CLARKE telecom

## SUPPLEMENTARY INFORMATION

### 1. Site Details

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|---|---|---|---|
| Site Name: | SW @ Chazey Road | Site Address: | Grass verge on Chazey Road, Caversham Heights, Reading. RG4 7DS |
| National Grid Reference: | E:470236 N:175434 | | |
| Site Ref Number: | H3G ref no. RDG25323 | Site Type: | 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)

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

**Site Specific Pre-application consultation with local planning authority**

| | |
|---|---|
| Was there pre-application contact: | No |
| Date of pre-application contact: | N/a |
| Name of contact: | N/a |
| Summary of outcome/Main issues raised:<br><br>A pre-application consultation letter and a copy of the scheme drawings was sent to the LPA by email dated 14/11/22.<br><br>No specific response received to date. | |

**Annual area wide information to planning authority**

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|---|---|
| Has annual area wide information been provided? | No |
| If no explain why: | |
| Summary issues raised:<br>The relevant information is being collated and will be distributed accordingly in due course. | |

**Community Consultation**

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|---|---|---|---|
| Rating of Site under Traffic Light Model: | **Red** | ~~Amber~~ | ~~Green~~ |

Outline of consultation carried out:

Caversham Heights Ward Cllrs Carnell; Ballsdon; & Kitchingham were sent a copy of the consultation letter and drawings on 14/11/22.

A response was received from Cllr Ballsdon by email on 28/11/22 as follows :-
*"My residents and I would strongly oppose the proposed siting of this radio base station.*
***Alternative sites***
*The reasons set out in your letter for discounting alternative sites do not stack up. Nor has there been any consideration to sharing one of the nearby existing masts. Also, mobile phone coverage in St Peter's Avenue and Chazey Road is excellent, which begs the question of whether there is actually a need in the local area.*
***Siting and appearance***
*I accept that whichever site your company selects, a mast will have a negative visual impact (hence it would be preferable you look at sharing an existing mast). However, the siting you are proposing in St Peter's Avenue, which is an extremely attractive tree-lined road, would be hugely unpopular. It would be highly prominent because of being at / near the junction at the top of the hill. It is a much-used pedestrian and cycle route down to Caversham because it is so lovely. I urge your company to discount St Peter's Avenue and look into sharing one of the existing masts on the A4074 instead."*

Cllr Ballsdon queries were answered by return email on 29/11/22 thus :-

*Thank you for your email. To answer below:*

1. *Could you elaborate how the discounted alternatives do not stack up please?*
2. *The existing masts are outside of the search area, where there is currently a hole in coverage for this operator. The radio base station will also meet the extra demands on the network in this area as more people use internet enabled handheld devices. It is a densification project for the operator's network to fill holes in service provision including coverage and capacity. This will enable the operator's customers to be able to use their handheld devices without calls being dropped or buffering occurring where there is a gap in the operator's network coverage and capacity ability. A site in this location will fill the gap in service provision and provide high quality, reliable, advanced 3G, 4G and 5G in this area. The search area is very small for this new installation. 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 3G, 4G and 5G technology.*
3. *As noted above the existing masts are outside the search area and would fail to meet the operators design brief and in time the existing masts in this area will struggle to cope with the demand.*
4. *In line with the Code of Practice (2022) - Paragraph 39 advises that all new masts should be sited, so far as practicable, so as to minimise their impact on their setting, including the landscape and any buildings. This includes siting next to similar structures – e.g. streetworks 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. As a result, the mast has been placed alongside other vertical structures and trees in order to reduce its visual appearance.*

Copies of this correspondence are enclosed with this application.

## School/College

Location of site in relation to school/college (include name of school/college):

Caversham Heights Pre-School was noted within the locality.

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|---|
| Outline of consultation carried out with school/college (include evidence of consultation):<br><br>A consultation letter was issued 14/11/22 to the pre-school and a copy of this correspondence is attached to this application. |
| Summary of outcome/main issues raised (include copies of main correspondence):<br><br>No responses received to date. |

**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? | | No |
| Has the Civil Aviation Authority/Secretary of State for Defence/Aerodrome Operator been notified? | | No |
| Details of response:<br><br>N/a | | |

**Developer's Notice**

| | | |
|---|---|---|
| Copy of Developer's Notice enclosed? | Yes | |
| Date served: | A copy of the developers notice and a set of plans were sent to Reading Borough Council Highways by email on 26/11/2022. Copies of the developers notice and proof of issue are attached as part of this application.<br><br>Mr Cook - Highways responded 28/11/22 confirming no highway objections. A copy of this communication is attached. | |

## 3. Proposed Development

**The proposed site:**

Clarke Telecom Ltd act on behalf of the mobile telecommunications operator CK Hutchinson Networks (UK) Ltd (commonly known as Three). The proposal is to install a radio base station, in order to provide the latest 3G, 4G and new 5G technologies.

As part of CK Hutchinson Networks (UK) Ltd continued network improvement program, there is a specific requirement for an installation in the grass verge on the northern side of Chazey Road to ensure that the latest high quality 3G and 4G service provision is provided in this area of Caversham Heights. The proposed column will also ensure that new 5G coverage can be provided at this location. This ensures that coverage and capacity requirements are maintained and enhanced.

Mobile telecoms networks are now ubiquitous throughout the UK. It is an expectation that an individual can connect and use their mobile phone whenever and wherever they are. With the advent of new technology, under the banner of 5G, further advances are proposed and Central Government has seen the telecoms industry, and in particular 5G, to be at the forefront of economic development.

This site will enable 5G coverage to be provided to this area of Caversham Heights. The Government recognises that widespread coverage of mobile connectivity is essential for people and businesses. That is why the Government is committed to extending mobile geographical coverage further across the UK, with continuous mobile connectivity provided to all major roads and to being a world leader in 5G. This will allow everyone in the country to benefit from the economic advantages of widespread mobile coverage.

As well as improved mobile signal, 5G networks are also crucial to drive productivity and growth across the sectors that local areas are focusing on through their emerging Local Industrial Strategies. Enabling and planning for 5G implementation is central to achieving the Government's objective to deliver prosperity at the local level and enable all places to share in the proceeds of growth.

5G service provision will bring faster, more responsive and reliable connections than ever before.

More than any previous generation of mobile networks, it has the potential to improve the way people live, work and travel, and to deliver significant benefits to the economy and industry through the ability to connect more devices to the Internet at the same time, the 'Internet of Things'. This will enable communities to manage traffic flow and control energy usage, monitor patient health remotely, and increase productivity for business and farmers, all through the real-time management of data.

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

The radio base station will also meet the extra demands on the network in this area as more people use internet enabled handheld devices. It is a densification project for the operator's network to fill holes in service provision including coverage and capacity. This will enable the operator's customers to be able to use their handheld devices without calls being dropped or buffering occurring where there is a gap in the operator's network coverage and capacity ability. A site in this location will fill the gap in service provision and provide high quality, reliable, advanced 3G, 4G and 5G to this locality.

As part of CK Hutchinson Networks (UK) Ltd continued network improvement program, there is a specific requirement for a new mast on the grass verge to Chazey Road, to ensure that the latest high quality 3G and 4G service provision can be provided in this area for CK Hutchinson Networks (UK) Ltd. The proposed new column will also ensure that new 5G coverage can be provided at this location for CK Hutchinson Networks (UK) Ltd. This ensures that coverage and capacity requirements are maintained.

The proposed new mast has been sited and designed in order to provide 5G coverage and to support the existing mobile network. 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. The current proposal therefore provides such additional capacity to the network whilst still promoting the improved 5G technology.

The 3G and 4G provision allows internet access, video calling, data downstreaming, accessing social media networks and emailing to name just a few of the benefits. Therefore, to maintain high quality indoor 3G and 4G services in to this area would promote activity in line with the general population demand as the ownership of smart devices increases. 5G service provision will bring faster, more responsive and reliable connections than ever before.

The search area is very small for this new installation. 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 3G, 4G and 5G technology. It is a densification project for the operator's network to fill holes in service provision including coverage and capacity. This will enable the operator's customers to be able to use their handheld devices without calls being dropped or buffering occurring where there is a gap in the operator's network coverage and capacity ability. A site in this location will fill the gap in service provision and provide high quality, reliable, advanced 3G, 4G and 5G to this area of Caversham Heights and Chazey Road and St Peters Avenue in particular.

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|---|---|
| Type of Structure *(e.g. tower, mast, etc):* | |
| Description:<br><br>The proposal relates to the installation of up to a 18m high slim-line monopole, supporting 6 no. antennas, 1 no. wraparound equipment cabinet at the base of the monopole, 2 no. equipment cabinets, 1 no. electric meter cabinet, and ancillary development thereto. | |
| Overall Height: | 18 Metres |
| Height of existing building *(where applicable):* | N/a |
| Equipment Housing: H3G Wraparound | |
| Length: | 0.75 Metres |
| Width: | 1.8 Metres |
| Height: | 1.6 Metres |

| | |
|---|---|
| Equipment Housing: Bowler | |
| Length: | 0.66 Metres |
| Width: | 1.9 Metres |
| Height: | 1.827 Metres |
| Equipment Housing: RBS 6130 | |
| Length: | 0.7 Metres |
| Width: | 0.65 Metres |
| Height: | 1.1 Metres |
| Equipment Housing : A/C Transmission Cabinet | |
| Length: | 0.6 Metres |
| Width: | 0.5 Metres |
| Height: | 1.585 Metres |
| Materials *(as applicable):* | |
| Tower/mast etc – type of material and external colour: | Steel - light grey |
| Equipment housing – type of material and external colour: | Steel - light grey |

**Reasons for choice of design, making reference to pre-application responses:**

The radio base station will meet the extra demands on the network in this area as more people use internet enabled handheld devices. It is a densification project for the operator's network to fill holes in service provision including coverage and capacity. As demonstrated in the Alternative Sites section, the area surrounding the proposed site has been fully investigated, and it was considered that the application site was the most viable and suitable location for the proposed equipment. The search area for the proposed site is small due to the operator's requirement to fill the hole in coverage to fix coverage and capacity issues currently being experienced by its users.

The operator has carefully considered the design of the new proposed column. The operator is proposing the most sensitive design currently available to provide the necessary coverage and capacity to the surrounding area. Due to all the technologies that will be available at this location 3G, 4G and 5G, 6 antennas need to be installed at the top of the slim-line monopole. These are split into a dual stack formation where 3 antennas will be located at the top and the other 3 will be located underneath. The 3 upper antennas will provide new 5G service provision. The 3 lower antennas will provide 3G and 4G technology for the operator to the surrounding area. This makes the lower set of antennas 3.35m lower than the top of the pole. Thus if the column were to be any lower, the antennas would not be able to clear the buildings, trees and urban clutter and as such would not be able to operate effectively.

The proposed height at 18m is essential in order to provide coverage to the target coverage area. 5G new radio technologies operate in higher frequency bands than older technologies. Since it operates at higher frequencies where attenuation of the radio signal is naturally higher and the effects of clutter are greater it will normally require a higher structure to achieve the same coverage footprint. To increase capacity and data speeds to the user, the antenna will normally need to be mounted higher than conventional antennae. These factors drive a requirement for an increase in antenna height in 5G.

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

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

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

The design of the column resembles as closely as possible to other vertical structures within the immediate area such as lighting columns and telegraph poles. These vertical structures will help the proposed installation of this radio base station assimilate with the surrounding area.

The design of the column is a simple, functional, vertical structure which will not appear incongruous within the streetscene. The presence of other linear urban structures such as lighting columns and telegraph poles will assist with assimilation in the streetscene and the presence of numerous mature trees in the highway and gardens adjacent to the site will also add visual mitigation. The column is proposed to be coloured light grey to match the existing street furniture, however the column can be coloured any other colour the LPA consider appropriate.

The equipment cabinets are small for telecommunications apparatus and proposed to be coloured light grey. They have been positioned in the grass verge alongside the proposed monopole. They will assimilate with the existing statutory undertaker equipment cabinets in this area.

It is therefore considered that the proposal before you strikes a good balance between environmental impact and operational considerations. The proposed height and design represents the best compromise between the visual impact of the proposal on the surrounding area and meeting the operator's technical requirements for the site. Taking all matters into account it is considered that this proposal, to provide the latest 3G and 4G service provision and new 5G coverage providing high quality dense coverage and capacity, would not appear out of place within the streetscene.

**Health and Safety - including ICNIRP compliance**

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

International Commission on Non-Ionizing Radiation Protection public compliance is determined by mathematical calculation and implemented by careful location of antennas, access restrictions and/or barriers and signage as necessary. Members of the public cannot unknowingly enter areas close to the antennas where exposure may exceed the relevant guidelines.

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

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

As part of CK Hutchinson Networks (UK) Ltd network, the radio base station that is the subject of this application will be configured to operate in this way. All operators of radio transmitters are under a legal obligation to operate those transmitters in accordance with the conditions of their licence. Operation of the transmitter in accordance with the conditions of the licence fulfils the legal obligations in respect of interference to other radio systems, other electrical equipment, instrumentation, or air traffic systems. The conditions of the licence are mandated by Ofcom, an agency of national government, who are responsible for the regulation of the civilian radio spectrum. The remit of Ofcom also includes investigation and remedy of any reported significant interference.

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

## 4. Technical Justification

*[ 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

There is a specific requirement for a new column and associated equipment cabinets at this location to allow CK Hutchinson Networks (UK) Ltd (commonly known as Three) to improve their 3G and 4G coverage and capacity in the district of Battle and be able to provide new 5G service provision to this cell. This ensures high quality indoor service provision is provided.

The dynamic nature of technological advances in the telecommunications 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 licence requirements, mobile operators are constantly developing their networks including filling holes where there is currently a lack of service provision.

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'.

Notably, there are 3 main elements to a radio base station; the cabin or cabinets contain the equipment used to generate the radio signals(s), the supporting structure that holds the antennas in the air or fixes them to a building or structure and the antennas themselves, which emit the radio signals (along with the necessary amplifier or receiver units). Other elements necessary for the base station to function are a 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.

These base stations then receive and transmit to mobile devices using radio waves. The antennas operate like an aerosol spray with signal transmitted along a central orientation and dissipating with distance. The dishes operate on a direct line of sight basis, linking with dishes on other base station sites elsewhere within the wider network. The dish links also link the base station to a master control centre that manages the call handover process that occurs when a mobile user moves from one cell area to another. They also provide telemetric monitoring to ensure the site is working properly and offer remote maintenance.

In the early days of mobile communications, peripheral locations, high-level topographies and large-scale masts were often identified in order that transmission from a new base station could cover an expansive geographical area. However, whilst this approach was viable for early network generations, the number of mobile handset users has dramatically increased with time, as have the advancements in mobile technology itself. As a result, the cellular network construction and operational criteria have changed too. Because modern networks use higher frequencies with faster data rates whilst serving significantly increased numbers of mobile device users, typical network cell areas (i.e. the geographical area targeted for coverage for which a base station development provides a solution), are now smaller in their geographical expanse and tend to be directly proportionate to the number of users within it. They are also therefore greater in their number with base stations operating at a lower power output than their predecessors.

Mobile phone base stations operate on a low power and accordingly base stations therefore need to be located in the areas they are required to serve. Increasingly, people are also using their mobiles in their homes and this means the operator needs to position base stations in, or close to, residential areas.

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 the UK, rollout is now commencing. The main benefits of 5G are that it will be much faster and have higher capacity than 4G, with download speeds in excess of 1Gbps. To place this in context, customers will be able to download - not merely stream - a full HD movie in less than 10 seconds on a 5G network. The same task would take closer to 10 minutes on 4G.

The case for 5G is compelling as it will bring faster, more responsive and reliable connections than ever before.

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

- Faster mobile broadband and a more consistent experience in congested areas with a very high number of devices.
- Industrial applications, enabling businesses to improve their productivity, for example through predictive maintenance and real-time analytics.
- Internet of Things (IoT) services, many of which will help council's and businesses deliver services more efficiently including:
    - Transport and logistics: connected parcels and fleet tracking.
    - Health and social care.
    - Environmental monitoring: sensors monitoring air quality and water pollution in real-time.
    - Smart agriculture and smart animal farming, smart retailing.
    - Connected and autonomous cars: allowing cars to communicate with each other, other road users and even the road infrastructure.

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

## 5. Site Selection Process

Alternative sites considered and not chosen:

| **Site Type** | | **National Grid Reference** | |
|---|---|---|---|
| | | | |

| | | | |
|---|---|---|---|
| Rooftop | The Heights Primary School<br>RG4 7LB | E:469857<br>N:175803 | The rooftop is too low in order to deliver the required level of coverage to the target coverage area. This site has therefore been discounted for this reason. |
| Rooftop | Caversham Heights Methodist Church<br>RG4 7BQ | E:470389<br>N:175347 | Due to the pitched roof construction of the building there is no design available to support the operator's apparatus and provide the necessary coverage to the target coverage area. |
| Greenfield | The Heights Primary School<br>RG4 7LB | E:470067<br>N:175529 | Due to the highly residential nature of the area, a Greenfield installation, which would typically comprise of a lattice style structure with an open headframe with equipment cabinets at ground level within a fenced compound would not be suitable for the area. |
| Streetworks | St Peters Avenue<br>RG4 7DL | E:470210<br>N;175538 | A site in this location would not be able to be built due to the proximity of BT lines would make the installation of a radio base station in this location problematic. A site in this location has therefore been discounted for this reason. |
| Streetworks | Donaldswood, Upper Warren Avenue.<br>RG4 7EJ | E:470194<br>N:175272 | A mast at this location would not provide the required level of coverage to the target area due the substantial tree cover that would inhibit the signal and would not deliver the required coverage to the target area. This site has therefore been discounted for this reason. |
| Streetworks | St Peters Avenue<br>RG4 7DH | E:470414<br>N;175181 | A mast at this location would not provide the required level of coverage to the target area due the substantial tree cover that would inhibit the signal and would not deliver the required coverage to the target area. This site has therefore been discounted for this reason. |
| Streetworks | Autumn Lodge, 9 Grass Hill.<br>RG4 7TJ | E:470325<br>N:175014 | Due to the location of the proposed site within a Flood Zone development here should be avoided and other locations are considered to be more appropriate to deliver the required level of coverage to the target area. A mast at this location is not viable due to a physical lack of space in order to deliver the required level of coverage to the target area. |
| Streetworks | Blagrave Lane, Mapledurham,<br>NG4 7DX | E:469533<br>N:175623 | An installation at this location would be within the AONB and development within this sensitive area should be avoided and other locations are considered to be more appropriate to deliver the required level of coverage to the target area. |

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

N/A

**Land use planning designations:**

**Reading Borough Local Plan November 2019** : Proposals Map indicates that the site is unallocated for any specific designation. The locality is predominantly residential in nature.

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

**National Planning Guidance**
Planning policy is provided at the national level by the National Planning Policy Framework (NPPF). It is a material consideration in planning decisions. It is not necessary to quote extensively from this document but the following points are highlighted.

**National Planning Policy Framework (July 2021)**
The Government's National Planning Policy Framework (NPPF) was published on 24 July 2018 and updates the 2012 version. In February 2019 the NPPF was revised again, with minor alterations to wording relating to housing supply and not any parts relating to telecommunications. The NPPF was updated in July 2021, in order to strengthen sections including requirements on improved design quality, a requirement for Councils to produce local design codes or guides, an emphasis on using trees in new developments, revised policies on plan-making, removing statues and opting out of PD rights relating to residential conversions.

The Government's latest thinking continues to strongly support communications infrastructure. The NPPF remains very supportive of high quality communications. Indeed, a whole chapter is dedicated to high quality communications, emphasising the importance that the Government attaches to digital connectivity. Paragraph 114 states that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. This wording echoes guidance set out in paragraph 42 of the 2012 version of NPPF. However, it also includes the importance of *reliable* communications infrastructure for both economic growth *and social well-being*.

The NPPF continues to support the expansion of electronic communications networks at paragraph 114. It notes that policies should set out how high quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time.

The economic and social benefits of providing high quality and reliable communications infrastructure are well documented and can be found later in this Supporting Information Statement.

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

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

Paragraph 115 of the NPPF retains the requirement to minimise the number of installations consistent with the efficient operation of the network but also includes being consistent with the needs of consumers and providing reasonable capacity for future expansion.

Paragraph 118 of the NPPF retains the guidance set out in paragraph 46 of the 2012 NPPF version which relates to determining applications on planning grounds only. They should not seek to prevent competition between different operators, question the need for an electronic communications system, or set health safeguards different from the International Commission guidelines for public exposure.

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

The NPPF continues to provide guidance on decision-making. At paragraph 38 it states that:
***'Local planning authorities should approach decisions on proposed development in a positive and creative way. They should use the full range of planning tools available, including…permission in principle, and work proactively with applicants to secure developments that will improve the economic, social and environmental conditions of the area. Decision-makers at every level should seek to approve applications for sustainable development where possible'.***

The NPPF builds on the aspiration to build a strong, competitive economy. Paragraph 81 states:
**'Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking in to account both local business needs and wider opportunities for development. The approach taken, should allow each area to build on its strengths, counter any weaknesses and address the challenges of the future. This is particularly important where Britain can be a global leader in driving innovation[42]'…**

Footnote 42 of the NPPF states:
***'The Government's Industrial Strategy sets out a vision to drive productivity improvements across the UK, identifies a number of Grand Challenges facing all 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 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 of Practice 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 local communities and other interested parties.

The Code of Practice 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 for Digital, Culture, Media and Sport (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 replaces the previous Code of Best Practice on Mobile Network Development, which was published in 2016 and is now published by DCMS.

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

Paragraphs 8 - 12 of the Code of Practice set 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.*

. 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, reliable digital infrastructure that works across the UK?.*

11. *The government has committed to extending mobile coverage across the UK. The government has committed to extending mobile coverage across the UK. The government's Levelling Up White Paper has set a mission that the UK will have nationwide 4G coverage, with 5G coverage for the majority of the population by 2030. In support of this, the government and the UK's mobile network operators agreed 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.

The Code of Practice sets outs 'How wireless networks function

Para. 16 states, *"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 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"*

Para. 17 sets out that, *"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 of Practice establishes 'Principles and commitments' by which operators should develop their networks and that Local Planning Authorities should demonstrate their support by.

Paragraph 18 of the Code of Practice 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 of Practice also sets out the requirements of the LP 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.
- Facilitating sites: engage with operators when new sites have been proposed and discuss site requirements.
- Engagement with operators: respond positively to requests for engagement and make decisions in line with national policy and Local Plans. For planning applications, find solutions to issues and ensure timely decisions are made

The added emphasis on support from Local Planning Authorities in the deployment in digital infrastructure is even more evident in the revised Code of Practice. The Code of Practice 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 of Practice acknowledges that 'good siting and design principles should apply to all wireless network development and take into account any site specific considerations and context. Both can create better places in which to Ive and work and hen make development acceptable to communities'.

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

Paragraphs 24 - 27 sets out general siting and site selection principles which Operators should consider. The Code of Practice acknowledges at Para. 24 that, *'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 deployment, in particular for initial 5G deployment'.*

Para 25 notes that, *'When selecting sites for mobile infrastructure, operators should examine local plans and designations 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 siting 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); and*
- *Mast and/or site sharing (including 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 the 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 within that coverage area to meet the demand. This is more likely to be required in densely populated areas or areas of high footfall.

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

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 benefit of improved connectivity. Para. 27 further considers that in general, it should not, 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 of Practice 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:-

1. *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 streetwork monopoles and rooftop installations and, in 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 of Practice establishes radio equipment housing (cabinets) principles. It states at Para. 30 states that *"cabinets protect radio transmitters and receivers, provide the power source 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 of Practice establishes the planning and visual considerations for siting radio housing. These include:-

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

The Code of Practice 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 in order to meet growing customer demand for data. Where higher frequencies are used, with lower signal propagation characteristics, apparatus will need to be located 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 environmental and visual impact of a ground-based mast can be reduced.

Paragraph 39 advises that all new masts should be sited, so far as practicable, so as to minimise their impact on their setting, including the landscape and any buildings. This includes siting next to similar structures - e.g. streetworks 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.

Paragraph 40 relates to colouring and camouflage and states that where appropriate masts should be coloured to match their backdrop to minimise contrast in an urban setting. Streetworks monopoles can utilise design features such as shrouding or 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 of Practice states again in paragraph 64 that there are three primary technical and operational considerations for 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'. Paragraph 65 notes that planning authorities should take account of these constraints on network deployment and siting and design, when considering proposals.

Paragraphs 66 and 67 of the Code of Practice set out the 5G network deploment 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 generations, including more fixed line fibre optic cable for reliable and high capacity backhaul.*
> *The siting of 5G installations will be more constrained and guided by these special technical and operational considerations.*
>
> *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 Policy**

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 Reading Borough Local Plan** was adopted in November 2019. The plan confirms Reading's population to be of a 'younger profile than many of it's neighbours'. It also ranks fourth in the SE for population density at the time of the 2011 Census and is a major centre of employment and functions as the centre of the thames Valley in one of the most economically dynamic regions in the country.

In parallel to the drafting of the Local Plan to 2036, Reading UK, the economic development and marketing company for Reading, has launched a 2050 vision for the town as a smart and sustainable city by 2050, a place where low carbon living will be the norm, and the built environment, technology and innovation have combined to create a smart, dynamic and sustainable city, with a high quality of life and equal opportunity for all.

Of particular relevance is:-

**POLICY OU3: TELECOMMUNICATIONS DEVELOPMENT**

***Proposals for telecommunications development will be permitted provided that:***

- ***They do not have an adverse impact on the visual amenity of the surrounding area or on the significance of a heritage asset;***
- ***The apparatus will be sited and designed so as to minimise its visual impact by the use of innovative design solutions such as lamp column 'swap-outs' or concealment/ camouflage options; and***
- ***Alternative sites and site-sharing options have been fully investigated and it has been demonstrated that no preferable alternative sites are potentially available which would result in a development that would be less visually intrusive.***

The local plan acknowledges that whilst Reading is currently relatively well provided for in respect of mobile phone coverage,

> ***"The anticipated continued expansion of the telecommunications network is likely to require additional 'infill' coverage, much of which is likely to be within established residential areas. Given continuing advances in third and fourth-generation mobile phone technology and increasing trends to send larger amounts of information via mobile phones, additional telecommunication infrastructure will be required to facilitate this demand. This will most notably be in the form of new telecommunications 'base stations' or antennae."***

**Reading Infrastructure Delivery Plan [ IDP ] - March 2018**

The purpose of this Infrastructure Delivery Plan (IDP) is to identify the key infrastructure required to support growth, resulting from housing and employment allocations during the Plan period to 2036. National planning policy provides the framework for this. The approach adopted by Reading Borough Council is to focus on "the necessary infrastructure required to enable growth or support sustainable growth.

The main thrust of national policy is that homes and employment require the support or technical infrastructure, which includes the provision of advanced Information and Communications Technology infrastructure. The NPPF states: "Advanced, high quality communications infrastructure is essential for sustainable economic growth. The development of high speed broadband technology and other communications networks also plays a vital role in enhancing the provision of local community facilities and services[34]." The Government's National Infrastructure Delivery Plan states: *"Demand for digital services and applications will continue to rise rapidly, with a consequent acceleration in the amount of data being carried over networks. Over the next decade, we can expect the emergence of new services, applications and devices which will create additional demands on networks. To support this demand, the UK needs infrastructure that is high capacity, reliable, resilient, secure, affordable and fast."*

***Impact of future growth:*** There will be an ongoing need to raise the level of ICT infrastructure. We should expect increases in the amount of data being carried over networks and additional usage demand.

**The Reading Borough Council Corporate Plan 2022/25.**

A key foundation of the plan is **Digital Transformation** : 'Both internally and externally, we're transforming how we work using the power of digital technology. We're modernising services and harnessing new technology to make it easier for residents to interact with us. We're improving our website, streamlining processes and making more services available online.' A critical initiative as part of this process is installing and improving the digital connectivity of our community buildings, with Wi-Fi and new schemes to lend and use IT equipment.

The Appendix to the Plan highlights an initiative to becoming a Digital First Organisation and a Digitally Inclusive Community by adopting the philosophy of the publication;

**Connected Reading [ The digital heart of the Thames Valley ] 2021-2024.**

The Strategic Vision is to use digital to create new, connected relationships between residents, businesses, delivery partners, and the Council and its staff. We are using an approach – user-centred design – that puts people and their needs first, designing the digital response to fit those needs. The notion for this would appear to have been highlighted by Ofcom's Connected Nations Report 2021, discussed below.

What does the Connected Reading vision mean in practice : -

- Everyone is more connected, so we work face-to-face as well as digitally.
- We share our data with partners, and they help us by sharing their data too.
- People in all our communities are able to connect directly with each other to share their stories and help one another.
- People at home and on the move are able to connect with businesses and access services.
- We recover from the pandemic by helping each other in new ways.
- Vulnerable people are connected to care providers who can respond quicker with more targeted care .
- People and businesses choose to locate here because of the great connectivity.
- The council plays a leading role in bringing everyone together.
- People's overall health and wellbeing improves in measurable ways, through joining up services and data for the population.
- Events bring people together to gain a common understanding.
- We collaborate to solve shared problems and try out new ideas.

Ofcom's '**Connected Nations & Infrastructure Report, June 2021.**

The importance of the internet and access to smartphones is acknowledged within the latest report (June 2021). The report notes that the pandemic has highlighted the importance of being online and driven changes in the take-up and use of internet services, as many people have had a critical reliance on the internet for communications, information, entertainment and commerce. Increases in internet use in 2020 were most pronounced in spring and November 2020 lockdowns, as people turned to the internet and were more dependent than ever on online services for video calling for socialising or home-based working, home schooling, keeping in touch, films and gaming, shopping and information about the pandemic.

In September 2020, UK Internet users spent nearly 4 times as much time on smartphones than they did on computers. 68% of the time spent online was via smartphones up 4% from September 2019, this was compared to 18% of time spent on line via computers and 13% via tablets.

By the end of 2020 approximately 94% of UK homes had internet access, up from 89% in 2019. Video calling became an important way for people to keep in touch during the pandemic. Zoom went from a few hundred thousand users in the first few months of 2020 to more than 13 million in April and May 2020. This has dropped to 10.4 million users in March 2021, while platforms used mainly for work and education, notably Microsoft Teams have shown a sustained increase in use (13.7 million users in March 2021m up by 5.3 million year on year).

The report found that most of the time people spend on the internet is via apps on mobile devices. Online services were a crucial way for people to find out information about the pandemic, and for governments to try and track and control the spread of the virus.

The report acknowledged that the internet helped most children continue their education throughout lockdown. Virtually all households with school-aged children had access to the internet at home. 7% did not have fixed broadband and 4% had access only to a mobile phone. 1 in 5 did not have access to an appropriate device for their schoolwork all the time. The Report found that 2020 saw the rapid adoption of digital remote education by teachers, parents and children such as video conferencing, and platforms for setting and collecting work. In the first few weeks of lockdown in spring 2020, two thirds of children in England were not receiving any live or recorded lessons. By January 2021, this was down to just one in ten. The Report suggests that the use of these platforms may continue such as for those who can't attend school due to illness, or to provide additional revision materials.

Nine in ten 8 - 15 year olds who use social-media said it helped them to feel closer to their friends in 2020. The report stated that social video services offer huge benefits for users and the economy. They provide a platform for self-expression through enabling user-generated content (31% of adults and 40% of 13-17 year olds post video content).

Lockdown influenced the types of social video that were most popular such as the first episode of Joe Wickes' PE which was the most viewed YouTube video of 2020, and videos relating to home baking such as sourdough bread increased by 458%.

Social media serves as a means of entertainment and education for many (used by 97% of adult internet users), and as an important method of marketing for businesses (online video advertising grew by 23% in the UK in 2020).

On line retail spend in the UK increased by 48% in 2020 (compared to an average annual increase of 13% in the previous 4 years. Online's share of retail spend increased from approximately 20% in

2019 to 35% in the spring lockdown and 30% in December 2020. By December 2020 11% of the UK grocery market sales were online, up from 5% at the beginning of the year. Online food delivery services also increased in demand. Just Eat being the most popular with its UK orders up 58% higher in the last quarter of 202 compared to the same period in 2019.

People have relied on the internet for news and information throughout the pandemic. During the spring 2020 lockdown 52% of people said that news and current affairs was one of their main reasons to go online.

Adults are as likely to use social media to find information about the COVID-19 pandemic as they are to use news sites and apps (approximately 1 in 3). Whilst one in eight 16 - 24 year olds considered social media to be their most important source of information about the coronavirus pandemic, compared to 5% of all UK online adults.

The report found that 91% of households used smartphones to access the internet in 2021, compared to 65% who used tablets and 47% who accessed the internet using computers. The report also noted that 61% of UK adults who access the internet did so using both computers and smart devices.

The Report notes that the smartphone is the most-used device for accessing the internet for all age groups apart from those aged 65 +. It found that in 2020, 85% of internet users aged 16 + used a smartphone to go online, compared to nearly 75% accessing the internet via a computer and just over 50% using a tablet to access the internet. One in ten adults also stated that they only use a smartphone to go online and three in ten used their phone to complete an online form or app on a weekly basis.

**Levelling Up the United Kingdom (February 2022)**

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

Chapter 3 - The Policy Programme : Para 3.2.4; 'By 2030, the UK will have nationwide gigabit-capable broadband and 4G coverage, with 5G coverage for the majority of the population. This mission is focused on improving digital connectivity.'

Digital connectivity : The case for action;

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

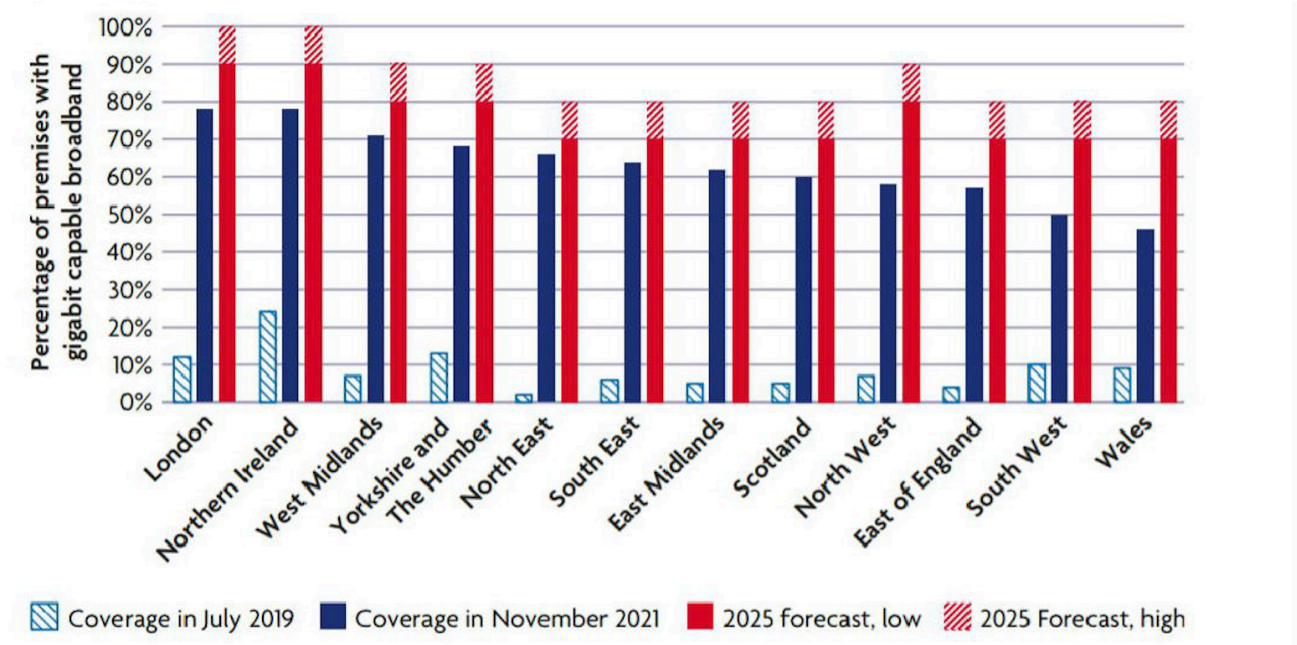
More broadly, high quality digital infrastructure can deepen local labour markets through remote working, making it more attractive for both workers and companies to locate regionally. It also allows for the development of high-value sectoral clusters, which can drive growth and jobs in new areas. Existing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

The policy programme.

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

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

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




Source: Levelling Up the United Kingdom.

5G has the potential to radically change the way people live and make businesses more productive and competitive. The UK Government's ambition is for the majority of the population to have access to a 5G signal by 2027. Since 2017, the UK Government has provided £200m in funding for 5G Testbeds and Trials, supporting over 200 startups and SMEs across a range of sectors - including healthcare, manufacturing, Agri-Tech and creative industries - to better understand how to use the technology to develop new solutions and services.

In 2022, the UK Government will publish the Wireless Infrastructure Strategy. This will review how far the private sector will go to deliver wireless infrastructure - including 5G - across the country, and determine whether there are any market failures in places that need to be addressed, and how the UK Government could tackle these.

Box 3.9 - West Midlands 5G The West Midlands 5G (WM5G) Testbed started in 2018 with the mission of testing and proving the benefits of 5G to public and private sector productivity, creating jobs and boosting growth. The UK Government has invested £21m over three years, alongside investment from local government and the private sector.

By working with local authorities and Mobile Network Operators (MOs), WM5G has accelerated 5G deployment by over six months, resulting in the West Midlands being amongst the best connected places for 5G in the UK. In addition, WM5G has delivered a number of UK firsts, including a 5G road sensor network, 5G connected ambulance and capsule endoscopy trials, and a 5G application accelerator programme called 5prinG, which has already upskilled over 400 organisations on the benefits of 5G and allowed over 60 start-ups to develop new 5G products and services.

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

**Planning Assessment**

The main issues arising from this prior approval notification are whether the proposed monopole and cabinets due to their scale and siting would be a visually obtrusive feature which would be detrimental to the character and appearance of the area. Further, whether any perceived harm would outweigh the significant social and economic benefits associated with the increased service provision attributed to the proposal and other valid material considerations as outlined NPPF. The NPPF fully supports the roll out of 5G and the next generation connectivity to accelerate business opportunities and growth to ensure the economy is resilient and competitive, along with the relevant local planning policies in the Reading Local Plan, and also the ambitions of the RBC Infrastructure Delivery Plan; the Corporate Plan; & Connected Reading which all appear to have digital connectivity at their heart, reliant of course upon fast, state of the art telecommunications.

The principle of development has been established by the Government when the new permitted development rights came in to force in April 2022, which enabled sites such as this one to be built under the operators permitted development rights, (as the mast height does not exceed 20m), with prior approval for siting and appearance being the only matters that the local planning authority can take in to consideration.

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

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

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

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

**Siting**

The siting of the proposed radio base station has been carefully considered. To this end, there are a number of existing vertical elements of street furniture, predominantly lighting columns and telegraph poles, in the immediate vicinity. Consequently, the visual impact of the proposed radio base station will be minimised within the streetscene as the proposed monopole will assimilate well with the existing vertical structures already in situ in the immediate locale. The site will be set within the grass verge on Chazey Road. In addition, the immediate area also has numerous mature trees within the highway and private gardens around the site which will significantly mitigate against the prominence and visual impact of the installation. As such, it is considered to be in accordance with Policy OU3 of the Reading Local Plan.

Technical requirements have dictated the siting of the proposed equipment. The operator has spent a considerable amount of time identifying a potential site and the proposed location is considered to present the best balance between operational/technical requirements and environmental impact. As explained throughout this document, the search area is small due to the technical requirements for the site, to improve coverage and capacity issues currently being experienced by this operator.

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

In line with the requirements of NPPF and Policy OU3 of the Reading Local Plan, there are no existing suitable telecommunications installations for the operator to share, that would provide the necessary coverage to the target coverage area. Similarly, there are no buildings which are suitable and available that the operator could utilise to operate their equipment. Therefore, a new ground based installation is required. The discounted options are set out above and their reasons for being discounted are fully explained.

3G and 4G signals by their very nature (as they carry high data rates) do not penetrate over long distances, (5G even less so), just a few hundred metres, depending on the topography of the land, building clutter and vegetation including trees in the area which can reduce their effectiveness. Therefore 3G, 4G and 5G radio base stations need to be close to their customer demand. A new site is therefore required to provide new 5G service provision as well as enhance their 3G and 4G coverage to this cell area. The operator's search area is naturally smaller than would otherwise be the case if the operator wasn't providing service provision from this location as they are looking to fill an existing hole in coverage and capacity. This severely limits the options for siting a new installation in the area. If the operators move the location of the new radio base station too far away then it will not fill the current hole in service provision and would start to encroach on neighbouring cells causing interference with both installations. This would lead to buffering and dropped calls which would be counter productive and an unacceptable situation for the operator.

As Section 5 above demonstrates there are no more suitable sites that are located within less sensitive locations than the current proposed site, and, as this is a site to improve coverage and capacity issues which is even more restricted in locating a more suitable site in which to provide new coverage to the target coverage area in this part of Caversham Heights.

In line with NPPF and Policy OU3 of the Reading Local Plan, the proposed installation is an item of essential infrastructure and therefore will not cause an loss of privacy nor will any occupants of nearby properties be overlooked. The column and antennas do not emit any noise, odour, vibration, artificial light or disturbance from air. The only noise emitted is from a cooling fan within the equipment cabinets, which only operate during hot weather conditions. However, within a few metres the noise is inaudible, particularly when taking into account the ambient noise levels of the area which include passing traffic. The proposed installation will not cause any traffic generation as it is not a visitor destination. Maintenance of the equipment cabinets is usually once a year, where the engineer can walk to site with handheld tools.

**Appearance**

The design of the monopole has been carefully considered. To this end, it is a simple, functional slim-line monopole, with the main column being split in to two sections. The upper section is 406mm and the lower section is 457mm in width. This column width is essential in order 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. The column is proposed to be painted light grey, in order to blend with the street furniture in the surrounding vicinity. However, the monopole can be painted any colour should the Local Planning Authority consider that an alternative colour would be more appropriate.

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

In order to reduce the visual impact on the surrounding area further, the antennas have been positioned in a dual stack formation, with 3 antennas at the top of the mast at an antenna top height of 17.95m and the other 3 antennas are proposed to be located underneath at an antenna top height of 17.15m. The antennas are positioned as tight as possible and will only be marginally wider than the main column width, rather than being a bulky headframe, as such will not appear dissimilar to a shrouded design.

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

The presence of the linear street furniture structures including telegraph poles and lighting columns, together with the numerous mature trees will ensure that the proposed column will not appear incongruous within the streetscene. Thus there will be no detrimental loss of visual amenity to the area or environmental intrusion in line with Policy OU3 of the Reading Local Plan.

The installation of this 18m slim-line column designed to be as similar as possible to the other linear structures found in the immediate area will be no more at odds with the streetscene and character of the area than the other vertical structures within the immediate locale.

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

Telecommunications apparatus by their very nature must be taller than surrounding built and natural form to ensure its efficient operation. The former 2016 Code of Best Practice explains this requirement fully in paragraph 3.1, 'radio signals operate like light and must "see" over the target coverage area...' To suggest that it is inappropriate development because it is taller than adjacent lighting columns or road signage is no more relevant than suggesting that street lighting columns are inappropriate because they are taller than road signage or traffic lights. They are all essential pieces of infrastructure within a streetscene that carry out differing functions and therefore cannot be considered on the same merits. Should a street lighting column be capable of the provision of high quality 3G/4G and 5G telecommunication services for the operator then this would be a reasonable consideration, but this is clearly not the case. As such, the proposal should not be considered negatively due to it being taller per se than other vertical structures. Reasonable consideration of the proposal in the context of nearby street furniture can only conclude that the presence of other vertical structures in the immediate area only seeks to provide a setting wherein a base station may appear more congruous from which to provide an important service to a wider area.

NPPF states at paragraph 115 the number of radio and electronic communications masts, and the sites for such installations, should be kept to a minimum consistent with the needs of consumers, the efficient operation of the network and providing reasonable capacity for future expansion. In order to provide the latest 4G technology and 5G service in this locality, a new site is required in order to provide the latest technologies to the surrounding area. The operator has already explained above, it is unable to shroud the antennas, but the design is as slim as possible and will represent a simple, functional, vertical structure in the streetscene similar to the existing lighting columns on the street.
If the column and shroud were to be any slimmer, then the multi technologies would not be able to fit in the same installation and an additional radio base station would be required which would be contrary to national planning guidance. It would also not be structurally capable of supporting all the technologies including the latest 4G coverage as well as 5G service provision. If the column were to be the same width throughout then it would have to be as wide as the antennas at the top of the column. This would appear more visually prominent in the streetscene than the current proposals.

The design of the radio base station is one of the most sensitive designs available to the operators, designed to resemble typical existing urban linear street furniture. This is in line with the requirements of NPPF which supports equipment which is sympathetically designed and camouflaged where appropriate [paragraph115], The Code of Practice as well as the aspirations of Policy OU3 of the Reading Local Plan.

The proposed new site accords with NPPF and Policy OU3 of the Reading Local Plan because the equipment will resemble other linear structures within the area and will expand the network, ensuring high quality communications infrastructure is maintained whilst minimising the number of radio base stations in the area. Placing masts near similar structures such as lighting columns, utilising simple and unfussy designs is acknowledged in the Code of Practice on Mobile Network Development in England, to be less likely to dominate and be in discord with the streetscene and as a result, less likely to have a detrimental impact on the visual amenity of the surrounding area.

**Lack of Coverage - Material Consideration**

The current proposals will facilitate the development of an advanced broadband telecommunications infrastructure in line with National Government guidance contained within the NPPF which supports infrastructure especially where growth takes place. By providing the latest 4G technology and new 5G service provision the proposals will also help meet the aspirations of the Reading BC Infrastructure Delivery Plan; the Corporate Plan; & Connected Reading which all appear to have digital connectivity at their heart, reliant of course upon fast, state of the art telecommunications.

The current proposals will facilitate the development of an advanced broadband telecommunications infrastructure in line with National Government guidance contained within the NPPF which supports infrastructure especially where growth takes place. By providing the latest 4G technology and new 5G service provision the proposals will support the aspirations of Central Government for everyone to have access to the superfast highway network wherever they are and that the majority of the population have access to a 5G service by 2027.

The proposed radio base station will also fully comply with the Reading BC Infrastructure Delivery Plan; the Corporate Plan; & Connected Reading in ensuring the ability to deliver connectivity-led growth to all parts of the region, as there are areas where there is insufficient digital connectivity. Therefore, there is an identified need for this installation to ensure that the latest 4G and 5G technology can be brought to this area of Caversham Heights, ensuring there is sufficient capacity in the network to prevent buffering as greater demands on the network lead to additional pressure on capacity. If there is insufficient capacity then even if coverage is available customers would increasingly be unable to utilise their handheld devices for the manner in which they have become accustomed. Filling this lack of 4G capacity and bringing 5G into the area is fully in line with the requirements of the NPPF and the Reading BC Infrastructure Delivery Plan; the Corporate Plan; & Connected Reading initiatives.

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

Without this radio base station, the operator's customers would experience increasing numbers of dropped calls and buffering unable to access the internet on their handheld devices. They would also not be able to access the 5G network, a demand which is increasing rapidly as customers update their handheld devices to ones that are 5G compatible. If the 5G network is not available then the customers' would not be able to utilise these handheld devices for the purposes in which they were purchased. This would be contrary to the aspirations of Central Government which aspires to everyone having access to the superfast highway network wherever they are, and that the majority of the population have access to a 5G service by 2027.

In accordance with all the Reading initiatives on digital connectivity, investment in digital infrastructure can ensure a more productive and better-connected workforce, with more able to participate in and benefit from this change. It will support a better environment for today and tomorrow by reducing the need to travel and in turn minimise carbon emissions.

The radio base station will support the delivery of healthcare provision and accessibility by enabling people greater access to online services, NHS appointment reminders, reminders to take medicines, make appointments etc. As well as assisting hospital outpatient appointments and emergency consultations carried out remotely via video link, connected ambulances, live streaming of CCTV footage etc.

By filling the current hole in coverage for 3G and 4G service provision to the surrounding area and providing new 5G coverage into the operator's networks, this would fully support the vision of Central Government that people will be able to access the 'information highway' wherever they are.

The way 5G works, it is closely connected with the Smart City agenda and will enable centralized control of lots of different street infrastructure owned or managed by councils, such as street lights, water meters and bus stops. As such areas need the 21st century infrastructure to enable this objective to become a reality.

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

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

The Government fully supports high quality communications infrastructure, even more so with the advent of 5G. The NPPF continues to strongly support telecommunications connectivity and states at paragraph 114 that local planning authorities should support the expansion of electronic communications networks. acknowledges that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being.

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

Access to the internet in whatever medium now impacts every facet of our lives but only benefits those who can access and use it. The benefits of internet connectivity are key for both residents and businesses alike and a radio base station in this location providing the latest 3G, 4G and 5G technologies will support the Central and Local Government objectives to improve connectivity infrastructure to speed up economic and business growth.

In line with guidance contained within the NPPF, a radio base station in this location will enable fast, reliable, secure internet accessibility wherever the user is located. This would fully meet the latest operators' coverage and capacity requirements for 3G, 4G and 5G provision. This would be wholly in line with the Government's latest aspirations to strongly support advanced, high quality and reliable communications infrastructure, essential for economic growth and social well-being.

As part of the operators 4G licence obligations, many customers will benefit significantly from a vastly improved service provision in this locality. They will be able to gain access to the very latest technologies and connectivity, including 5G, to high speed data services. Digital technology has catalysed the interconnection of the global economy, with the internet enabling the free exchange of goods and services providing consumers with greater choice and businesses with access to skills, resources and customers.

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

The Online Nation 2021 Report highlights the importance of smart phones and thus in turn connectivity. In September 2020, UK Internet users spent nearly 4 times as much time on smartphones than they did on computers. The report found that most of the time people spend on the internet is via apps on mobile devices. Social media serves as a means of entertainment and education for many, and as an important method of marketing for businesses. The report found that 91% of households used smartphones to access the internet in 2021, compared to 65% who used tablets and 47% who accessed the internet using computers. The Report notes that the smartphone is the most-used device for accessing the internet for all age groups apart from those aged 65 +.

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

**Economic and Social Benefits**

The NPPF strongly supports sustainable development. Mobile communications play a significant role in sustainable development. Being able to access the internet via a mobile device allows people to access a wide range of central and local government services buy groceries, manage finances, apply for jobs/university, and carry out school projects, send emails, download applications, send and receive instant messages, participate in social media, streaming and downloading data to name just a few of the benefits of being able to use an internet enabled handheld device. It also allows people to work from home or on the move without needing to return to the office.

Residents and businesses will enjoy better accessibility, assisting home-base working by improving the electronic means of communication and the roll-out of high-speed broadband helping to promote live-work development. This reduces travel time, carbon emissions and increases the speed in which information is processed shared. The proposals therefore fully comply with NPPF and the Reading Local Plan and other objectives, to minimise the effects of climate change reducing the need to travel and therefore the carbon footprint.

In such instances, as described above, the NPPF supports development that improves the economic, social and environmental conditions in the area. Enhancing the 3G and 4G coverage and capacity in this area and providing new 5G services will fully meet this national policy objective. Continuing to transform the digital connectivity of the city-region to drive economic growth and innovation, working to meet national targets of full roll-out of 5G technology for most people by 2027.

Mobile connectivity is essential to the future success of the economy. The combined value of 4G and 5G mobile connectivity is estimated to add £18.5b to the economy by 2026 (Councils and Connectivity Sept [2018). Mobile connectivity is essential to creating a better society. Digital inclusion can help people gain employment, become more financially secure and improve health and well-being.

Mobile connectivity is essential to fulfilling the potential of new technologies. Innovations such as artificial intelligence and connected cars will change how we work, spend our leisure time and run our public services.

Providing the latest digital infrastructure to enable improvements in digital technology empowers and enables residents to have the highest quality of life, supports the creation of high quality jobs and achieves the maximum productivity levels. It will help Reading become a world-leading digital district and one which its businesses, public service providers and citizens are using digital technology by default and to the fullest to grow their businesses and improve productivity to access skills, training and employment opportunities to address global challenges that have a local impact such as ill health, social isolation, homelessness and pollution; to improve living standards and well-being; and to improve the quality and value for money of public services.

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

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

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

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

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

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

Paragraph 38 of the revised NPPF states that:

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

Providing high quality 3G, 4G and 5G coverage and capacity in this area fully meets this part of the NPPF. The social and economic benefits are a significant material consideration which should be weighed against the visual impact associated with a radio base station in this location.

HM Treasury outlined such benefits in its report 'Fixing the Foundations: Creating a More Prosperous Nation' - July 2015. Paragraph 7.1 of the plan stated that reliable and high quality fixed and mobile broadband connections support growth in productivity, efficiency and labour force participation across the whole economy. They enable new and more efficient business processes, access to new markets and support flexible working and working from home.

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

> *'by reducing red tape and barriers to investment, the Government will support the market to deliver the internationally competitive fixed and mobile digital communications infrastructure the UK's businesses need to thrive and grow, and which will enable the UK to remain at the forefront of the digital economy. The Government is working with business so that the market can play the lead role in delivering against the ambitions set out in the Digital Communications Infrastructure Strategy, published March, of near universal 4G and ultrafast broadband coverage.'*

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

This will allow everyone in the country to benefit from the economic advantages of widespread mobile coverage. As well as improved mobile signal, 5G networks are also crucial to drive productivity and growth across the sectors that local areas are focusing on through their emerging Local Industrial Strategies. Enabling and planning for 5G implementation is central to achieving the Government's objective to deliver property at the local level and enable all places to share in the proceeds of growth.

The Government is determined to ensure the UK receives the coverage and connectivity it needs. To this end, the Government wants to be a world leader in 5G, the next generation of wireless connectivity, and for communities to benefit from the investments in the new technology.

The case for 5G is compelling as it will bring faster, more responsive and reliable connections than ever before.

MPs have noted in parliament that the UKs Superfast Broadband connectivity was 'relatively poor'. As such, there is continuing and growing strong national support for high quality communications infrastructure. Further to the Government's commitment to improve connectivity, on 24th November 2016 the new permitted development rights for telecommunication operators came in to force, designed to lift the restrictions on mobile operators such is the significance and weight the Government place upon the benefits attached to modern connectivity. In April 2022, these regulations were further relaxed by the Government to help roll out the 5G network and assist in the 'Speed up Britain' campaign.

In October 2016, there was also the BIG Infrastructure Group (as Chaired by MP Grant Shapps) Report release calling on operators to improve their network. This is signed and has comments from numerous MP's nationally.

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

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

The Assessment goes on to note that 'Universal digital connectivity would serve as an equaliser of economic opportunity in that it enables participation in a modern digital economy. Therefore, this Needs Assessment further explains the consequences of a lack of coverage and the effects this has on social and economic prosperity. This clearly highlights the importance of improving high quality 3G and 4G coverage to this locality where the social and economic benefits outweigh the environmental considerations.

Ministers from the DCMS and MHCL wrote to all CEOs of Council's in England (March 2019) setting out its position in respect of supporting investment in high-quality, reliable digital connectivity 'Collaborating for digital connectivity'. The Government acknowledges that such infrastructure is essential for communities to benefit from faster economic growth and greater social inclusion. Ministers state:-

> *'It is essential to keep pace with growing demand for internet bandwidth and mobile data from local businesses, residents and those who visit our communities. As outlined in the Future Telecoms Infrastructure Review, the Government would like to see nationwide full fibre coverage by 2033. We would also like the UK to be a world leader in 5G, with the majority of the population covered by a 5G signal by 2027. We are writing to ask for your help in supporting the investment necessary to achieve these objectives.'*
>
> *Recent years have seen substantial investment in mobile and fixed digital infrastructure across the UK.*
>
> *While mobile coverage across the UK has been significantly improving, there are still too many areas where coverage is poor. The UK has now achieved 95% superfast broadband coverage but still only 6% full fire coverage.*
>
> *We need to create the market and policy conditions necessary to support the large- scale commercial investment required to extend and future-proof digital connectivity. A key part of this is making it easier for operators to deploy infrastructure. To help to achieve this, the Government recently reformed the Electronic Communications Code - the statutory framework which underpins agreements between communications network providers and those in both the private and public sector who can provide sites for the installation of network equipment. The purpose of the reforms was to make it easier and more cost effective for communications network providers to deploy and maintain digital infrastructure.*
>
> *Local authorities have an essential role to play as site providers. As Chief Executives, you can support investment in digital communications infrastructure by ensuring your organisations have policies and procedures in place that promote effective engagement with the digital communications industry and minimise barriers to deployment.'*

In November 2019, Matt Warman MP wrote to all CEOs of Council's in England setting out the case for '5G - The Next Mobile Generation'. The letter stated:-

> *"More than any previous generation of mobile networks, 5G has the potential to transform the way we live and improve economic productivity. Networks will have the capacity for millions more devices to be connected at the same time, enabling businesses and communities to operate more efficiently. It will allow cities and communities to manage traffic flow, monitor air quality and control energy usage through real-time management of high volumes of data.'*

An installation in this location will ensure that the expansion of the electronic communications network is facilitated, and that high-quality communications infrastructure is provided to the immediate area.

**Health and Safety**

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 has to 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 alone for withholding planning permission providing it has been demonstrated that the proposed installation will comply with the ICNIRP guidelines.

The publication of the National Planning Policy Framework continues to highlight the Governments view that the planning system is not the appropriate mechanism for determining health safeguards. It sends a clear message to local planning authorities stating that 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.

Notably, Ofcom have now undertaken 5G audits in the major cities and the results indicate that the exposure level 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 a small 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 consecuences for public health.'* (https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health

**Summary**

The operator is limited in siting options as there is a requirement to fill the current hole in coverage and to provide improved 3G/ 4G coverage and capacity for this area of Caversham Heights, whilst also providing new 5G services. The requirement is to fill the hole in coverage to provide the latest technology whilst improving the provision of coverage and capacity to the surrounding local area.

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

The siting of the proposed radio base station has been carefully considered. The proposed height at 18 metres is essential in order for the antennas to clear the surrounding urban clutter and trees and ensure the antennas are able to reach the target coverage area, to provide new high quality 3G, 4G and 5G service provision to Chazey Road, St Peters Avenue and the wider Caversham Heights area. This will fully meet the national Governments aim of 'ensuring that everyone is connected to the information superhighway' and the national policies set out in the NPPF. If the height of the column were to be reduced then the antennas would not be able to operate effectively, leading to a degraded service for the operator's customers especially for the higher frequency technologies including the latest 4G technology and new 5G service provision.

The social and economic benefits of providing reliable and high quality mobile broadband connections including 5G support growth in productivity, efficiency and labour force participation across the whole economy. This is fully supported by the NPPF. These benefits are strong material considerations which any perceived loss of visual amenity to the surrounding area.

The applicant considers the proposed installation in terms of its siting and appearance would not cause significant harm to visual amenity and any harm caused would be outweighed by the need for the proposal when balanced against the development plan and other material considerations.

**Confirmation that submitted drawings have been checked for accuracy**

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