

SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	Pagham Road	Site Address:	Highway verge on the western side of Pagham Road, Pagham, Bognor Regis, West Sussex, PO21 4NP
National Grid Reference:	E488704, N097724		
Site Ref Number:	128511	Site Type: ¹	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	<u>No</u>
If no explain why: n/a upgrade of existing site		
Was the industry site database checked for suitable sites by the operator:	Yes	<u>No</u>
If no explain why: n/a upgrade of existing site		

Annual Area Wide Information to local planning authority

Date of information submission to local planning authority	07.10.2013
Name of Contact:	anita.gardner@arun.gov.uk
Summary of any issues raised:	List of existing sites and general rollout at that time within the authority.

Pre-application consultation with local planning authority

Date of written offer of pre-application consultation:	28.10.2013 & 22.11.2013
Was there pre-application contact:	Yes <u>No</u>
Date of pre-application contact:	
Name of contact:	Head of Planning
Summary of outcome/Main issues raised: A pre-application consultation email was sent to the LPA on the 28.10.2013 introducing a number of existing sites, which are earmarked to be upgraded as part of the CTIL initiative. This email included the option subject to this application, in which it was said that minimal changes were proposed. A further pre-application consultation email was sent to the LPA on the 22.11.2013 detailing the site-specific proposal and the need for the existing telecommunications base station to be upgraded and redeveloped. To date no comments have been received. Although no LPA comments have been forthcoming, as the proposal relates to the upgrade of an existing base station and the principle of telecommunication development is established on-site, it was considered appropriate to progress this application and seek the LPA's formal determination.	

Ten Commitments Consultation

Rating of Site under Traffic Light Model:	Red	Amber	<u>Green</u>
Outline Consultation carried out: A pre-application consultation email was sent to the ward councillors on 28.10.13 introducing a number of existing sites, which are earmarked to be upgraded as part of the new CTIL initiative. This email included the option subject to this application, in which it was said that minimal changes were proposed. A further pre-application consultation email was sent to the ward councillors on the 22.11.13 detailing the site-specific proposal and the need for the existing telecommunications base station to be upgraded and redeveloped. A pre-application consultation email was sent to the Highways Authority on the 22.11.13 detailing the site-specific proposal and the need for the existing telecommunications base station to be upgraded and redeveloped.			

¹ Macro or Micro

Summary of outcome/Main issues raised:
To date no comments have been received.

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?

Yes

No

Has the Civil Aviation Authority/Secretary of State for Defence/Aerodrome Operator been notified?

Yes

No

Details of response:

n/a

Developer's Notice

Copy of Developer's Notice enclosed?

Yes

No

Date served:

04.12.13

3. Proposed Development

The proposed site:

This application relates to an existing telecommunications installation which is found at highway verge on the western side of Pagham Road, Pagham, Bognor Regis, West Sussex, PO21 4NP. For reference please see below a photograph of the base station in-situ: -



Existing Vodafone radio base station (shown left), co-located next to an existing telecommunications monopole.

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

Type of Structure	Hutchinson Engineering Jupiter
Description: The installation of a 15 metre dual user Jupiter monopole housing three antennas mounted together at the top of the structure. The main stem of the column is cylindrical and will measure 324mm in diameter in which towards the top it will taper to a 540mm diameter antenna shroud. The length of the cylindrical antenna shroud section will be 2500mm. The existing 12.5 metre high monopole shall be removed. It is of note that the proposed scheme involves, the replacement of 2no. equipment cabinets for 2no. new equipment cabinets and the retention of 1no. existing equipment cabinet and 1no. electrical meter cabinet. The dimensions of the proposed equipment cabinets are detailed below.	
Overall Height:	15 metres
Equipment Housing:	RBS 6102
Length:	1300mm
Width:	700mm
Height:	1450mm
Equipment Housing:	RBS 6102
Length:	1300mm
Width:	700mm
Height:	1450mm
Tower/mast etc – type of material and external colour:	Galvanised steel - painted brown (RAL 8011)
Equipment housing – type of material and external colour:	Galvanised steel - painted green (RAL 6009)

Reasons for choice of design:
In this instance, the choice of design tabled in this application has been influenced by the existing base station's siting and appearance, the technologies it currently supports, as well as the added emphasis to cater for 4G coverage requirements. As part of a sequential approach to site selection, an existing base station development made available as part of the CTIL initiative was identified at this site. Technological advances have enabled a mast share structure that breaks the barriers of conventional schemes which in the past have typically involved tall heights due to the separation needed between each operators set of stacked antennas and or large exposed antenna head-frames. The height of the existing structure is 12.5 metres tall, whilst the new monopole will be 15 metres to top. In this regard the height will <i>increase by 2.5 metres</i>. The proposed height is necessary to retain the continued need for both coverage and capacity of the existing networks. The overall height of the proposed column at 15 metres to top has been kept to its technical minimum given the structure types which are available to the aforementioned operators. The proposed monopole is at a height of 15 metre so as not to compromise on the centre line of the existing antennas and to allow for adequate coverage to the target area. The proposed height and structure type will also cater for future 4G coverage demands which will enable network restructuring towards a single grid network that can serve both operators. Allowing for the proposed height and once this phase of upgrade rollout is complete it will allow existing base stations elsewhere in each respective network to be reviewed and decommissioned where technically feasible. In this regard the height and robust extent of development proposed will aid network consolidation and limit future infill requirements. It is highlighted that the antennas in this instance would be concealed within a cylindrical shroud which would be integral to the upper most section of the monopole. Furthermore the dimensions of the structure are the thinnest available so as to be able to support the technically preferred antennas and feeder cables. It is of note that the antennas which function for both operators are closely spaced together so as to keep the profile of the column as thin as possible. In this respect each operators antennas are not distinguishable as separate elements, whereby taking into account the form and appearance of proposed column as a whole, to the naked eye the mast share monopole gives the illusion of a single operator installation. Also it is considered that in opting to connect the site into the national network via an underground link rather than rely on a transmission dish, this has simplified the design and hence reduced the proposal's prominence in the street scene. The proposed column in its entirety will be painted brown in which it is considered that this treatment will help assimilate the column into the street scene. The choice of a slim-line streetworks monopole with shrouded antennas is considered to be appropriate as it would minimise the visual impact of the development within the street scene. In light of the above and in choosing this particular monopole design, it is considered that the scheme takes a form which is sympathetic within the context of its immediate street scene.

The proposed equipment cabinets are less than 2.5m³ each and will be located alongside the new monopole. It should be recognised that seen on their own merits they do not normally require a formal determination of the Council and are often considered as permitted development. The proposed equipment cabinets have an appearance similar to existing cabinets found in a street scene. The proposed ground based development will be painted green 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

International Commission on Non-Ionizing Radiation Protection Declaration attached	<u>Yes</u>	No
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, 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. 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

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 Ltd and Telefónica UK Ltd 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.

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

Further detail 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.

The new Code of Best Practice on Mobile Phone Network Development published 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 21st 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	Site Name & Address	National Grid Reference	Reason for not choosing
n/a	n/a	n/a	n/a

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.

Planning Policies

Local Planning Policy

It is acknowledged that the Local Planning Authority are in the process of formulated a Local Development Framework (LDF) and have produced planning documents which will be shaped by National Planning Policy Framework. This approach to planning policy will in time supersede completely their previous Development Plan. In this regard it is noted that some policies from the Council's Development Plan are saved, in which on the topic of telecommunications the following policy is stated: -

Policy - DEV41 Telecommunications

"Planning permission will be granted for telecommunications development provided that it is demonstrated that careful consideration has been given to possible sharing of sites or use of existing buildings or structures, and that there are no satisfactory alternative sites available, and the following criteria are met:

- (i) Development will not be permitted within the Area of Outstanding Natural Beauty, Sites of Special Scientific Interest or Conservation Areas unless the developer is able to demonstrate a sequential approach has been taken and that there are no suitable alternative locations. Under such circumstances considerable weight will be placed on good design and landscaping to minimise visual intrusion. Elsewhere, proposals should not harm local amenity.*
- (ii) The use of conditions or planning agreements will be considered to secure landscaping, as well as restoration of the site once operations have ceased.*

Where prior notification is required, the Council will require developers to demonstrate what attempts have been made to minimise impact through appropriate siting and design."

National Planning Policy

National Planning Policy Framework (2012)

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 note that was first published in 2002. Since the previous version, there have been significant changes in planning policy with NPPF replacing PPG8, in technology and infrastructure rollout via consolidation agreements. The new Code of Best Practice is now more reflective of today's current practices, in which it is intended to be kept under review and will be updated every 18 months to take onboard any matters arising. 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: -

In 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.

It is recognised in the Code of Best Practice 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."

With regards sympathetic design and camouflaging the Code of Best Practice recognises that operators have made great strides in developing their designs. Indeed in Appendix B regarding such matters it is stated that "This can be seen in the newer, more modern masts which are frequently able to blend into their surroundings far more effectively in contrast to some of the older, larger masts that were first built over 25 years ago." The Code of Best Practice goes on to acknowledge the use of colours in disguising equipment and this practice should be encouraged to continue wherever appropriate. It identifies the common use of street furniture as suitable forms of development and acknowledges designs which are intended to resemble street lamp posts and telegraph poles.

Planning Assessment

From the outset, it should be appreciated that irrespective of the installation's use as a telecommunications base station, the change in form of an existing tall structure will always be, to some degree, a noticeable alteration to those residents and regular passers by found closest. However it should be recognised that visibility or a development's height and design does not automatically result in an overwhelming adverse harm. Similarly, it should be acknowledged that the presence of the existing telecommunications installation on-site may result in a number of preconceptions regarding the new proposal now subject to this application. In reflection it should be appreciated that these opinions may actually derive from the previous planning history and or the siting and appearance relating to the now existing mast. Irrespective of these viewpoints and what has gone before it should be acknowledged that the existing base station is now established on-site, in which this provides a good reference point for the latest scheme's siting and appearance.

In light of the above it is considered that the planning assessment of this case should concentrate on whether the proposed changes in terms of its form when compared to the existing development are significant as to outweigh other material planning matters. Indeed it should also be ascertained as to whether there is still a need for the base station and if there have been any notable changes in terms of the development's site specific siting and surroundings. Also the latest proposal subject to this application should be reviewed against the up to date planning policy regarding telecommunications development.

As discussed previously with regards the choice of design when comparing the appearance of the existing installation with the proposed scheme, it is considered that the latest upgrade development will not undermine the visual amenity of the area. In this respect balanced against the other matters as below, it is considered that the latest CTIL proposal is acceptable.

With regards the need for the development it has been highlighted previously that the existing base station requires upgrading to meet the existing and future 4G demands of mobile users. In this respect it's continue presence and operation is essential in providing network coverage for Vodafone and Telefónica.

It should be acknowledged that a sequential approach to site selection has been taken, whereby the proposal seeks to replace an existing ground based installation found at the application site. It should therefore be acknowledged that the proposed column would not add to the existing clutter of street furniture, as the proposal is a direct replacement for that which already exists on-site. Taking into account the residential nature of parts of the wider area, it is considered that this stretch of Pagham Road remains an appropriate stretch of adopted highway controlled land to site a streetworks style proposal. The scheme would be positioned on a wide stretch of grass verge which allows for unimpeded pedestrian and vehicular movements. There are mature trees and foliage in the immediate locality and together with the extent of existing street furniture, including being co-located next to another streetworks style base station these are all considered features that would help assimilate its change in form into this particular environment. In light of the above it is considered that the upgrade proposal would not be overly intrusive in the street scene and its visual impact would not outweigh the continued need and future 4G demands to provide coverage.

It is recognised that the now existing base station was determined prior to the adoption of the aforementioned NPPF. Nevertheless it is evident that the planning policy context has not altered significantly since permission was initially granted, in which the key principals of telecommunication development are deep rooted in planning policy. In this regard it is reasonable to presume that the NPPF has derived from PPG8 which was applied in the first instance. Therefore it is considered that there is limited material conflict between the latest adopted planning policies used today when compared to the policy context that has gone before. Taking into account the local planning policies which are applicable it is considered that the proposal accords with the Council development plan.

In light of the 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 land-use planning system. However the weight to be attached to this issue has to be determined accordingly in each case by the decision maker. It has been generally held, and widely established at planning appeal, that health concerns are not a sufficient basis alone for withholding planning permission providing it has been demonstrated that the proposed installation will comply with the ICNIRP guidelines.

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 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 operators are committed to ensuring that all new installations are ICNIRP compliant therefore it is considered that there is 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, in which the ICNIRP declaration takes into account the cumulative effect of the emissions from the proposed installation and all radio base stations present, at or co-located near to the proposed installation. Radio frequency emissions from the proposed installation will be many 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 concerns should not be so great as to warrant a refusal of the case on health grounds.

Contact Details

Name: (Agent)	Dominic Needham	Telephone:	[REDACTED]
Operator:	Vodafone Ltd	Fax no:	[REDACTED]
Address:	Mono Consultants Ltd Steam Packet House 76 Cross Street Manchester M2 4JG	Email:	[REDACTED]
Signed:	[REDACTED]	Date:	05.12.13
Position:	Town Planner	Company:	Mono Consultants Ltd
		on behalf of	Vodafone Limited & CTIL

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 27th 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>

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 signals², 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 produce 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).

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

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

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:

EMF Enquiries, CTIL, The Exchange, Arlington Business Park, Theale, Berks, RG7 4TY
Tel. 01753 564306, emf.enquiries@cornerstonemobile.net