

SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	STREETWORKS NEAR SHELL GARAGE	Site Address:	KNOWSLEY LANE, KNOWSLEY, L36 8BT
National Grid Reference:	345179E, 392618N		
Site Ref Number:	CS30750000	Site Type: ¹	MACRO

Background information:

As part of VMO2 continued network improvement program, there is a specific requirement for a radio base station at this location to provide enhanced 3G and 4G and new 5G coverage. An existing base station has been identified in the area, however it cannot accommodate VMO2's latest requirements due to technical constraints. Therefore, an additional new streetworks style base station is required for this 5G upgrade to VMO2's service in close proximity of the existing base station that will be retained and in due course upgraded for improved service.

In this instance, a new streetworks installation has been proposed as the most viable solution to meet the demand for coverage taking into consideration both technical requirements and planning and environmental constraints.

This application therefore seeks consent for:

The installation of a 20m high streetworks column supporting 6 no. antennas, 2 no. 0.3m dishes and ancillary equipment. The installation of 3 no. equipment cabinets and development ancillary thereto.

¹ Macro or Micro

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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: No mast register exists. A physical search of the area was undertaken prior to the selection of a suitable site, to identify any potential opportunities for mast or site sharing.		
Were industry site databases checked for suitable sites by the operator:	Yes	No
If no explain why: N/A		

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 description of the latest proposal and drawings were sent to the Knowsley Metropolitan Borough Council and Highways Authority by email on 17 th May 2023. No response was received however the LPA have already engaged with Cornerstone with regards to finding a suitable location to meet this requirement.	

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Annual area wide information to planning authority

Has annual area wide information been provided?	No
If no explain why:	
Summary issues raised: Cornerstone's commercial relationship with VMO2 has changed, effectively increasing their independence to work with other companies in the deployment of mobile infrastructure. It means Cornerstone no longer has visibility of VMO2's full update plan. However, Cornerstone is fully committed to working closely with Local Planning Authorities and following best practice guidance. Cornerstone aims to engage and work with the planning department at the earliest opportunity from when it is 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 long term partnerships and will always work with you to deliver improved mobile connectivity.	

Community Consultation

Rating of Site under Traffic Light Model:	Red	Amber	Green
Outline of consultation carried out: A description of the proposal and drawings were sent to the Stockbridge Ward Councillors Dennis J Baum, John Donnelly and Lynn O'Keeffe, to the Knowsley Town Council, and also to George Howarth MP on 17th May 2023.			
Summary of outcome/main issues raised (include copies of relevant correspondence): No responses have been received to date.			

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School/College

Location of site in relation to school/college (include name of school/college):
None in proximity.
Outline of consultation carried out with school/college (include evidence of consultation):
N/A
Summary of outcome/main issues raised (include copies of main correspondence):
N/A

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Civil Aviation Authority/Secretary of State for Defence/Aerodrome Operator consultation (only required for an application for prior approval)

Will the structure be within 3km of an aerodrome or airfield?	Yes	No
Has the Civil Aviation Authority/Secretary of State for Defence/Aerodrome Operator been notified?	Yes	No
Details of response: A notice was served on Liverpool John Lennon Airport on 17 th May. No response has been received to date.		

Developer's Notice

Copy of Developer's Notice enclosed?	Yes	No
Date served:	26 th May 2023	

3. Proposed Development

The proposed site: This application seeks consent with regard to the siting and appearance of: <i>The installation of a 20m high streetworks column supporting 6 no. antennas, 2 no. 0.3m dishes and ancillary equipment. The installation of 3 no. equipment cabinets and development ancillary thereto.</i> The site is located on the western side of Forest House Interchange roundabout adjacent to Knowsley Lane. The site is to the south of Shell Garage with open space to the north. The nearest residential development is to the south, along Knowsley Road. This residential development is road fronting with the entrances located on the northern side of the building. The proposed installation will be viewed within the mixed-use character of the immediate surrounding area. The mast is located within the area it is designed to serve and benefits from the mixed-use nature of the area. There are streetlamps and road signs close to the site and in the wider area which will ensure that the visual impact of the development is kept to a minimum and to streamline the design as much as possible.
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The new site needs to be within close proximity to the existing in order to maintain and improve upon existing network coverage and provide new 5G services to this area of Knowsley.

The rollout of 5G across the country is designed to bring connectivity, in line with government guidelines, to those areas where the provision is substandard and additional capacity is required. However, the very nature of 5G coverage with its high data capacity and higher frequency means that the installations have to be located within the areas where the coverage is required. Previous generations of mobile coverage have been able to provide their coverage from outside of the areas, and whereas these existing sites are being upgraded to 5G where possible, the 5G coverage is not reaching into the residential areas that were deliberately avoided before and new installations must be deployed within the area that the 5G coverage is required to serve. This does mean that new sites are required if coverage is to be improved across the country.

There are no planning constraints on the site itself or adjacent.

The proposed location is shown below:



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

N/A

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Type of Structure (e.g. tower, mast, etc):	
Description:	
The installation of a 20m high streetworks column supporting 6 no. antennas, 2 no. 0.3m dishes and ancillary equipment. The installation of 3 no. equipment cabinets and development ancillary thereto.	
Overall Height:	20 Metres
Height of existing building (where applicable):	Metres
Equipment Housing: York Cabinet	
Width:	1.90 Metres
Depth:	0.66 Metres
Height:	1.75 Metres
Equipment Housing: Shire Cabinet	
Width:	1.05 Metres
Depth:	0.66 Metres
Height:	1.75 Metres
Equipment Housing: Terrier Cabinet	
Width:	0.70 Metres
Depth:	0.66 Metres
Height:	1.75 Metres
Materials (as applicable):	
Tower/mast etc – type of material and external colour:	Monopole – steel – grey RAL 7035
Equipment housing – type of material and external colour:	Cabinets - steel – grey RAL 7035

Reasons for choice of design, making reference to pre-application responses:
In designing the proposed installation, the applicant has sought to achieve a balance between technical requirements and minimising environmental impact as far as was practicable. It, however, must be acknowledged that technical constraints heavily influenced the design and limited the scope to alter the appearance of the site to a significant degree.
There are three main elements to a radio base station;
- the supporting structure that holds the antennas in the air or fixes them to a building or structure

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- the antennas themselves, which emit the radio signals (along with any necessary amplifier or receiver units)
- and the cabin or cabinets which contain the equipment used to generate the radio signals
- Other elements necessary for the base station to function are the power source, feeder cables that link the equipment housing to the antennas and the various support structures, grillages and fixings, often referred to in general terms as “development ancillary to” the base station.

In terms of design, a slim and unfussy design of support structure has been chosen to take account of the sites highways location. The monopole design of support structure is the most appropriate and available design for a streetworks location. This structure has been selected over other available design such as a lattice tower with an open headframe and level antennas and is free of ancillary equipment such as tall fencing, or larger cabinets. The finish of the monopole and cabinets is proposed to be grey to match the existing street furniture and to blend into the surroundings.

The cabinets are of a type commonly seen on the street and are low level structures that, when viewed in the context of the street scene, will not be obtrusive features; they will also be painted grey, a colour typical for street furniture.

Whilst the proposed colour scheme has been selected taking into consideration the specific site context, the applicant would be willing to adhere to any colour scheme deemed more appropriate by the local authority.

In terms of the height of the proposed structure, it is acknowledged that the mast would be taller than the existing street furniture and trees. This is necessary to ensure that antennas are able to over-sail surrounding buildings and trees, enabling the required coverage to reach the required extent of the target area.

This height also takes into account a need to accommodate multiple technologies in one installation. These technologies are stacked on top of each other. The need to provide modern frequencies and multiple technologies in once mast, is therefore a driver of the height of the installation.

2 no. dishes are proposed to provide a link back into the wider network. These are proposed under the antennas and other ancillary equipment on a small bracket.

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In all aspects of the design now put forward the smallest practical components have been utilised to ensure that the visual impact of the development is kept to the absolute minimum within the context of the technical constraints to design.

There is street furniture close to the site including lighting columns and signage the road and in the surrounding area which will provide context. There are clusters of trees in the surrounding area, including on the roundabout itself which create screening and/or backdrop to the proposed development from different vantage points. The level of screening of the equipment will depend on the specific viewpoint, however overall, the screening would assist in minimising visual impact to ensure that impact on amenity is kept to a minimum. The street furniture and the nature of the area - all of which will provide screening and/or backdrop to the proposed development and assisting in minimising visual impact on surrounding amenity.

It is considered that the proposal strikes an appropriate balance between operational and environmental considerations.

Health and Safety - including ICNIRP compliance

This application is supported by a certificate of ICNIRP compliance. Para 118 of the NPPF (2021) states: Local planning authorities must determine 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.

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4. Technical Justification

Enclose predictive coverage plots if appropriate, e.g. to show coverage improvement. Proposals to improve capacity will not generally require coverage plots.

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

Whilst it is the case that Cornerstone remains a jointly owned company, established by the two mobile network operators, Vodafone Limited and VMO2 (trading as O2), to establish and operate a shared single grid network to provide 2G, 3G and 4G coverage, this can no longer be the case with all sites for the provision of 5G service. Mobile connectivity and service is required where customers live, work and play. 5G coverage and superfast mobile broadband data capacity demand will continue to increase exponentially with the introduction of IoT (Internet of Things), machine to machine connectivity, automated transport/industry and other 'smart' applications.

To this end the existing shared infrastructure within the built environment has had to be reviewed and adapted as appropriate. In those instances where greenfield structures and rooftop installations are currently in place, in the vast majority of cases, these will remain shared base stations. These shared base stations allow for separate antennas on supporting structures that are capable of accommodating the weight, wind loading, and technological requirements associated with providing four technologies (2G, 3G, 4G and 5G) for two separate operators from a single shared location, albeit sometimes via redevelopment of the existing base station. However, to address some site-specific coverage and data capacity demand, the 5G equipment upon many base station structures cannot be shared by both operators. This is due to variations in the make-up of the independent Vodafone and VMO2 networks.

It is critical to understand that the UK's four Mobile Network Operators (MNOs), including Vodafone and VMO2 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 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.

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For this reason, all MNOs, including Vodafone and VMO2 whom continue to be competitors but share base stations where possible, 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 requirement. As such, the various networks will have variations in how their infrastructure is deployed and developed.

As noted, most infrastructure should be capable of sharing, however, the current site is not capable of upgrading with all of the differing equipment that is required to meet the site-specific demand of both operators and customers for this area from a single site, being mindful of the spectrum variations. To this end, many existing shared installations are being removed from the 'single grid', meaning the existing site will become operator unilateral for 5G provision. This creates the necessity for an additional new base station in the cell to accommodate the technological requirements of the other unilateral operator – either Vodafone or VMO2. Given the maturity of the two independent networks, and the single grid consolidation over the last few years, any new base station needs to be located in close proximity to the existing site – thereby retaining customer coverage and experience within a previously shared 'cell'.

The new pole will accommodate all the technologies for the single operator and the 'cell' will benefit from improved service provision from both operators including new 5G coverage. To continue to share an existing structure at this location would require significant redevelopment of the existing structure to a much more structurally robust site capable of hosting all the differing antennas and equipment from both operators to address their spectrum variations. This is not possible given the constraints of the installation on which the current antennas are located therefore it is felt that a secondary, slimline, street-pole is the only other viable option to ensure a continuation of coverage and the provision of new technologies and frequencies.

For this reason, all MNOs, including Vodafone and VMO2, whom continue to be competitors but share base stations where possible, 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 requirement. As such, the various networks will have variations in how their infrastructure is deployed and developed.

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The new pole will accommodate all the technologies for the operator and the 'cell' will benefit from improved service provision, including the introduction of 5G service to the area.

Further detail regarding the general operation of the network can be found in the accompanying document entitled 'General Background Information for Telecommunications Development'. This information is provided to assist the local planning authority in understanding any technical constraints on the location of the proposed development.

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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)

Site Type	Site name and address	National Grid Reference	Reason for not choosing site
SW	SW on Liverpool Road, Prescot, Knowsley, L34 1QA	345603E, 392672N	Though currently a shared structure providing 2G/3G/4G coverage for both Operators, there is no comparable street works solution that can accommodate 5G antennas for both Vodafone and VMO2. It would require significant redevelopment and a completely new mast of substantial width and height, as well as taking up the majority of land at its base. Therefore, it is considered that redevelopment would be inappropriate within the street-scene, compromise pedestrian movements and impact on highway safety. In order to avoid network interference there needs to be vertical and horizontal separation between antennas of each operator. In this instance 30 metres of horizontal separation is required between the existing mast that will continue to be operated by Vodafone and the proposed VMO2 mast. Therefore, co-location within this 30 metre radius is not technically viable and so is discounted.

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SW	Kings Business Park, Prescot, Knowsley, L34 1BN	345346E, 392314N	The buildings within the Business Park are all too low to provide coverage to the surround area and the area is surrounded by tall trees which would block coverage. An installation in this area would not provide the required level of coverage and for these reasons this option has been discounted.
RT	Five Star car wash, Liverpool Road, Prescot, Knowsley, L34 1RN	345754E, 392623N	Potential rooftop installation on the school building. Building is not tall enough to provide the required coverage to the area and therefore discounted.
Existing mast	Orange mast, Adjacent M57, Prescot, Knowsley, L34 1NR	345568E, 392468N	Existing lattice mast just poking over the trees - to accommodate a shared installation, the mast would need to be increased in height to allow coverage to be provided to the wider area and accommodate an increase in the amount of equipment that it must accommodate. This would make it more prominent than the proposed option. For this reason, this option has been discounted.
SW	SW on Liverpool Road, Prescot, Knowsley, L34 1RN	345365E, 392612N	The grass verge on Liverpool Road was investigated as a potential SW location, however, this area is within Green Belt and closer to King's Business Park and listed buildings than the proposed location which would be able to better protect the character of the area, being located outside the Green Belt. The proposed location balances the requirement to keep within proximity to the existing mast to the East and the purpose to provide 5G to the area.

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SW	SW on Liverpool Road, Prescot, Knowsley, L34 1RN	345365E, 392612N	The grass verge on Liverpool Road was investigated as a potential SW location, however, this area is within Green Belt and closer to King's Business Park and listed buildings than the proposed location which would be able to better protect the character of the area, being located outside the Green Belt. The proposed location balances the requirement to keep within proximity to the existing mast to the East and the purpose to provide 5G to the area.
SW	Kings Drive SF, Prescot, Knowsley, L36 8BT	345303E, 392554N	This was identified as a potentially suitable site, however, when this site was submitted for planning under Ref: 20/00395/TEL it was refused on the basis of its size, height and prominence in the street-scene being to the detriment of visual amenity. The now revised location seeks to overcome these reasons for refusal through the proposal of a site in this new location.
SW	Liverpool Road (north), Knowsley, Huyton, Knowsley, L34 1QA	345363E, 392612N	This location within the greenbelt and is different in character, being more rural in nature than the proposed option. The trees to the south of the site are also of significant height, such that they would block coverage from reaching the target areas and reduce the coverage that the mast could provide to the surrounding area. Where the existing coverage pattern is not replicated then additional masts will be required to 'plug' any newly created holes in the network. This option has been

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			discounted in favour of the proposed option as the proposed option is outside of the greenbelt and will benefit from the backdrop of the commercial / leisure development to be built to the north and the petrol station which has already been constructed. It is also able to replicate the existing coverage pattern and deliver coverage to the target areas through the one installation.
SW	Liverpool Road (south), Knowsley, Huyton, Knowsley, L34 1QA	345302 , 392573	This location has been discounted for the same reasons as the discounted option above.

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

N/A - alternative locations set out above.

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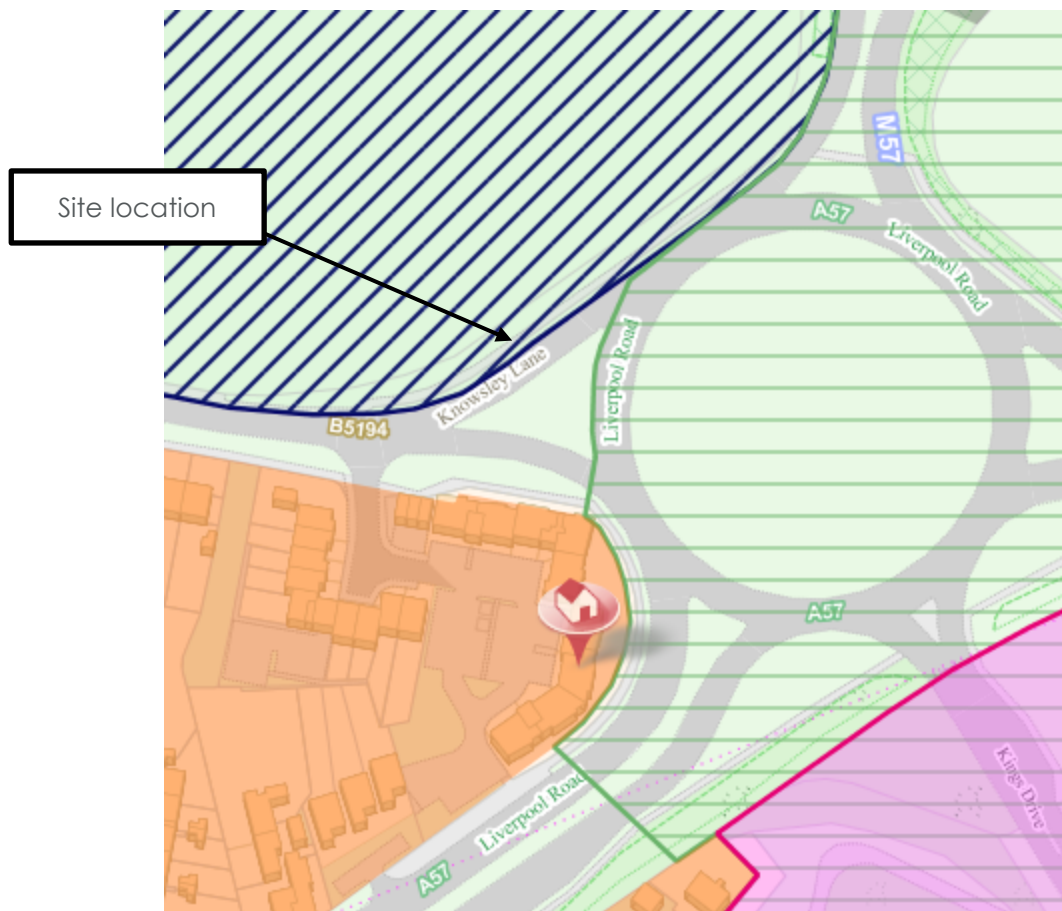
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Land use planning designations:



The site is within Sustainable Urban Extension but is otherwise free from designation or constraint.

The Green Belt is located to the south-east (shown by the light green hatching) and Kings Business Park (shown by the pink shading) to the south beyond the roundabout. The area to the south is a predominantly residential location (orange shading).

There are a cluster of Grade II Listed Buildings to the south:

- Stables to west of The Hazels - List UID: 1075537
- The Hazels - List UID: 1283592

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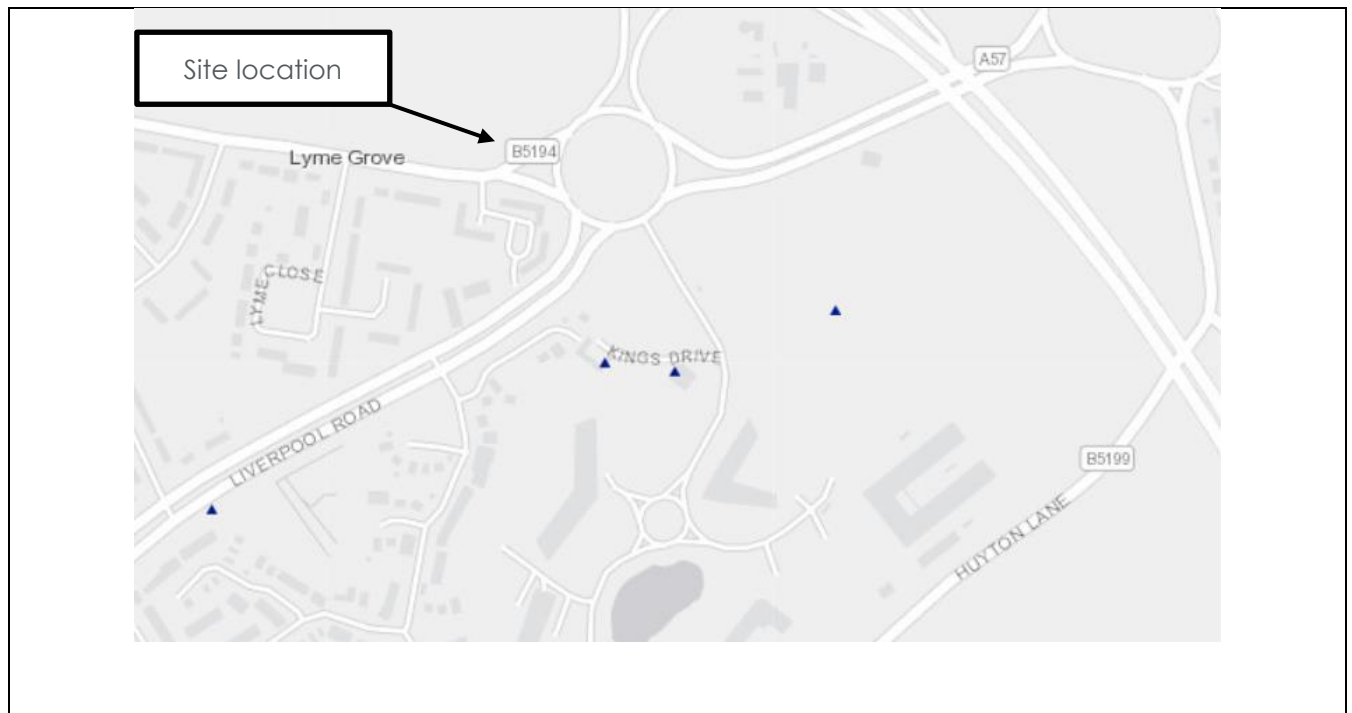
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Additional relevant information (include planning policy and material considerations):

Background

There is a specific requirement for a radio base station at this location to provide enhanced 3G and 4G coverage and new 5G coverage in this area of Knowsley.

As mentioned above and detailed in the discounts, there is an existing streetworks site to the East of this site on Liverpool Lane which currently serves the area. Following technical consideration of the existing site, it has been concluded that the site is unable to accommodate new 5G equipment. This is mainly because the equipment currently installed on the mast is not capable of providing 5G service and because providing 5G coverage for two operators within one installation would require a significant re-development of the mast, to a much taller and wider structure with open headframe, due to the technical requirements of 5G. For these reasons a new streetworks installation is required.

The proposal includes the installation of a 20m height streetworks column supporting 6 no. antennas, 2 no. 0.3m microwave dishes and the installation of 3 no. equipment cabinets.

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An application was submitted and refused in July 2020 under Reference Ref: 20/00395/TEL for an installation to the south of the roundabout on Kings Drive to meet this same requirement. The Council refused the application on the basis of its size and height combined with its prominent and open location. A review has been undertaken in consultation with the local planning authority and the now revised location seeks to overcome these reasons for refusal through the proposal of a site in this new location.

PLANNING POLICY

The following documents are considered relevant to the assessment of this application:

- a) The Town and Country Planning (General Permitted Development) (England) (As Amended) - Schedule 2, Part 16
- b) National Planning Policy Framework (2021) – Chapter 10, Supporting High Quality Communications Infrastructure
- c) National Planning Policy Guidance
- d) Code of Practice for Wireless Network Development (2022)
- e) The Knowsley Local Plan Core Strategy was adopted in January 2016 – Policy ENV8: Telecommunications Developments

Schedule 2, Part 16 of the GPDO

Schedule 2, Part 16 of the GPDO relates to the Prior Approval process for telecommunications development. This legislation has established the principle of telecommunications development. Prior Approval is therefore only assessed on the basis of siting and appearance. The development plan and NPPF (2021) is therefore only considered relevant in as far as it relates to the matters of siting and appearance.

The Knowsley Local Plan Core Strategy (2016) – Policy ENV8: Telecommunications Developments

“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,

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- 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:
 - 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. “

The Local Policy has been followed in that:

- 1.a). Please see discounted options above and further explanation within the siting and design section below. There are no existing structures or masts in the area capable for sharing and the location of the installation is dictated by a requirement to be as close as possible to the existing installation which can no longer be shared.
- b). The site has been designed to minimise the impact on the surrounding area whilst achieving the required coverage. The mast has been designed using a slimline monopole of the lowest possible height, using the smallest practical components and with the minimum amount of supporting equipment necessary to provide the required levels of coverage. Design has been explored further and justified below. The site has retained sufficient separation distance to ensure it is not overbearing or detrimental to amenity.
- 2. The site is not located within any designated areas.
- 3.a). The proposal is fully compliant with ICNIRP guidelines and declaration of compliance has been provided within this application.
- b). Please see consideration of this criteria under Technical Justification
- c). The proposed site is not located in proximity of schools or colleges.

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Planning Assessment

Principle of Development

This is a prior approval application. As such, the only issues that can be considered when assessing this application are the siting and appearance of the proposed telecommunications monopole and cabinets. The principle of development is therefore not an issue of consideration for this prior approval application.

Notwithstanding this, it is useful to highlight the following paragraphs of the National Planning Policy Framework:

The NPPF directly addresses the need for enhanced wireless communication services, at paragraph 20, which states that an LPA's strategic policies must make sufficient provision for:

b) infrastructure for transport, telecommunications (our emphasis), security, waste management, water supply, wastewater, flood risk and coastal change management, and the provision of minerals and energy (including heat)"

Chapter 10 [Para's 114-118] (Supporting High Quality Communications) is most relevant to this application.

Paragraph 114 states that "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) and full fibre broadband connections".

Paragraph 115 states that "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".

It should be noted that **paragraph 118** states that "Local planning authorities must determine 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".

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This proposal seeks to expand the electronic communications network to provide advance, high quality and reliable communications infrastructure in accordance with para 114 of the NPPF. This installation is proposed following an identified need for an additional base station to meet customer demands, to ensure the efficient operation of the network and provide reasonable capacity for future expansion. The operator has taken a sequential approach to development and has explored the use of existing masts, sites and buildings however a new streetworks installation is considered to be the only appropriate solution to deliver the required levels of coverage within the target area in accordance with para 115 of the NPPF.

Siting and Appearance

As set out above, there is a requirement to upgrade coverage to the area to allow VMO2 to enhance its existing 3G and 4G network capacity and to provide new 5G capability to the surrounding area.

In terms of siting, this location is considered to be the most appropriate site, in the absence of viable alternatives, which can balance the technical requirements of the operator and planning considerations within the required cell boundaries. A physical search of the area has taken place and the applicant has explored the possibility of erecting apparatus on existing buildings, masts or other structures and is unable to find a suitable and/or available alternative which also meets planning considerations. As such a new mast is proposed to meet customer demand within this area. Discounted options and reasons for discounting are shown above within this document. This approach accords with criteria 1.a of Policy ENV8 of - Knowsley Local Plan.

The search area for a mast / installation is selected through technical assessment by a qualified radio planner and is based on technical data which shows the areas within which masts are required. There is limited scope to move the search area from where this assessment determines, as doing so may mean that the mast would not replicate the existing coverage pattern and could result in more masts being required to address the same demand (due to the creation of new coverage gaps) and potential for interfere with adjoining masts which are located within the locality.

The site is proposed on the northern side of Knowsley Lane just west of the Forest House Interchange roundabout. Following the previous refusal on Kings Drive to the south of the roundabout, the site has been relocated to the further north. The site is to the south of Shell Garage in a mixed-use area and is set in proximity to road signs and

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streetlights which will provide a backdrop for the development and partial screening from certain vantage points. The installation would be placed on the grass verge away from the pedestrian movement so as not to obstruct the pavement. The mast will be coloured grey, assimilating into its surroundings as an additional grey pole in this mixed location against the backdrop of existing street furniture and vegetation. Due regard has been given to site the proposed installation in a location which gives consideration to the skyline, topography, surrounding landscape and views into and out of the development.

The nearest properties are along the Knowsley Road to the south of the site. Sufficient separation distance has been retained to ensure that the installation would not be overbearing or detrimental to amenity. It is understood that the land from the north of the site is to be re-development with commercial / leisure development and therefore in the long term the mast will be viewed within this context.

The installation would take up a small area of the grass verge and will not impact upon pedestrian useability. It is not considered that the introduction of telecommunications infrastructure would greatly disturb the way the land is used or understood or the character of the area, particularly when weighed against the benefits of providing improved coverage to this area of Knowsley.

The location is free from planning constraint and will have no unacceptable harm on areas of ecological sensitive areas in accordance with criteria 2 of Policy ENV8.

In terms of appearance, following technical assessment by qualified radio planners and telecommunications designers, the height of the mast has been proposed at 20m. This is the lowest possible height which can still deliver the required levels of mobile phone signal to the locality due to technical constraints.

It is accepted that the proposed mast would be taller than the existing street furniture and the surrounding buildings. Whilst it would be preferable to propose the mast at a lower height which is more in keeping with the surrounding infrastructure, it is unfortunate that the technical requirements of the mast mean that this is not possible. This is because 5G signal does not travel as far and is prone to 'clipping' than lower frequencies such as 3G and 4G. It does not pass well through different materials and needs a clear space free of obstructions (such as trees and buildings) to deliver signal. As such, there is a need to ensure that the antennas are able to rise above any obstructions. Taller masts are being proposed across the country to accommodate the delivery of 5G coverage.

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With regards to form and scale, a relatively slimline streetworks monopole with smaller antennas has been chosen over a bulkier and wider, standard mast or lattice tower with an open headed bracket, larger level antennas and dishes, and a large cabin and/cabinets. The development is also free of any fencing, lengths of cable trays and large areas of hard standing. The number of cabinets have been kept to the technical minimum and are of the smallest possible dimensions.

A simple design solution has been selected to minimise harm to the surrounding area and balance technical considerations / performance. Para 67 of the Code of Practice acknowledges constraints to 5G development and mast design and supports a simple design solution. It states *"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"*.

It is acknowledged that the installation would be visible, however, the installation would be read in the context of the existing street furniture in this urban environment and the substantial commercial / leisure development and infrastructure proposed to the north in the long term. It is not considered that the installation would be overly dominant. The siting of the mast on the grass verge is in keeping with the existing character of the area – where street furniture is generally more prevalent and accepted.

Balancing siting and appearance of mobile phone mast against operational efficiency can be challenging and every effort has been made in this case to ensure that the installation is proposed in the best possible location and is of the best possible appearance given the technical and planning constraints which exist. It should be acknowledged by the LPA that operators are limited on the options for where equipment can be located and how it appears, particularly with regard to the emergence of new technologies such as 5G which require different considerations than previous technologies. The location as selected is considered to be the least detrimental location within the required search area.

The installation is therefore considered to be sited and design to minimise visual impact and impact on residential amenity and character, in accordance with criteria 1.b of Policy ENV8.

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Neighbouring Amenity and highways safety

Criteria 1b of Policy ENV8 of the local plans seeks to ensure that new development does not have an unacceptable impact on the character or appearance of the surrounding area, or the amenity of nearby residents.

Firstly, it is accepted that a new telecommunications mast in this location would be visible within the street scene and that it would be taller than the existing infrastructure and items around it, such as lampposts and trees. The proposed location has been chosen in the absence of a viable alternative (such as a site share, mast share, rooftop location or different greenfield / streetworks location). The proposed location is however considered to have struck a balance between meeting the operational requirements and technical constraints of the operator, as well as selecting a location which is least harmful with regards to planning and environmental considerations.

The nearest properties are sited to the south of the proposed installation. There are commercial premises to the north of the proposed location. The mast has been positioned close to lampposts and the vegetation within the roundabout to the south of the site will provide partial screening. Given the separation distance and that residential development is generally orientated away from the site, it is not considered that the installation would be harmful to residential amenity.

In summary, whilst visible it is considered that sufficient separation distance has been retained between the installation and any nearby properties to ensure the installation is not harmful to residential amenity in accordance with the local plan.

Public Benefits Associated with Improved Coverage and New 5G Coverage

Mobile telecoms networks are now ubiquitous throughout the UK. Individuals and businesses expect to be able to connect and use their mobile device whenever and wherever they so require. Access to quality mobile communication services is an essential utility for the residents, businesses and for commuters that travel through an area daily.

High quality communications infrastructure is essential for sustainable economic growth. Mobile connectivity allows business to be carried out on the move, enables access to information and services anywhere, and opens new opportunities and markets. Telecommunications networks also play a vital role in enhancing the provision of local community facilities and services.

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5G is expected to broaden the role that mobile technology plays in wider society by enabling thousands more 'smart' devices on the street which connect to the internet and each other. This will pave the way for new virtual and augmented reality services and help drive the take-up of new innovations such as autonomous cars and remote healthcare technologies. And it could transform the way public services are delivered - such as energy and transport - by allowing greater real-time monitoring and responsiveness in order to reduce waste, pollution or congestion.

At the time of writing, the critical nature of these services has been made ever more apparent. Restrictions on travel resulting from the Coronavirus pandemic has resulted in a continued shift from office based to home working, from physical professional and social gatherings to virtual ones and to reliance on online shopping and entertainment services. Usage within suburbs and peripheral areas has therefore increased dramatically as less people travel to town and city centres.

The recently published 'Online Nation Report' (June 2022, OFCOM) is supportive of this statement, finding that *"The global pandemic since March 2020 has resulted in significant changes in online behaviour; in particular, our online shopping habits that developed during lockdown periods appear to be here to stay. Overall, online companies grew in 2021. The largest online platforms' revenues and profits increased significantly during the lockdown periods and this growth continued in 2021. The growth is being driven by UK consumers' increasing spend on e-commerce and entertainment subscription services, while advertising revenues are also increasing with the continuing brand migration to online."*

In addition this report highlights that *"data from Ipsos iris shows that 49.9 million UK individuals aged 15+ accessed the internet on smartphones, tablets and computers in September 2021 (our sample month), spending an average of 3 hours 59 minutes a day online. Young adults continue to spend the most time online, with 18- 24-year-olds spending a daily average of 5 hours 6 minutes, and the 55+ group spending the least time (2 hours 58 minutes). Women spent more time online (4 hours 11 minutes) than men (3 hours and 46 minutes). Online adults in Scotland spent the most time compared to the other UK nations (4 hours 18 minutes), while those in Northern Ireland spent the least (3 hours 25 minutes)"*.

Ofcom's 2022 communications market report (interactive data published in July 2022) reaffirms the importance of mobile technology in the UK. The average monthly data volumes per mobile data user increased by 1.1 GB (24%) to 5.6GB per month in 2021. The total number of mobile subscriptions also increased by 3% to 97.2 million in 2021.

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It is clear therefore that data-based technologies, such as 4G and 5G services (provided by this proposed development), are increasingly important to our everyday lives, even during more normal circumstances.

This importance has been reaffirmed in a letter from Matt Warman MP, the previous minister for Digital Infrastructure, to English Local Authority Chief Executives. The letter dated 24 May 2021 accompanied the 'Consultation on Changes to Permitted Development Rights for Electronic Communications Infrastructure' and states:

"Digital connectivity is – now, more than ever – vital to enable people to stay connected and businesses to grow. The demand for mobile data is increasing rapidly, and the COVID-19 pandemic has highlighted how important it is that we all have access to reliable, high quality mobile connectivity...The planning system plays a key role in delivering the infrastructure that we need as households and businesses become increasingly reliant on mobile connectivity."

Upgrading digital telecommunications is evidently a key Government priority and one that is also set out in detail in the NPPF (2021) and summarised within the DDCMS Connected Growth Manual (2019). Furthermore, the Government wants the UK to be a world leader in 5G and has set a target for "the majority of the UK population to have access to a 5G signal by 2027" (House of Commons Library, Building Telecommunications Infrastructure, August 2021). Critical to achieving this is the ability of operators to deploy appropriate infrastructure in the places which need it most.

Differences between 4G and 5G

In their recent #checkthefacts campaign, Mobile UK highlight the biggest differences between 4G and 5G. These are broadly summarised as:

- Quicker speeds
- Improved latency - Time taken for information to travel from sender to receiver
- Improved capacity - more devices can be connected at one time
- 5G Networks can be sliced – allowing dedicated and reliable networks for local services (such as the emergency services) and individual businesses.

The new installation will bring next generation technology. The full extent of benefits of 5G technology is still unknown and will, to a significant degree, depend on the ability to provide a comprehensive network coverage. However, the possibilities and potential of the technology seem endless. If allowed, residents and visitors will benefit from:

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Much faster download/upload speed and latency. Delays between information sent and received will become virtually impossible to perceive. Real-time content sharing and data will become a reality. This will effectively make buffering and loading delays a thing of the past, with data only taking 1 millisecond to be received by a device after it has been requested – it currently it takes up to 60 milliseconds.

Multiple Devices can be connected. Countless devices will be able to access mobile online services at the same time. It will mean you can always stay connected. For example, if you are at a football stadium or a crowded festival with everyone trying to simultaneously upload and share their experiences to social media without loss of connection.

Improved home working. 5G rivals the speed of fibre broadband and can provide much needed connections where internet connections are still poor and in need of updating. Everyone will have access to fast and uninterrupted sharing, streaming, and browsing via their mobile phone network. It will mean accessible near gigabit capable speeds when you are out and about and could, in the future, work alongside or provide an alternative to fibre and wires in the home.

5G supports the development of the “Internet of Things”. This encompasses all the ‘smart’ and connected devices we’re starting to see in homes and beyond, from smart light bulbs and thermostats, to connected kettles, security cameras and more, most of which can be controlled by an app on a mobile phone, or by voice when paired with an AI Assistant such as Amazon Alexa. In some cases, they can even be automated, with lights for example turning on when entering a room and turning off when leaving it. They do this in part by communicating with each other, for example, motion sensors at a room entrance could adjust lighting when people enter or leave a room.

Smart Cities. It also supports the development of “Smart Cities” which develops the “Internet of Things” beyond homes and out into the world to make cities smarter. Examples include traffic lights that can adapt automatically based on traffic flow, automatic deployment of road repair vehicles when potholes are detected, smart power distribution (e.g., so that buildings are not being lit when they are empty) and rubbish bins automatically reporting when they require emptying, all leading to cleaner, safer, more efficient cities, and all with minimal human oversight.

Cars of the future. When connected to 5G, the cars would communicate and share data with other vehicles and connected infrastructure, avoiding accidents and traffic

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as a result, and telling smart cities where traffic is building up, so routes for other vehicles can be adjusted. This will also play a large role in self-driving cars, with its speed and reliability key to them rapidly sending and receiving information about the road and other vehicles.

The Environment. 5G connected devices will allow us to reduce our energy use and emissions, so we have a less negative impact on the environment. Multiple devices will connect to each other, so they know when they're in use and powerup or down accordingly. 5G will allow us to download data in a more efficient way, so we use less energy. Smart energy meters will help us reduce household energy use, and smart transport systems will help us produce fewer emissions when we travel.

More information on 5G and its benefits can be found at <https://www.mobileuk.org/5g-benefits>.

Mobile UK also have a useful Local Authority Toolkit which can be viewed through the following link <https://www.mobileuk.org/5g-local-authority-toolkit>.

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

There is a requirement to upgrade the VMO2 network in the area to provide improved coverage and capacity, most notably in relation to 5G services, but also in relation to 4G services.

The first generation of services provided voice calls, the second generation (2G) allowed basic data such as texting and the third generation (3G) offered internet access and the development of apps. Since then, the smart phone has developed further, and the fourth generation has brought video and much faster data speeds allowing the integration of the smart phone into wider use.

The next generation of mobile telephony is 5G which brings greatly increasing data speeds. The advantages this presents range from near-instant downloads of HD films to connected cars, smart medical devices, and smart cities. To bring this new technology VMO2 will need to provide a mix of upgrades to existing sites and the building of new sites. New sites will be needed for many reasons, including that the higher radio frequencies used for 5G do not travel as far as those frequencies currently in use leaving gaps in the network.

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In the first instance, all correspondence should be directed to the agent.

Cornerstone Industry Site Specific Supplementary Information (England) V.5 – 21.03.2022

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Although 5G will undoubtedly bring new opportunities and huge benefits to society, we cannot escape from the requirement that new structures, antennas, and ancillary equipment will be needed. It has been acknowledged by Government that we must ensure that we have the infrastructure in place to deliver 5G across our major centres and transport networks. This is one of the many additional structures that will be needed to provide enhanced services.

The higher frequencies that 5G will use can provide more bandwidth and thus greater capacity but the signal will not travel as far as those of previous generations. The implications to the built environment will be that more infrastructure needs to be deployed, as in this case.

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 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.

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Summary

National planning policy is to facilitate the growth of new and existing telecommunications systems, and operators have obligations to meet customer demands for improved quality of service.

This development proposes improved coverage to the surrounding area. The proposal represents an appropriate siting and design solution for this area, balancing environmental and planning considerations.

A simple design solution is proposed to mitigate visual impact and prevent harm to the local environment. The relatively minimal impact of the development would be outweighed by the significant public benefits of the new super-fast coverage to the area.

The proposed development is compliant with the relevant policies from the NPPF and local planning policy as outlined within this supporting statement. The proposal is fully compliant with ICNIRP guidelines and declaration of compliance has been provided.

As such, it is respectfully requested that this application is approved.

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Confirmation that submitted drawings have been checked for accuracy

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Address:	3 Princes Street, Bath, BA1 1HL	Email Address:	matt.silverwood@sinclairdalby.co.uk
		Date:	31 st May 2023
Signed:	Director	Company:	Sinclair Dalby Limited
		(on behalf of Cornerstone and above operator)	
Position:	Matthew Silverwood	Telephone:	07867 977748

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