

Our ref: CTIL 241834 VF 14428



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24<sup>th</sup> July 2017

Dear Sir,

**RE: PROPOSED BASE STATION AT LEAGRAM HALL, LEAGRAM PARK, CHIPPING, PRESTON, LANCASHIRE PR3 2RD**

This is a full planning application, and notice in accordance with the electronic communications code under the Telecommunications Act 1984 Schedule 2 as amended by the Communications Act 2003, for permission for the development of:

**Installation of a 21m high mobile telecommunications mast and associated equipment cabinets located in field to the west of Leagram Hall.**

at

Leagram Hall  
Leagram Park  
Chipping  
Preston  
Lancashire  
R3 2RD

E 362202 N 444006

Vodafone Limited, has entered into an agreement with Telefónica UK Limited, commonly known as O2, pursuant to which the two companies plan to jointly operate and manage a single network grid across the UK. These arrangements will be overseen by Cornerstone Telecommunications Infrastructure Ltd (CTIL) which is a joint venture company owned by Vodafone Limited and Telefónica UK Limited.

This agreement allows both organisations to pool their basic network infrastructure, while running two, independent, nationwide networks. It also enables both organisations to maximise opportunities to consolidate the number of base stations and significantly reduce the environmental impact of network development.

This application is submitted for and on behalf of Cornerstone Telecommunications Infrastructure Limited (CTIL) and Vodafone Limited.

The full planning application comprises:

- 1APP full planning application forms and applicable certificates;
- Drawings Ref. No's: 100, 101, 201 and 301 with application site red edged;
- A planning application fee in the sum of £385.00 made payable to Ribble Valley Borough Council;



- Site Specific Supplementary Information;
- Design & Access Statement;
- General Background Information for Telecommunications Development;
- Radio Planning and Propagation document;
- Health and Mobile Phone Base Stations document;
- ICNIRP declaration and clarification statement.

This application has been prepared in accordance with the Code of Best Practice on Mobile Network Development (July 2013).

The enclosed application is identified as the most suitable site option and design that balances operational need with local planning policies and national planning policy guidance.

Furthermore we would like to assist the council and would like 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 additional information in relation to this application.

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

**Hifzul Moosa**  
Mono Consultants Limited

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For and on behalf of Cornerstone Telecommunications Infrastructure Limited (CTIL) and Vodafone Limited as a duly authorised agent

**SUPPLEMENTARY INFORMATION**

1. Site Details

Site Name:		Site Address:	Leagram Hall Leagram Park Chipping Preston Lancashire R3 2RD
National Grid Reference:	E 362202 N 444006		
Site Ref Number:	CTIL 241834 VF 14428	Site Type: <sup>1</sup>	Macro

2. Pre Application Check List

**Site Selection (for New Sites only)**

(Would not generally apply to upgrades/alterations to existing sites)

Was an LPA mast register used to check for suitable sites by the operator or the LPA?	Yes	
If no explain why:		
Was the industry site database checked for suitable sites by the operator:	Yes	
If no explain why:		

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

Date of written offer of pre-application consultation:	19 <sup>th</sup> May 2017
Was there pre-application contact:	No
Date of pre-application contact:	
Name of contact:	
Summary of outcome/Main issues raised:	
<p>A pre-application consultation email was sent to the LPA on the 19<sup>th</sup> May 2017 which outlined the need for a new base station in the area, listed sites considered but discounted and included site-specific drawings of the draft proposal.</p> <p>To date no comments have been received, therefore it was considered appropriate to progress this application and seek the LPA's formal determination.</p>	

**Ten Commitments Consultation**

Rating of Site under Traffic Light Model:	Amber
Outline Consultation carried out:	
<p>A pre-application consultation email was sent to the Ward Councillor Simon Hore and Chipping Parish Council on the 19<sup>th</sup> May 2017 which outlined the need for a new base station in the area, listed sites considered but discounted and included site-specific drawings of the draft proposal.</p> <p>On advice of Councillor Hore, a further pre-application consultation email was sent to Bowland with Leagram Parish Council and the Trustees of Chipping and District Memorial Hall Charity on the 28<sup>th</sup> May 2017 which outlined the need for a new base station in the area, listed sites considered but discounted and included site-specific drawings of the draft proposal.</p>	

<sup>1</sup> Macro or Micro

Summary of outcome/Main issues raised:

Councillor Hore responded by saying that 'overall it will be very useful to have additional mobile providers in the village, the issue will revolve around the visual impact.'

Although this proposed application Chipping Parish Councils area, the Councillors looked at the plans and decided this mast is not appropriate in this designated area of outstanding natural beauty.

The Bowland with Leagram Parish Council confirmed that they will be meeting to discuss the application when it is received and we will respond according to the wishes of the householders in Leagram at that time.

### School/College

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

No school or college were considered to have a direct of functional relationship with the site.

Outline of consultation carried out with school/college (*include evidence of consultation*):

n/a

Summary of outcome/Main issues raised:

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 Full Planning application		

### Developer's Notice

Copy of Developer's Notice enclosed?		No
Date served:		

### 3. Proposed Development

The proposed site:

The proposed site is found in a field located to the west of Leagram Hall, Leagram Park. For reference purposes only please see below a photograph of the site: -



Enclose map showing the cell centre and adjoining cells:
n/a

<b>Type of Structure</b>	
Description:	
<p>The proposal involves the installation of a 21 metre dual user lattice mast which is constructed of a hatched framework of steel rods. Its cross-section is triangular in which the new mast will accommodate 3 no. antenna on a support head frame. There will also be 2 no. 600mm transmission dishes located beneath the new antennas and.</p> <p>At ground level and ancillary to the mast itself, the proposal includes the installation of 2 no equipment cabinets and 1 no meter cabinet. The dimensions of the proposed equipment cabinets are detailed below. The mast and cabinets will be set within a fenced compound constructed of 2 metre high chainlink fencing and measuring 7m metres by 7 metres.</p>	
Overall Height:	21 metres
Equipment Housing:	3900AL Cabinet
Length:	770 mm
Width:	750 mm
Height:	1925 mm
Equipment Housing:	TSC Cabinet
Length:	600 mm
Width:	600 mm
Height:	1415 mm
Equipment Housing:	Meter Cabinet
Length:	655 mm
Width:	260 mm
Height:	1015 mm
Tower/mast etc – type of material and external colour:	Galvanised steel / untreated.
Equipment housing – type of material and external colour:	Galvanised steel - painted grey (RAL 7035)

<b>Reasons for choice of design:</b>
<p>In a pre-application responses from the ward councillor and parish council they raised comments with regards the design. Such matters have been taken on board and when finalising the scheme in which the appearance of the scheme is justified as below.</p> <p>Technological advances have enabled a mast share structure that breaks the barriers of conventional schemes which in the past would have typically involved an even taller mast height than proposed. This is because as individual operators each have varying technical requirements and there is normally a need for vertical separation between each set of operator's antennas. In this instance the CTIL consolidation agreement between Vodafone and Telefónica has allowed both organisations to pool their basic network infrastructure, while still running two, independent, nationwide networks. In this case the environmental benefits have meant the number of antennas and the overall height of the mast has been kept to minimum.</p> <p>The proposed mast is at a height of 21m metre so as not to compromise on the centre line of the antennas when taking into account the extent of surrounding obstacles that they need to clear, coupled with the extent of the target area in relation to neighbouring sites in the single grid network. In this regard the lowest possible height has been progressed here so as to present the optimum angle of projection that allows the antennas to see the target audience as much as possible and so enable a reliable signal to propagate across the target area. Taking this into account and to justify the height yet further, it should be recognised that should the applicant pursue a structure any lower, then this would have a direct impact on the proposed base station performance making it an unsuitable option for the operators to invest in. Its footprint of coverage would be greatly reduced and it may result in the need for another new base station in the area, rather than as proposed just one, so preventing the proliferation of telecommunication in the area. In this respect the height and design of the proposal presents the optimum technical solution and negates the unnecessary need for additional base stations to serve the target audience.</p> <p>It is highlighted that the antennas in this instance have dual user capabilities and will provide multiple technology coverage to the intended area. Taking this into account the number of proposed antennas, the spacing between each antenna and the size of the mast's head frame have been kept to its minimum. The dimensions of the proposed mast are the thinnest available to the applicant so as to be able to structurally support the technically</p>

preferred antennas, dishes and feeder cables. When comparing the design of the existing and proposed structures, it is considered that the change in appearance would not be untoward.

The proposed structure in its entirety will maintain an untreated galvanised steel finish in which it is considered that this treatment will help assimilate the installation into the surrounding scene. In light of the above and in choosing this particular design, it is considered that the scheme takes a form which is sympathetic within the context of its immediate environment.

In this proposal there are 2 no 600 mm diameter transmission dishes which are attached to the mast at a height of 17.5metres. Dish antennas operate on a line of sight basis and transmit and receive highly focussed low powered radio waves that travel in a straight line direction. Dish antennas usually have the function of linking a base station, sometimes through a series of dish links, to a base station site elsewhere in a telecommunications network in order for a mobile user to hand over to the adjacent site when on the move. In this respect dishes can vary in terms of their diameter size, subject to the distance between base station sites and the data it seeks to send. In this respect dishes need to be positioned at specific heights and in directions above the immediate natural clutter so as to have a direct line of sight to the neighbouring dish site it aims to link with. Therefore if a direct line of sight between base station sites is compromised by an obstruction placed in their path this means the link goes down. Therefore taking into account the technical need for a dish link solution when balances against the overall form of the mast it is consider that this element of the scheme's design can be justified.

Albeit the proposed base station has the functionality to provide Vodafone and Telefónica the required coverage and capacity, it should be acknowledged that both operators are not visually distinguishable as separate entities. In this respect taking into account the form and appearance of proposal as a whole, to the naked eye this mast share scheme gives the illusion of a single operator installation. Also as the proposed telecommunication development will provide multiple technology platforms i.e. 2G, 3G and 4G for both operators, thus catering for the areas connectivity demands. As well as being a form of mast sharing in itself, the proposed ground based scheme has been designed with inbuilt sustainable qualities in which it could be shared in the future if deemed technically viable by other operators as there is space on the mast and within its compound for added apparatus.

The proposed equipment cabinets are less than 2.5m<sup>3</sup> each and will be located alongside the new mast. It should be recognised that seen on their own merits as single developments they do not normally require a formal determination of the Council and they are permitted development. The proposed equipment cabinets have an appearance similar to existing cabinets found in a street scene. The proposed ground based development supports multiple technologies for both operators and also has provision for a power source. In this regard the number of proposed equipment cabinets has been kept to a minimum when balanced against the technical requirements of this site-specific base station. The sizes of the cabinets are justified as each needs to be large enough inside to ensure a satisfactory airflow around the equipment. This also allows adequate cooling and in turn minimises the noise generated. Furthermore given their outdoor location, they have been designed to be weather proof from rain, snow or freezing temperatures. The proposed ground based development will be painted grey hence helping it to blend into its environment and reducing its prominence within its immediate environment. In this respect it is considered that the design of the ancillary development will not have a detrimental impact upon the visual amenity of the area.

Technical Information

<p>International Commission on Non-Ionizing Radiation Protection Declaration attached</p> <p>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.</p> <p>In order to minimise interference within its own network and with other radio networks, Vodafone Limited operates its network in such a way the radio frequency power outputs are kept to the lowest levels commensurate with effective service provision. As part of Vodafone Limited's network, the radio base station that is the subject of this application will be configured to operate in this way.</p>	<p><b><u>Yes</u></b></p>	
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<p>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.</p>		
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<p>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.</p>		
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#### 4. Technical Justification

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

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

It was announced in mid 2009 that the Vodafone Group were to form a strategic partnership with the Telefónica Group to share their telecommunication infrastructure assets across Europe. In the UK this project was called 'Cornerstone' as saw both Vodafone Ltd and Telefónica UK Ltd, commonly known as O2 working closely together to pool their resources and infrastructure making substantial improvements to their 2G and 3G networks. This initial agreement between the two aforementioned operators broke barriers in addressing the historical limitations encountered in conventional mast share schemes. It allowed both organisations to consolidate a number of base stations through, where appropriate, sharing each others sites and in turn significantly reducing the environmental impact of their network deployment. Although infrastructure development formed part of Cornerstone, Vodafone and Telefónica have continued to actively compete in the telecommunications market place to retain and win mobile phone customers and both operators differentiate themselves on the quality of their customer experience. Although Vodafone and Telefónica share their infrastructure, they operate entirely independently as businesses with their own separate strategies and networks. Accordingly the key focus as part of Cornerstone was to build new sites which had the capabilities to provide coverage for both operators.

In February 2013, the Office of Communications, commonly known as Ofcom, who are the independent regulator and competition authority for the UK's communications industries announced the winners of the 4G mobile spectrum auction. 4G is the fourth generation of mobile phone technology and follows on from 2G and 3G. 2G technologies is predominately used for making calls and sending text messages, whilst 3G enables access to internet services more effectively through a mobile device. 4G services are intended to improve mobile broadband services into the future, enabling greater capacities of data to be shared via mobile technologies with speeds likely to be nearer those currently experienced via home broadband. Both Vodafone and Telefónica were awarded 4G licenses, hence they have entered into a new agreement in which the two companies now plan to jointly operate and manage a single network grid across the UK. This initiative strengthens the network infrastructure partnership between the two companies, previously rolled out as part of Cornerstone. This next phase of consolidation will primarily involve upgrading existing base stations to accommodate 4G technology and will be facilitated by Cornerstone Telecommunications Infrastructure Limited (CTIL), a newly formed joint venture company owned equally by Vodafone and Telefónica. The single grid infrastructure will enable both organisations to pool and consolidate their respective networks yet further while running two, independent, nationwide networks.

The rollout of multiple technology networks to support the growth of mobile devices has had an impact on more conventional ways of communications. Latest figures from the regulator, Ofcom, show that consumers are spending less time using their landlines in the year to June 2014, a reduction of 12.7% in one year alone. In this respect it is thought that fixed line call volumes are declining as people are using mobiles speak to each other. Also the way people communicate on mobile devices is changing as they have instant access to video calls and may choose to utilise the in-built capabilities of various messenger and social media applications.

In December 2014, Ofcom published their finding on the status of electronic communications networks and services in the UK. The Infrastructure Report 2014 acknowledges that robust telecommunication networks present vital enablers towards supporting a vast amount of economic and social activity, by both general consumers and businesses. The report provides an overview of the state of telecommunications infrastructures in the UK in terms of its coverage, capacity and reliability. In Ofcom's Infrastructure Report 2014 it suggests that fixed broadband connections are now almost universally available throughout the UK, however internet and downloads speeds can

be patchy. However it is said that 18% of households do not have any home fixed line internet access at all and with about 16% of households already having no voice landline, it is apparent that mobile connectivity is a society choice that has importance.

According to Ofcom in November 2014, UK 4G speeds were more than twice as fast as 3G. However in a report of the same year compiled by OpenSignal, who studies mobile phone signal strengths, it was suggested that 4G speeds had almost halved in the past year as more people sign up to such services. In this respect, as well as providing coverage representation a base station will also provide much needed capacity to a network. Added capacity will create a reliable customers experience by reducing not-spots, call dropping and provide a more consistent mobile internet connectivity which people expect from their mobile devices whenever and wherever they are using them.

A retained base station site is required in this location in order to maintain existing network coverage and capacity, as well as catering for added multiple technologies, most notably 4G for both Vodafone and Telefónica, commonly known as O2.

Details regarding the general operation of the Vodafone and Telefónica networks can be found in the accompanying document entitled 'General Background Information for Telecommunications Development'. This information is provided to assist the Local Planning Authority in understanding any technical constraints on the location of the proposed development. Supporting information can also be found in the attached CTIL document called 'Radio Planning and Propagation', which discusses how radio networks are planned, the need for height and the limitations associated with the technology.

Furthermore the new Code of Best Practice on Mobile Phone Network Development published by the Mobile Operators Association (MOA) in July 2013 explains the special operational and technical considerations, which the telecommunications industry encounters. It also details the evolution of mobile networks and discusses the implications of mobile connectivity in the 21<sup>st</sup> Century. The new Code of Best Practice on Mobile Phone Network Development explains how mobile networks function and the challenges faced in providing sufficient signal, coverage and capacity to supporting customer experiences. It is also of note that the MOA has produced a new guidance document to clarify some of the technical aspects of network development entitled 'Mobile Networks: What They Are and How They Work', August 2013.

## 5. Site Selection Process

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

Site Type	Address	Grid Ref:	Reason for not choosing
Greenfield	Clark House Farm, Chipping, Preston PR3 2GQ	N: 361669 E: 443609	Given the site's geographical position and ground height, it is considered that the site advanced would provide a better level of coverage to the target area.
Greenfield	Nan Kings Farm, Malt Kiln Row, Chipping PR3 2GR	E: 361445 N: 444141	The site provider was approached whilst searching the area for potential options but said they were unwilling to accommodate a telecommunications installation. Therefore, this site has to be discounted as the operator does not have the owner's permission to use their land.
Greenfield	Fish House Farm, Fish Lane, Chipping PR3 2GR	E 361642 N 444057	This site is found on the edge of the search area and given its geographical position would not provide meaningful coverage and capacity to the target area. Therefore, this site has to be discounted as it does not meet operator's technical requirements.
Greenfield	Football Club, Club Lane, Chipping PR3 2QH	E: 362032 N: 443215	The site provider was approached about accommodating a telecommunications installation however there has been no confirmation of interest or unwillingness to date. Given the time that has elapsed and the attempts to gain some form of acknowledgment,



			this site has to be discounted as the operator does not have the owner's permission to use their land.
Greenfield	Isaacs Farm, Chipping PR3 2GJ	E 315045 N 376475	Given the site's geographical position and ground height, it is considered that the site advanced would provide a better level of coverage to the target area.
Greenfield	Kirk Mills Works, Malt Kiln Row, Chipping PR3 2QP.	E 362064 N 443555	Given the site's geographical position and ground height, the location not provide meaningful coverage and capacity to the target area. Therefore, this site has to be discounted as it does not meet operator's technical requirements.

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

In accordance with the operators licence obligations, NPPF and the Code of Best Practice on Mobile Phone Network Development, CTIL have reviewed existing telecommunications provision operated by Vodafone and Telefónica in the intended target area. An existing base station has been identified in which taking advantage of the CTIL agreement a sequential approach to site selection has been taken in seeking to upgrade this particular installation. Furthermore it should be acknowledged that alternative sites would have been considered by the operator and determining planning body when this now existing base station was first conceived and established on-site.

Land use planning designations:

The application site is set within an area characterised as open countryside.

It is recognised that the application site is found close to the boundary of Area of Outstanding Natural Beauty, in which the surrounding context, together with any other material planning considerations will also be discussed in this statement.

Additional relevant information (planning policy and material considerations):

### **Planning Policies**

#### **Local Planning Policy**

It is acknowledged that the Council's approach to the plan-led system has evolved. Central Government now seek to streamline the process for the preparation and adoption of Development Plans, in which Local Planning Authorities are now required to adopt a new Development Plan in accordance with section 20 of the Planning and Compulsory Purchase Act 2004 (as amended) and the National Planning Policy Framework. The documents that provide local planning policies are referred to within the 'Local Plan', in which they describe the spatial strategy for the authority. The Core Strategy is the key document that forms the Local Plan and this is supported by various types of detailed information about the local and sub-regional matters. Once adopted decisions will be made in accordance with the Local Plan unless material considerations indicate otherwise.

In this regard, the Core Strategy 2008 - 2028 has now been adopted by the Council, in which there is no policy specific to telecommunications development.

#### **National Planning Policy Framework (2012)**

It is recognised that in seeking to adopt a new Local Plan and Core Strategy national guidance on the matter suggests that repetition, should be avoided thus the most up-to-date policy stance regarding telecommunication development should be taken from National Planning Policy Framework.

## 5 - Supporting high quality communications infrastructure

The National Planning Policy Framework (NPPF) set out Central Government's planning policies for England and how these are expected to be applied. It replaces a number of planning documents including Planning Policy Guidance 8 – Telecommunication. NPPF sets out the Central Government's requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

Pertinent to telecommunications development section 5 of NPPF sets out the Governments general overview regarding supporting high quality communications infrastructure and is stated as follows: -

*"42. Advanced, high quality communications infrastructure is essential for sustainable economic growth. The development of high speed broadband technology and other communications networks also plays a vital role in enhancing the provision of local community facilities and services.*

*43. In preparing Local Plans, local planning authorities should support the expansion of electronic communications networks, including telecommunications and high speed broadband. They should aim to keep the numbers of radio and telecommunications masts and the sites for such installations to a minimum consistent with the efficient operation of the network. Existing masts, buildings and other structures should be used, unless the need for a new site has been justified. Where new sites are required, equipment should be sympathetically designed and camouflaged where appropriate.*

*44. Local planning authorities should not impose a ban on new telecommunications development in certain areas, impose blanket Article 4 directions over a wide area or a wide range of telecommunications development or insist on minimum distances between new telecommunications development and existing development. They should ensure that:*

- they have evidence to demonstrate that telecommunications infrastructure will not cause significant and irremediable interference with other electrical equipment, air traffic services or instrumentation operated in the national interest; and*
- they have considered the possibility of the construction of new buildings or other structures interfering with broadcast and telecommunications services.*

*45. Applications for telecommunications development (including for prior approval under Part 24 of the General Permitted Development Order) should be supported by the necessary evidence to justify the proposed development. This should include:*

- the outcome of consultations with organisations with an interest in the proposed development, in particular with the relevant body where a mast is to be installed near a school or college or within a statutory safeguarding zone surrounding an aerodrome or technical site; and*
- for an addition to an existing mast or base station, a statement that selfcertifies that the cumulative exposure, when operational, will not exceed International Commission on non-ionising radiation protection guidelines; or*
- for a new mast or base station, evidence that the applicant has explored the possibility of erecting antennas on an existing building, mast or other structure and a statement that self certifies that, when operational, International Commission guidelines will be met.*

*46. Local planning authorities must determine applications on planning grounds. They should not seek to prevent competition between different operators, question the need for the telecommunications system, or determine health safeguards if the proposal meets International Commission guidelines for public exposure."*

### **Code of Best Practice on Mobile Phone Network Development (2013)**

A new English Code of Best Practice on Mobile Network Development has replaced the original guidance document that was first published in 2002. Since the previous version, there have been significant changes in planning policy with NPPF replacing PPG8, as well as in technology and infrastructure rollout due to consolidation agreements. The planning process and tools in the new Code of Best Practice remains much the same as previous, in which the following is considered relevant in this particular case: -

The opening paragraphs of the new Code of Best Practice acknowledge the material weight that should be given to NPPF, in particular Section 5 - Supporting high quality communications infrastructure as noted above. It is noted in paragraph 3.2 that special operation and technical considerations should be taken into account in which it is stated that due to increased demands of mobile device users there will be *"the requirement to upgrade and improve networks through changes to existing sites and the development of new sites"*

It is highlighted in paragraph 7.5 and in Appendix A which sets out the operators Ten Commitments that there will always be an emphasis on site sharing. Operators will “*continue to work together to locate base stations on existing structures, and to share sites wherever viable in order to reduce the need to build new masts on which to locate their equipment and to minimise the number of base station sites in the UK.*”

Appendix B discusses the general principles for telecommunications development. It is stated that “*The Government’s general policy on telecommunications development is to facilitate the growth of efficient and effective telecommunication systems whilst keeping the environmental impact of such development to a minimum. The siting and design of telecommunications equipment, if undertaken with care and sensitivity, will be vital in achieving this policy aim. Good siting and design should not only be respected in environmentally sensitive areas but should also be applied to all telecommunications development. In all circumstances, the sensitivity to context of the proposed development should be considered.*

*In particular, the following general design principles should be regarded as important considerations in respect of telecommunications development:*

- *Proper assessment of the character of the area concerned*
- *Design should be holistic and three dimensional showing an appreciation of context;*
- *Analysis of the near and far views of the proposal and to what extent these will be experienced by the public and any residents;*
- *Proposals should respect views in relation to existing landmarks and distant vistas;*
- *Proposals should seek to consider the skyline and any roofscapes visible from streets and spaces;*
- *Choice of suitable designs, materials, finishes and colours to produce a harmonious development and to minimise contrast between equipment and its surroundings.*

*The options for the design used by an operator will be affected by site conditions, technical constraints, landscape features and coverage and capacity requirements. The main options would include:*

- *Mast and/or site sharing;*
- *Installation on existing buildings and structures;*
- *Camouflaging or disguising equipment where appropriate;*
- *Using small scale equipment;*
- *Erecting new ground based masts.”*

Appendix B goes on and recognises that mast and site sharing is a longstanding Government policy objective. In this regard the Government encourages telecommunications operators, wherever viable, to share masts and sites as a means of minimising overall mast numbers. It is stated in Appendix B that “*If operators are able to share sites, and install more equipment on each site, this reduces the overall visual impact of network infrastructure, because even though shared sites will tend to be slightly bigger, it means that fewer sites are needed to improve coverage and capacity, infrastructure becomes more feasible, and is more cost-effective to deploy. In fact, sharing of sites is now the norm, and network operators now share much of their network infrastructure via joint venture commercial arrangements.*”

### **Mobile Networks: What They Are And How They Work (2013)**

It is highlighted that the new Code of Best Practice is supplemented by a document titled ‘Mobile Networks: What They Are And How They Work’. It explains the main factors that affect radio signals such as shadowing, attenuation, diffraction and reflection. In this regard it should be appreciated that antennas need to be sited with the clearest possible view of the area for which they are intended to provide coverage. It is stated that “*there are various reasons that can lead to the need for new cell sites. Two main ones are the need for additional coverage and capacity. Other factors that can lead to the need for new sites include the introduction of new technologies and services; new property developments in an area requiring new coverage or additional capacity; or redevelopment of an area requiring existing sites to be replaced.*”

### **Planning Assessment**

It should be recognised that irrespective of the installation’s use as a telecommunications base station, the introduction of a new tall structure within a particular environment will always be, to some degree, a noticeable addition to those residents and regular passers-by found closest. However it should be appreciated that the visibility of a development; most notably in this instance the site being within a Area of Outstanding Natural Beauty or its location within its immediate context does not automatically result in an overwhelming adverse harm occurring. Indeed the fundamental principle applied by the applicant is always to minimise the contrast between the telecommunication proposal itself and its surroundings through where practicable appropriate siting and

design. This is the case here whereby the siting of the installation within the context of its particular target area, coupled with feasible locations that can be pursued should be taken on board. In turn the technical limitations the immediate setting and wider area has towards the scheme's height and design aesthetics, should be borne into consideration when assessing the proposals.

In this regard it is considered that the planning assessment of this case should concentrate on whether the proposal's siting and appearance creates a significant impact as to outweigh other material planning factors. Indeed it should also be ascertained as to whether there is a need for the base station and if the progress of the chosen site can be justified when taking into account the potential opportunity that arise in the target area of search. Thereafter an assessment as to the siting and appearance of the proposal should take into account the technical factors that have influenced the scheme when seen within its immediate context and wider surroundings. Also the proposal subject to this application should be reviewed against the up to date planning policy regarding telecommunications development and any other planning factors of material note.

Taking into account the context in which the proposal would be read, it is considered that the application site is an appropriate location for a telecommunication base station. The position of the proposal makes best use of existing boundary treatments and physical features, most notable the immediate trees. Indeed there are tall trees in the vicinity of the application site which presents a natural environment that can adequately absorb the proposed lattice mast and will from certain directions help soften and screen the development from view. A lattice mast design has been progressed as its construction allows views through the structure which is considered an appropriate design when seen against the sky or amongst tree branches even when not in leaf.

As previously discussed in the justification for the proposal's height and design, the antennas need to clear the surrounding obstacles in order to function and project the necessary signal across the target area, however given the scheme's siting to some extent the lower sections of the installation will be screened so reducing its prominence. It is considered that the proposal will not significantly undermine the visual amenity of the area, in which when balanced against the other material planning considerations the overall siting and appearance of the telecommunications base station is acceptable.

The application site is set well off the main vehicular route and is some distance away from the nearest houses as well as the settlement boundary of Chipping. Therefore viewed at distance and in perspective it is considered the proposal will not undermine the visual amenity of those found closest.

In light of the above, it is considered that the proposal would not be overly intrusive in this particular environment, whereby taking all matters into account, it is the applicant's opinion that any visual impact as a result of the proposal's siting and appearance would not outweigh the material merits of this case.

To justify the case in hand, material weight should be given to the discounted options listed and in accordance with planning policy the sequential approach to site selection. Firstly when taking into account both the existing sites in the wider Vodafone and Telefónica networks, it was found that there were no existing installations operated by either company that could be upgraded to meet the coverage requirements here. Similarly it should be noted that surrounding sites in the network have been optimised to their full potential. The next appropriate step as part of sequential approach to site selection was to utilise any existing base stations belonging to another operator, however there is no existing telecommunications provision in the wider target area that is suitable in addressing the coverage needs of Vodafone and Telefónica. Leading on there are no tall buildings in the target area that were able to be progressed. Also the applicant have considered other privately owned sites which have been discounted for a variety of reasons. Therefore when taking into account the whereabouts of the target audience, the geographical extent of the search area in terms of its topography as well as the built and natural features contained therein, coupled site ownership availability, then it has been these factors that have led to the application site being advanced. In this regard, it is evident that the applicant has exhausted a number of alternative sites before progressing the chosen sites and specific proposal, in which it is considered that on balance there is no other realistic opportunity elsewhere that would be less detrimental than that of the site advanced.

In summary it must be emphasised that the target area where coverage and capacity is needed is primarily found in the built up area of Chipping. Therefore taking into account the more residential areas of the target area, it is felt that the application site found on the outskirts is on balance an appropriate option to advance. In this respect it is considered that the proposal is far enough removed from houses so that the scheme will not impact significantly upon their residential amenity whilst still being close enough to provide the necessary coverage and capacity.

Advancing this proposal can be justified for its technical need, given that it seeks to address the operators coverage requirements in this part of authority. In this regard the added services the base station will bring to the

target area will positively enhance the experiences of those customers within in the area and so would outweigh any visual harm created. The scheme has mast sharing and sustainable qualities in that it will accommodate both Vodafone and Telefónica and provide 2G, 3G and 4G coverage and capacity. Also there is space on the mast and in the compound for further operators to be accommodated, if in the future other operators deem a base station site here technically viable. All such matters are deep rooted in national and local planning policy relating to telecommunications development. In conclusion and when balanced against all other material planning considerations, it is believed that principle of a mast share scheme is acceptable and should be given weight in the determination of this application.

With regards the proposal compliance with planning policy, it is evident that NPPF, in particular Section 5, should be given significant weight in the determination of this application. Indeed it should be recognised that the guiding factors of telecommunications policy have not altered significantly since PPG8 and many of the key material matters are deep rooted in planning policy, for example mast sharing. Therefore taking NPPF Section 5 into account, it is considered that the scheme's siting and design, together with justification provided, presents no significant material conflict and accords with national planning policies. As previously highlighted the Code of Best Practice on Mobile Network Development which is a guidance document that should be used by all has updated and is more reflective of today's current practices. Indeed the latest version of the Code of Best Practice coincided with the statutory instrument changes to Part 16 that came into force at the end of November 2016. The process taking in advancing this particular scheme has taken a best practice approach in which its sited and designed. Similarly taking into account the local planning policies which are applicable, it is considered that the proposal accords with the objectives of Council's Development Plan where relevant. Most notably the proposal is fully compliant with local planning policy \*\*\* on telecommunications development and satisfies the points raised.

As noted above there are a number of supporting documents which encourages this form of development. Similarly planning legislation has change and initiatives have been set up to aid the much needed delivery of telecommunication infrastructure into areas where a technical requirement has been identified. Also it should be appreciated that as a result of amendments to Part 16, the threshold heights that have historically implicated on the need for a full planning submission have been changed so meaning that many proposals now require prior approval instead. Similarly permitted development rights have been relaxed for some forms of telecommunication development in which for example the alteration or replacement of an existing mast up to 20 metres in height can now be deployed as permitted development without having to apply to the Local Planning Authority for either GPDO prior approval or full planning permission. These legislative changes are a material consideration and are a clear indication that the Government are committed to facilitating telecommunication infrastructure development at the necessary heights.

In light of the case presented above, the applicant considers that the proposal strikes a good balance between environmental impact and operational considerations.

### **Health & Safety**

Court cases have confirmed that the public perception of health risks can be a material consideration within the planning system. That said the weight to be attached to this issue has to be determined accordingly in each case by the decision maker. However it has been generally upheld and widely established at planning appeal, that health concerns are not a sufficient basis alone for withholding planning permission providing it has been demonstrated that the proposed base station will comply with the International Commission on Non-Ionizing Radiation Protection guidelines.

It should be recognised that it has been long since established that it is Central Government's stance that the planning system is not the appropriate mechanism for determining health safeguards. It remains Central Government's responsibility to decide what measures are necessary to protect public health. Most notably it is Central Government's view that if a proposed development meets the ICNIRP guidelines for public exposure it should not be necessary for a Local Planning Authority, in processing and determining an application for planning permission or prior approval, to consider further the health aspects and concerns about them.

In this respect the operators believe that it is not necessary to consider health effects further. Vodafone and Telefónica as well established operators are committed to ensuring that all new and upgraded installations are ICNIRP compliant. In this regards there should be no basis for this case to be refused on health and safety grounds or for reasons relating to public concerns about health and safety. An ICNIRP compliance certificate is attached as part of this submission, as required by NPPF paragraph 45. As previously noted in this submission statement the ICNIRP declaration takes into account the cumulative effect of the emissions from the proposed upgrade installation and all radio base stations present, at or co-located near to the proposed installation. Albeit the upgrade proposal has dual user capabilities and seeks to provide multiple technologies the radio frequency emissions from the proposed development will be may times lower than the ICNIRP reference standard in all

publicly accessible areas around the installation. In the light of the above information, it is clear that the weight to be given to such health and safety concerns should not be so great as to warrant a refusal of the case on these grounds.

#### Contact Details

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Signed:		Date:	24 <sup>th</sup> July 2017
Position:	Principal Surveyor	Company:	Mono Consultants Ltd
			on behalf of CTIL & Vodafone Ltd

## **DESIGN AND ACCESS STATEMENT**

This Design and Access Statement is provided in conjunction with the Supplementary Information Template, drawings and supporting material that was submitted with this planning application.

In accordance with the Code of Best Practice on Mobile Phone Network Development and published Government guidance, this proposal was drawn up having regard to the need for good design.

In particular:

- Considerations of design and layout are informed by the context, having regard not just to any immediate neighbouring buildings but the townscape and landscape of the wider locality. The local pattern of streets and spaces, building traditions, materials and ecology all help to determine the character and identity of the development.
- The scale, massing and height of proposed development have been considered in relation to that of adjoining buildings; the topography, the general pattern of heights in the area; and views, vistas and landmarks.

The following general design principles have been taken into account in respect of this proposed telecommunications development:

- A proper assessment of the character of the area concerned.
- That the design shows an appreciation of context;

## **SITE CONDITIONS, TECHNICAL CONSTRAINTS, LANDSCAPE FEATURES AND CAPACITY REQUIREMENTS**

### **Introduction**

It needs to be borne in mind that the proposed development is for a mobile telecommunications installation. Hence, access is deliberately restricted, where appropriate, for the security of the installation.

### **Pre Application Discussions and Negotiations**

A pre-application consultation email was sent to the LPA on the 19<sup>th</sup> May 2017 which outlined the need for a new base station in the area, listed sites considered but discounted and included site-specific drawings of the draft proposal.

To date no comments have been received, therefore it was considered appropriate to progress this application and seek the LPA's formal determination.

A pre-application consultation email was sent to the Ward Councillor Simon Hore and Chipping Parish Council on the 19<sup>th</sup> May 2017 which outlined the need for a new base station in the area, listed sites considered but discounted and included site-specific drawings of the draft proposal.

On advice of Councillor Hore, a further pre-application consultation email was sent to Bowland with Leagram Parish Council and the Trustees of Chipping and District Memorial Hall Charity on the 28<sup>th</sup> May 2017 which outlined the need for a new base station in the area, listed sites considered but discounted and included site-specific drawings of the draft proposal.

Councillor Hore responded by saying that 'overall it will be very useful to have additional mobile providers in the village, the issue will revolve around the visual impact.'

Although this proposed application Chipping Parish Councils area, the Councillors looked at the plans and decided this mast is not appropriate in this designated area of outstanding natural beauty.

The Bowland with Leagram Parish Council confirmed that they will be meeting to discuss the application when it is received and we will respond according to the wishes of the householders in Leagram at that time.

### **Documentation Submitted with Application**

- Drawings Ref. No's: 100, 101, 201 and 301 with application site red edged;
- Site Specific Supplementary Information;
- General Background Information for Telecommunications Development;
- Health and Mobile Phone Base Stations document;
- ICNIRP declaration and clarification statement.

## **Design Component**

### Use proposed

- The proposed development will consist of the installation of a new base station that will provide coverage for both Vodafone Limited and Telefónica UK Ltd, commonly known as O2.
- The proposal will offer improved services and capabilities to the local community, creating better connections that will have social and economic benefits for the area.
- Commercially companies of all sizes, from sole traders to multi-nationals will benefit from improved business efficiency that mobile communications bring. The added security for travellers is a benefit many people will recognise and most families have come to rely on the convenience and reassurance of instant mobile communications.

### Amount

- The installation of a 21m high lattice mast.
- The installation of 3 no. antennas
- The installation of 2 no 600mm transmission dishes;
- The installation of 3 no equipment cabinets;

### Layout

- The proposal is confined to a new 7m x 7m fenced compound demise;

### Scale

- The height of the r mast is 21 metres to top;

### Landscaping

- No landscaping is proposed as part of this application.

### Appearance

- The proposal consists of a new lattice with an open antenna arrangement;
- The new antennas will be manufactured in a grey material;
- The new structure and steelwork will be left galvanised;

## **Access**

The proposal will be located on private land and within a secure compound enclosure. In this regard the development will not be accessible within the public realm. Nevertheless the access to the ground based equipment and can be likened to other communications and electrical service boxes found in typical street scenes in which similar operations would take place. Should the need arise then access to the site will be primarily by foot in which authorised persons would gain access to the locked / gated compound and equipment found within. It is likely that once built, the site will be visited infrequently for maintenance purposes only, as most works can be achieved at ground level. It should be recognised that the antennas do not need to be physically maintained once in-situ. However subject to the mast's design capabilities some operations may entail optimizing, re-orientating or adding down-tilt to the antennas in order to maximise the coverage offered by the installation. In the event of the antennas attached to the mast require attention this will normally be achieved by climbing the mast.

## **Community Safety**

The radio base station will be operated in accordance with the radio frequency or electromagnetic field exposure guidelines suggested by the European Union.

This recommendation is based on the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines for limiting public exposure to electromagnetic fields. This means that in areas where the general public may spend time, exposure levels will be fully within guidelines which the UK Government and the European Union have recommended and has formal backing of the World Health Organisation.

A declaration of ICNIRP compliance is provided as part of this planning submission.



## **General Background Information for Telecommunications Development**

This document is designed to provide general background information on the development of the Vodafone and Telefónica networks. It has been prepared for inclusion with planning applications and supports network development proposals with generic information.

### **1.0 INTRODUCTION**

Over 25 years ago under the Telecommunications Act 1984, a licence was granted to Vodafone and Telefónica to provide wireless (or mobile) phone services utilising unused radio frequencies adjacent to those transmitted for over 50 years by the television industry. Initially, because this wireless technology was new and the number of potential customers unknown, a number of tall masts were used to provide basic radio coverage to the main populated areas. The design strategy used was similar to that used by local radio and television i.e. tall masts to cover large distances over all types of topography.

It is important to note that in recent years form has followed function and digital technology has resulted in the development of smaller equipment. In addition, smaller radio coverage areas have resulted in antenna/mast heights being generally reduced. The industry has also been able to develop low impact designs for use in sensitive planning areas such as in Conservation Areas, on Listed Buildings, and in National Parks etc. The wireless telegraph pole solution is just one example of a design, which has minimised impact on visual amenity of the local neighbourhood.

### **2.0 DIGITAL NETWORKS**

The Vodafone and Telefónica 2G digital networks were developed in the early 1990s. This digital technology is often referred to as GSM (Global System for Mobile Communications) which is the common European operating standard enabling phones to inter-connect to other networks throughout Europe and Internationally.

In April 2000, Vodafone and Telefónica were successful in their bids for two of the five licences available to provide a 'Third Generation' mobile telecommunications service known as 3G or UMTS. In addition to voice services, this technology enables Vodafone and Telefónica to offer high resolution video and multi-media applications. Among other things this enables office services, virtual banking, e-retailing, video conferencing and high quality broadband internet access to be provided to users on the move. This is all made possible by higher rates of data transfer allowing wireless broadband access to the Internet for mobile phones and laptop computer data card users. The 3G radio base station is designed to provide a service via cells in a similar way as the GSM (2G) system but with a few differences. Due to the increased data transfer, the location of base station sites is even more critical. Base stations must be located where the local demand exists in order to provide the required levels of service, otherwise the network will not function.

In February 2013, Vodafone and Telefónica were successful in their bids for 4G spectrum. 4G (LTE - Long Term Evolution) is the next major enhancement to mobile radio communications networks and will allow customers to use ultra-fast speeds when browsing the internet, streaming videos or sending emails. It also enables faster downloads. To meet this demand and improve the quality of service, additional base stations or upgrades to the equipment at an existing base station may be needed.

Vodafone and Telefónica will ensure they comply with planning policy guidance by ensuring apparatus is installed on existing buildings and structures, including masts wherever possible. However, in spite of these efforts, there are likely to be instances where there is a need to install additional base stations to provide contiguous service. This is largely due to the characteristics of radio propagation at these frequencies, demands on the service and the high data transfer rates.

It is very important to note that mobiles can only work with a network of base stations in place where people want to use their phones or other wireless devices. Without base stations, the mobile phones we rely on simply won't work.

#### **2.1 How the cellular radio network works**

The building blocks of the mobile telecommunications network are called radio base stations, which transmit and receive calls to and from mobile phones using radio waves, similar to those used in domestic television and radio equipment. Radio base stations are often associated with free-standing masts, however they can be located on, or even inside, existing buildings and other structures. Vodafone and Telefónica use "radio frequencies" to transmit and receive calls at 900 MHz or 1800 MHz for 2G whilst 3G uses slightly higher frequencies within the 2100 MHz range. 4G will use frequencies within the 800 MHz and 2600 MHz ranges.

## **2.2 How radio signals are transmitted**

The radio signals are transmitted from antennas, which are part of the radio base station and cover an area known as a “cell”, hence the term “cellular phone”. The size of the cell is dependent on a number of factors including the height at which the radio base station is positioned; the topography of the surrounding landscape; anticipated demand; and the population density in the area.

Radio signal transmission from a radio base station can be likened to water being distributed from a garden sprinkler. The area immediately adjacent to the sprinkler remains almost “dry”. However the grass gets progressively wetter moving, further away from the sprinkler, until a wettest point is reached. Then the further away from the centre, the ground becomes progressively drier. Radio base stations provide network services in a similar manner. The area immediately beneath the antennas receives limited or, occasionally, no signal. Moving further away, the signal steadily improves until it reaches an optimum level and then gets progressively weaker.

In order to use mobile phones whenever and wherever we are, a network of radio base stations is required to maintain a continuous signal or ‘network service’ across a geographical area. The network is designed so that the cells from each radio base station slightly overlap. Travelling even a short distance may take us through a number of cell areas. Mobile phones are designed to monitor the strength of signal from surrounding radio base stations and automatically select the clearest signal, which often comes from the nearest site. As you approach the edge of the cell area, the phone will automatically select the adjoining radio base station, to provide a continuous service. This process is known as ‘call handover’.

## **2.3 Factors affecting network services**

The siting of a radio base station is largely dependent on the characteristics of the radio signals, which they transmit. Physical features such as buildings or landscape can obstruct the signals. In open rural areas, one base station can typically cover several kilometres in radius. However, in urban areas where surrounding buildings will obstruct the signal, this range can be reduced to as little as a few hundred metres.

## **2.4 Network Capacity**

Radio base station sites can only receive and transmit a limited number of simultaneous calls to and from mobile phones. In areas where the use of phones is particularly high, such as major towns or cities, many sites will reach the maximum number of calls they can process. When a customer attempts to make a call in an area where the network has reached its full capacity, the ‘network busy’ message is displayed on their mobile phone. In order to continue to meet customer demand and improve the quality of services in these areas, there is a need to increase the capacity of the network to allow more calls to be made.

## **2.5 Technical Requirements**

Vodafone and Telefónica radio engineers identify the need for a new radio base station where the existing signal strength is insufficient to support network requirements, or where demand on the system is such that we need to increase capacity. The location of each radio base station is determined by the following factors:-

- The proximity of adjacent radio base stations and the signal coverage from them.
- The terrain height of the area and surrounding topography.
- The height and density of the buildings and structures within the area.
- The potential customer demand within the area.
- The service type that is required.

## **3.0 SITE SELECTION PROCESS**

The following site selection procedures apply to each new installation to identify and sequentially discount alternative site options:-

1. Following a technical review, which identifies need, Vodafone and Telefónica radio engineers undertake a desktop analysis to identify the best way of meeting the site requirement. This is completed by using computerised radio propagation modelling tools. These tools show every site on the existing networks and identifies those areas where insufficient signal level exists or where there is a need to increase capacity.
2. The desktop search also identifies other operators’ existing telecommunications installations. This interrogation of databases ensures any mast-sharing opportunities are maximised. Where available the LPA’s mast register is also reviewed.
3. The radio engineers define a search area, which is then issued to an acquisition agent who undertakes a detailed ground search with the radio engineer to identify suitable options.
4. The acquisition agent will obtain site-specific details to identify those sites that are viable options. The possible options are short-listed according to those that combine the following: location within or close to the search area, a willing landlord with acceptable commercial terms, adherence to planning and environmental policy,

and other site specific issues such as initial power and link availability. These options are then returned to the radio engineers for a computer modelling assessment, taking into account the ground height, potential available antenna height and surrounding obstructions.

5. Discussions are offered to the local planning authority to consider local policies and any protected areas and to agree additional public consultation if required. These discussions are used to identify a 'preferred' option.
6. A plan for local consultation is drawn up, and where appropriate, a consultation exercise is undertaken with the local community.
7. Finally, a site survey provides a full structural analysis of the site including confirming power routes and how the site will be linked into the network. Terms with the landlord are then finalised, detailed plans prepared and the application submitted.
8. Vodafone and Telefónica are committed to ensuring the number and visual impact of any additional sites is minimised.

#### **4.0 PLANNING POLICY GUIDANCE ON TELECOMMUNICATIONS**

The National Planning Policy Framework (NPPF) was published on 27<sup>th</sup> March 2012. The NPPF supports high quality communications infrastructure and recognises it as a strategic priority. At paragraph 42 it states that: *"Advanced, high quality communications infrastructure is essential for sustainable economic growth. The development of high speed broadband technology and other communications networks also plays a vital role in enhancing the provision of local community facilities and services."*

The NPPF goes on to state at paragraph 46 that: *"Local planning authorities must determine applications on planning grounds. They should not seek to prevent competition between different operators, question the need for the telecommunications system, or determine health safeguards if the proposal meets International Commission guidelines for public exposure."*

#### **5.0 SITE / MAST SHARING**

Vodafone and Telefónica actively encourage and support site sharing for both commercial and environmental reasons. All operators are required to explore site-sharing opportunities under the terms of their licences. Vodafone and Telefónica have implemented a number of measures to identify and maximise site-sharing opportunities.

#### **6.0 COUNCILS**

##### **6.1 Moratoria**

Local authorities should make suitable council owned property available to network operators for base station development. If suitable council sites are not made available, operators may have to look for alternative sites which the local community might find less acceptable.

Moratoria may also increase the number of new sites needed as council owned buildings are often better suited for base stations e.g. tall buildings. The operators believe it is preferable to deal with proposed developments on council property on a case by case basis.

##### **6.2 Mast register**

Guidance in the Code of Best Practice on Network Development recommends that local authorities develop a register of local base stations.

Local Planning Authorities should ensure that any mast register is kept up to date.

#### **7.0 CONSULTATION WITH SCHOOLS**

The operators fully comply with Government Guidance on pre application consultation with schools and colleges. They provide evidence to the local planning authority that they have consulted the relevant body of the school or college.

The Code of Best Practice on Mobile Network Development gives guidance on the factors operators should consider when determining whether 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.

A recent report stated that there is no scientific basis for siting base stations away from schools (NRPB report, January 2005)

## **8.0 LEGAL CASES**

The following legal cases may be helpful:-

### **8.1 Harrogate case November 2004**

The Court of Appeal gave a judgment 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.

### **8.2 Winchester case November 2004**

The Court of Appeal decision upheld an earlier decision by Mr Justice Sullivan that a mobile phone network operator should not use its compulsory acquisition powers as part of its day to day radio base station siting processes.

The Court of Appeal agreed with Mr Justice Sullivan that these far-reaching statutory powers were never intended for use in day to day planning situations and should be used by an operator only as a last resort when there is no other siting alternative. The House of Lords on 16 March 2005 refused leave to appeal the Court of Appeal ruling.

### **8.3 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.

## **9.0 FURTHER INFORMATION**

We trust the above 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. A copy of the report is available at <http://www.lgo.org.uk/pdf/phone-masts-sr.pdf>

## **RADIO PLANNING AND PROPAGATION**

An introduction to how radio networks are planned and the limitations associated with the technology.

When planning cellular telecommunications networks it is important for engineers 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 required by the services they offer under the terms of their licence.

The strength of radio signals detected at a receiving device naturally reduces the further away it is from the transmitter. In general the reduction (or decay) in signal power is affected by a number of variables. The main factors are :-

- frequency,
- distance (from 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 signal strength reaching a customer's device. A common term for these objects is 'clutter'. The more obvious examples are buildings, trees and geographical terrain such as hills.

Buildings cause a varying amount of signal reduction depending on their height, construction, thickness of walls, amount 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.

### **Tree Clutter**

The effects of trees on signal degradation should never be underestimated. 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.

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 be a) above the top level of the trees, b) allow greater height due to the antenna down-tilt at build or for future requirements and c) allow some room for future growth of the trees.

In the case where the cell site utilises point-to-point microwave backhaul transmission, the microwave dish should not be obscured at all.

### **Propagation Models**

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

The most well-known propagation model used for mobile telecommunications is 'Okamura-Hata'. More specific studies have been performed to investigate specific clutter and terrain such as dense-urban and urban environments. Resulting from these are propagation models for specific clutter types.

## **Coverage Planning Tools**

Radio planning engineers plan cellular networks using highly sophisticated computer programs that incorporate the above 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 is subject to change. For example, building developments, housing and tree growth can all change. As a consequence the signals received from local phone masts can degrade, as they are dependent on these factors. These reasons along with customer complaints, network consolidation (mast sharing) and new technologies (4G) 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.

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 15 metre above ground level, particularly street furniture sites. More details on these reasons are discussed 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**

There are a number of reasons why an operator may request a height increase of 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 two sets of antennas positioned one above the other.

The 'Dual Stack' is by far the preferred option. This is due to a number of factors including greater flexibility and control for different technologies and providing optimum service performance to customers.

Network consolidation between Vodafone and Telefonica and new 4G technologies can facilitate a Single Stack structure being upgraded to a Dual Stack structure. In a straight swap scenario at equal height, the new lower 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 line 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 of existing masts or additional new masts are required. The former is the preferred option in many cases.

### *ICNIRP Compliance*

The addition of new technologies and mast sharing affects ICNIRP compliance, in which a higher minimum antenna height above ground level is required in some cases.

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

We take these public concerns seriously and 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.

Vodafone and Telefónica ensure that our radio base stations are designed and operated 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 low levels of radiofrequency fields, typically hundreds to thousands of times lower than the ICNIRP general public guidelines.

### Research Reviews

There are about 1400 peer-reviewed publications on the biological and health effects of RF signals<sup>2</sup>, which are used in mobile communication technology. The scientific community have collated, summarised and assessed these publications in research reviews, the most influential in the UK being the Mobile Phones and Health Report (also known as the Stewart Report) by the Independent Expert Group on Mobile Phones under the chairmanship of Professor Sir William Stewart. These research reviews are used by Governments to develop policy on exposure to radiofrequency signals.

Published in May 2000, 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, although it acknowledged that biological effects might occur below these values. The report stressed, however, that a biological effect does not necessarily mean a negative impact on health. Walking, drinking a glass of water or listening to music all produces biological effects.

Since 2000, 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 similar 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 June 2011 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

In April 2012 the Health Protection Agency’s independent Advisory Group on Non-ionising Radiation (AGNIR) published a report entitled *“Health Effects from Radiofrequency Electromagnetic Fields”*. This report concluded that there is no convincing evidence that mobile phone technologies cause adverse effects on human health. In addition, AGNIR found that although a substantial amount of research has been conducted, there is no convincing evidence that RF field exposure below the internationally agreed guideline levels applied in the UK causes health effects in adults or children.

Research reviews are used by guideline setting bodies and Governments to develop advice and public policy on exposure to the signal used by mobile communications technology.

### Compliance with International Exposure Guidelines

All Vodafone and Telefónica installations are designed constructed and operated 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 and are there to 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).

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<sup>2</sup> Source: MMF web site: <http://www.mmfai.org/public/research-overview.cfm?lang=eng>

When measured, field strengths are typically hundreds to thousands of times lower than the precautionary ICNIRP general public guidelines.

An ICNIRP certificate is provided with every planning application and this certifies 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 declares that emissions from all mobile phone network operators' equipment on the site are considered when determining compliance.

### **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 reviews 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. The ICNIRP guidelines have been adopted for use in the European Union and the UK.

In August 2009, ICNIRP published a review of the guidelines for limiting RF exposure and concluded that *"it is the opinion of ICNIRP that the scientific literature published since the 1998 guidelines has provided no evidence of any adverse effects below the basic restrictions and does not necessitate an immediate revision of its guidance on limiting exposure to high frequency electromagnetic fields."*

### **Further Information:**

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

**ICNIRP** - <http://www.icnirp.org/>  
International Commission on Non-Ionizing Radiation Protection

**HPA** - <http://www.hpa.org.uk/HPA/Topics/Radiation/UnderstandingRadiation/1158934607698/>

**UK Mobile Telecommunications and Health Research** - <http://www.mthr.org.uk/>

**UK Mobile Operators Association** - <http://www.mobilemastinfo.com/>

### **Or contact:**

CTIL Community Consultation & EMF Enquiries, The Exchange, Building 1330, Arlington Business Park, Theale, Berkshire, RG7 4SA

Tel. 01753 564306

Email - [emf.enquiries@cornerstonemobile.net](mailto:emf.enquiries@cornerstonemobile.net)



Our ref: CTIL 241834 VF 14428

Head of Planning  
Ribble Valley Council  
Council Offices  
Church Walk  
Clitheroe  
Lancashire  
BB7 2RA.

24<sup>th</sup> July 2017

Dear Sir or Madam,

**CLARIFICATION OF THE DECLARATION OF ICNIRP COMPLIANCE ISSUED AS PART OF THE PLANNING APPLICATION ATTACHED FOR THE SITE AT LEAGRAM HALL, LEAGRAM PARK, CHIPPING, PRESTON, LANCASHIRE PR3 2RD**

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

The “ICNIRP Declaration” certifies that the site is designed to be in full compliance with the requirements of the radio frequency (RF) guidelines of the International Commission on Non-Ionizing Radiation (ICNIRP) for public exposure as expressed in the EU Council recommendation of July 1999.

**The ICNIRP declaration produced by Vodafone Ltd takes into account the cumulative effect of the emissions from the proposed installation and all radio base stations present at, or near, the proposed location.**

The radio emission compliance calculation is based upon the maximum possible cumulative values.

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.

If you have any further enquiries concerning the “ICNIRP Declaration” certificate or anything else in this letter then please contact CTIL Community Consultation & EMF Enquiries on 01753 564306.

Yours faithfully,



**PROJECT MANAGER**  
Mono Consultants Ltd

For and on behalf of Cornerstone Telecommunications Infrastructure Limited (CTIL) and Vodafone Limited as a duly authorised agent

Our ref: CTIL 241834 VF 14428

**Declaration of Conformity with International Commission of Non-Ionizing Radiation Public Exposure Guidelines**

**(“ICNIRP Declaration”)**

Vodafone Ltd  
Vodafone House  
The Connection  
Newbury  
Berkshire  
RG14 2FN

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

Leagram Hall  
Leagram Park  
Chipping  
Preston  
Lancashire  
R3 2RD

E 362202 N 444006

is designed to be in full compliance with the requirements of the radio frequency public exposure guidelines of the International Commission on Non-Ionizing Radiation as expressed in the EU Council Recommendation of 12 July 1999 \* “on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)”.

\* Reference: 1999/519/E

Date 24<sup>th</sup> July 2017

Signed



Name Chelsey Swain

Position Project Manager