Our ref: ***CTIL_20571520***

NYMNPA
20/02/2023

15/02/23

Chief Planning Officer
North York Moors National Park
The Old Vicarage
YO62 5BP

Clarke Telecom Ltd
Unit E
Madison Place
Northampton Road
Manchester
M40 5AG

BY PLANNING PORTAL

Dear Sir/Madam,

PROPOSED RADIO BASE STATION INSTALLATION AT *CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB NGR E: 478141 N: 518497*

This application is submitted under Part 16 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) and is in accordance with the Electronic Communications Code (as amended).

This is an application for a determination as to whether the prior approval of the Authority will be required as to the siting and appearance of the development.

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

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

This application is submitted for and on behalf of Cornerstone

- Written description of the proposed development –
- ***The installation of a 17.5m metre high slim-line monopole supporting 6no. antennas, 2 no. equipment cabinets 1 meter cabinet, and ancillary development thereto, including 3 no. Remote Radio Units (RRU's)*** At ***GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB***
- defined within the plan indicating its location, numbered 100A
- Prescribed fee

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

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

- Copy of Developer's Notice, and proof of delivery
- Confirmation as to whether the developer has had to notify the CAA or MOD or aerodrome operator which clarifies whether the proposal lies within 3km of an aerodrome
- Contact address and email address for developer

For your further assistance, we enclose additional information: -

- 1APP Prior Approval form via planning portal
- Supplemental drawings – Proposed Site Plan 200D, Proposed Site Plan 300D
- Site Specific Supplementary Information (including copies of pre-consultation)
- General Background Information for Telecommunications Development
- Health and Mobile Phone Base Stations document
- ICNIRP declaration & clarification statement
- General Background Information for Telecommunications Development
- Health and Mobile Phone Base Stations document
- ICNIRP declaration and clarification statement
- Cornerstone Radio Planning and Propagation V6
- DCMS MHCLG Collaborating for Digital Connectivity Letter
- Cornerstone - Local Authority Engagement Brochure - Sept 2020 (002)
- Digital Public Benefit Brochure updated
- MobileUK Health Fact Sheet V1
- Planning for a better network v6
- Matt Warman MP Letter to LPA Chiefs 2021
- Cornerstone Radio Planning and Propagation V6
- Health summary v20
- 5G Services v8

This application has been prepared in accordance with the Code of Practice for Wireless Network Development in England (March 2022)

The enclosed application is identified as the most suitable option that balances operational need with local planning policies and national planning policy guidance. It will deliver public benefit in terms of the mobile services it will provide.

Furthermore, we would like to assist the Local Planning Authority and would like to offer to arrange a presentation or meeting with your officers and members to discuss the issues if appropriate.

We are committed to maintaining a positive relationship with all Local Planning Authorities and we would be happy to provide any reasonable additional information in relation to this application.

We look forward to receiving your acknowledgement and decision in due course.

Should you have any queries regarding this matter, please do not hesitate to contact me (quoting cell number ***CTIL_20571520***

Yours faithfully

Jamaal Hafiz MTCP MRTPI
Town Planner
Clarke Telecom

(for and on behalf of Cornerstone)

In accordance with The Town and Country Planning (General Permitted Development) (England) (Amendment) (No. 2) Order 2016, all correspondence to the developer, should be sent to: Cornerstone Community Consultation & EMF Enquiries, Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA
Email – community@cornerstone.network

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SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	Gateway Centre Garages	Site Address:	Gateway Centre Garages, Whitegate Close, Staithes, North Yorkshire, TS13 5BB
National Grid Reference:	E: 478141 N: 518497		
Site Ref Number:	CTIL_205715	Site Type:[1]	Macro

2. Pre Application Check List

Site Selection (for New Sites only)

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

Was a local planning authority mast register available to check for suitable sites by the operator or the local planning authority?	Yes	
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: A pre-application consultation letter and set of the proposal drawings were sent to the Local Planning Authority on 18/05/2022.	

[1] Macro or Micro

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Annual area wide information to planning authority

Has annual area wide information been provided?	No
If no explain why:	
Summary issues raised: "Cornerstones commercial relationship with VM02 has changed, effectively increasing our independence to work with other companies in the deployment of mobile infrastructure. It means we no longer have visibility of VM02 full update plan. However, Cornerstone is fully committed to working closely with Local Planning Authorities and following best practice guidance. We aim to engage and work with the planning department at the earliest opportunity from when we are instructed to deliver new infrastructure within your Local Authority area and often conduct strategic pre-rollout engagement meetings to discuss our wider rollout. If your Local Authority would like a meeting to discuss wider Cornerstone rollout plans then please advise. We recognise the importance of developing long term partnerships and will always work with you to deliver improved mobile connectivity.	

Community Consultation

Rating of Site under Traffic Light Model:	Red	~~Amber~~	~~Green~~
Outline of consultation carried out: A pre-application consultation letter and copy of the proposal drawings were sent to the local councillors for Danby & Mulgrave Ward (Cllr M Watson, C Pearson, D Chance) Hinderwell Parish Council and the local MP Sir Robert Goodwill by email on 18/05/2022.			

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Summary of outcome/main issues raised (include copies of relevant correspondence): The Parish council responded on 18/05/22 stating: A preliminary look at your documents, shows that you have failed to take on board our earlier suggestion that you look at siting the mast at East Cliffe Lodge, TS13 5AE. A large agricultural complex with farm buildings that would be able to semi screen the mast. Close to the lower village but easily accessible. This would move the mast away from the residential area of Staithes. Please respond with your report on the viability of this location. A response was sent to the Parish Council on 01/06/22 stating how the option has been considered by the Radio Planner and discounted.

School/College

Location of site in relation to school/college (include name of school/college): No schools nearby.
Outline of consultation carried out with school/college (include evidence of consultation): N/A
Summary of outcome/main issues raised (include copies of main correspondence): N/A

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: N/A		

Developer's Notice

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Copy of Developer's Notice enclosed?	Yes	
Date served:	Developers' notices were sent via email on 03.02.2023. Proof of deliveries and copies of the developers notice have been enclosed with the application.	

3. Proposed Development

The proposed site:

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

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

Background

As part of Cornerstone's network improvement programme, Cornerstone is in the process of progressing a number of suitable sites for radio base stations, which will provide improved 2G, 3G and 4G coverage and new 5G service provision to current 'not spot' areas and to Grow the Grid. This is fully in line with the Government's aim to ensure that everyone is connected to the superhighway.

Proposed Development

Please note this application is a resubmission to NYM/2022/0453 relating to the installation of a 20m monopole with associated antennas, Remote Radio Units, equipment cabinets. This application was refused on 02/08/22 for:

The proposed single 20m mast, would by reason of its height towering above nearby buildings and trees would constitute a dominating and unduly obtrusive feature in the wider townscape and have an adverse impact on the landscape and character of this part of the National Park contrary to Strategic Policy A and Policy BL10 of the Authority's Adopted Policies as set out in the Local Plan, which seek to conserve and enhance the landscape and ensure that the development does not have an unnaceptable adverse visual impact upon the character of the locality and the wider landscape.

Following this reasoning and discussions with the authority the operator has opted to reduce the height to the absolute minimum required at 17.5m to reduce impact and prominence of the proposal within the area and address the reason for refusal.

Cornerstone are looking to progress works which will entail the installation of a 17.5 metre high slim-line monopole supporting 6 no. antennas, 2 no. equipment cabinets, 1no. meter cabinet and ancillary development thereto, including 3 no. Remote Radio Units (RRU's).

The site is proposed to be installed on private land at Gateway Centre Garages at Whitegate Close. It is acknowledged the site is within the North York Moors National Park but outside the Stainthes Conservation Area.

To the south and west are residential properties, though their orientation and local topography means views of the installation form most of these properties will be limited. The presence of the Captain Cook Inn, a building of substantial size, 100 metres south-west provides some screening and context for views from the south when entering the settlement. To the north is a public carpark and beyond this the harbour area – again the topography of the area ensures that views of the proposed installation will be limited to areas immediately adjacent to the site.

The most prominent views of the proposed installation will be from the open land area to the east, which forms part of the Cleveland Way Walk. However the views of the installation must be seen in context. The pole is designed to be the most slender solution available, and at a reduced height of 17.5m will not be a dominant feature in the landscape. This is particularly the case when it is considered that, from views from the east, an industrial estate will form the foreground and a very large mining complex with associated stacks dominates the background.

The site location has been carefully chosen to maximise the screening provided by the surrounding built form and local topography. However it is also led by the need to ensure that service can be provided to as many locations as possible within the local area. Whilst providing service to properties to the south of the settlement is relatively simple due to the uniform topography and build form, providing coverage to the west and north is far more challenging. The clustered, stone buildings at the harbour area make it exceptionally difficult for mobile coverage service to penetrate, and therefore the installation must be located in relatively close proximity. The sheer drop in land height to the west of the site, from Staithes Lane down to Staithes Caravan Park, provides a further challenge. Unless the antenna are sites so that they can 'see' into this area there will be a shadowing effect from the cliff, meaning that this area will not receive service despite its close proximity to the proposed mast. A shadowing effect occurs when signal is provided to the wider area but not to the immediate area due to blocking by buildings or, in this case, landform. As the caravan park is a popular tourist destination and an important tourism resource within what is predominantly a tourism village, it is clearly of significant importance that service is provided to this area.

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

The installation of this ground based installation will enable enhanced 2G, 3G and 4G coverage and capacity to the surrounding area as well as provide new 5G service provision for VM02 to ensure high quality customer experience is obtained as demands on the network increase and technologies change.

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Type of Structure *(e.g. tower, mast, etc): Orion monopole*	
Description: The installation of a 17.5m metre high slim-line monopole supporting 6 no. antennas, 2 no. equipment cabinets 1 meter cabinet, and ancillary development thereto, including 3 no. Remote Radio Units (RRU's).	
Overall Height: 17.5m	
Height of existing building *(where applicable):*	N/A
Equipment Housing: RBS6102 (x1)	
Length:	1.3 Metres
Width:	0.7 Metres
Height:	1.7 Metres
Equipment Housing: TSC Cab (x1)	
Length:	0.6 Metres
Width:	0.6 Metres
Height:	1.415 Metres
Equipment Housing: SFMC Meter Cabinet (x1)	
Length:	0.264 Metres
Width:	0.655 Metres
Height:	1.015 Metres
Materials *(as applicable):*	
Tower/mast etc – type of material and external colour:	Steel – Galvanised
Equipment housing – type of material and external colour:	Steel – RAL 7035 Grey

Reasons for choice of design, making reference to pre-application responses:
Technology advances (including 5G service provision) and additional demands on the operator's mobile network system in the area have meant that a new site is needed to be installed in the Staithes area to facilitate all the data that is required to be carried for mobile superfast broadband. This enables customers to continue to be able to use their handheld devices for the purposes in which they have become accustomed, and now rely on in the modern world we live in, a similar scenario to the reliance on gas and electricity. The level of VM02 coverage in this area is currently poor and the operator wishes to improve this. The new technologies for the latest 4G and 5G service provision and the design of the antennas required for them has guided the requirement for the height and design of the proposed monopole. The operator has carefully considered the design of the new proposed column. The operator is proposing the most sensitive design currently available to provide the necessary coverage and capacity to the surrounding area. Due to all the technologies that will be available at this location, 2G, 3G, 4G and future 5G, 3 antennas need to be installed at the top of the slim-

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line monopole. The 6 antennas will provide new 5G technology for the operator to the surrounding area. Thus if the column were to be any lower, the antennas would not be able to clear the trees and urban clutter and as such would not be able to operate effectively.

As previously stated the operator has opted to reduce the height from 20m to 17.5m. The proposed height at 17.5m 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 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 a 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 Best 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 area, than the proposed design.

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

The design of the column resembles as closely as possible the other existing vertical structures within the immediate area including the road signage, semi-mature trees and lighting columns. These vertical structures will continue to help the proposed installation of this radio base station assimilate with the surrounding area.

The design of the column maintains its simple, functional, vertical structure which will not appear incongruous within the streetscene. This is especially so given its careful siting near to and against the backdrop of existing semi-mature trees away from residential frontages. The trees will help filter views of the column. The presence of other linear urban structures such

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as flood lights will assist with assimilation in the streetscene. The column will be galvanised to to blend in with the often grey sky. Although the column can be coloured any other colour the LPA consider appropriate. The proposed equipment cabinets will be located at ground level alongside the proposed monopole. They will be painted RAL 7035 light grey to assimilate within the area. The RRU's are small each one about the size of a shoe box. They are designed to make the antennas more efficient and reduce the amount of ground based equipment cabinets thus minimising the visual impact on the surrounding area. Given their height above ground level underneath the antennas, at some 16m, they will not be overly prominent in the streetscene. 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 multi technical requirements for the site. Taking all matters into account, it is considered that this proposal, to provide the latest of 2G, 3G and 4G service provision and new 5G coverage to the surrounding area, would not appear out of place within its surroundings and would provide enhanced high quality, reliable and secure coverage and capacity, delivering the capability for a multi hi tech service.

Technical Information

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, VM02 Ltd operates its network in such a way the radio frequency power outputs are kept to the lowest levels commensurate with effective service provision.	Yes	

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As part of VM02's network, the radio base station that is the subject of this application will be configured to operate in this way. All operators of radio transmitters are under a legal obligation to operate those transmitters in accordance with the conditions of their licence. Operation of the transmitter in accordance with the conditions of the licence fulfils the legal obligations in respect of interference to other radio systems, other electrical equipment, instrumentation, or air traffic systems. The conditions of the licence are mandated by Ofcom, an agency of national government, who are responsible for the regulation of the civilian radio spectrum. The remit of Ofcom also includes investigation and remedy of any reported significant interference. The 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

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

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There is a specific requirement to install a radio base station at this location to enable enhanced 2G, 3G and 4G coverage and capacity to this area of Staithes as well as providing new 5G service provision for VM02.

5. Site Selection Process

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

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

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

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

In accordance with the above sequential approach, and in line with the principles of pooling the two operators existing network infrastructure to create a single network grid, the proposal is to install a new radio base station in this location.

Site Type	Site name and address	National Grid Reference	Reason for not choosing site
ETS – Existing Telecom Site	Existing Structure - Arqiva ID 3056, Staithes, TS13 5AA,	E: 478100 N: 518960	The radio planner has discounted this site is right on the coastal edge, therefore only one sector out of three would be pointing in the correct direction of Staithes target area. It is some 700m from the main target area and therefore the mast performance would see minimal benefit.

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Greenfield	Shared Access, Recreation Ground off Seaton Crescent, Staithes, TS13 5AE	E: 478197 N: 518261	Planning permission was granted for a mast in this location some years ago. However, there was intense local opposition presented during the planning application process, and a legal challenge was sought to prevent the Operator from developing the mast and therefore this option was not pursued any further.
Greenfield	Seaton Hall Farm, Whitby Road, Staithes, TS13 5AT,	E: 478100 N: 517834	This location is too far south of the central Staithes target area and therefore would not provide sufficient coverage.
Greenfield	Land of Cliff Road, Cliff Road, Staithes, TS13 5AE	E: 478259 N: 518382	We entered discussions with the Site Provider for a mast installation within this locality and following further consultation, the site provider decided not to proceed due to concerns of the local residents' opposition whose residential properties face directly on to his industrial unit from Cliff Road.
Greenfield	Red House Farm, Cowbar Lane, Staithes, TS13 4UN	E: 476867 N: 518565	This location is too far from East of the central Staithes target area and therefore would not provide sufficient coverage.
Greenfield	Land adjacent at Co-Op convenience store, Hinderwell Lane, Staithes, TS13 5AL	E: 478299 N: 578042	This convenience store has very limited parking and loading areas. A mast in this location would significantly disrupt the day-to-day operation of the store. The site is also adjacent to residential and Seton Community Primary School, and it is thought that there would be considerable objections to siting a mast in this location in comparison to the chosen subject site.
Rooftop	Our Lady Star of the Sea Catholic Church, Staithes Lane, Staithes, TS13 5AG,	E: 478049 N: 518309	This church building has a low-pitched roof which would not present a suitable design for attaching antennas. Face mounted antennas on the taller bell tower would still present technical difficulties due to the height of the adjacent residential properties along Staithes Lane which is the target direction and would block the signal.
Greenfield	East Cliffe Lodge TS13 5AE		This location was suggested by the parish council at pre-application stage. The

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			Radio Planner has reviewed this site location and has concluded this option does not provide the level of coverage required to the target area. The difficult topography of the local area, with substantial changes in land height over short distances, makes the delivery of ubiquitous coverage extremely challenging, and therefore there are very limited areas within which the infrastructure can be sited if it is to deliver the service expected. No location within this farmholding allows for the delivery of service to all of the target area, and particularly to low lying areas to the west.

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

N/A

Environmental Information (refer to Section 2 of Site Finder Report):

No specific environmental considerations identified to date.

Land use planning designations (if Heritage Statement is required then include here or make reference to attached Heritage Statement):

Located within North York Moors National Park

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 governments 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 new requirement for Councils to

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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 176 of the NPPF states great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads59. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

Paragraph 177 furthers by stating When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development60 other than in exceptional circumstances, and where it can

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:
a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;
b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and
c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

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:

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Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

'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 Best Practice on Mobile Network Development in England (March 2022)

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

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

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

Principles and Commitment

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

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

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

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

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

Siting and Design Principles

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

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

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

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

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Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Key Technical and Operational Considerations

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

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

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

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

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

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

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

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

Good mobile connectivity also promotes sustainability e.g. it reduces the need to travel and thus carbon emissions. The Code continues to support mobile telecommunications network

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1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

as it is seen as a crucial piece of national infrastructure in economic, community and social terms.

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

Local Policy

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 Local Plan comprises:

- North York Moors National Park Authority Local Plan July 2020

North York Moors National Park Authority Local Plan

The North York Moors National Park Authority Local Plan sets out planning policies for the North York Moors National Park that will be used to help decide planning applications in the future. The Plan:

- conserves and enhances the National Park's natural beauty, wildlife and cultural heritage, and protects special areas and features within it from harmful development;
- protects and encourages the understanding and enjoyment of the National Park's 'Special Qualities';
- identifies where development can and cannot take place;
- encourages redevelopment of vacant buildings or land; and
- helps reduce the National Park's contribution to climate change

The portrait of the North York Moors National Park states:

Communications 2.33

Reliance on communications technologies becomes even greater when other services are declining. High speed broadband and mobile coverage is patchy in some areas, the result of a low population density making the area less attractive for commercial investment in modern communication technologies in the area. This situation is being gradually improved through Government support to roll out to more remote areas; however it may be some years before coverage is improved for some.

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Challenge: Transport and connectivity are a key issue for the National Park – there remains a need to make sure services remain accessible to all and that modern communications are provided to allow residents to access services and businesses to thrive.
The North York Moors Vision states:

A place managed with care and concern for future generations A place where the diversity and distinctiveness of the landscape, villages and buildings is cherished A place where biological and cultural diversity, and other special qualities are conserved and enhanced A place where the environment and way of life is respected and understood A place where communities are more self-sustaining and economic activity engenders environmental and recreational benefits A place that is special to people and that provides pleasure, inspiration and spiritual well-being; where calm and quality of life are celebrated A place where visitors are welcome and cultural and recreational opportunities and experiences are accessible A place that continues to adapt to change whilst National Park purposes continue to be furthered and pursued A place where natural resources are managed sustainably and environmental limits are recognised.

The following policies apply to the proposals:

Strategic Policy E – the Natural Environment

The quality and diversity of the natural environment of the North York Moors National Park will be conserved and enhanced.

Development which has an unacceptable impact on the natural environment, the wildlife it supports and the environmental benefits it provides will not be permitted.

All development will be expected to:
1. Ensure that natural capital is used in efficient and sustainable ways;
2. Demonstrate, where appropriate, how it makes a positive contribution to natural capital and its ability to provide ecosystem services.

Policy BL10 – Communications Infrastructure

The provision of infrastructure for radio, broadband and other telecommunications and information technology will only be permitted where it is of a scale and design appropriate to the National Park and helps meet the needs of local communities. Development will only be permitted where:
1. There are no suitable alternative means of provision;
2. There is no unacceptable adverse visual impact upon the character of the locality and the wider landscape;
3. The siting of the installation makes use of the least environmentally intrusive option available, subject to technical issues;
4. The proposal is part of a coordinated, long term strategy for the provision of telecommunications technology; and
5. Provision is made for the removal of the equipment when it is redundant.

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Where there would be unacceptable harmful impact which cannot be mitigated by alternative siting or design, permission will be refused.

Online Nation 2021 Report (June 2021)

The importance of the internet and access to smartphones is acknowledged within the latest Online Nation 2021 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 online 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

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VAT No. GB142 8555 06

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1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

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).

Online 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 2020 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.

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.

In February 2021 the Government said that more than 1.7 million app users across England and Wales had been advised to isolate by the NHS COVID-19 app, following close contact with someone who had tested positive.

Levelling Up the United Kingdom (February 2022)

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

Digital connectivity: The case for action

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

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.

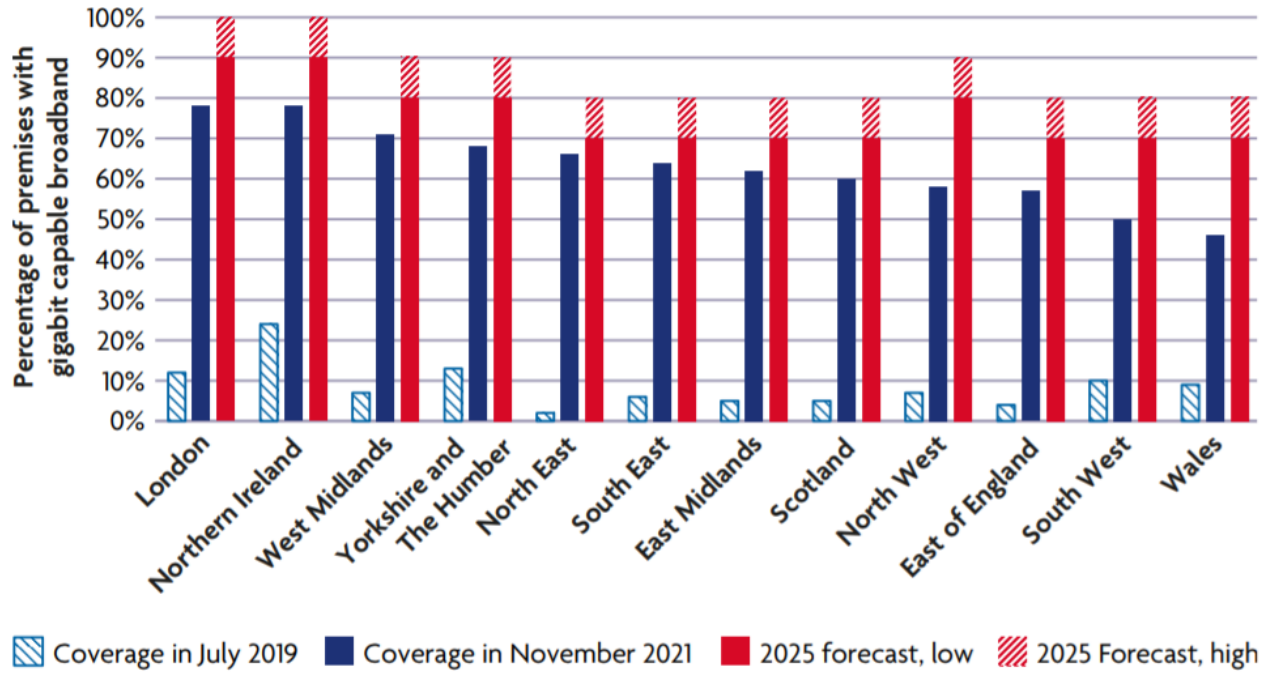
More broadly, high quality digital infrastructure can deepen local labour markets through remote working, making it more attractive for both workers and companies to locate regionally. It also allows for the development of high-value sectoral clusters, which can drive growth and jobs in new areas. Existing 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 £5bn in public funding to roll out gigabit broadband to at least 85% of the country by 2025, and subsequently to as close to 100% as possible, working with the private sector.

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

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



Source: Levelling Up the United Kingdom.

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

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

Planning Assessment

The main issues arising from this prior approval notification are whether the proposed mast 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 including the North York Moors National Park. Whether any perceived harm would outweigh the significant social and economic benefits associated with the increased service provision attributed to the proposal

and other valid material considerations as outlined NPPF, which fully supports the roll out of 5G and the next generation connectivity to accelerate business opportunities and growth to ensure the economy is resilient and competitive, also the vision, objectives and policies E and BL10 of the local plan.

The monopole and associated antennas fully comply with Policy BL10 of the Local Plan as it will increase overall connectivity for the area of Staithes. Access to a high quality, reliable superfast mobile network is not just 'a nice to have' but an essential part of everyday life. Indeed many, including the Minister for Digital Infrastructure Matt Warman, consider it to be the fourth utility service as important as gas, water and electricity, a life line for many especially during the COVID-19 pandemic where people were able to see their loved ones, speak to friends and family and arrange virtual meetings allowing some form of normality in a very abnormal situation.

The principle of development has been established by the Government when the new permitted development rights came in to force in 2022, which enabled sites such as this one to be built under the operators permitted development rights, (as the column height does not exceed 30m), 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, it is located on private land set against the backdrop of semi-mature trees, with similar designed vertical structures such as lighting columns nearby. These perpendicular items of street furniture are similarly designed to the proposed column i.e. to be simple, functional, vertical structures. The lighting columns in the immediate area also help soften the visual impact of

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Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

the proposed column in particular given the height reduction to 17.5m in the area and reduce the overall impact on the North York Moors National Park. Consequently, the visual impact of the proposed radio base station will be minimised within the area as the proposed column will assimilate well with the existing vertical structures already in situ in the immediate locale. This is in full accordance with the Code of Best Practice, the NPPF, the vision, objectives and policies E and BL10 of the local plan.

The proposed column will be galvanised to blend in with the often grey sky and equipment cabinets will be coloured grey to assimilate within the area which includes garages. This minimises their visual impact on the National Park and is in line with the vision, objectives and policies E and BL10 of the local plan.

In line with the requirements of NPPF and policies E and BL10 of the 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. There are no other buildings which are suitable and available that the operator could utilise to operate their equipment. It is considered that the chosen location, on private land at Gateway Centre Garages, is the most favourable and the proposed equipment will be blend in given the makeup of the area. The discounted options are set out in Section 5 above and their reasons for being discounted are fully explained.

Appearance

The design of the monopole has been carefully considered following the refusal of the previous application the operator has taken the process of reducing the total height to 17.5m. To this end, it is a simple, functional slim-line monopole, 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. The column is proposed to be galvanised in order to blend in with the common Grey Sky. 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 not allow the base station to function to the required standard. 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 and the vision, objectives and policies E and BL10 of the local plan.

The proposed radio base fully complies with the vision, objectives and policies E and BL10 of the local plan. In order to reduce the visual impact on the surrounding area the antennas have been positioned, with 3 antennas on the upper part of the mast at an antenna top height of 17.3m and the top of the lower antennas at a height of 14.73m. 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 structures including lighting columns coupled with the shielding effects from the trees, will ensure that the proposed column will not appear incongruous within the area and not cause detrimental harm to the North York Moors National Park. Thus, there will be no detrimental loss of visual amenity to the area or environmental intrusion in line with the vision, objectives and policies E and BL10 of the local plan.

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 on private land.

If the column and shroud were to be any slimmer, then the technologies would not be able to fit in the same installation and an additional radio base station would be required which would be contrary to national planning guidance. It would also not be structurally capable of supporting all the technologies including the latest 4G coverage as well as 5G service provision for VM02. 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 area and National Park than the current proposals.

The design of the radio base station is one of the most sensitive designs available to the operators, designed to resemble typical existing urban linear street furniture. This is in line with the requirements of NPPF which supports equipment which is sympathetically designed and camouflaged where appropriate [paragraph 115], The Code of Best Practice as well as the the vision, objectives and policies E and BL10 of the local plan.

The RRUs are designed to make the antennas more efficient and reduce the need for additional equipment cabinets at ground level. This minimises the impact on the visual amenity of the area. In order to maximise signal efficiency the RRUs need to be as close as possible to the antennas, hence they need to be located underneath the antennas towards the top of the column. Given their height above ground level and their small size, approximately that of a shoe box, they will not appear prominent in the area as they will be

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1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

out of the general eye line of casual passers-by. This is in accordance with the vision, objectives and policies E and BL10 of the local plan.

The proposed installation is part of essential infrastructure. The column and antennas do not emit any noise, odour, vibration, artificial light or disturbance from air. The proposed changes 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 hand held tools and will be no more regular than is currently the case.

The proposed new site accords with NPPF and the vision, objectives and policies E and BL10 of the local plan located on private land and will expand the network, ensure high quality communications infrastructure is maintained whilst minimising the number of radio base stations in the area. Placing masts near similar structures such as lighting columns, utilising simple and unfussy designs is acknowledged in the Code of Best 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

In accordance with the NPPF, the vision, objectives and policy BL10 of the Local Plan. the proposed installation is significant to enable continuous coverage of the telecommunication network, ensuring that this area of Staithes continues to get the mobile coverage it needs for VM02 customers as well as access to the latest 4G spectrum to ensure sufficient capacity in the network for customers handheld devices. The proposal will provide the latest 2G, 3G and 4G as well as new 5G coverage. It will also maintain and improve coverage for the Mobile Virtual Network Operator's (MVNOs) which use the VM02 network which includes GiffGaff, Tesco Mobile, Sky Mobile, and Lyca Mobile. So the proposal will not only provide a service for VM02 but those who buy network space off them, which is at least 4. This will provide a choice for those customers who consider the level of coverage in their area when selecting which operator they agree future contracts with.

The current proposals will facilitate the development of an advanced broadband telecommunications infrastructure in line with National Government guidance contained within the NPPF which supports infrastructure especially where growth takes place. By providing the latest 4G technology and new 5G service provision the proposals will 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 vision, objectives and policies E and BL10 of the local plan. by helping to improve employment and quality of life in the district. There is an identified need for this installation to ensure that the latest 4G and 5G technology can be brought to this area of Staithes, 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 providing the latest 5G technology to the area is fully in line with the requirements of the NPPF and Central Government aspirations.

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).

The proposal will provide world-class connections and access to opportunity for all in this cell area, as well as providing world-class digital infrastructure which provides the platform for this area of Staithes to embrace emerging technologies and societal changes. The latest 4G and 5G infrastructure is fundamental to enable digital technologies to continue to function. The proposal will ensure that any VM02 customer and the MVNO's who buy network space off this operator in this cell area will be able to access resilient, seamless connectivity at a speed they need anywhere at any time. Without the more basic technology solutions such as 4G and 5G, smart-region solutions and value-added outcomes will struggle to be brought to fruition.

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

Without this new site, 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.

The proposed installation will help improve the area's economic prosperity, strengthen the urban economy's by supporting local businesses to start, grow, adapt and diversify. It will support a better environment for today and tomorrow by reducing the need to travel and in turn minimise carbon emissions, in line with the local plan. 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

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consultations carried out remotely via video link, connected ambulances, live streaming of CCTV footage etc.

By enhancing the 2G, 3G and 4G service provision to the surrounding area and providing new 5G coverage into the operator's network, this would fully support the aim of ending to digital disadvantage.

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. The proposed installation will ensure that this aspiration is fully met.

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

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. It acknowledges that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being.

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

The installation in this location will fill the current gap in the latest high quality service provision and enable VM02 and MVNOs who buy network space off VM02 to maintain access to their handheld devices wherever they are for the purposes in which they were purchased. This is fully in line with the Government's aspirations that everyone has access to the superfast communications network, contained within the NPPF.

Access to the internet in whatever medium now impacts every facet of our lives but only benefits those who can access and use it. The benefits of internet connectivity are key for both residents and businesses alike and an installation in this location providing the latest 2G, 3G, 4G and 5G technologies will support the Central Government objectives to improve connectivity infrastructure to speed up economic and business growth.

In line with guidance contained within the NPPF and Policy BL10 of the local plan a new radio base station in this location will enable fast, reliable, secure internet accessibility wherever the user is located. The proposed installation would fully meet the latest operators' coverage and capacity requirements for 3G and 4G provision as well as 5G provision for the operator. 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

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growth and social well-being. Where the NPPF notes that decisions should support the expansion of electronic communications networks. An installation outside this search area, regardless of whether there are existing sites, would not allow the operator to provide their desired level of coverage and therefore would not adequately maintain and provide new coverage and capacity.

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, 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. Installing telecommunications equipment at this site will help Staithes to meet its aim of having effective and efficient infrastructure to support investment.

The Code of Best 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.

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

The Online Nation 2021 Report highlights the importance of continued access to the latest technology on mobile devices, with 35% of the internet users only accessing the internet on mobile devices (Smartphone or tablet).

The Report goes on to note that 60% of the consumer market consider smartphones are now the most important device for internet access. In September 2019, 81% of time spent online was on a mobile device (both tablet and Smartphone). Furthermore, nearly half of all adults consider that their mobile device is the device they would miss most if it were taken away.

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.

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Economic and Social Benefits

The NPPF strongly supports sustainable development, as does the vision, objectives and policies E and BL10 of the local plan. Mobile communication plays a significant role in sustainable development, being able to access the internet via a mobile device allows people to access a wide range of central and local government services buy groceries, manage finances, apply for jobs/university, and carry out school projects, send emails, download applications, send and receive instant messages, participate in social media, streaming and downloading data to name just a few of the benefits of being able to use an internet enabled handheld device. It also allows people to work from home or on the move without needing to return to the office. Residents and businesses will enjoy better accessibility, assisting home-base working by improving the electronic means of communication and the roll-out of high-speed broadband helping to promote live-work development. This reduces travel time, carbon emissions and increases the speed in which information is processed/shared. The proposals therefore fully comply with NPPF, the vision, objectives and policies E and BL10 of the local plan.

In such instances, as described above, the NPPF supports development that improves the economic, social and environmental conditions in the area. Enhancing the 2G, 3G and 4G coverage and capacity in this area and providing new 5G services will fully meet this national policy objective.

Mobile connectivity is essential to the future success of the economy. The combined value of 4G and 5G mobile connectivity is estimated to add £18.5bn to the economy by 2026 (Councils and Connectivity Sept 2018). Mobile connectivity is essential to creating a better society. Digital inclusion can help people gain employment, become more financially secure and improve health and well-being. Mobile connectivity is essential to fulfilling the potential of new technologies. Innovations such as artificial intelligence and connected cars will change how we work, spend our leisure time and run our public services.

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 also helps the economy to be resilient and competitive. This is in full accordance with the vision of the local plan. It will help Staithes become an area where 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, and pollution; to improve living standards and well-being, helping people to lead prosperous and rewarding lives; and to improve the quality and value for money of public services.

The enclosed Cornerstone Local Authority Engagement Brochure September 2020, emphasises further the benefits of high quality mobile connectivity including: promoting economic growth by attracting investment from business, which creates jobs and regional prosperity in line with national and local Economic Strategies; helps local businesses to offer a broader range of services, boosting the local economy; helps local Councils to offer online

services such as school admissions and local information for residents supports local companies by facilitating working from home, offers social benefits such as being able to connect with vulnerable family and friends (a life line during COVID 19 lockdown) or contact the emergency services 24/7, and helps local councils to offer online services such as paying council tax bills which provides a more efficient service to name but a few benefits.

Practical Applications of 5G Connectivity as Example of Material 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 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'.*

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Providing improved 3G and 4G coverage and capacity and new 5G service provision in this area will fully meet paragraph 38 of the NPPF.

The social and economic benefits are a significant material consideration which should be weighed against the visual impact associated with the proposed 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.'*

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

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

This will allow everyone in the country to benefit from the economic advantages of widespread mobile coverage. As well as improved mobile signal, 5G networks are also crucial to drive productivity and growth across the sectors that local areas are focusing on through their emerging Local Industrial Strategies. 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 Local Industrial Strategy aspirations align with the Government objectives of utilising the opportunities that 5G will bring. The proposed installation will fully support these national and local aspirations.

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

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

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

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

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

'A lack of digital connectivity has a detrimental effect on business operations, productivity and output and hence competitiveness in the global marketplace. 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

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coverage and the effects this has on social and economic prosperity. This clearly highlights the importance of maintaining and enhancing high quality 2G, 3G and 4G coverage and capacity in Staithes as well as providing new 5G in this area, where the social and economic benefits will outweigh the environmental considerations.

The Government's continued strong support for connectivity is further evidenced by the DCMS who launched their UK wide Digital Connectivity Portal on 20 December 2018. The Digital connectivity portal provides guidance for local authorities and network providers on improving connectivity in local areas. The Government wants everyone in the UK to benefit from world-class connectivity no matter where they live, work or travel. The Future Telecommunications Infrastructure Review outlines a package of measures to create the right market and policy conditions to deliver world-class connectivity for citizens and businesses. As a result, the pressure to install a radio base station in this area of the region to provide 2G, 3G, 4G and 5G is significant.

On the 23 September 2020, the Digital Infrastructure Minister Matt Warman MP spoke about the ongoing work by the Government and telecoms industry to boost the UK's world class digital connectivity in his keynote speech at Connected Britain 2020:

…'I'd like to take this opportunity to thank everyone in the industry for their tireless efforts at keeping us all connected through an unprecedented period of disruption.

…COVID has altered the way we live, work and most importantly, stay connected with our family and friends. The digital infrastructure that keeps us all connected was essential to our daily way of life under lockdown – and is now more important than ever as we head into recovery. Many of these changes – such as increased working from home – will stay with us for the foreseeable future.

People have referred to the internet as "the fourth utility" – and it's true. For countless people across the country, having fast and reliable broadband and a good mobile connection is as essential and vital to our daily lives as gas, water and electricity.

That's why I'm committed to working with you to ensure the entire nation has access to world-class, next generation gigabit connectivity that is secure and resilient enough to deal with all sorts of future challenges.

This Government is ambitious for the UK's digital infrastructure.

And because we know that more citizens are increasingly living their lives online, we will be one of the earliest adopters of 5G coverage, with the majority of the population able to access 5G by 2027.

...We know how important local authorities are to the delivery of digital infrastructure, which is why I have written to them, together with the Local Government Minister, to outline how they can work more effectively with the industry…

….Turning to 5G, while the commercial rollout of 5G continues at pace, we're pushing ahead with plans to make sure all sorts of industries benefit from this game-changing technology.

….since the start of the 5G Testbeds and trials programme, we've now funded 24 5G testbeds across the UK. Between them, those testbeds have trialled almost 70 different 5G technologies, products and applications. And more importantly than ever, we are investing in a range of sectors to foster, build and grow 5G cross wider industry...

…The world is in the middle of a digital revolution. COVID has accelerated this process, digitising almost every part of our everyday lives and making the infrastructure that connects us more important than ever. That's why it is at the top of the government's agenda…

This Keynote Speech by Matt Warman MP highlights the importance that Government places on 5G and advanced, reliable, high quality 5G technology. To prevent this technology from being brought into the area would be contrary to the Government's key aims.

In a more recent letter published by the Digital Infrastructure Minister Matt Warman MP on the 24 May 2021 addressed to the local authority chief executives he spoke further about the Government's Commitment to extending mobile coverage:

'Digital connectivity is – now, more than ever – vital to enable people to stay connected and businesses to grow. The demand for mobile data is increasing rapidly, and the COVID-19 pandemic has highlighted how important it is that we all have access to reliable, high quality mobile connectivity…

…The Government is committed to extending mobile network coverage across the UK and providing uninterrupted mobile signal on all major roads, and our ambition is for the majority of the population to have access to a 5G signal by 2027…

…The National Planning Policy Framework ("the Framework") for England states that planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology, such as 5G…

…In relation to electronic communications development, it also states that local planning authorities must determine applications on planning grounds only and they should not seek to prevent competition between different operators, or question the need for an electronic communications system. As set out in planning practice guidance, it is in the public interest for local planning authorities to have effective delegation arrangements in place to ensure that decisions on planning applications that raise no significant planning issues are made quickly and that resources are appropriately concentrated on the applications of greatest significance to the local area'

On the 1 October 2020, as part of the Speed up Britain Campaign, The Centre of Policy Studies Report published 'Upwardly Mobile: How the UK can gain the full benefits of the 5G revolution'. The report identifies what the 5G opportunities are and what the Government needs to do so we can all benefit from this vital new technology. It states that delays to the

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rollout of 5G could cost the country tens of billions of pounds in lost economic output. The former Government advisers Alex Jackman and Nick King argue that Government's 'levelling up' agenda and the UK's recovery from the COVID-19 pandemic is at risk without a faster 5G rollout – to the tune of £41 billion.

The report highlights that if delays continue at their current rate, by 2027, over 11 million households and businesses could be missing out on vital digital connectivity. Improving digital infrastructure supports the Government's 'levelling up' agenda, by helping local areas to retain and attract businesses and talent as well as by reducing regional inequalities.

The report states that 'the UK must have a functioning network to now support the recovery from the pandemic, empowering businesses and communities with wider coverage, and preparing the ground for the services that 5G can provide'.

Using analysis by the independent consultancy Policy Points, the report estimates that if 5G coverage reaches a quarter more of the population than the Government's current target of 51%, it will produce GDP gains of £41.7 billion by 2027. It highlights that the difference between the UK being a leader and a laggard in 5G adoption could be as much as £173 billion in incremental GDP over the coming decade, as estimated by the Future Communications Challenge Group.

The manufacturing, construction and agricultural sectors have been hit particularly hard by the pandemic, and these would benefit significantly from improved connectivity. However, onerous planning rules and loopholes in existing legislation are slowing down the infrastructure upgrades needed to make the most of this mobile revolution in these much-needed industries.

Digital networks and services have underpinned our resilience to the COVID-19 pandemic and they will drive our recovery. By expanding them, we deliver not only immediate benefits but also the essential foundation stone for future prosperity.

The report highlights that while 5G promises to create economic benefits through increased capacity, reliability and speed – vastly improving business productivity and removing barriers imposed by poor digital connectivity – the system is plagued by red tape.

The report acknowledges that the gains are not just at national level. A more extensive digital infrastructure helps local areas to attract and retain businesses and talent, thereby playing a vital role in reducing regional inequalities. Providing a supportive environment for digital infrastructure is one of the few things the Government can do that costs little, boosts growth and helps level up the UK….the key is speed. **The faster a network is built, the bigger the regional gains** (emphasis added). The telecommunications industry faces challenges on this front. The COVID-19 pandemic has increased demand on networks but delayed the availability of new spectrum to provide additional capacity.

The report notes that the reliability and reach of 4G is more important than ever. It is needed both to quench immediate demand, and also to facilitate future 5G rollout, as the underlying

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passive infrastructure will initially support both technologies. Every failure to provide better coverage not only presents an immediate opportunity loss for local business and consumers but also has a bigger downstream economic impact. It acknowledges that productivity gains to business, equality gains for regions and economic gains for the country are only as achievable as the networks they can access.

The report recommended that the Government should reform the strategic planning framework to compel local authorities to ensure that the needs of future mobile connectivity are adequately addressed in Local Plans and that new developments are assessed on how they might impact, or could support, local connectivity.

In April 2021 the DCMS issued a further round of consultation on the '*proposed changes to permitted development rights for electronic communications infrastructure: technical consultation'. The continuing support for high quality 5G service provision continues to be emphasised:*

> *'Now, more than ever, people need access to dependable and consistent mobile coverage where they live, work and travel. The coronavirus pandemic has highlighted the importance of digital connectivity and ensuring that networks have sufficient capacity and resilience to meet demand. Increased connectivity will also be key to our recovery. As the UK seeks to build back better, our changes to the planning system will help to extend and improve mobile coverage, including in rural areas, to benefit communities and businesses.*
>
> *The government is committed to extending mobile geographical coverage across the UK and providing uninterrupted mobile signal on all major roads, and to be a global leader in 5G… The government is investing £200 million in a programme of 5G testbeds and trials to encourage investment in 5G so that communities and businesses can benefit from this new technology. Our ambition is for the majority of the population to have access to a 5G signal by 2027. The increased connectivity and capacity offered by 5G is opening-up the potential for new, innovative services for individuals and industry…*
>
> *It is also essential that the planning system can effectively support the delivery of the mobile infrastructure that we need'…*
>
> *The government response set out that, subject to a technical consultation on the detail of the proposals, including the appropriate environmental protections and other safeguards, we would take forward changes to:*
>
> - *Enable the deployment of radio equipment housing on land without the need for prior approval, up to specified limits and excluding sites of special scientific interest, to support 5G deployment;*
> - *Strengthen existing masts up to specified limits to enable sites to be upgraded for 5G and for mast sharing without the need for prior approval;*

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Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

- *Enable the deployment of building-based masts nearer to highways to support deployment of 5G and extend mobile coverage, subject to prior approval and specified limits; and,*
- *Enable higher new masts to deliver better mobile coverage and mast sharing, subject to prior approval and specified limits".*

The proposed installation in this location will allow the operator to provide new and improved high quality 2G, 3G and 4G coverage and capacity and new 5G service provision supporting the Government's aim of 'focusing on ensuring that everyone is connected to the information superhighway' and help to meet its target that the majority of the population will have access to a 5G signal by 2027. This fully meets the aspirations of the NPPF.

An installation of a radio base station in this location will ensure that the expansion of the electronic communications network is facilitated and that high quality communications infrastructure is provided to the immediate area. This is in full accordance with the operator's 5G license obligations and the Council's aims and aspirations to expand and improve desirable infrastructure as required and to have the latest high quality 5G infrastructure, promoting and growing the digital sector and increasing digital inclusion.

Summary

The proposal is to install a radio base station in this location, consisting of an amended monopole at a height of 17.5m, supporting 6 no. antennas, 2 no. equipment cabinets, 1no. meter cabinet and ancillary development thereto including 3 no. RRUs. The operator will be able to provide enhanced 2G, 3G and 4G coverage and capacity and new 5G coverage in this area of Staithes.

The proposed site will be able to assimilate with the existing vertical structures within the immediate area. The proposed height at 17.5m is the most minimal in order for the antennas to reach the target coverage area, and provide enhanced 2G, 3G and 4G coverage and capacity and new 5G coverage for the operator to the surrounding area in and around Staithes. Thus providing a high quality service to their customers and access to the latest technologies whenever and wherever they are. Any limited harm will be outweighed by the benefits associated with providing and maintaining the latest high quality communications in line with the NPPF and the Governments strong commitment to a world leader in 5G. If the challenge is to be met to provide pervasive, affordable, resilient digital connectivity, the challenge is early roll out of 5G, especially in areas where mobile data use is congested.

Providing the latest 2G, 3G and 4G coverage and new 5G service provision will fully meet the national Governments aim of 'ensuring that everyone is connected to the information superhighway', that the majority of the population have access to a 5G signal by 2027 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 which have lower antenna propagation. This would ultimately lead to the need for an additional installation elsewhere within the cell area causing unnecessary proliferation of masts contrary to the NPPF.

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

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 outweigh any perceived loss of visual amenity to the surrounding area.

Confirmation that submitted drawings have been checked for accuracy

Name: (Agent)	Jamaal Hafiz	Telephone:	
Company:	Clarke Telecom Limited		
Company Address:	Clarke Telecom Limited, Unit E, Madison Place, Northampton Road, Manchester, M40 5AG	Email Address:	
Signed:		Date:	15/02/2023
Position:	Town Planner	(on behalf of Cornerstone)	

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Relayed: SP - Developers notice - for CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, N

Microsoft Outlook
Sent Fri 03/02/2023 15:21
To Jamaal Hafiz

NYMNPA
20/02/2023

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

Subject: SP - Developers notice - for CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497

Relayed: TEF - Developers notice - for CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, I

Microsoft Outlook
Sent Fri 03/02/2023 15:23
To Jamaal Hafiz

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

DevelopersNoticeTEF@o2.com (DevelopersNoticeTEF@o2.com)

Subject: TEF - Developers notice - for CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497

Clarke Telecom Limited
Unit E, Madison Place,
Northhampton Road,
Manchester T: +44 (0) 161 785 4500
M40 5AG F: +44 (0) 161 785 4501
www.clarke-telecom.com

Our ref ***CTIL_20571520***

NYMNPA
20/02/2023

Debbi White
Scarborough Borough Council
Town Hall,
St Nicholas Street,
Scarborough,
YO11 2HG

3rd February 2023

VIA EMAIL

Dear Sir or Madam,

APPLICATION FOR PRIOR APPROVAL: CORNERSTONE

PROPOSED RADIO BASE STATION INSTALLATION AT *CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497*

Please find attached a notice that is required under paragraph under Part 16 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2016 (as amended).

The notice is required by law to owner of the land to which the application relates to advise that an application for prior approval is to be submitted to the local planning authority for the proposed telecommunications equipment noted above and shown on the attached drawings numbered 100A_200D_300D. Should you wish to make representations to the local planning authority on the application then the relevant details are contained on the Notice.

Should you have any further queries regarding the proposal please do not hesitate to contact me.

Yours sincerely

Jamaal Hafiz MTCP MRTPI
Town Planner
Clarke Telecom

(for and on behalf of Cornerstone)
Enc Drawings as detailed above

Clarke Telecom Limited
Unit E, Madison Place,
Northhampton Road,
Manchester T: +44 (0) 161 785 4500
M40 5AG F: +44 (0) 161 785 4501
www.clarke-telecom.com

Our ref ***CTIL_20571520***

NYMNPA
20/02/2023

Telefónica UK Ltd,
260 Bath Road,
Slough,
Berkshire,
SL1 4DX

3rd February 2023

VIA EMAIL

Dear Sir or Madam,

APPLICATION FOR PRIOR APPROVAL: CORNERSTONE

PROPOSED RADIO BASE STATION INSTALLATION AT *CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497*

Please find attached a notice that is required under paragraph under Part 16 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2016 (as amended).

The notice is required by law to whom are of interest to the land to which the application relates to advise that an application for prior approval is to be submitted to the local planning authority for the proposed telecommunications equipment noted above and shown on the attached drawings numbered 100A_200D_300D. Should you wish to make representations to the local planning authority on the application then the relevant details are contained on the Notice.

Should you have any further queries regarding the proposal please do not hesitate to contact me.

Yours sincerely

Jamaal Hafiz MTCP MRTPI
Town Planner
Clarke Telecom
Tel:

(for and on behalf of Cornerstone)
Enc Drawings as detailed above

NYMNPA
20/02/2023

Developer's Notice as required under the Town and Country Planning (General Permitted Development) (England) (Amendment) (No.2) Order 2016

BY EMAIL

Proposed Development at: ***GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB***

National Grid Reference: ***E: 478141 N: 518497*** *Ref no;* ***CTIL_20571520***

I give notice that (Clarke Telecom Limited, Unit E, Madison Place, Northampton Road, Manchester, M40 5AG, UK), on behalf of Cornerstone Telecommunications Infrastructure Ltd (Cornerstone), will be applying to Chief Planning Officer, North York Moors National Park, The Old Vicarage, YO62 5BP, under Part 16 of Schedule 2 of the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) for its determination as to whether the prior approval of the authority will be required as to the siting and appearance of:

The installation of a 17.5m metre high slim-line monopole supporting 6no. antennas, 2 no. equipment cabinets 1 meter cabinet, and ancillary development thereto, including 3 no. Remote Radio Units (RRU's).

The application and accompanying plans are available for public inspection at the offices of the above Authority at Chief Planning Officer, North York Moors National Park, The Old Vicarage, YO62 5BP during usual office hours.

Any individual and organisation wishing to make representations about the siting and appearance of the proposed development may do so in writing to the Local Planning Authority at the address above (please quote site address given above). Any representations must be received by the Local Planning Authority no later than *(17/02/23)*

Name: **Jamaal Hafiz**

Signed: _____

(for and on behalf of Cornerstone)

Date: **03/02/23**

All correspondence to the developers, in the first instance, should be sent to: Cornerstone Community Consultation & EMF Enquiries, Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Email - community@cornerstone.network

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Our ref: ***CTIL_20571520 VM02 75453***

NYMNPA
20/02/2023

15/02/23

Chief Planning Officer
North York Moors National Park
The Old Vicarage
YO62 5BP

Clarke Telecom Ltd
Unit E
Madison Place
Northampton Road
Manchester
M40 5AG

Dear Sir/Madam

CLARIFICATION OF THE DECLARATION OF ICNIRP COMPLIANCE ISSUED AS PART OF THE SUBMISSION ATTACHED FOR SITE *CTIL_20571520 VM02 75453, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497*

I refer to the Declaration of Conformity with ICNIRP Public Exposure Guidelines ("ICNIRP Declaration"), sent with this submission in relation to the proposed telecommunications installation as detailed above.

The "ICNIRP Declaration" certifies that the proposed site shall be operated to be in full compliance with the requirements of the radio frequency (RF) guideline limits of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) for public exposure and UK legislation.

This ICNIRP declaration takes into account the cumulative effect of the emissions from the proposed installation and <u>all</u> radio base stations present at, or near, the proposed location.

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.

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1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

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.

If you have any further enquiries concerning the "ICNIRP Declaration" certificate or anything else in this letter, then please contact me ***CTIL_20571520 VM02 75453***

Yours faithfully

Jamaal Hafiz MTCP MRTPI
Town Planner
Clarke Telecom Ltd

(for and on behalf of Cornerstone)

Registered Address:
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Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Our ref: ***CTIL_20571520 VM02 75453***

15/02/23

Chief Planning Officer
North York Moors National Park
The Old Vicarage
YO62 5BP

Clarke Telecom Ltd
Unit E
Madison Place
Northampton Road
Manchester
M40 5AG

Declaration of Conformity with ICNIRP Public Exposure Guidelines
("ICNIRP Declaration")

VM02
260 Bath Road
Slough
Berkshire
SL1 4DX

Declares that the proposed equipment and installation as detailed in the attached submission at;

GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497
shall be operated to be in full compliance with the requirements of the radio frequency (RF) public exposure limit of the International Commission on Non-Ionizing Radiation Protection (ICNIRP)and UK legislation.

Date: *15/02/23*

Signed: _____

Name: *Simon Stephens*

Position: *Head of Design for Clarke Telecom Limited*

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

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

The Institution of Engineering and Technology

Allaying health concerns regarding 5G and exposure to radio waves

An IET guide for policy makers and local planning authorities
2nd edition

theiet.org/5G-health

Contents

Allaying health concerns regarding 5G and exposure to radio waves is published by the Institution of Engineering and Technology.

Please note that the views expressed in this publication are not necessarily those of the IET. It is not intended to be a guidance note with a specified set of recommendations or actions but rather seeks to add understanding and debate around the topic.

The Institution of Engineering and Technology

The Institution of Engineering and Technology (IET) is working to engineer a better world. We inspire, inform and influence the global engineering community, supporting technology innovation to meet the needs of society. The Institution of Engineering and Technology is registered as a Charity in England and Wales (no. 211014) and Scotland (no. SC038698).

About this guide

This Institution of Engineering and Technology Guide aims to give policy makers and Local Planning Authorities a better understanding of what 5G is, and what it is not, as it affects the concerns that have been expressed about exposure to radio waves.

The document is intended as a brief overview and references for further reading are provided in the footnotes.

Prof Will Stewart FREng, FInstP, FIET, FOSA
Chairman of the IET Digital Communications Policy Panel

Prof Stephen Temple CBE FREng CEng FIET
IET Guide Lead Editor

The IET Digital Panel would welcome any comments you may have on the contents/ your ideas for future digital publications. Please get in touch via **sep@theiet.org**.

Foreword

There has been an "infodemic" of misleading and false information circulating in the media about 5G and alleged health effects. Some of it is pure fantasy, but there have also been sincere concerns expressed by some people, including scientists, who are not up to date with how 5G has evolved in the UK.

The second edition of the IET Guide "Allaying health concerns regarding 5G and exposure to radio waves" provides a bridge to understanding how the 5G technology being implemented and the frequencies being used affect radio wave exposure, compared to the earlier mobile technologies that everyone is very familiar with.

The Guide is also helpful in another respect. It brings together, in one publication, an explanation of the overall rigorous radio exposure safety framework for public mobile services, embracing both the mobile networks and smartphones. The conclusion that 5G is as safe as 4G, 3G and Global System for Mobile communication (GSM) is not a political soundbite, but a conclusion drawn from an objective detailed examination, by independent professional engineers, who belong to institutions committed to the very highest professional standards.

Professor Danielle George
IET Deputy President

Introduction

What is 5G?

5G is the next evolution in mobile technology that will provide the underlying wireless infrastructure to cope with the relentless rise in data consumption[1] and support many new applications. This includes everything from connected cars and virtual and augmented reality through to the foundations for emerging smart city and Internet of Things (IoT) technologies. It delivers this through the use of revolutionary new hardware like beam forming antennas and innovative new radio coding software at its core.

Features of 5G

Faster download speeds

It is expected that 5G will provide Gb/s data speeds. This would mean things that currently take minutes to download would only take seconds. Even more important will be the ability to support higher download speeds for many more concurrent users in the same place. This will lead to a more predictable and consistent performance.

Lower latency

5G can support significantly lower latency, where appropriate, meaning very little lag, or buffering. This could enable mobile applications that simply aren't possible today, such as multiplayer gaming, factory automation and other tasks that demand quick responses.

Greater capacity

5G will also have vastly greater capacity, allowing networks to better cope with not only the rapidly increasing data demands of customers today, but also the growth of high-demand applications being planned in the future.

[1] Ofcom "*Enabling 5G in the UK*" https://www.ofcom.org.uk/__data/assets/pdf_file/0022/111883/enabling-5g-uk.pdf.

Key observations

The 5G technology itself, ***in so far as it affects radio wave exposure***, is very similar to 4G and in terms of its pulsed signals, the same as Global System for Mobile communication (GSM), Digital Enhanced Cordless Telecommunications (DECT) phones and a version of 4G.

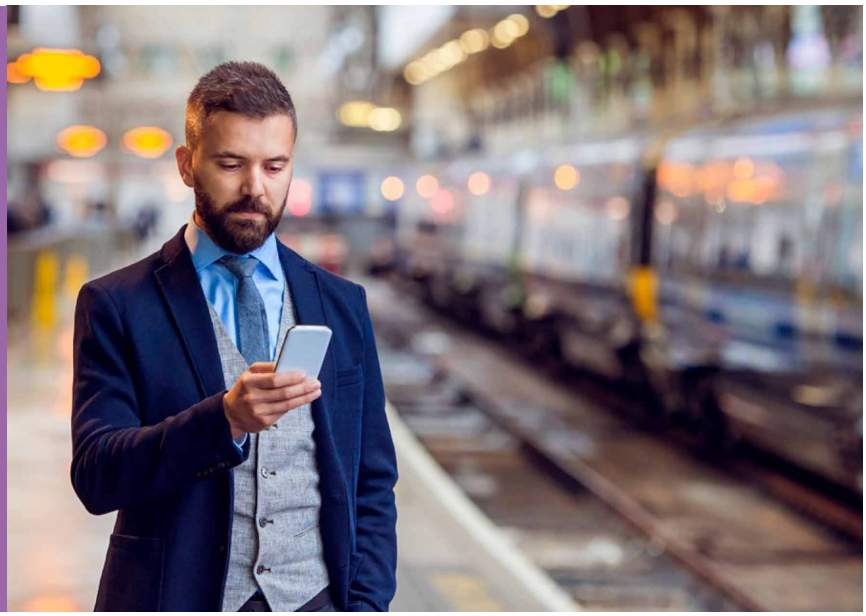
As there has been no dispensation for 5G safety standards, it will have to meet the same safety standards as 4G, 3G and GSM, meaning ***5G will be just as safe as 4G, 3G and GSM***.

There are no "higher frequency" (mmWaves) commercial 5G mobile antennas ***deployed anywhere in the UK*** and none are currently planned (due to high cost of coverage).

Reducing exposure to radio waves in the future requires more base stations ***in order to drive down both*** smartphone and base station power levels.

Electromagnetic Field (EMF) exposure guidelines developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)

The first element of the cellular mobile radio wave exposure safety framework are the international recommended guidelines set by the ICNIRP at levels to ensure no harm[2].



The most recent set of ICNIRP guidelines were published on the 11th March 2020, following a comprehensive assessment of peer-reviewed scientific literature over two decades, covering both thermal and non-thermal effects. The guidelines are designed to ensure that all people are not exposed to electromagnetic radiation at radio frequencies[3] in a way that would have any adverse effect on the body, such as excessive heating. No evidence for cancer, infertility or other health effects[4] has been found at the exposure levels recommended in the guidelines.

The reference exposure level for bands below 6 GHz (i.e. all the frequencies currently used in the UK for GSM, 3G, 4G & 5G) has not been changed in the revised guidelines. They have been calculated by reference to specific absorption rate (SAR)[5] and incorporate a substantial margin of safety.

For bands above 6 GHz, where the body does not really absorb the Radio Frequency (RF), the guidelines are set by reference to Power Density (PD)[6], and again incorporating a substantial margin of safety.

[2] https://www.icnirp.org/en/frequencies/radiofrequency/index.html. https://www.icnirp.org/cms/upload/publications/ICNIRPrfgdl2020.pdf.

[3] The radiofrequency ranges are in the non-ionising part of the Electromagnetic Spectrum (30Hz to 300GHz), well below, for example, the visible light portion of the Electromagnetic Spectrum (c.430-740THz).

[4] Other health effects mentioned include absurd theories linking 5G to Coronavirus.

[5] **SAR** is defined as the power absorbed per mass of tissue and has units of watts per kilogram (W/kg). SAR is usually averaged either over the whole body or over a small sample volume (typically 1g or 10g of tissue).

[6] **Power density** is the amount of power per unit area (Watts/M2).

Compliance with ICNIRP guidelines for 5G mobile broadband networks

The second element of the cellular mobile radio wave exposure safety framework is *compliance* of base stations with ICNIRP recommended limits.

Ofcom intends to introduce a new condition in spectrum licences that will require licensees to ensure that all Electric and Magnetic Fields (EMF) emissions from radio equipment in excess of 10 watts (effective isotropic radiated power) complies with the relevant levels for general public exposure from the ICNIRP Guidelines. It will ensure Ofcom is in a position to take appropriate enforcement action in the event of non-compliance with the ICNIRP Guidelines.

Ofcom has already carried out their own independent measurements on some deployed 5G base stations and verified their compliance with the guidelines[7].

As part of the process for obtaining planning consent for new 4G/5G sites and upgrades, each operator will continue to confirm compliance with ICNIRP guidelines[8].

[7] See https://www.comsoc.org/publications/ctn/truth-out-there-examining-science-around-5g-paranoia.
[8] See https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/mobile-wirelessbroadband/exposure-electro-magnetic-fields.

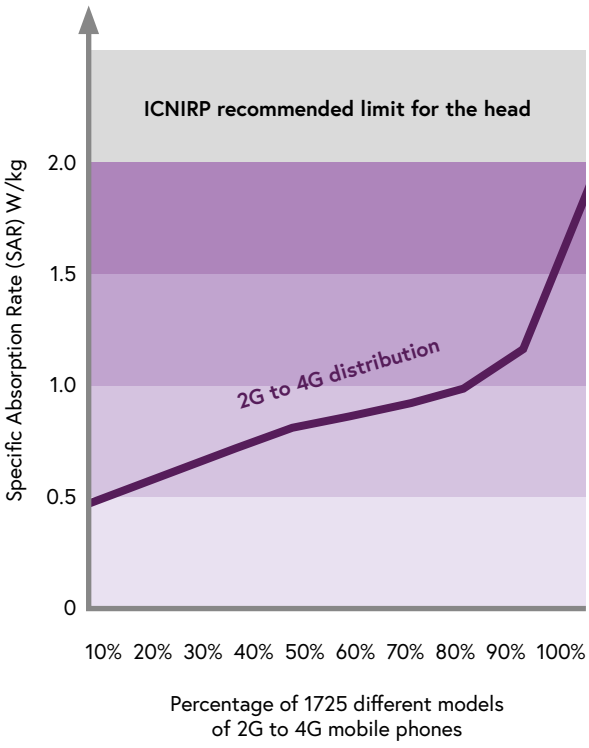
Compliance with ICNIRP guidelines for 5G smartphones and consumer choice

The third element of the cellular mobile radio wave exposure safety framework are the recommended limits for smartphones and other mobile devices.

A manufacturer, by adding a CE marking, is declaring, on its own responsibility, conformity with all of the legal requirements to achieve CE marking, including compliance with ICNIRP guidelines.

The illustration below indicates the distribution of Specific Absorption Rate (SAR) values for the head with GSM, 3G and 4G mobile technology generations based upon a very large sample of 1725 different models from 14 different manufacturers over a number of years.

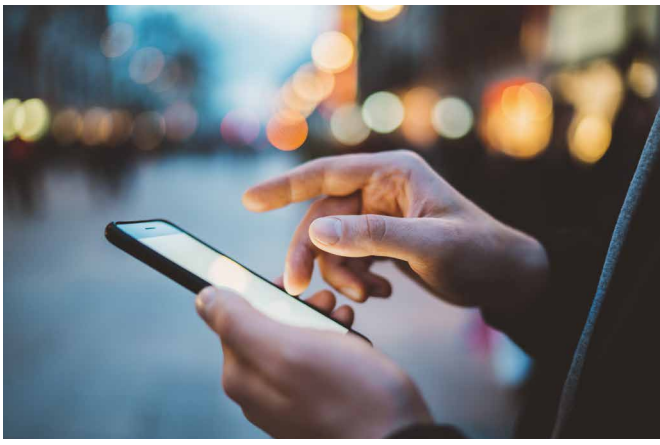
Specific Absorption Rate (SAR) values for the head with GSM, 3G and 4G mobile technology



The result shows almost 80% of all models in this very large sample had SAR values under 50% of the recommended limit. Data has been gathered on a number of 5G smartphones on sale in the UK. All the values were compliant and comparable to the earlier generations of smartphones. The frequencies built into the UK 5G smartphones were all below 6 GHz.

In recent years, SAR information for some phones has not always been easy for consumers to locate. SAR information should be included in publicly available technical specifications of all smartphones in order to facilitate consumer choice.

Finally, "handsfree working" is now standard on all smartphones. This offers consumers the discretion for further reducing RF exposure.



Exposure level reductions from new masts and small cells

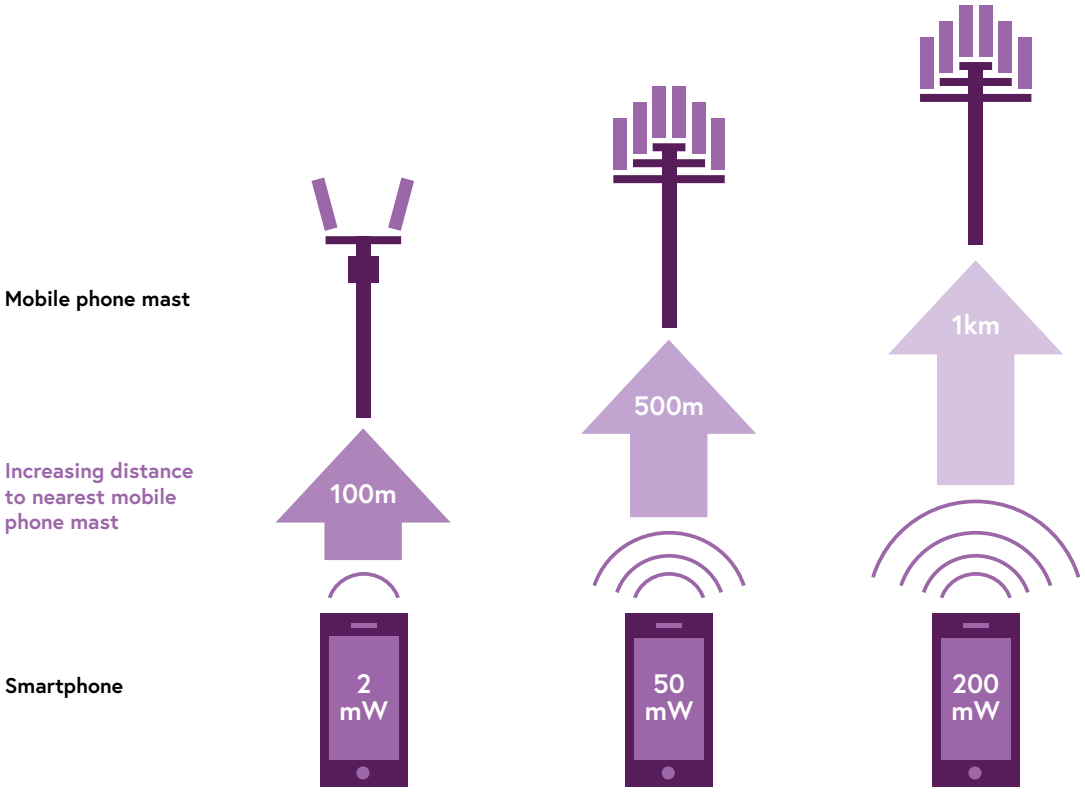
Small cells (micro-cells or pico-cells) are physically smaller antenna systems designed to work over a very short range to ease network congestion or fill in gaps in coverage.

Some people have expressed concern that a large number of 5G cells may increase a person's exposure to radio waves. However, that is not the way cellular mobile networks work. Every time a new mast or small cell is added, the distance the signal has to travel reduces. Therefore, from the laws of physics, the power needed at the smartphone and base station for a reliable connection is much less. Using the lowest practical power level is essential to prevent users located in different cells from disrupting each other's connections. It also saves the user's smartphone battery life.

For many people, their smartphone will be by far the nearest source of radio wave energy to them. As a result, more masts or 5G small cells will lead to a reduction in the overall radio wave signal strength an individual smartphone user is exposed to.

At the moment, there are relatively few small cells in use in the UK and though their numbers are likely to increase over time, we don't expect a mass rollout of them any time soon.

Illustrating how more base stations reduce smartphone powers and hence RF exposure[9]



[9] The numbers are purely illustrative and the actual powers will be determined by many factors including, importantly, the physical distance but also the urban topology between the network antenna and the smartphone.

The most widely used 5G band in the UK will be 3.6GHz

The UK and Europe proposed the use of three bands for 5G[10]. These were termed the 5G pioneer bands and each had a different purpose.

700MHz

This band is to secure pervasive national coverage. It's likely to be deployed from the traditional tall mobile phone masts. Only modest data capacity can be supported.

3.6GHz (3.4-3.8GHz)

The 3.6GHz band sits between the current WiFi bands at 2.4GHz and 5GHz that are already widely deployed in homes, offices and public places. 3.6GHz is the 'sweet spot' for achieving the best capacity over the largest areas for the lowest cost and has wide international support. The mass deployment of small low power base stations in towns and cities will most likely use this band[11].

26GHz

This high frequency (mmWaves) supports the largest capacity but at the highest cost of coverage. There are no 26 GHz (mmWaves) commercial 5G mobile antenna being deployed anywhere in the UK and none are currently planned.

Research engineers see a potential for 26GHz to be used for a data capacity lift in the limited number of locations where the 3.6 GHz frequency maxes out over the next 10 years (less than 3% of the UK[13]). Another use may be as a low power advanced manufacturing broadband access point (industry 4.0). Such examples of relatively short distance applications only need relatively low power levels.

Beam forming antennas

For the past 20 years mobile operators have typically used three or four sectored antennas, so as not to waste radio energy in directions where it's not needed. New beam forming antennas (sometimes referred to as Massive (complexity) Multiple input Multiple output antenna) make the transmission much more efficient, with the equivalent of 40, much smaller sectors, but still able to deliver the same power to a user standing at the edge of the cell's coverage area but wasting less energy to achieve this[12].

[10] European Commission Radio Spectrum Policy Group's "*Strategic Roadmap towards 5G in Europe*" https://rspg-spectrum.eu/wp-content/uploads/2013/05/RPSG16-032-Opinion_5G.pdf and IET "*5G Networks for Policy Makers*" report https://www.theiet.org/media/1166/5g-report.pdf.

[11] Ofcom "*Enabling 5G in the UK*" March 2018 paragraph 1.13 https://www.ofcom.org.uk/__data/assets/pdf_file/0022/111883/enabling-5g-uk.pdf.

[12] IEEE Spectrum "*5G Bytes: Massive MIMO Explained*" https://spectrum.ieee.org/video/telecom/wireless/5gbytes-massive-mimo-explained.

[13] techUK "*UK SPF publish principles for the release of 26 GHz 5G pioneer band*" https://www.techuk.org/insights/reports/item/15915-uk-spf-publish-principles-for-the-release-of-26-ghz-5g-pioneer-band.

Conclusion

5G is just as safe as 4G, 3G and GSM

This document has aimed to set out the reality around concerns regarding radio wave exposure, mobile coverage and 5G.

Small 5G base stations in our towns and cities will allow improved network coverage. They will reduce radio wave exposure to individual smartphone users and improve local 5G capacity for all manner of useful bandwidth-hungry applications. A good 5G fibre base local broadband infrastructure will be important to local communities over the coming decades in view of the ever-increasing amounts of data being consumed by the general public.

The Institution of Engineering and Technology

Our offices

London, UK
T +44 (0)20 7344 8460
E faradaycentre@ietvenues.co.uk

Stevenage, UK
T +44 (0)1438 313311
E postmaster@theiet.org

Beijing, China
T +86 10 6566 4687
E china@theiet.org
W theiet.org.cn

Hong Kong
T +852 2521 2140
E adminap@theiet.org

Bangalore, India
T +91 80 4089 2222
E india@theiet.in
W theiet.in

New Jersey, USA
T +1 (732) 321 5575
E ietusa@theiet.org

@TheIET theiet.org

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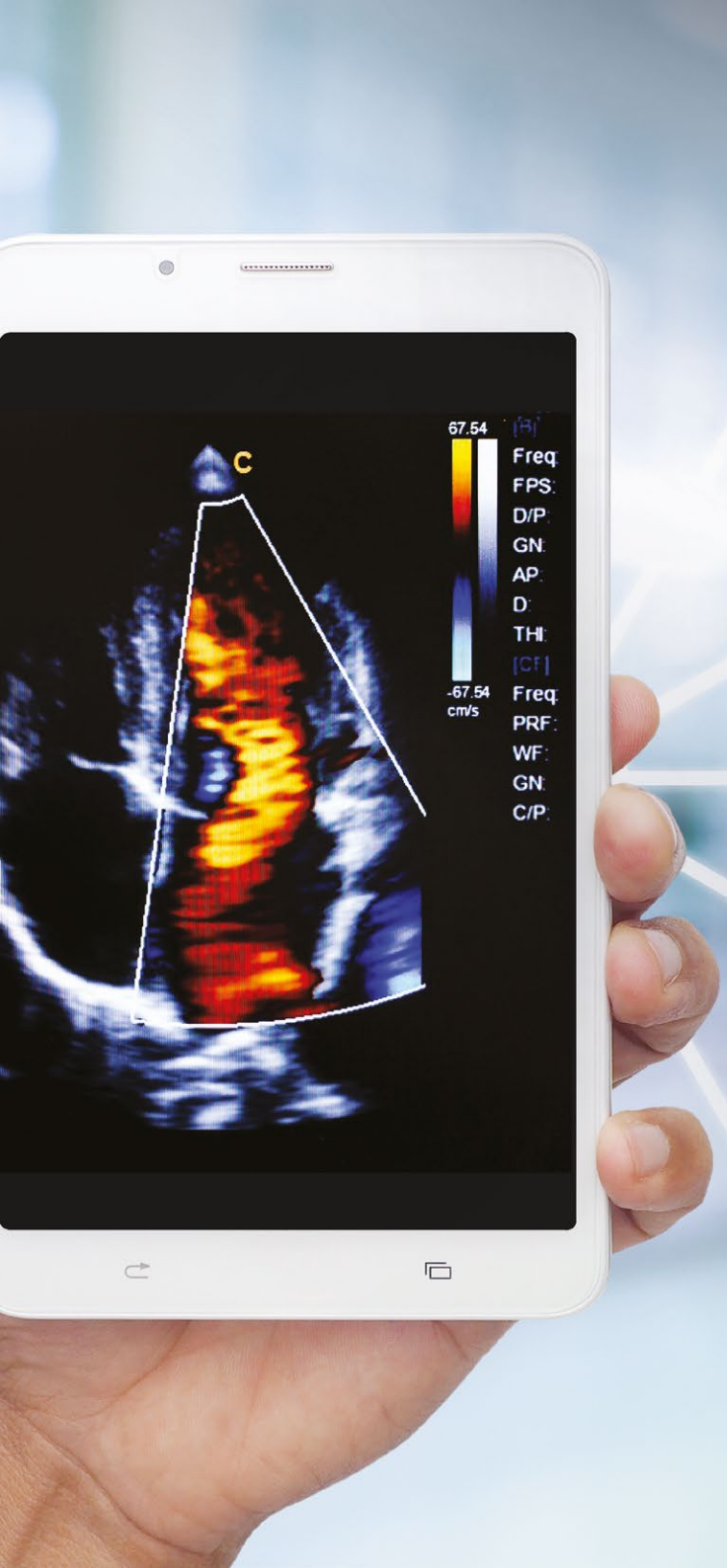
The importance of local authority collaboration to deliver mobile connectivity

NYMNPA

20/02/2023

cornerstone



Recognising the benefits of digital connectivity for local authorities and regional 'combined authorities'.

Mobile connectivity offers countless benefits to individuals, communities and businesses across the UK. It has become part of our daily lives, allowing us to do many things like communicating with family and friends, manage businesses online, get remote access to services such as doctor appointments or banking, or shopping for our groceries.

Recognising the rapid increase of smartphone usage over the years, many local authorities and organisations have introduced their services online for their residents and local businesses.

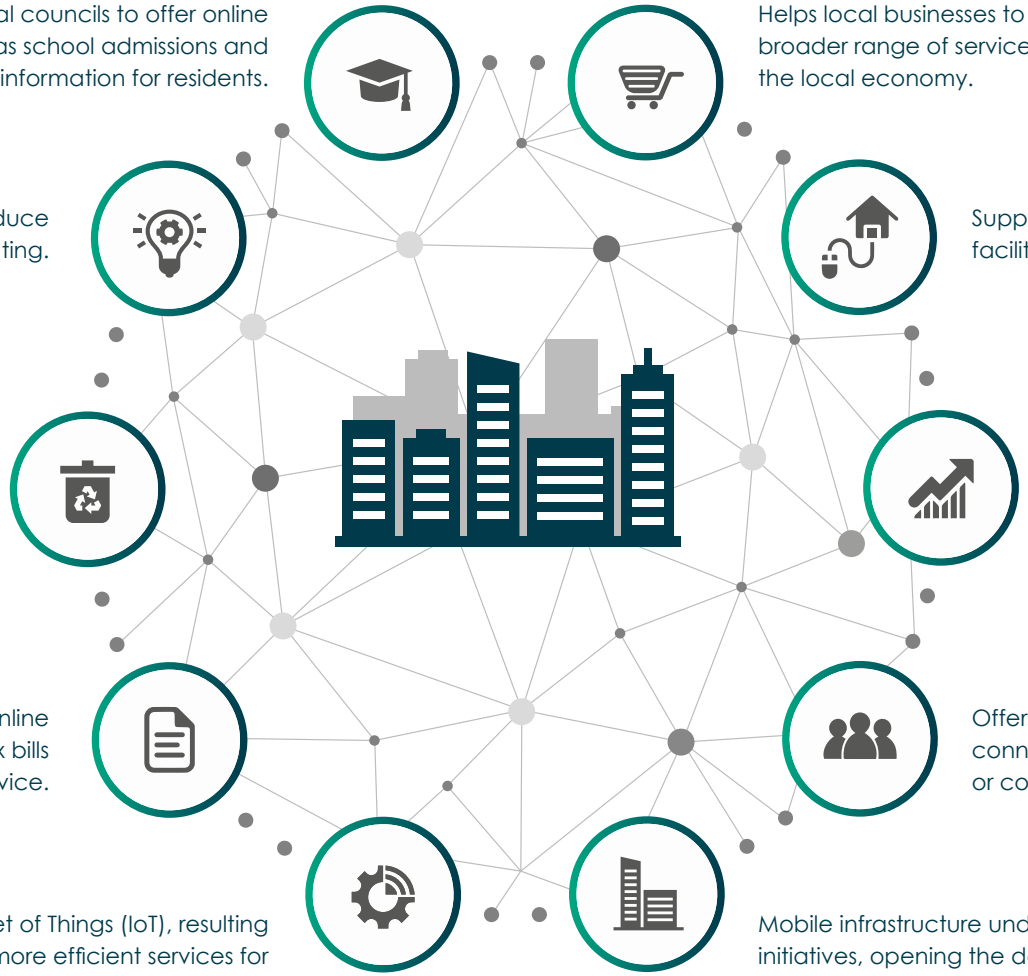
Furthermore, with the opportunities that 5G will bring, the need for digital connectivity will be in greater demand. Trials have already begun across the UK to demonstrate the potential of 5G and how it can drive improved productivity and efficiency.

In June 2019, West Midlands 5G partnered with BT and University Hospitals Birmingham to trial the UK's first 5G Connected Ambulance. Real-time communication between the paramedics and the hospital doctors enabled the effective diagnosis of the patient at an early stage of care.

The trial showcased how a paramedic performed a remote-controlled ultrasound 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)

Mobile connectivity.

Covid-19 has emphasised these benefits and dependence on mobile connectivity



Helps local councils to offer online services such as school admissions and local information for residents.

Helps local businesses to offer a broader range of services, boosting the local economy.

Councils can introduce technologies like smart lighting.

Supports local companies by facilitating working from home.

Enables councils to introduce smart refuse collection services, which saves costs.

Promotes economic growth by attracting investment from business, which creates jobs and regional prosperity in line with national and local economic strategies.

Helps local councils to offer online services such as paying council tax bills which provides a more efficient service.

Offers social benefits such as being able to connect with vulnerable family and friends or contact the emergency services 24/7.

Supports Internet of Things (IoT), resulting in quicker and more efficient services for businesses and residents.

Mobile infrastructure underpins Smart City initiatives, opening the door to Government funding for local authorities.

Working together to deliver mobile connectivity.

Delivering reliable mobile services across the UK by telecom operators requires the effective deployment of mobile infrastructure. As the UK's leading mobile infrastructure services company, Cornerstone works with landowners, institutions, and public authorities to place mobile equipment on rooftops, greenfield sites and street-works.

Preparing for the next generation of mobile technology is at the forefront of telecom operators' and the government's agenda. Recognising how it will improve businesses and individuals' daily lives, Cornerstone is working collaboratively with the different government bodies and local authorities to ensure that we are all supporting each other and sharing best practices for deploying 5G in the UK.

Central and devolved governments of the UK appreciate and understand the significance of modern digital connectivity to the socio-economic wellbeing of the UK and the devolved nations. This is clearly outlined in documents such as the 'Future Telecoms Infrastructure Review' and 'Statement of Strategic Priorities.'

The UK Government has also tried to facilitate a positive environment for 5G rollout by establishing testbeds via the Urban and Rural 'Connected Communities' projects.

These central government initiatives closely align with efforts in the devolved nations such as Scottish Government's 5G and Digital Strategy documents and 'Mobile Action Plan.'

The Welsh Government has implemented a similar 'Mobile Action Plan.'

Most notably, the UK Government and the four main UK Mobile Network Operators (MNO's) have now agreed the 'Shared Rural Network', worth £1bn of investment, to deliver rural mobile connectivity. The deal will lead to increases in coverage in some areas by more than a third, with the most prominent coverage improvements in rural parts of Scotland, Northern Ireland and Wales.

Digital connectivity is vital for the UK's post-COVID economic recovery plan. Digital infrastructure will be fundamental to the UK Governments 'Project Speed' initiative, aimed at cutting down the time it takes to develop, design and deliver vital infrastructure projects. In July 2020, the UK Government published their Permitted Development Legislation Consultation Response for England, aimed at removing restriction on mobile telecoms infrastructure deployment, with new legislation expected later in the year.

There is clearly an appetite for improved coverage at government level. Still, these initiatives and investments towards a national network must be delivered at a local level - local collaboration is critical.

Case studies of successful collaboration between Cornerstone & public authorities

Cornerstone is highly involved in significant engagement with various local and combined authorities across the UK. This engagement and collaboration have resulted in numerous positive relationships and practical benefits that are mutually advantageous in delivering new mobile telecommunications services to an area.

The following are a few examples and outcomes of that collaborative working.

WM5G.

WM5G is wholly owned by the West Midlands Combined Authority (who represent Birmingham, Wolverhampton, Coventry, Dudley, Sandwell, Solihull and Walsall local authorities). It works in partnership with public and private sector organisations to deliver 5G. WM5G was set up as part of the West Midlands, winning the DCMS 'Urban Connected Communities' 5G testbed project.

- WM5G has worked closely with a member Council to facilitate an agreement for a 20-year estates moratorium, that prohibited the use of Council property to host telecoms equipment, to be abolished.
- Birmingham City, Wolverhampton City and Dudley Councils, are all in advanced discussions in agreeing on a Template Code Agreement with Cornerstone, to utilise Council owned assets to host telecommunications infrastructure.
- WM5G has worked holistically with its 7-member local authorities to ensure that they each have Digital Co-ordinators and Champions in place to streamline their telecommunications service rollout and 'bust barriers.'
- WM5G has facilitated meetings between Cornerstone and the elected Planning Committees of Birmingham and Solihull Councils.
- WM5G has facilitated 'pre-rollout' strategic engagement between Cornerstone and senior officers within the 7-member local authority planning departments. This has provided a collaborative relationship where all parties can raise site-specific issues to find mutual solutions.

Greater Manchester Combined Authority.

Greater Manchester Combined Authority (GMCA) represents the 10 Councils of Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan.

- Engagement with GMCA has made it possible for Cornerstone to have a positive influence on various strategic planning and economic development policy documents that will assist in guiding development across Greater Manchester. These include the Greater Manchester Spatial Framework, GM Industrial Strategy, GM Infrastructure Framework and the GM Digital Blueprint.
- GMCA has facilitated pre-rollout engagement with the Development Managers of the 10 GM local authorities. This has assisted in building relationships for collaboration on mutual solutions that assist delivery of 5G connectivity.
- GMCA hosted a conference titled 'Accelerating the rollout of 5G across Greater Manchester.' This provided a platform for the industry to discuss various elements with stakeholders over multiple departments, across all 10-member local authorities. Discussion points included planning, estates, health concerns and the practical benefits to local authorities and their constituents.

Glasgow City Council.

Glasgow City Council has been extremely pro-active in their attitude to 5G rollout and digital connectivity.

Glasgow CC has established their own 'in-house' 5G delivery department to streamline various departments and engage with the industry.

- Glasgow City Council has been working with their own Estates department and engaging with third party landlords to open assets and create siting options that Cornerstone can use to place the necessary infrastructure. This will deliver improved mobile connectivity to the businesses and residents of Glasgow.
- Glasgow City Council's 5G delivery department has facilitated a workshop between Cornerstone and numerous officers from the Planning department. This is to discuss rollout, material benefits, technical constraints that dictate siting and design, and generally assist in building a collaborative relationship.
- The Glasgow City Council 5G delivery department has been pro-active in their engagement in acting as a facilitator between Cornerstone Planning and Heritage officers at the Council around a specific site. The site in question was significant to the socio-economic framework of Glasgow City Centre, as the site provided service to Queens Street Station, George Square and the many numerous businesses, tourists and residents who use this part of the city centre every day. The engagement led to a mutually suitable solution and grant of Listed Building Consent for the necessary infrastructure to maintain service provision.

How can local authorities work collaboratively with Mobile Network Operators to deliver the future of mobile connectivity?

Without the continuous installation of mobile infrastructure, the UK would lag in providing constant mobile connectivity and coverage. We need a national network of base stations.

It's therefore vital that local authorities offer their support at a very early stage to ensure that the process of mobile infrastructure deployment can be delivered as effectively and quickly as possible.

With the emergence of toolkits such as the DCMS Digital Connectivity Portal, Code of Best Practice and the MobileUK 'Councils and Connectivity2' document, there is an abundance of guidance on how local authorities should work collaboratively with MNOs to deliver mobile connectivity.

In Aug 2020, DCMS updated their guidance on access agreements between property owners and network operators for the deployment of digital infrastructure. Local authorities are being encouraged by ministers to consider the wider social and economic benefits for bringing connectivity to an area.

The guidance forms part of the government's plan to ensure people can access better broadband and mobile connectivity more quickly and is considered crucial to the UK's coronavirus recovery.

Visit https://www.gov.uk/guidance/guidance-on-access-agreements for more information

The key steps

- Building a collaborative partnership – this saves both local authorities and MNO's time and money to deliver infrastructure that residents and businesses depend on, in a quicker and more streamlined approach
- Facilitate 'barrier busting' – this encourages an 'open door' on both sides to discuss issues and solutions
- Understand the relationship between infrastructure rollout and local/regional/national aspirations around economic and digital goals
- Work with embedded 'Digital Champions' – they holistically 'join the dots' between various Council departments and elected members – Planning, Estates, Highways, Econ Development departments. They can help develop a digital infrastructure strategy
- Local authorities make assets available and work with MNOs to agree on Template Code Agreements – this helps to identify mutual ways of working around acquiring Public Estate and speeds the delivery of service to local people, saving legal and estate agent costs
- Engage with Planning departments – this facilitates pre-application discussion, a greater understanding of socio-economic material considerations and technical elements/constraints associated with infrastructure that governs design. In effect, this then results in better proposals coming forward into an application, improved planning approval rates and fewer appeals
- Assist LPAs in training planning committee members about telecoms developments
- Promote positive local planning policy and digital strategies in line with national policies
- Assist with pro-active working around procedural issues, for example, the problems created by the COVID-19 pandemic

With early engagement and cooperation between authorities and telecom operators, we can build a better-connected society quickly and cost-effectively.

Let's join the future together.

For more information, please contact us on Community@ctil.co.uk

in working together.

Proud to be delivering sites for the future of UK mobile connectivity.

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Hive 2, 1530 Arlington Business Park
Theale, Berkshire, RG7 4SA
www.cornerstone.network

SPEED UP BRITAIN

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HEALTH AND MOBILE PHONE BASE STATIONS

We recognise that the growth in mobile communication has led, in some cases, to public concern about perceived health effects of mobile technology, in particular about siting masts close to local communities. Quite naturally, the public seeks reassurance that masts are not in any way harmful or dangerous.

We are committed to providing the latest independent peer-reviewed research findings, information, advice and guidance from national and international agencies on radiofrequency (RF) electromagnetic fields.

Cornerstone ensure that our radio base stations are designed and built so that the public are not exposed to radio frequency fields above the guidelines set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). In fact, radio base stations operate at low power and emit levels of radiofrequency fields many times lower than the ICNIRP general public guidelines.

RESEARCH REVIEWS

The World Health Organisation notes that "In the area of biological effects and medical applications of non-ionizing radiation approximately 25,000 articles have been published over the past 30 years. Despite the feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals: (http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html).

The scientific community have collated, summarised and assessed these publications into research reviews. The most influential in the UK being the Mobile Phones and Health Report (also known as the Stewart Report). These research reviews are used by Governments to develop policy on exposure to radiofrequency signals.

The Stewart Report concluded that the balance of evidence did not suggest that exposures to radio frequency fields below international guidelines could cause adverse health effects. One of the recommendations of the Stewart report was a research programme to address uncertainties regarding mobile phone base stations and health. This programme was called the Mobile Telecommunications and Health Research (MTHR) Programme. The final report from this programme was published in February 2014. The report noted that the research conducted found no evidence of adverse health effects from the radio waves produced by mobile phones or their base stations.

Since the Stewart Report, over 30 further reviews have been carried out, carefully considering many hundreds of pieces of research. Most have made similar recommendations and have come to comparable conclusions: that research should continue to address any gaps in the knowledge and that overall, the possibility of adverse health effects from mobile communications remains unproven.

In April 2012 the Health Protection Agency's independent Advisory Group on Non-ionising Radiation (AGNIR) published a report entitled "Health Effects from Radiofrequency

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Electromagnetic Fields". This report concluded that there is no convincing evidence that mobile phone technologies cause adverse effects on human health.

The World Health Organisation (WHO) noted that "A large number of studies have been performed over the last two decades to assess whether mobile phones pose a potential health risk. To date, no adverse health effects have been established as being caused by mobile phone use" WHO factsheet 193: Electromagnetic fields and public health: mobile telephones, 2014.

In 2019 Public Health England (PHE) noted that "Exposure to radio waves is not new and health-related research has been conducted on this topic over several decades. In particular, a large amount of new scientific evidence has emerged since the year 2000 through dedicated national and international research programmes" https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health/5g-technologies-radio-waves-and-health

ICNIRP GUIDELINES

The radiofrequency public exposure limits for EMF fields were developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) http://www.icnirp.org following evaluation of all the peer-reviewed scientific literature, including thermal and non-thermal effects. ICNIRP is a non-governmental organisation formally recognised by WHO. Established biological and health effects have been used as the basis for the ICNIRP exposure restrictions. These guidelines have been adopted for use in the European Union and the UK.

In 2017 ICNIRP reaffirmed that their safety guidelines provide protection against all known health effects of radiofrequency signals.

COMPLIANCE WITH INTERNATIONAL EXPOSURE GUIDELINES

All Cornerstone installations are designed and constructed in compliance with the precautionary ICNIRP public exposure guidelines as adopted in EU Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz). These guidelines have been set following a thorough review of the science and take into consideration both thermal and non-thermal effects. They protect all members of the public 24 hours a day. In addition, precautionary measures have been taken into account when setting relevant guideline limits for the public (i.e. in the UK a safety factor of 50 times is applied to the public exposure guideline).

When measured, field strengths are many times lower than the precautionary ICNIRP general public guidelines.

An ICNIRP certificate is provided with every planning application and this verifies that the mobile phone base station, when operational, will meet the precautionary ICNIRP guidelines. We also provide further documentation to clarify that the ICNIRP certificate addresses emissions from all mobile phone network operators' equipment at the proposed site.

Further Information:

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

World Health Organisation EMF Project
http://www.who.int/peh-emf/en/

International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org/

Public Health England (formally HPA)
https://www.gov.uk/government/collections/electromagnetic-fields

Or contact:
Community, Cornerstone
The Hive 2, 1530 Arlington Business Park, Theale, Berks, RG7 4SA
Email: community@cornerstone.network

RADIO PLANNING AND PROPAGATION (V.4 November 2019)
An introduction to how radio networks are planned and the limitations associated with the technology

When planning cellular telecommunications networks engineers use specialist software to predict, with a high degree of confidence, the behaviour of cellular transmissions. This then enables the operator to calculate how many cell sites are needed to provide the level of coverage and capacity required by their customers.

Radio signals at the frequencies used for cellular radio propagate in a manner that is broadly similar to light. Generally anything that casts a shadow to light will attenuate radio waves. The strength of radio signals detected at a receiving device naturally reduces the further away it is from the transmitter. In general, the attenuation (or decay) in signal power is affected by a number of variables. The main factors are:

- signal frequency (attenuation increases with frequency),
- distance (from the transmitter),
- terrain (such as hills),
- clutter (such as buildings, foliage, vehicles, and water) and
- atmospheric conditions (such as rain).

A reduction in the strength of the radio signal increases the likelihood of dropped calls and reduced data rates for internet browsing, for example.

Clutter

Any physical object obstructing the propagation of radio signals causes a reduction in the signal strength reaching a customer's device. A common term for these objects is 'clutter'. The more obvious examples are buildings and geographical terrain such as hills and trees.

Buildings cause a varying amount of signal reduction depending on their height, construction, thickness of walls, number of windows etc. Glass causes a lower reduction in signal than brick/concrete walls.

Customers will inadvertently be aware of this by finding that sometimes they need to go near windows, a higher floor of a building or even outside in order to achieve a stronger signal for their mobile devices.

Generally, the higher the signal frequency the more it will be impacted by clutter.

Tree Clutter

The effects of trees on signal degradation can be significant. Signal absorption and shadowing effects vary according to vegetation and density, and are caused by the main tree trunk, branches, and leaves.

Cell sites located in or near trees will have signals significantly reduced. As a result, a number of extra sites may need to be built locally in order to counter-effect this.

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Signal variation throughout the seasons is also a practical concern. Leaves on trees in the spring and summer can cause shadowing and reduce radio voice quality and increase the number of dropped calls.

As a result, the bottom of an antenna should a) be above the top level of the trees, b) allow greater height due to the antenna downtilt at build or for future requirements and c) allow some room for future growth of the trees.

When a cell site utilises point-to-point microwave dishes to communicate with other cell sites in the network any obstruction between these dishes will result in failed line of sight communications. As a result, dishes need to be placed above the top level of the trees.

Propagation Models

In essence these are mathematical formulae used to characterise radio wave propagation, in order to determine the signal strength at a receiving device.

Coverage Planning Tools

Radio planning engineers plan cellular networks using highly sophisticated computer programs that incorporate propagation models. Armed with data on cell site location, cell site configuration, maps, terrain etc. they are used to *predict* areas of coverage deficiency (so called 'coverage holes'), new site requirements and configurations.

Network Changes

Over time the topography and clutter in an area may change. For example, building developments, housing and tree growth can all change. As the signals received from local phone masts can degrade, as they are dependent on these factors. These reasons along with increased usage of mobile devices, customer complaints, network consolidation (mast sharing) and new technologies (5G) require a re-evaluation of a network operator's telecommunications infrastructure.

Mast sharing can result in some masts no longer being needed. As a result, they are decommissioned and physically removed. Mast sharing will however sometimes result in the need for a taller more substantial structure.

Technical surveys undertaken for reasons above may highlight that antenna height increases are required – this is more likely for sites with low antenna heights around 15m AGL, particularly street furniture sites. More details on these reasons below.

While thus far this document is generic to mobile telephony masts it should be noted that each mast has to be dealt with on a case-by-case basis.

Site Height increases

Registered Address:
Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

There are a number of reasons why an operator may request a height increase on existing structures. The main ones are described below.

Maintaining existing coverage
The antennas inside, for example, street furniture sites are generally of 2 physical build designs – 'Single Stack' and 'Dual Stack'. The former describes when the set of antennas are all at the same height. The latter describes a site with 2 sets of antennas one above the other.

The 'Dual Stack' is by far the preferred option. This is due to a number of factors including greater flexibility & control for different technologies and providing optimum service performance to customers.
Site upgrades such as network consolidation between Vodafone and Telefonica and/ or new 5G technologies facilitate a Single Stack structure being upgraded to a Dual Stack structure. In a straight swap scenario at equal height the new lower aperture antennas would be lower than they were originally - resulting in significantly reduced coverage. To ensure existing coverage is maintained the whole structure needs to be increased in height.

Clutter changes

A more extreme example is when the local clutter or tree lines have changed, or are such that the mobile signals are blocked, resulting in lower quality calls and downloads for mobile device users. To provide sufficient services to customers height increases on existing masts or additional new masts are required. The former is the preferred option in many cases.

5G Technologies

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. Furthermore, unlike traditional technologies 5G uses adaptive beamforming technologies to increase capacity and data speeds to the user. For effective beamforming the antenna will normally need to be mounted higher than conventional antennas. These factors drive a require for an increase in antenna height in 5G

International Commission on Non-Ionizing Radiation Protection (ICNIRP) Compliance
The addition of new technologies and mast sharing affects ICNIRP compliance, one of the health and safety requirements for a cell site, a higher minimum mast height is required in some cases.

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Cornerstone Telecommunications, Infrastructure Limited,
Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

Department for Digital, Culture, Media & Sport

Ministry of Housing, Communities & Local Government

7th March 2019

Collaborating for digital connectivity

Government is committed to supporting investment in high-quality, reliable digital connectivity so that communities can benefit from faster economic growth and greater social inclusion. 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. In 2016 the Gross Value Added from the digital sector was £116.5 billion, which equates to 6.7% of the UK economy, so the benefits for individuals and the UK as a whole are substantial. 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 fibre 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.

We have published guidance for local authorities and network operators on areas such as digital leadership, considerations for the local planning authority, streetworks, and on making local authority assets available to network operators for the installation of networks. This advice follows on from the Digital Infrastructure Toolkit, which was published in 2018 and provides advice for central government and network providers regarding access to government sites.

We welcome the efforts that some local authorities have already made to enable network deployment. In future, the Government intends to publish information on how effectively local authorities are engaging with industry and adopting the principles outlined in this guidance. We would, therefore, ask you:

1. To ensure your teams are aware of, and using, the guidance the Government has provided to improve broadband and mobile connectivity in their areas.
2. If you have not already, identify a Digital Infrastructure Champion within your organisation and share these contact details with local.connectivity@culture.gov.uk, and
3. In particular, to ensure your teams are granting access to your assets and infrastructure effectively to support the rollout of full fibre and mobile networks.

I hope you agree that we should work hand in hand to support the significant new investment in digital infrastructure that can benefit our communities. With this in mind, Government will give significant weight to the extent to which local authorities have adopted the principles contained in our guidance when allocating funding for future DCMS projects aimed at boosting investment in fibre or mobile networks.

If you or any of your colleagues have any questions, please contact DCMS at localconnectivity@culture.gov.uk.

Thank you in advance for your cooperation.

The public benefit of

mobile connectivity.

cornerstone

The evolution of **mobile connectivity.**

The demand for faster and improved mobile connectivity continues to grow. Most of us rely on having mobile phones and devices 24/7, which provides us with many benefits.

Since the launch of 2G in 1991, the mobile generation is firmly established. Not only has it provided a way to communicate with each other and exchange information, but it has given individuals and businesses an innovative platform to do much more. Over the years, we have seen 3G and 4G, and now we have been introduced to 5G. The differences between the generations have provided us with higher speed, better connection, and many more advanced features on our mobiles. Now with 5G, we can expect to experience an even more extensive range of telecommunication services.

1G

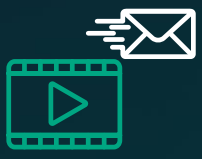
Mobile voice only

2G

Calls and texts

3G

Data services



4G

High-speed internet access

5G

Faster connection, enhanced data services

Connecting you to what matters.

Access to a reliable mobile network has become a necessity for many of us. Some of the key benefits it provides us with are:

- Connecting with family, friends, and colleagues at any time around the world
- Giving the ability to manage our personal information 24/7
- Keeping us always entertained and informed with the latest news
- Creating more productive and cost efficiencies for businesses

The economic benefit

- Businesses offering online services can extend their products to a broader audience
- Local areas and businesses can benefit from tourists and visitors as hotels, attractions, and restaurants can be booked online from anywhere in the world
- Business owners and services like doctors can provide a faster and more cost-effective service by offering both online appointments and ordering
- Digital connectivity facilitates economic growth, something which the Government is keen to progress and promote

The social benefit

- Mobile communications can help people to stay in touch wherever and whenever, which can help improve social wellbeing
- Contacting emergency services is easier, especially in remote areas
- Using a mobile wherever you go can provide better personal security
- Having access to social networking sites and applications can keep people entertained with their lifestyles and interests
- Mobile connectivity helps promote smarter and productive ways of working. For example, working from home can help minimise commuting which can provide better work and home life balance
- Access to personal information 24/7, e.g. bank accounts, can offer efficiency and convenience

5G is the next generation of mobile connectivity, providing us with a new level of experience. It will offer immense opportunities, given the faster and more reliable connectivity that it will provide. We will experience new technologies that will help us become more efficient and save costs as an individual or business.

What can we expect from 5G?

- Driverless vehicles – this will give drivers autonomy to do other things while driving
- Advanced healthcare facilities – performing surgeries remotely will be made possible, along with freeing up more GP time through better online facilities
- Enhanced Virtual and Augmented reality (AR) – used in gaming and entertainment already, with 5G, live interactions will be taken to the next level
- Greater Internet of Things (IoT) transformation – with better connected devices, the IoT will enable us to control devices more independently
- Cutting-edge agricultural operations – operating farming machinery and tools remotely will promote smart agriculture, saving time and increasing productivity for farmers

These are just some highlights of how the public benefits from mobile phones and what 5G will offer. But what's also essential is reliable mobile coverage and connectivity. Without this, we are at risk of not being able to use our phones or maximise it's potential if we experience poor coverage or no signal.

What do we need to enable mobile connectivity in the UK?

To maintain and improve mobile connectivity, it is crucial to recognise that this is only possible with the continuous deployment of mobile infrastructure throughout the UK. Mobile infrastructure (or masts as you might know them) can be placed on rooftops, greenfield sites, and street-works.

As the UK's leading mobile infrastructure services company, Cornerstone works with landowners, institutions, and public authorities to place mobile equipment on sites to enable telecom operators to deliver mobile services to the public.

With more advanced technology now available, placing mobile infrastructure has become even more necessary. To achieve this is a collaborative effort between telecoms, the legal & property industry, and landowners, and requires everyone to work together.

Recognising this, the Government introduced an updated version of the Electronic Communications Code (ECC) in December 2017, to help support the roll-out of mobile infrastructure. Ofcom also issued an ECC Code of Practice to help guide operators and landlords with site dealings and negotiations. Since the introduction of the new ECC, many landlords have been agreeing leases using the Code principles. This has helped operators and landlords, guiding them through the process and ultimately playing a key role in enabling mobile connectivity.

Working together

The future for digital connectivity in the UK lies in many of our hands. The telecom operators are constantly developing new technologies to provide better mobile services to the public in rural and urban areas. However, landlords play a crucial part in building the network too, allowing mobile infrastructure to be placed on their site. Without infrastructure, providing a mobile network to the public isn't possible, which would affect all of us as individuals and businesses.

We need to continue to work together to enable the opportunities that mobile technology brings to all of us.

Proud to be delivering sites for the future of UK mobile connectivity.

cornerstone

Hive 2, 1530 Arlington Business Park
Theale, Berkshire, RG7 4SA
www.cornerstone.network

General Background Information for Telecommunications Development.

England

cornerstone

Introduction.

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

- Promote shared infrastructure;
- Maximise opportunities to consolidate the number of base stations;
- Significantly reduce the environmental impact of network development.

This document is designed to provide general background information on the development of UK mobile telecommunications networks.

It has been prepared for inclusion with planning applications and supports network development proposals with general information.

Background

Over 30 years ago under the Telecommunications Act 1984, a licence was granted to mobile network operators. The licence was to provide wireless (or mobile) phone services utilising unused radio frequencies adjacent to those transmitted for over 50 years by the television industry.

With the wireless technology being new and the number of potential customers unknown, several tall masts were used to provide basic radio coverage to the main populated areas.

As the way we use our phones and other technologies have changed over the past 30 years, where we locate masts is crucial.

Due to the increased data transfer necessary for the latest telecommunication services, locations of base stations must be where the local demand exists.

Digital networks.

2G

2G digital networks developed in the early 1990s.

This digital technology is also known as GSM (Global System for Mobile Communications), which is the common European operating standard. This technology enabled phones to interconnect to other networks throughout Europe and internationally.

3G

In 2000, the 'Third Generation' mobile telecommunications service was launched, known as 3G or UMTS.

In addition to voice services, this allowed broadband access to the internet for mobile phones and laptop computer data card users.

4G

2013 saw the launch of 4G services on the network.

This technology allows for ultra-fast speeds when browsing the internet, streaming videos or sending emails. It also enables faster downloads.

5G

2019 saw the introduction of 5G services, with the Government's ambition for the UK to become a world leader in this technology.

5G Connectivity will ensure that everyone benefits from early advantages of its potential and that the UK creates a world-leading digital economy that works for all.

What is 5G?

5G is the new generation of wireless technology that will deliver reliable and faster networks of the future, changing how we understand wireless connectivity.

The technology will see us all move from something we experience through personal devices to an integrated infrastructure across buildings, transport and utilities. The new technology will provide enormous benefits for citizens, businesses and urban regions alike.

5G will also offer a new level of underlying connectivity to transform services and create new digital ecosystems.

The benefits of 5G.

The economic benefit

- Businesses offering online services can extend their products to a broader audience
- Local areas and businesses can benefit from tourists and visitors as hotels, attractions, and restaurants can be booked online from anywhere in the world
- Business owners and services like doctors can provide a faster and more cost effective service by offering both online appointments and ordering
- Digital connectivity facilitates economic growth, something which the Government is keen to progress and promote

The social benefit

- Mobile communications can help people to stay in touch wherever and whenever, which can help improve social wellbeing
- Contacting emergency services is easier, especially in remote areas
- Using a mobile wherever you go can provide better personal security
- Having access to social networking sites and applications can keep people entertained with their lifestyles and interests
- Mobile connectivity helps promote smarter and productive ways of working. For example, working from home can help minimise commuting which can provide better work and home life balance
- Access to personal information 24/7, e.g. bank accounts, can offer efficiency and convenience

5G is the next generation of mobile connectivity, providing us with a new level of experience. It will offer immense opportunities, given the faster and more reliable connectivity that it will provide.

We will experience new technologies that will help us become more efficient and save costs as an individual or business.

What can we expect from 5G?

- Driverless vehicles – this will give drivers autonomy to do other things while driving
- Advanced healthcare facilities – performing surgeries remotely will be made possible, along with freeing up more GP time through better online facilities
- Enhanced Virtual and Augmented reality (AR) – used in gaming and entertainment already, with 5G, live interactions will be taken to the next level
- Greater Internet of Things (IoT) transformation – with better connected devices, the IoT will enable us to control devices more independently
- Cutting-edge agricultural operations – operating farming machinery and tools remotely will promote smart agriculture, saving time and increasing productivity for farmers

We need to continue to work together to enable the opportunities that mobile technology brings to all of us.

Planning policies.

Planning policy guidance on telecommunications

The revised National Planning Policy Framework (NPPF), published on 19th February 2019, supports high-quality communications infrastructure and recognises it as a strategic priority.

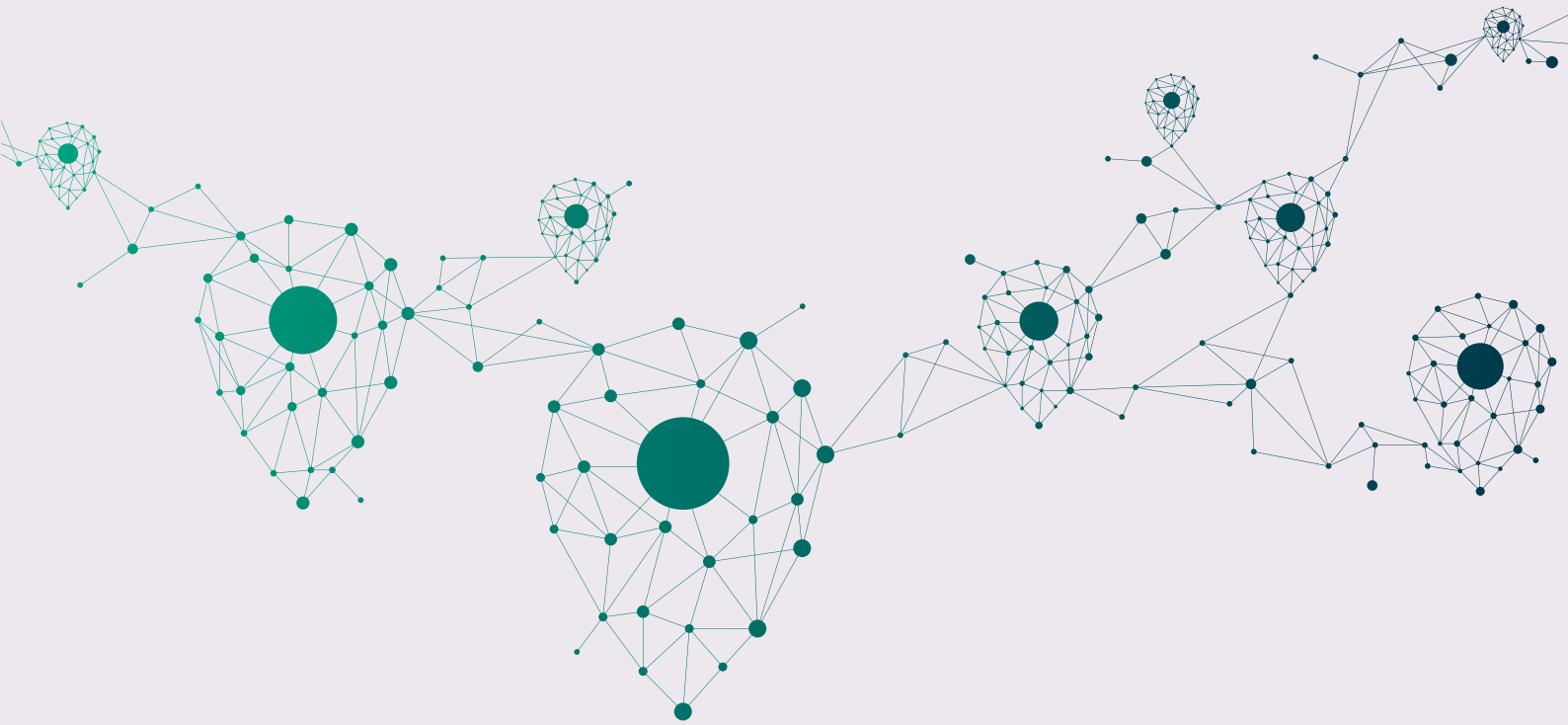
Within paragraph 112 it states that:

"Advanced, high-quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next-generation mobile technology (such as 5G) and full-fibre broadband connections."

The NPPF goes on to state within Paragraph 116 that:

"Local planning authorities must determine applications on planning grounds only. They should not seek to prevent competition between different operators, question the need for an electronic communications system, or set health safeguards different from the International Commission guidelines for public exposure."

Site/mast sharing.



Cornerstone actively encourages and supports site-sharing for both commercial and environmental reasons.

All operators are required to explore site-sharing opportunities under the terms of their licences.

Cornerstone has implemented many measures to identify and maximise site-sharing opportunities.

Consultation & legal case.

Consultation

Cornerstone is committed to carrying out appropriate consultations with Local Planning Authorities, stakeholders and the public. The Code of Best Practice on Mobile Network Development gives guidance on the factors that operators should consider when determining what consultation is required, as each development is different. These factors are equally applicable for Local Planning Authorities who carry out their own consultation once the application has been submitted.

Legal case

The following legal case may be helpful:

Harrogate case November 2004

The Court of Appeal gave a judgement that Government Planning Guidance in PPG8 (now replaced by the NPPF) is perfectly clear in relation to compliance with the Health and Safety standards for mobile phone base stations. The Court of Appeal and the High Court both upheld Government policy in response to a planning inspector's decision that departed from that policy and failed to give adequate reasons for doing so.

Bardsey case January 2005

The Court of Appeal confirmed that the permitted development regime for mobile phone base stations is compliant with the Human Rights Act. This was a case in which a local planning authority failed to comply with its obligations to act within the 56 day period provided under the permitted development regulations.

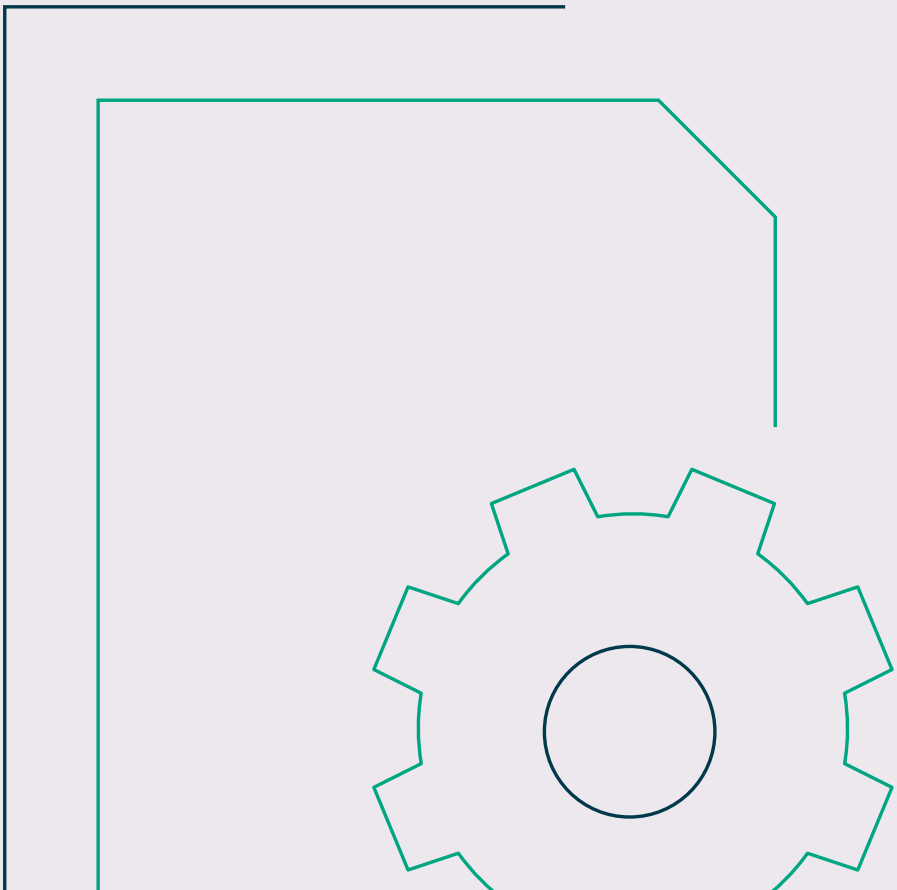
Further information.

We trust that this document answers your main queries regarding our planned installation.

The enclosed site-specific details will identify any alternative discounted options and reasons why they were rejected and how the proposed site complies with national and local planning policies.

The Local Government Ombudsman's Special Report on Telecommunication Masts gives some positive recommendations and advice to Local Planning Authorities in determining prior approval applications.

The **Digital Connectivity Portal** provides guidance for local authorities and network providers on improving connectivity across the UK. Produced by DCMS, it promotes closer co-operation between network providers and local authorities, and offers guidance on effective policies and processes to facilitate deployment of digital networks.



For further information or to contact Cornerstone, please visit **www.cornerstone.network**

or write to us at:

Hive 2, 1530 Arlington Business Park, Theale,
Berkshire, RG7 4SA.

cornerstone

NYMNPA

20/02/2023

Cornerstone Community Information Sheet

Health Summary

Radio base stations and handsets use electromagnetic fields (EMFs) to transfer information and make communication possible with mobile phones and devices. EMFs are used for television and radio transmissions, by the police, fire and ambulance services, by taxi firms and public utilities. EMFs are also used for a wide range of personal and commercial equipment from electronic car keys, WiFi equipment and baby monitoring devices to shop security tag systems. They are also produced by household electrical appliances like the fridges, vacuum cleaners or electric shavers.

Public Health England (PHE) have noted that "Exposure to radio waves is not new and health-related research has been conducted on this topic over several decades. In particular, a large amount of new scientific evidence has emerged since the year 2000 through dedicated national and international research programmes" https://www.gov.uk/government/publications/5g-technologies-radio-wavesand-health/5g-technologies-radio-waves-and-health. After a thorough review of the available scientific findings, the World Health Organisation reported: "To date, the only health effect from RF fields identified in scientific reviews has been related to an increase in body temperature (> 1 °C) from exposure at very high field intensity found only in certain industrial facilities, such as RF heaters. The levels of RF exposure from base stations and wireless networks are so low that the temperature increases are insignificant and do not affect human health" World Health Organisation, Fact Sheet 304, Base stations and wireless technologies, 2006. In addition, the WHO notes that "Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields". http://www.who.int/pehemf/about/WhatisEMF/en/index1.html. In 2020 the World Health Organisation published information on 5G commenting that: "Provided that the overall exposure remains below international guidelines, no consequences for public health are anticipated" https://www.who.int/news-room/q-a-detail/5g-mobile-networks-and-health.

The Advisory Group on Non-ionising Radiation (AGNIR) summarised that "although a substantial amount of research has been conducted in this area, there is no convincing evidence that RF field exposure below guideline levels causes health effects in adults or children." "Health Effects from Radiofrequency Electromagnetic Fields – RCE 20", 2012

In 2019 Public Health England (PHE) noted: "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 consequences for public health" https://www.gov.uk/government/publications/5g-technologies-radio-waves-andhealth/5g-technologies-radio-waves-and-health.

Radio base stations are designed to comply with the stringent, precautionary public exposure guidelines set out by ICNIRP (International Commission on Non-Ionizing Radiation Protection). These guidelines have been developed following a thorough review of the science including both thermal and non-thermal effects. UK radio base station installations have been surveyed by independent bodies and found to be hundreds and sometimes thousands of times below these guidelines.

Cornerstone, Hive 2
1530 Arlington Business Park
Theale, Berkshire, RG7 4SA

Registered Address:
Cornerstone Telecommunications Infrastructure Limited, Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

In 2020 ICNIRP updated their safety guidelines noting that: 'we looked at the adequacy of the ones we published in 1998. We found that the previous ones were conservative in most cases, and they'd still provide adequate protection for current technologies'
https://www.icnirp.org/cms/upload/presentations/ICNIRP_Media_Release_110320.pdf

For further information please contact:

Community, Cornerstone

The Hive 2, 1530 Arlington Business Park, Theale, Berks, RG7 4SA

Tel. 01753 564306, community@cornerstone.network

HM Government

5G mobile technology: a guide

5G is the latest mobile technology. It brings greater speed, capacity and functionality to mobile services, opening up new opportunities for consumers, businesses and public services.

Companies have been rolling out 5G in the UK since 2019. However, some people have raised concerns that the introduction of 5G could affect people's health and have even linked it to the coronavirus pandemic.

These claims are completely unfounded and should not be used as a basis to block or delay 5G rollout.

This guide explains the facts about 5G to help you deal with queries from the public and to combat the disinformation that is spreading online.

Ofcom
making communications work
for everyone

What is 5G?

5G is the new, fifth generation of mobile technology. Like previous mobile generations, including 3G and 4G, 5G uses the **radio spectrum**. The radio spectrum supports all of the wireless services used by people and businesses every day – including making a mobile phone call, listening to the radio or going online using Wi-Fi.

What are the differences between 5G and 3G and 4G?

There is nothing fundamentally different about the physical characteristics of the radio signals that will be produced by 5G compared to previous technologies like 3G and 4G.

Compared to previous generations of mobile services, 5G offers faster internet speeds and the ability to connect thousands of different devices in a small area. This means it could help create new 'smart' services for people in public spaces – providing real-time information to them about the local area and availability of services. It can also be used in healthcare, agriculture and other industries – for example, connecting machinery in factories to make production more efficient.

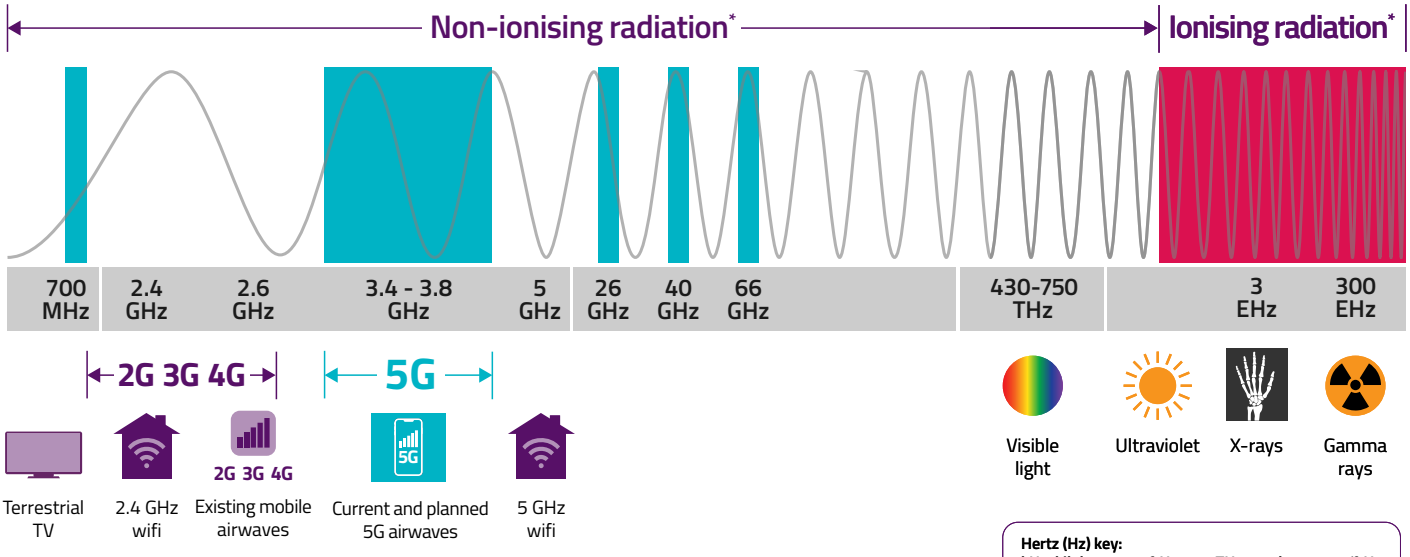
5G also makes use of certain advances in technology which are described further in this guide.

Which radiowaves does 5G use?

5G is re-using spectrum that has previously been used to deliver services such as TV broadcasting, wireless broadband and other types of transmissions that have been in the environment for many years.

Initially, mobile phone companies have deployed 5G in frequency bands which are close to those already used for previous generations of mobile technology (sometimes called low- and mid-frequency spectrum). 5G can also make use of higher frequency spectrum, and some 5G trials have already taken place in these frequencies.

All frequencies that are currently and will in future be used for 5G fall within the part of the electromagnetic spectrum that includes radiation which is classed as 'non-ionising'. This means that these radio waves do not carry enough energy to directly damage cells. This is different from 'ionising' radiation, which is generally considered to be hazardous to humans and includes gamma (nuclear) radiation as well as x-rays, which occur at the higher frequency end of the electromagnetic spectrum.



**Radio frequencies needed for common household items to work, from televisions to microwave ovens (usually between 3KHz and 300GHz), produce radiation which is classed as 'non-ionising'. This means that it does not have sufficient energy to break chemical bonds or remove electrons, as opposed to 'ionising radiation', which occurs at much higher frequencies and is generally considered to be hazardous to humans. (Source: International Commission for Non-Ionizing Radiation Protection (ICNIRP))*

Figure A: The Electromagnetic Spectrum

What do health experts say about 5G?

Health experts have studied the effects of radio waves on health for many years.

In the UK, Public Health England (PHE)[1] takes the lead on public health matters associated with electromagnetic fields, or radio waves, and has a statutory duty to provide advice to the UK Government on any health effects that may be caused by exposure to electromagnetic fields, including radio wave emissions.

PHE endorses the international guidelines for limiting exposure to radio waves, published by the International Commission for Non-Ionising Radiation Protection (ICNIRP). These guidelines cover many uses of radio frequencies, including Wi-Fi, Bluetooth and mobile technologies. The guidelines were updated in March 2020 and take full account of 5G operating at higher frequencies.

In relation to 5G, PHE have said that "the overall exposure is expected to remain low relative to guidelines and, as such, there should be no consequences for public health".

Mobile companies are also required to ensure that their signals do not exceed the limits set out in the ICNIRP guidelines for the protection of the general public.

Have 5G masts been tested to ensure they are safe?

Ofcom carries out measurements to confirm transmitter base stations do not exceed the restrictions set out in the ICNIRP guidelines. Over the past few months, **Ofcom has measured radio wave emission levels at 5G sites in 10 UK towns and cities** and, in all cases, the levels recorded are a small fraction of those in the ICNIRP guidelines.

The maximum measured at any mobile site was approximately 1.5% of the guideline levels – including signals from other mobile technologies such as 3G and 4G. The highest level from 5G signals specifically was 0.039% of the maximum set out in the guidelines.

Ofcom will continue to monitor 5G signal levels as 5G becomes more widely adopted.

Will the technological advances of 5G result in increased risks for the general public?

Use of higher frequencies (millimetre wave)

At the moment, all mobile phone companies in the UK are operating mobile services in frequencies between 700 MHz and 3.8 GHz. This includes 2G, 3G and 4G as well as all current 5G deployments. These frequencies are at the lower end of the microwave frequency range (microwaves are generally considered to encompass frequencies between 300 MHz and 300 GHz)[2].

5G can also make use of higher frequency spectrum, and some 5G trials have already taken place in these frequencies. Higher frequency bands that could be used for 5G include the 26 GHz, 40 GHz and 66 GHz frequency bands (as illustrated in Figure A above). The term millimetre wave or mmWave is often used to describe these higher frequencies. The advantage of these frequencies is that they can deliver very high speeds and high capacity with very low latency (the time between instructing a wireless device to perform an action and that action being completed).

At these frequencies, the signals do not travel as far and do not carry through walls or objects as easily as low- and mid-frequency spectrum, so they are not suited to providing wide-area mobile coverage. They are instead most likely to be used in areas with the highest demand from mobile phone users - so-called 'hotspots'.

The use of these frequencies is not new – they have been used for many years for other radio services, including point-to-point links, satellite earth stations and radio astronomy. The ICNIRP guidelines cover all frequencies that will be used for 5G, including mmWave, and all operators are required to comply with these guidelines. The latest version of these guidelines, published in March 2020, contains some additional restrictions for use at these higher frequencies.

Advanced antenna technology (massive MIMO and beamforming)

New advanced 'massive MIMO' (multiple input, multiple output) and 'beamforming' antenna technology mean that antennas used in mobile networks will be able to direct signals only to where they are needed – for example, directly to your mobile handset. This technology is already used in

1. On 18 August 2020, the Government created the National Institute for Health Protection. This brings together Public Health England, NHS Test and Trace and the analytical capability of the Joint Biosecurity Centre under a single leadership team. The organisation will be formalised and be operating from spring 2021. 2. Note, the use of the term 'microwaves' here should not be confused with 'microwave ovens' - these use a very specific set of frequencies which, incidentally, are also widely used for Wi-Fi, albeit at much lower power levels.

4G to some extent but will be used more widely in 5G.

The antennas themselves are not 'massive' in size – in fact, they are similar in size to the antennas used in previous generations of mobile technology. Rather, they are massive in that they are made up of a larger number of smaller antennas than antennas used for previous generations.

This technology means 5G transmissions will be more efficient as they will not be transmitting in directions where the signal is not needed, tending to reduce incidental radio wave exposure levels in the environment. Even so, operators will still need to ensure that the emission levels from these new antennas are compliant with the restrictions in the ICNIRP guidelines.

Small cells

At the moment, 5G equipment is generally being added to existing mobile phone masts. However, over time, more smaller transmitters (known as "small cells") may be used to provide capacity in specific locations.

While more small cells might be needed, they will operate at much lower powers than existing mobile masts as the signals do not need to travel as far. In addition, use of small cells will have the benefit of enabling mobile phones to operate at lower powers. This means that, in general, small cells will be unlikely to cause any increase to the overall radio wave exposure levels experienced by a mobile phone user, and may cause a decrease.

However, a significant increase in the number of small cells is not expected immediately as operators are concentrating on adding 5G technology to their existing sites.

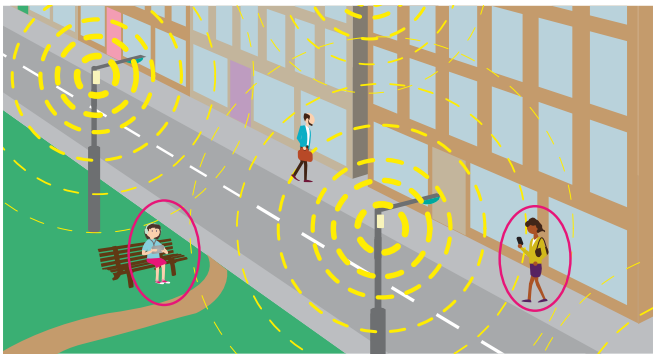


Figure B: Small cell deployment in a city centre

5G and Coronavirus

Recently, conspiracy theories have been shared online that claim 5G mobile is connected to the spread of the coronavirus. This is wrong. There is no scientific basis or credible evidence for these claims.

Some areas of the country have seen mobile phone masts vandalised because of these incorrect claims. Engineers from the mobile phone operators have also been threatened in the street while they work. These types of incidents put lives at risk. If a mobile phone mast stops working, either because it has been vandalised or because engineers can't carry out vital maintenance, people in that area can't call the emergency services, dial the NHS on 111 or contact their friends or family.

Mobile phones have been used by volunteers to organise support for their local communities to collect medicines and get food for those who cannot go out during the Covid-19 crisis. People's safety and wellbeing can be put at risk if the mobile phone network isn't available.

Which organisations are responsible for public safety relating to 5G?

The UK Government's priority is to promote investment and innovation in 5G, to ensure that services and applications are widely available for the benefit of UK consumers and businesses, to drive economic growth and boost productivity. The UK Government has published guidance in respect of 5G and coronavirus (COVID-19), and the sharing of false information.

Planning law and policy requires that planning applications for electronic communications development should be accompanied by a statement or declaration that certifies that when operational, equipment will be compliant with the ICNIRP guidelines for limiting exposure to electromagnetic fields[3].

Public Health England (PHE) takes the lead on public health matters associated with electromagnetic fields, or radio waves, and has a statutory duty to provide advice to Government on any health effects that may be caused by exposure to electromagnetic field emissions. PHE has published advice on exposure to radio waves at the following link: https://www.gov.uk/government/collections/electromagnetic-fields#radio-waves

Ofcom is responsible for managing use of the radio spectrum in the UK. Ofcom regularly carries out radio frequency electromagnetic field (EMF) measurements near mobile phone base stations to test whether EMF levels are within ICNIRP guidelines. Further information on Ofcom's work in relation to EMF is available at the following link: https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/mobile-wireless-broadband/exposure-electro-magnetic-fields.

3. Planning law is a devolved matter. Please see: The Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended); The Town and Country Planning (General Permitted Development) (Scotland) Order 1992 (as amended); The Town and Country Planning (General Permitted Development) (Wales) Order 1995 (as amended); The Planning (General Permitted Development) Order (Northern Ireland) 2015.

Local Authority Toolkit

5G & Health

NYMNPA

20/02/2023

Mobile UK

Introduction

Many people are unaware of the benefits of 5G or misunderstand what it is.

This is often because the information publicly available about 5G uses technical jargon, which makes it difficult to understand and explain to others. As a result, people can sometimes be swayed by false theories and unsubstantiated claims that 5G presents a danger to our health. This document has been created to help overcome some of the barriers to understanding this exciting technology. Over the following pages, we cover:

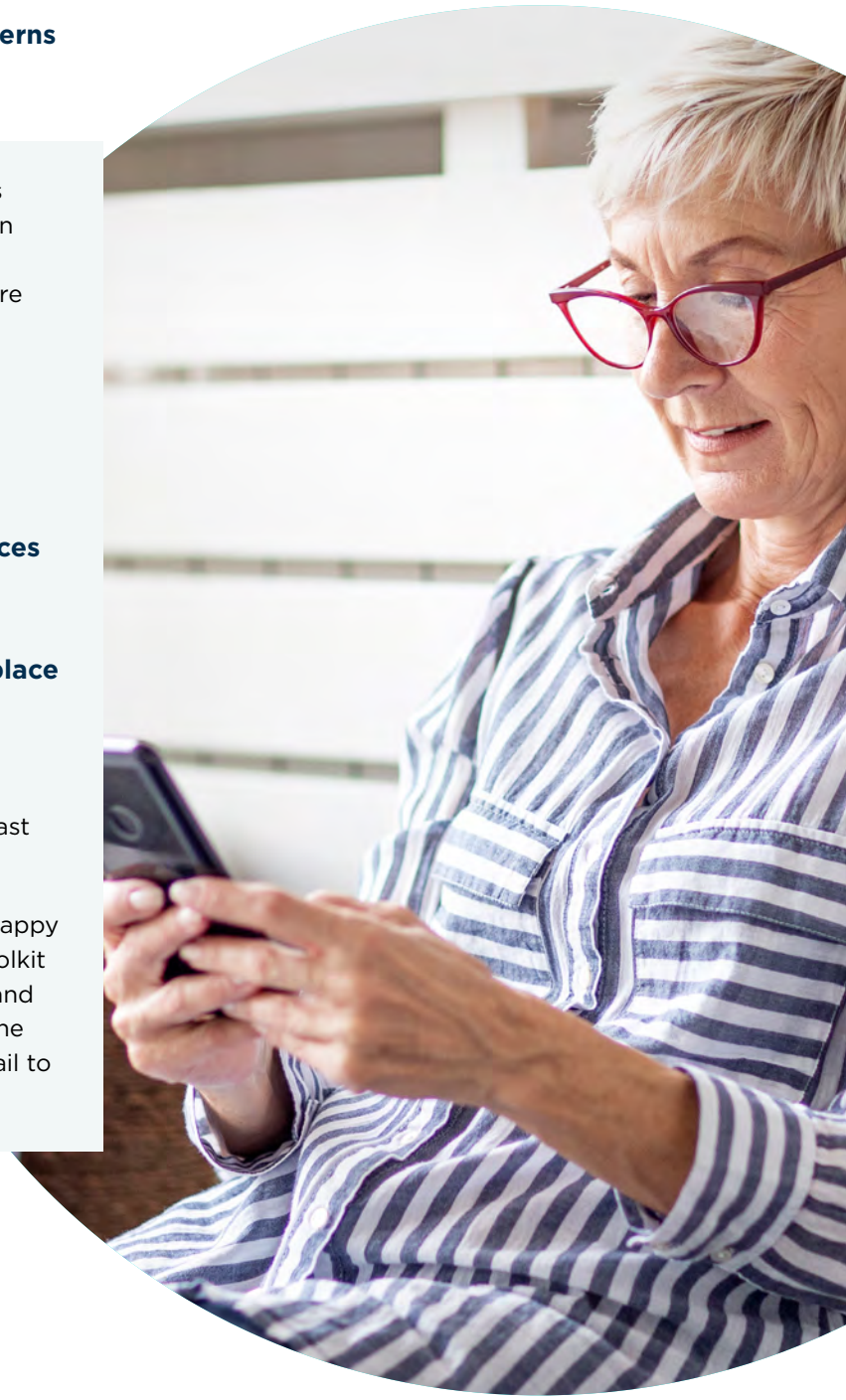
- **What is 5G?**
- **What difference will 5G make to our lives?**
- **Myth-busting facts to address common concerns**

Also available to accompany this toolkit is a series of information packs outlining the benefits of 5G in specific settings and sectors, brought to life with case studies and relevant statistics. These packs are available on the Mobile UK website and cover the following topics:

- **How 5G will help healthcare**
- **How 5G will increase rural opportunities**
- **How 5G will support the emergency services**
- **How 5G will help councils**
- **How 5G will improve the home and workplace**
- **How 5G will help the environment**

On the website you will also find an additional information document which may be useful for mast planning applications, as and when necessary.

If you would find it useful we are also more than happy for you to publish any of the documents in this toolkit on your own channels and share with colleagues and constituents. If you wish to do so and would like the documents to be co-branded please send an e-mail to info@mobileuk.org.



What is 5G?

In a nutshell, 5G is the fifth generation of mobile internet connectivity, succeeding 4G, 3G and before that 2G.

It will offer much faster data download and upload speeds and will allow more devices to simultaneously access the mobile internet.

As the world depends more and more on mobile connectivity and we are consuming more data, existing networks are becoming congested. This is particularly the case when there are lots of people in the same place, at the same time, trying to access online services.

5G has the capacity to handle this demand and has the unique ability to 'splice' the network. This gives councils, businesses and the emergency services the ability to have their own dedicated, reliable part of the 5G network.

Due to its speed, ability to connect multiple devices at the same time and the significant drop in the time it will take to send information from one point to another, 5G has the power to transform and save lives.

What difference will 5G make?

Now, we know that on paper 5G sounds like an improvement, but what difference will it really make. How will it improve our lives on a day-to-day basis?

High speed mobile internet

Everyone will have access to fast and uninterrupted sharing, streaming, and browsing via their mobile phone network. It will mean accessible near gigabit capable speeds when you are out and about and could, in the future, work alongside or provide an alternative to fibre and wires in the home.

Multiple connected devices

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

Reducing latency to a minimum

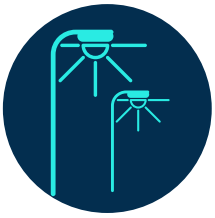
Delays between information sent and received will become virtually impossible to perceive. Real-time content sharing and data will become a reality. This will effectively make buffering and loading delays a thing of the past, with data only taking 1 millisecond to be received by a device after it has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

How will 5G make a difference to the environment?

5G will help make towns and cities more sustainable, reducing energy consumption

5G will not just improve our day-to-day connectivity, it will help reduce the environmental impact of our towns and cities, and ultimately, help save lives.

5G will be crucial in further enhancing smart cities, connecting multiple devices and sensors that will make our societies more sustainable and increase resource efficiency. For example:



5G-connected streetlights will detect when streets are empty and dim lighting to save energy, emit less CO_2 and reduce local council carbon tax contributions

5G connections between appliances and services providers and your home can reduce your household energy use and costs

Smart transport systems will help us reduce emissions when we travel

Home solar power and small-scale wind farms will integrate instantly with the national grid to share excess renewable energy

We will be able to download data in a more efficient way, using less energy

CASE STUDY

In partnership with Telefonica, the Spanish city of Malaga has converted its street lights to be 5G-connected. This allows for lighting to be adjusted according to conditions and for faulty street lights to be immediately identified. Malaga has cut its energy bill to the tune of millions as a result.

Source: O2

Mobile UK

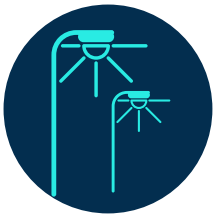
How will 5G make a difference to towns and cities?

5G will not just improve our day-to-day connectivity, it will help make our towns and cities safer, and ultimately, help save lives.

5G will help make the roads in our towns and cities safer and minimise congestion

Connected cars will communicate with each other, vastly reducing the number of accidents and resulting traffic jams and allowing cars to travel close together to keep traffic moving steadily

Connected devices will be able to alert drivers of upcoming hazards, detecting accidents before they happen and protecting vulnerable road users



Smart streetlights can include sensors to detect noise and disturbances that may relate to citizen safety concerns

CASE STUDY

Glasgow is trialling a smart street system lighting which also detects noise and disturbances that may relate to citizen safety concerns.

Source: Future City Glasgow Website

Mobile UK

How will 5G make a difference to the emergency services?

5G will not just improve our day-to-day connectivity, it will ultimately help save lives.

5G will help save lives by revolutionising the way emergency services operate

5G will further enhance the capabilities of existing 4G-enabled connected ambulances which means doctors and surgeons, in hospital, can virtually assist paramedics at the scene of an incident, saving vital minutes treating the patients

With 5G-enhanced video links at the scene of an emergency, the control room will be able to see what is happening in real time and with more clarity than 4G - including the precise positions of all emergency personnel

4G and 5G enabled drones will be able to act like police helicopters, observing large areas, providing live footage to help keep crowds safe and monitoring emergency situations such as a large fire or major incident, at a fraction of the current cost

Smart traffic light systems will allow an ambulance to change traffic lights to clear congestion along their route, improving vital response and arrival times in an emergency

CASE STUDY

In Bristol, thermal cameras specifically designed to alert the authorities when people fall into the water, were installed in the harbour. The technology was put in place after ten people tragically died drowning in one year alone. The council control centre is notified via 5G when a person breaks the virtual barrier at the harbour edge and fire and rescue are subsequently alerted. The lives of two people have already been saved using the technology.

Source: BristolLive

How will 5G make a difference to public health?

5G will help tackle public health crises

5G will not just improve our day-to-day connectivity, it will improve our health, tackle loneliness and isolation and ultimately, help save lives.

5G-connected drones will be able to deliver essential medicines to patients in remote areas, or those with accessibility issues

5G-connected wearables, such as fitness wristbands and body monitors, can provide critical health updates to GPs and other medical professionals, alerting them to potentially life-threatening issues, such as falls, premature heart attacks and strokes

5G-connected health devices could help doctors and GPs remotely diagnose and support treatment plans, meaning patients will have quicker access to healthcare and doctors will be able to see more patients

5G will allow council's to improve health and social care provision, while saving money. 5G-connected devices will help care for people in their homes and within care settings, such as using telehealth to monitor vital signs remotely, reduce loneliness and observe medicine administration using 4K video. The 5G networks will enable councils to be at the forefront of the latest technology to support their citizens

CASE STUDY

5G trials in Liverpool have focussed on the use of the technology in social care settings. Sensors detect accidents and concerning behaviour patterns of vulnerable people while in their own home. A push-of-the-button device was created so that isolated residents could instantly talk to somebody when they are feeling lonely. These innovations - that help residents live in their own home for longer - can only be reliably rolled-out with 5G.

Source: Liverpool 5G

Your questions answered

5G & cancer

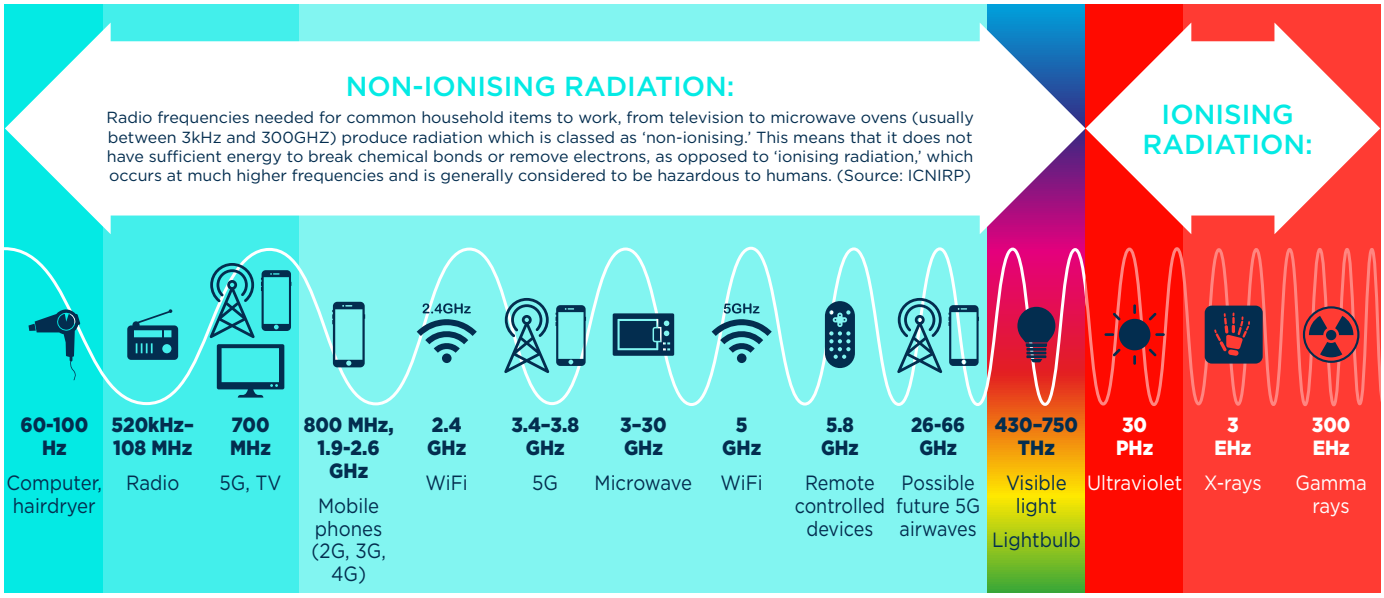
We are aware that some people are concerned that 5G could cause cancer. Importantly, this type of radiation is classed as mainly harmless when used within guidelines.

There is currently no scientific evidence to show that using mobile phones, or 5G within guidelines increases the risk of cancer.

Mobile phones and mobile masts transmit and receive radio waves, which are a type of electromagnetic radiation. Importantly, this type of radiation is classed as mainly harmless, or in scientific terms, non-ionising, just like our TVs, remote controls, home WiFi and so on. The strength of the signals is extremely weak and therefore does not have enough energy to damage DNA or directly cause cancer.

Many people who are concerned about 5G and cancer cite that the International Agency for Research on Cancer classified mobile phones as 'possibly carcinogenic.' This dates back to 2011, following a series of studies that were not considered conclusive, nor did they take into account factors that could distort the data. Mobile signals were therefore added to this category as a precautionary measure. To put this in context, talcum powder and eating pickled vegetables are also classed as 'possibly carcinogenic.'

It is widely recognised that non-ionising radiation is not capable of directly causing cancer when used within guidelines. As you can see from the graph below, 5G still falls way short of the ionising (harmful) part of the spectrum.



Mobile UK

Your questions answered

Masts and radiation

What type of radiation does 5G use?

Sometimes the word 'radiation' scares people, because it is an invisible thing and something many people do not understand, or easily confuse with 'radioactivity.'

Radiation is simply the release of energy, just like the light from the sun, or heat from our bodies. Most radiation is harmless, or in scientific terms non-ionising. It is part of our everyday lives, without us even realising it. Many household items such as our TVs, radios, lightbulbs, remote-controlled toys and WiFi, even our own bodies, emit a level of radiation. But importantly, the levels we are exposed are so low they are not powerful enough to cause adverse health effects. 5G, mobile phones and masts all safely fall into the same category.

Are 5G masts dangerous?

The strong consensus of scientific opinion and public health agencies, such as the World Health Organisation, is that no health risks have been established from exposure to the low-level radio signals used for mobile communications, including 5G.

While masts (or base stations) transmit and receive radio waves to connect the users of mobile phones and other devices to the internet, the strength of those radio waves is very low, in publicly accessible areas.

The UK's telecoms regulator, OFCOM carried out tests at 5G-enabled mobile masts across the country. The highest emission levels (e.g. radiation) recorded at mobile phone masts were consistently well within the strict safety guidelines that monitor radiation levels.

These strict guidelines are governed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) a universally acknowledged non-governmental organisation recognised by the World Health Organisation (WHO). The guidelines apply to frequencies up to 300GHz, well within the frequencies that could be used for 5G. Anything below this threshold is considered to not cause adverse health effects and is therefore safe for the public.

What type of radiation is 5G?

5G uses a specific frequency of radio waves to deliver the internet to mobile devices, just like 4G and 3G before that.

This type of radiation, and for that matter much stronger radiation, is commonly part of our daily lives as explained above. In the UK, existing 4G signals sit between 800MHz and 2.6GHz. Whereas 5G will operate at 700MHz and 3.4GHz to 3.6GHz – the TV remote you use several times a day operates at 5.8GHz.

Visible light is also a type of radiation, for example the light from your TV or a lightbulb. This is much higher than these everyday items but is still classed as non-ionising, and therefore not associated with any adverse health effects. Visible light operates at a frequency 100,000 times higher than 5G.

Dangerous radiation, that can cause harm from prolonged exposure, like UV rays from the sun, X-rays and gamma rays are even higher up the spectrum – at frequencies a quadrillion times higher than 5G.

Ofcom, the telecoms regulator, states:

"All frequencies that are currently and will in future be used for 5G fall within the part of the electromagnetic spectrum that includes radiation which is classed as 'non-ionising'. This means that these radio waves do not carry enough energy to directly damage cells. This is different from 'ionising' radiation, which is generally considered to be hazardous to humans and includes gamma (nuclear) radiation as well as x-rays, which occur at the higher frequency end of the electromagnetic spectrum."

Further Information

For further information, below we have listed additional external sources that you may find helpful in regard to 5G and health.

Ofcom and HM Government 5G health guide:
https://uploads-ssl.webflow.com/5b7ab54b285deca6a63ee27b/5f3fbf86c97b38101210ae5a_5G%20EMF%20Guide.pdf

Public Health England - 5G technologies: radio waves and health:
https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health/5g-technologies-radio-waves-and-health

World Health Organization (WHO) - Radiation: 5G mobile networks and health:
https://www.who.int/news-room/q-a-detail/radiation-5g-mobile-networks-and-health

Which? - Is 5G safe?:
https://www.which.co.uk/news/2020/06/is-5g-safe-everything-you-need-to-know-on-the-5g-powered-future/

BBC - Does 5G post health risks?:
https://www.bbc.co.uk/news/world-europe-48616174

BBC Click - Testing the safety of 5G:
https://www.youtube.com/watch?v=k2t1dUCyE0I&feature=youtu.be

Cancer Research UK - Do mobile phones cause cancer?:
https://www.cancerresearchuk.org/about-cancer/causes-of-cancer/cancer-myths/do-mobile-phones-cause-cancer

#5G CHECK THE FACTS

mobileuk.org

Mobile UK

5G Masts & Health

5G is a generation leap in mobile technology with multiple benefits. However, with new technology, it is understandable that people wish to seek reassurance as to its safety and how it works.

This guide provides an explanation of 5G and the equipment behind it, including the antennae and the masts, to ensure that there is no cause for concern in regard to health.

5G & Radio Waves

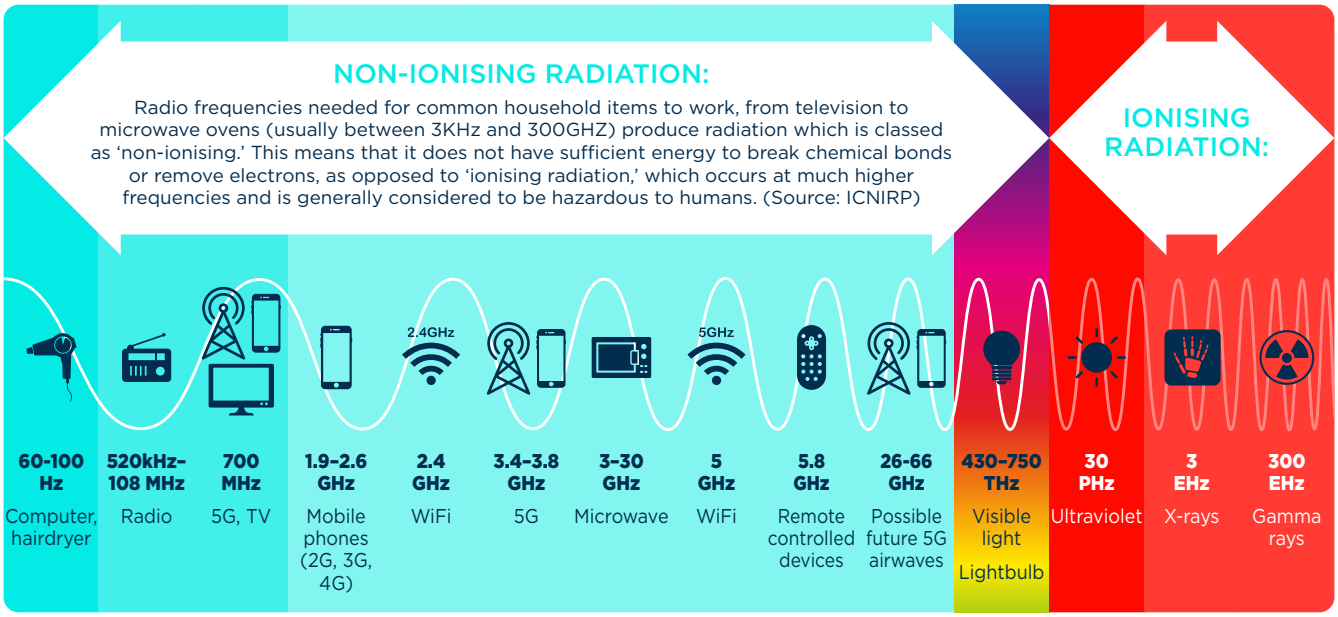
5G is broadcast using radio waves, which are a type of radiation in what is commonly referred to as the 'electromagnetic spectrum.' Sometimes the word 'radiation' scares people, because it is an invisible thing and something many people do not understand, or easily confuse with 'radioactivity.'

Radiation is simply the release of energy, just like the light from the sun or heat from our bodies. Most radiation is considered harmless, or in scientific terms, non-ionising when used within guidelines. It is part of our everyday lives, without us even realising it. Radio waves are used by your TV, radio and remote control.

5G uses a specific frequency of radio waves, just like 4G and before that 3G. The exposure to these radio waves is very low and crucially, many times lower than public safety guidelines dictate.

All frequencies that are currently and will in future be used for 5G fall within the part of the electromagnetic spectrum that includes radiation which is classed as non-ionising. This means that these radio waves do not carry enough energy to directly damage cells. This is different from 'ionising' radiation, which is generally considered to be hazardous to humans and includes gamma (nuclear) radiation as well as x-rays, which occur at the higher frequency end of the electromagnetic spectrum.

- Ofcom



5G Masts & Health

Research into the safety of 5G and mobile phone signals

Research into the safety of radio waves has been conducted for more than 80 years, across the UK and around the world. The strong consensus of scientific opinion and public health agencies, such as the World Health Organisation (WHO), is that no dangers to health have been established from exposure to the low-level radio signals used for mobile communications, including 5G, when used within guidelines.

Strict safety guidelines

All mobile operators must ensure that their radio base stations (also known as masts) are designed and built so that the public are not exposed to radiofrequency fields above the strict safety guidelines which govern and limit public exposure to electromagnetic fields. In fact, base stations operate at low levels, emitting levels of radio waves many times lower than the guidelines.

The International Commission on Non-Ionising Radiation Protection (ICNIRP) is the universally recognised non-governmental organisation that governs the safety levels of electromagnetic field or radio wave exposure and is accepted by the World Health Organisation (WHO). The guidelines, updated in 2020, monitor frequencies up to 300GHz, anything below this threshold is considered to not cause adverse health effects and is therefore safe for the public. 5G radio waves fall well within this category, operating at 700MHz and between 3.4GHz 3.6GHz.

Testing of 5G masts

In fact, the UK's telecoms regulator Ofcom carried out tests at 5G-enabled mobile masts across the country. The highest emission levels (e.g. radiation) recorded at mobile phone masts were consistently well within the strict safety guidelines that monitor radiation levels.

Further Information

As the world depends more and more on mobile connectivity and we are consuming more data, existing networks are becoming congested. 5G has the capacity to handle this and future demand, as it will offer much faster data and upload speeds, allow more devices to access the mobile internet at the same time, and significantly reduce the amount of time it takes to send information from one point to another.

The rollout of 5G is not just about the benefits to each individual mobile phone user but the wider societal benefits of providing connectivity to all, such as the emergency services, local businesses and the provision of council services; the capability of 5G can transform, and ultimately help save lives.

For more information on 5G and health, and to learn about the wider benefits of 5G visit **www.mobileuk.org.uk/5G-and-health**

For further information from external sources regarding 5G and health, the following links may be helpful:

World Health Organization (WHO) - Radiation: 5G mobile networks and health: **https://www.who.int/news-room/q-a-detail/radiation-5g-mobile-networks-and-health**

BBC - Does 5G post health risks?: **https://www.bbc.co.uk/news/world-europe-48616174**

Which? - Is 5G safe?: **https://www.which.co.uk/news/2020/06/is-5g-safe-everything-you-need-to-know-on-the-5g-powered-future/**

BBC Click - Testing the Safety of 5G: **https://www.youtube.com/watch?v=k2t1dUCyE0I&feature=youtu.be**

Cancer Research UK - Do mobile phones cause cancer?: **https://www.cancerresearchuk.org/about-cancer/causes-of-cancer/cancer-myths/do-mobile-phones-cause-cancer**

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Cornerstone Community Information Sheet

Planning for a better network

We sometimes need to upgrade existing sites or develop new sites to ensure network quality. This factsheets explains how we do this within the town and country planning system.

Base stations use radio signals to connect mobile devices and phones to the network, enabling people to send and receive calls, texts, emails, pictures, web, TV and downloads. Without base stations mobiles and devices will not work.

To keep up with growing demand from mobile phone users we need to upgrade existing base stations or build new base stations. An upgrade can be done in a number of ways, often by redeveloping the site to enable an increase in the number of technologies, or increasing the number or height of the antennas.

However, even after these upgrades, in some busy areas the demand for services can still exceed the capability of the local base stations. There are also some parts of the country where we do not have adequate coverage. In these situations we need to look into developing a new base station. This would improve the network coverage, resulting in improved network experiences for local customers.

There are three types of planning permission for mobile phone base stations. The type required by Cornerstone depends on the size of the proposed base station or upgrade as well as where in the UK the development is planned. In England, Wales and Scotland Cornerstone can apply for full planning permission, for prior approval through the General Permitted Development Order (GPDO) or send a notification to the local planning authority. In Northern Ireland Cornerstone can apply for full planning permission or send a notification only.

When full planning permission is required a planning application will be submitted by Cornerstone, this will be published on the local planning authority's website. Cornerstone and the local planning authority will consult with the local community. The level of consultation Cornerstone engage in is dependent on several factors including the history of telecommunications development locally. Consultation is the process by which Cornerstone and the local planning authority seek advice, information and opinions about the proposed development. Cornerstone generally undertakes consultation before submission of any application whilst the local planning authority consults once the application is submitted.

Development within the GPDO category must follow the prior approval procedure. The Council is given the opportunity to say whether it wishes to approve details of the siting and appearance of the proposed installation. These are the only factors that can be considered under an application for prior approval. Cornerstone and the local planning authority will consult with the local community in the same way as with full planning permission.

Cornerstone, Hive 2
1530 Arlington Business Park
Theale, Berkshire, RG7 4SA

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Written notifications are for minor developments only. Cornerstone will notify the local planning authority in writing of the intention to install telecommunications apparatus. The development however, is permitted in advance by law. Cornerstone does not need to produce an application for this type of development. Consultation, both by Cornerstone and the local planning authority, is generally limited due to the minor nature of these works.

For further information please contact:

Community, Cornerstone

The Hive 2, 1530 Arlington Business Park, Theale, Berks, RG7 4SA

Tel. 01753 564306, community@ctil.co.uk

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20/02/2023

Our ref: CTIL_20571520

8 February 2022

Sir Robert Goodwill MP
House of Commons
London
SW1A 0AA

Clarke Telecom Ltd
Unit E
Madison Place
Northampton Road
Manchester
M40 5AG

Dear Sir Robert,

PROPOSED BASE STATION INSTALLATION AT CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497

PRE-PLANNING APPLICATION CONSULTATION FOR A MOBILE PHONE BASE STATION INSTALLATION AT **CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497**

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

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

As a result, we are consulting with communities in line with Best Practice principles where planning applications for new telecommunications installations are required.

This letter is sent to you in the pre-planning application consultation phase of the development for a new mobile phone base station site and is simply intended to keep you informed and advised of the proposed development in your area prior to any planning application being submitted. However, if you do wish to submit comments or have been contacted by your constituents in relation to this matter and wish to send us comments on their behalf, please feel free to do so via the following address:

Community Consultation & EMF Enquiries, Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Email: community@cornerstone.network

What follows is a summary of the proposal and some further information that might be of use.

Summary of the proposal

Cornerstone is in the process of progressing suitable sites in the Staithes area for radio base stations to maintain and improve existing levels of 4G service provision.

A number of options have been assessed in respect of the site search process, but we consider the best option for the new radio base station to be the installation of: a 15m Elara streetpole with 3no Shrouded Antennas; a New Cabinet; a New Meter Cabinet on existing concrete hard standing, and a TSC Cabinet on existing concrete hard standing, with ancillary development thereto at **GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497.** This is because Cornerstone is limited in siting options as there is a requirement to provide equivalent replacement coverage and capacity for this area of Staithes. The replacement of an existing site means that it has to be located as close as possible to the existing installation in order to maintain the provision of equivalent coverage and capacity to the surrounding local area. This is the nearest suitable location that Cornerstone is able to position their replacement apparatus.

The proposed height at 15m is essential in order to provide equivalent replacement coverage to the target coverage area.

The column is a simple, functional, vertical structure necessary to provide replacement and new service provision to Staithes and the surrounding area. There are other vertical structures in the streetscene which will help it assimilate in to the local environ. The column is proposed to be finished in a grey colour but can be coloured any other colour that the LPA consider appropriate.

The cabinets are designed to appear like other statutory undertakers equipment cabinets. They are small for telecommunications apparatus and are proposed to be coloured green to assimilate with other equipment cabinets commonly found in urban environments. The cabinets can be installed under the operators permitted development rights, but have been included on the plans and in the description in order to remain fully transparent.

The other site options that were considered and then discounted are as follows:

- **Existing Structure - Arqiva ID 3056, Staithes, TS13 5AA, NGR E: 478100 N: 518960**
  The radio planner has discounted this site is right on the coastal edge, therefore only one sector out of three would be pointing in the correct direction of Staithes target area. It is some 700m from the main target area and therefore the mast performance would see minimal benefit, and high redevelopment costs of the mast.
- **Greenfield - Shared Access, Recreation Ground off Seaton Crescent, Staithes, TS13 5AE, NGR E: 478197 N: 518261**
  Planning permission was granted for a mast in this location some years ago. However, there was intense local opposition presented during the planning application process, and a legal challenge was sought to prevent the Operator from developing the mast and therefore this option was not pursued any further.

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- **Greenfield - Seaton Hall Farm, Whitby Road, Staithes, TS13 5AT, NGR E: 478100 N: 517834**
  This location is too far south of the central Staithes target area and therefore would not provide sufficient coverage.
- **Greenfield - Land of Cliff Road, Cliff Road, Staithes, TS13 5AE, NGR E: 478259 N: 518382**
  We entered discussions with the Site Provider for a mast installation within this locality and following further consultation, the site provider decided not to proceed due to concerns of the local residents' opposition whose residential properties face directly on to his industrial unit from Cliff Road.
- **Greenfield - Red House Farm, Cowbar Lane, Staithes, TS13 4UN, NGR E: 476867 N: 518565**
  This location is too far East of the central Staithes target area and therefore would not provide sufficient coverage.
- **Greenfield - Land adjacent at Co-Op convenience store, Hinderwell Lane, Staithes, TS13 5AL, NGR E: 478299 N: 578042**
  This convenience store has very limited parking and loading areas. A mast in this location would significantly disrupt the day to day operation of the store. The site is also adjacent to residential and Seton Community Primary School and it is thought that there would be considerable objections to siting a mast in this location in comparison to the chosen subject site.
- **Rooftop - Our Lady Star of the Sea Catholic Church, Staithes Lane, Staithes, TS13 5AG, NGR E: 478049 N: 518309**
  This church building has a low pitched roof which would not present a suitable design for attaching antennas. Face mounted antennas on the taller bell tower would still present technical difficulties due to the height of the adjacent residential properties along Staithes Lane which is the target direction and would block the signal.

In line with Best Practice principles we have shared these details with the ward councillors for Danby & Mulgrave district, the Whitby/Mayfield cum Mulgrave County Councillor, Hinderwell Parish Council, and planning officers at North York Moors National Park.

ICNIRP Compliance
All Cornerstone installations are designed to be fully compliant with the public exposure guidelines established by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). These guidelines have the support of UK Government, the European Union and they also have the formal backing of the World Health Organisation. A certificate of ICNIRP compliance will be included within the planning submission.

Radio Technology and Health
Useful information sources on this include:

Code of Best Practice on Mobile Network Development
http://www.mobileuk.org/cms-assets/documents/259876-147086.code-of-best-practice-2016-edition-pub

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National Planning Policy Framework
www.communities.gov.uk

World Health Organisation Electromagnetic Fields
www.who.int/peh-emf/en

International Commission on Non-Ionising Radiation Protection
www.icnirp.de

I trust all is clear from the enclosed but if you have further questions on this or any other matter concerning Cornerstone please do not hesitate to contact us through Community Consultation & EMF Enquiries within 14 days from the date of this letter.

Should you have any queries regarding this matter, please do not hesitate to contact me (quoting cell number CTIL_20571520)

Yours faithfully,

Matthew Hubbard | Acquisition Surveyor
Clarke Telecom

(for and on behalf of Cornerstone)

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Cornerstone Community Information Sheet

5G Services

As 5G technology is deployed across the country more and more services will become available and our lifestyles, economy and even the way we commute will be transformed. Additional base stations and upgrades to existing ones will be needed to meet this demand and improve the quality of service.

Practical uses of 5G

Two areas where these benefits are becoming evident are education and health,

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 care is undergoing a rapid transformation, patients across the country are now becoming accustomed to relying on remote healthcare services such as 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. 5G's fast and secure services will be fundamental in scaling the patient benefits of remote healthcare and keeping medical records protected and private. 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.

Health concerns

Various international assessments have concluded that below the International Commission on Non-Ionizing Radiation (ICNIRP) Guidelines there is no evidence of adverse health effects for wireless networks (including 5G).

In January 2019 the Finnish Radiation and Nuclear Safety Authority (STUK) concluded that:

In the light of current information, exposure to radio frequency radiation from base stations will not rise to a significant level with the introduction of the 5G network. From the point of view of exposure to radio frequency radiation, the new base stations do not differ significantly from the base stations of existing mobile communication technologies (2G, 3G, 4G).' https://www.stuk.fi/aiheet/matkapuhelimet-ja-tukiasemat/matkapuhelinverkko/5g-verkon-sateilyturvallisuus

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In the UK Ofcom, the regulator for the communications services, undertook measurements of electromagnetic fields (EMFs) around 5G base stations. In 2020 they noted: "In all cases, the measured EMF levels from 5G-enabled mobile phone base stations are at small fractions of the levels identified in the ICNIRP Guidelines" https://www.ofcom.org.uk/__data/assets/pdf_file/0015/190005/emf-test-summary.pdf

In Norway the Norwegian Radiation and Nuclear Safety Authority (DSA), noted:

'The overall research shows that the radiation from wireless technology is not hazardous to health, as long as the levels are below the recommended limit values. This is the prevailing view among researchers in many countries today, and it is supported by the EU Scientific Committee. We have used cell phones and radio transmitters for decades and much research has been done on how this affects our health. Risk factors of importance to public health have not been found. With the knowledge we have today, there is no need to worry that 5G is hazardous to health.' January 2019 https://www.dsa.no/temaartikler/94565/5g-teknologi-og-straaling

In the light of concerns about 5G signals from some members of the public the UK Health Security Agency (UKHSA) commented in 2019:

"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 consequences for public health" https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health/5g-technologies-radio-waves-and-health.

In 2020 the ICNIRP updated their safety guidelines to include further restrictions for frequencies used for 5G services. ICNIRP Chairman, Dr Eric van Rongen stated 'the new guidelines provide better and more detailed exposure guidance in particular for the higher frequency range, above 6 GHz, which is of importance to 5G and future technologies using these higher frequencies. The most important thing for people to remember is that 5G technologies will not be able to cause harm when these new guidelines are adhered to.' https://www.icnirp.org/cms/upload/presentations/ICNIRP_Media_Release_110320.pdf.

In 2020 the World Health Organisation commented on 5G stating: "Provided that the overall exposure remains below international guidelines, no consequences for public health are anticipated" https://www.who.int/news-room/q-a-detail/5g-mobile-networks-and-health.

In common with all mobile phone base stations, Cornerstone sites with 5G technology will be checked and certified for ICNIRP compliance.

For further information please contact

Community, Cornerstone

The Hive 2, 1530 Arlington Business Park, Theale, Berks, RG7 4SA

Tel. 01753 564306, community@ctil.co.uk

Our ref: CTIL_20571520

NYMNPA
20/02/2023

8 February 2022

Cllr David Chance
c/o Democratic Services
County Hall
Northallerton
DL7 8AD

Clarke Telecom Ltd
Unit E
Madison Place
Northampton Road
Manchester
M40 5AG

Dear Cllr Chance,

PROPOSED BASE STATION INSTALLATION AT CTIL_20571520, GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497

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Registered Address:
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Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

- **CTIL_20571520, CORNERSTONE, GATEWAY CENTRE GARAGES**

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A number of options have been assessed in respect of the site search process and the preferred Cornerstone option is as follows:

- **GATEWAY CENTRE GARAGES, WHITEGATE CLOSE, STAITHES, NORTH YORKSHIRE, TS13 5BB, NGR E: 478141 N: 518497**

The proposed works comprise the installation of: a 15m Elara streetpole with 3no Shrouded Antennas; a New Cabinet; a New Meter Cabinet on existing concrete hard standing, and a TSC Cabinet on existing concrete hard standing, with ancillary development thereto.

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The column is a simple, functional, vertical structure necessary to provide replacement and new service provision to Staithes and the surrounding area. There are other vertical structures in the streetscene which will help it assimilate in to the local environ. The column is proposed to be finished in a grey colour but can be coloured any other colour that the LPA consider appropriate.

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We have considered alternative site options and discounted as follows:

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The Local Planning Authority mast register and our records of other potential sites have already been reviewed, the policies in the Development Plan have been taken into account and the planning history of the site has been examined.

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Cllr Clive Pearson
Hill House Farm
Lealholm
Whitby
North Yorkshire
YO21 2QS

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Manchester
M40 5AG

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Cllr Marion Watson
31 Seaton Crescent
Staithes
Saltburn
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Clarke Telecom Ltd
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5 High Street
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one sector out of three would be pointing in the correct direction of Staithes target area. It is some 700m from the main target area and therefore the mast performance would see minimal benefit, and high redevelopment costs of the mast.

- **Greenfield - Shared Access, Recreation Ground off Seaton Crescent, Staithes, TS13 5AE, NGR E: 478197 N: 518261**
  Planning permission was granted for a mast in this location some years ago. However, there was intense local opposition presented during the planning application process, and a legal challenge was sought to prevent the Operator from developing the mast and therefore this option was not pursued any further.
- **Greenfield - Seaton Hall Farm, Whitby Road, Staithes, TS13 5AT, NGR E: 478100 N: 517834**
  This location is too far south of the central Staithes target area and therefore would not provide sufficient coverage.
- **Greenfield - Land of Cliff Road, Cliff Road, Staithes, TS13 5AE, NGR E: 478259 N: 518382**
  We entered discussions with the Site Provider for a mast installation within this locality and following further consultation, the site provider decided not to proceed due to concerns of the local residents' opposition whose residential properties face directly on to his industrial unit from Cliff Road.
- **Greenfield - Red House Farm, Cowbar Lane, Staithes, TS13 4UN, NGR E: 476867 N: 518565**
  This location is too far East of the central Staithes target area and therefore would not provide sufficient coverage.
- **Greenfield - Land adjacent at Co-Op convenience store, Hinderwell Lane, Staithes, TS13 5AL, NGR E: 478299 N: 578042**
  This convenience store has very limited parking and loading areas. A mast in this location would significantly disrupt the day to day operation of the store. The site is also adjacent to residential and Seton Community Primary School and it is thought that there would be considerable objections to siting a mast in this location in comparison to the chosen subject site.
- **Rooftop - Our Lady Star of the Sea Catholic Church, Staithes Lane, Staithes, TS13 5AG, NGR E: 478049 N: 518309**
  This church building has a low pitched roof which would not present a suitable design for attaching antennas. Face mounted antennas on the taller bell tower would still present technical difficulties due to the height of the adjacent residential properties along Staithes Lane which is the target direction and would block the signal.

The Local Planning Authority mast register and our records of other potential sites have already been reviewed, the policies in the Development Plan have been taken into account and the planning history of the site has been examined.

All Cornerstone installations are designed to be fully compliant with the public exposure guidelines established by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). These guidelines have the support of UK Government, the European Union and they also have the formal backing of the World Health Organisation. A certificate of ICNIRP compliance will be included within the planning submission.

Registered Address:
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Hive 2, 1530 Arlington Business Park, Theale, Berkshire, RG7 4SA.
Registered in England & Wales No. 08087551.
VAT No. GB142 8555 06

Cornerstone, Hive 2,
1530 Arlington Business Park,
Theale, Berkshire, RG7 4SA

In order to give you time to send your comments or request further information, we commit to allow at least 14 days before an application is submitted to the Local Planning Authority. This 14-day period starts from the date at the top of this letter.

We would also be grateful if you could please advise of any local stakeholders or groups that might like to make comments. For your information pre-consultation letters and a set of plans have been sent to the ward councillors for Danby & Mulgrave district, the Whitby/Mayfield cum Mulgrave County Councillor, Hinderwell Parish Council, local MP Sir Robert Goodwill, and planning officers at North York Moors National Park.

We look forward to receiving any comments you may have on the proposal.

Should you have any queries regarding this matter, please do not hesitate to contact me (quoting cell number CTIL_20571520)

Yours faithfully,

Matthew Hubbard | Acquisition Surveyor
Clarke Telecom

(for and on behalf of Cornerstone)

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Department for Digital, Culture, Media & Sport

INT2019/11842/DC
November 2019

Local Authority Chief Executives

5G - The Next Mobile Generation

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.

A recent report estimated that local authorities will share collectively an annual £2.35 billion of efficiency savings, from reduced social care costs for the elderly through 5G monitoring, to savings through smarter street lighting.[1] We want the UK to take early advantage of these benefits, so it is good news that all of the four main mobile network operators - EE, O2, Three and Vodafone - have started to deploy 5G networks. We expect 5G to go live in up to 50 cities and towns by the end of 2020. In order to support the deployment of 5G and extend mobile coverage, particularly in rural areas, the Government recently published a consultation on the principle of proposed reforms to permitted development rights, which closes on 4 November.

The National Planning Policy Framework ("the Framework") for England[2] supports the expansion of high quality communications, including next generation mobile technology, such as 5G. The Framework states that planning applications for mobile base stations should include a statement of compliance with international guidelines on limiting exposure to electromagnetic fields known as the International Commission on Non-Ionizing Radiation Protection guidelines ("the ICNIRP guidelines"[3]). It also states: "Local planning authorities must determine applications on planning grounds only. They should not seek to prevent competition between different operators, question the need for an electronic communications system, or set health safeguards different from the International Commission guidelines for public exposure."

Public Health England ("PHE") has recently updated its advice in respect of 5G and 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 consequences for public health."[4] I understand that PHE colleagues regularly provide

[1] "The value of 5G for cities and communities", Juniper Research and O2 https://d10wc7q7re41fz.cloudfront.net/wp-content/uploads/2018/03/Smart-Cities-Report.pdf
[2] https://www.gov.uk/government/publications/national-planning-policy-framework--2
[3] https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf
[4] https://www.gov.uk/government/publications/5g-technologies-radio-waves-and-health

advice to your public health officers across a range of health topics.

In compliance with PHE advice, mobile network operators have committed to follow the ICNIRP guidelines. ICNIRP is an independent organisation which is formally recognised by the World Health Organisation. It issues guidelines on human exposure to electro-magnetic fields, based upon the consensus view of a large amount of research carried out over many years. This includes the frequencies used by 5G and all other mobile / wireless technologies. Over the last two decades there have been over 100 expert reports on EMF and health published internationally[5] with well over 3,000 studies[6] informing these reviews and the existing scientific exposure guidelines.

Ofcom will carry out audits of mobile base stations on an ongoing basis to ensure that ICNIRP guidelines are not exceeded and publish the results of these audits on its website.

The Department for Digital, Culture, Media and Sport (DCMS) is working with colleagues in Ofcom, PHE and the network operators to provide some workshops for the benefit of council officials to help them understand the technology and the science relating to these health concerns. DCMS officials are also working with both the Local Government Association and the Association of Directors of Environment, Economy, Planning and Transport to support local authorities in this regard and would welcome any further feedback through those channels or directly.

If you or any of your colleagues have any questions, please contact DCMS at enquiries@culture.gov.uk.

Matt Warman MP
Parliamentary Under Secretary of State for
Digital and Broadband

[5] https://www.gsma.com/publicpolicy/consumer-affairs/emf-and-health/expert-reports
[6] https://www.emf-portal.org/en

Department for Digital, Culture Media & Sport

NYMNPA
20/02/2023

Matt Warman MP
Minister for Digital Infrastructure
4th Floor
100 Parliament Street
London SW1A 2BQ

www.gov.uk/dcms
enquiries@dcms.gov.uk

Local Authority
Chief Executives - England Only

INT2021/09526/DC
24 May 2021

Dear Chief Executives

Mobile Connectivity and 5G infrastructure - Planning

Digital connectivity is – now, more than ever – vital to enable people to stay connected and businesses to grow. The demand for mobile data is increasing rapidly, and the COVID-19 pandemic has highlighted how important it is that we all have access to reliable, high quality mobile connectivity.

The Government is committed to extending mobile network coverage across the UK and providing uninterrupted mobile signal on all major roads, and our ambition is for the majority of the population to have access to a 5G signal by 2027. Last year we agreed a £1 billion Shared Rural Network deal with the UK's mobile network operators to extend 4G mobile geographical coverage to 95% of the UK by 2025.

The Government is also investing £200 million in a programme of 5G testbeds and trials to encourage investment in 5G so that communities and businesses can benefit from this new technology. The increased capacity, reliability and functionality offered by 5G is opening-up the potential for new, innovative services for individuals and increased productivity for industry.

The planning system plays a key role in delivering the infrastructure that we need as households and businesses become increasingly reliant on mobile connectivity. Following our consultation on the principle of reforms to permitted development rights to support 5G deployment and extend mobile coverage[1], we recently published a technical consultation on the details of our proposed changes.[2]

[1] Proposed reforms to permitted development rights to support the deployment of 5G and extend mobile coverage

[2] Changes to permitted development rights for electronic communications infrastructure: technical consultation

The National Planning Policy Framework ("the Framework") for England states that planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology, such as 5G.

The Framework is clear that decisions on applications should be made as quickly as possible, and within statutory timescales unless a longer period has been agreed by the applicant in writing. In relation to electronic communications development, it also states that local planning authorities must determine applications on planning grounds only and they should not seek to prevent competition between different operators, or question the need for an electronic communications system. As set out in planning practice guidance, it is in the public interest for local planning authorities to have effective delegation arrangements in place to ensure that decisions on planning applications that raise no significant planning issues are made quickly and that resources are appropriately concentrated on the applications of greatest significance to the local area.[3]

We know that some constituents have expressed concerns about the potential harmful effects on human health of 5G. Public Health England (PHE), the Government's independent advisers on matters of public health, is clear that there is no credible evidence of a negative impact of mobile technology, including 5G on people's health. Central to PHE's advice are the guidelines published by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), which is formally recognised by the World Health Organisation.[4]

The National Planning Policy Framework requires mobile infrastructure providers to self-certify their compliance with the ICNIRP guidelines. It also sets out that local planning authorities should not set health safeguards different from the International Commission guidelines for public exposure.

The Government has developed guidance to help councils and local politicians deal with queries from the public, counter misinformation and explain the facts about 5G.[5] This will help support your role in facilitating the rollout of next-generation infrastructure, and prevent misleading claims becoming a barrier to rollout. As part of the support the Government is providing to local authorities on mobile infrastructure and the Town and Country Planning Regulations, we will be arranging a webinar on this topic for local authorities, and would encourage your planning teams to attend. Please contact the email address below for further information.

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[3] Planning Practice Guidance - Determining a planning application

[4] A summary of Public Health England's advice on radio waves can be accessed at: https://www.gov.uk/government/collections/electromagnetic-fields#radio-waves; Ofcom takes frequent measurements of EMF levels near mobile base stations to ensure compliance with international guidelines. These measurements can be found on Ofcom's website at: https://www.ofcom.org.uk/spectrum/information/mobile-operational-enquiries/mobile-base-station-audits.

[5] 5G mobile technology: a guide; Mobile UK, the industry representative body, has also published a Local Authority Toolkit for councillors and officers to help explain how 5G technology works.

If you or any of your colleagues have any questions, please contact the Department for Digital, Culture, Media and Sport at localconnectivity@dcms.gov.uk.

Yours sincerely,

Matt Warman MP
Minister for Digital Infrastructure

Cc: Local Authority Chief Planning Officer