SITE SPECIFIC SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	Prince Albert Road Streetworks	Site Address:	Footway of Prince Albert Road Camden London
NGR:	E527896 N183607		
Site Ref:	CS_14405/VF_80332/O2_46236	Site Type:[1]	Streetworks

2. Pre Application Check List

Site Selection

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

Annual roll out consultation with LPA

Date of last annual rollout information/submission:	October 2011
Name of Contact:	Head of Planning
Summary of outcome/Main issues raised:	No issued raised to date.

Pre-application consultation with LPA

Date of written offer of pre-application consultation:	07/12/11	
Was there pre-application contact:	Yes	**No**
Date of pre-application contact:	n/a	
Name of contact:	n/a	
Summary of outcome/Main issues raised: A pre application consultation letter was sent to Camden Council on 07/12/11 which included drawings of the proposed installation and requested comments on the proposed design and location of the equipment. We received a letter from Camden Council on 15/12/11 (ref: CA\2011\ENQ\07640) confirming that there would be a charge of £350 for pre application feedback. On that basis, our client instructed that we proceed with the application.		

Ten Commitments Consultation

Rating of Site under Traffic Light Model:	Green	**Amber**	Red
Outline Consultation carried out: Individual letters of consultation were sent to the ward councillors and the local MP dated 07/12/11.			
Summary of outcome/Main issues raised: No comments received to date.			

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

Will the structure be within 3km of an aerodrome or airfield?	Yes	**No**
Has the Civil Aviation Authority/Secretary of State for Defence/Aerodrome Operator been notified?	Yes	**No**

[1] Macro or Micro

Details of response: n/a

Developer's Notice

Copy of Developer's Notice enclosed?	**Yes**	No
Date served:	16 December 2011	

3. Proposed Development

The proposed site:
The site in question is found on the footway to the north side of Prince Albert Road. The surrounding area is predominantly recreational in character with parkland to the north and south. The land to the north of the proposed site accommodates a playground while the land to the south forms part of London Zoo. Prince Albert Road is a busy main road which travels along the northern boundary of Regent's Park. Prince Albert Road is lined with a mixture of tall, mature trees of up to 15 metre in height along with lower level hedging. The proposed site itself is not located within a Conservation Area but it is close to the boundary of the Regent's Park Conservation Area. The streetlights along Prince Albert Road are approximately 8-9 metres in height. There are no buildings in the immediate vicinity of the site which would have direct views of the proposed pole.

Enclose map showing the cell centre and adjoining cells:
See attached Telefónica and Vodafone coverage plots, showing the prediction from the proposed site and adjoining cells in the wider networks.

Type of Structure		
Description: The proposed installation of an 10.4 metre high shared streetworks pole accommodating antennas within a GRP shroud, 1No equipment cabinet and 1No electrical meter pillar on the footway adjacent Prince Albert Road, Camden, London (NGR: 527896E, 183607N).		
Overall Height of pole:		10.4 metres
Equipment Housing:	Harrier Cabinet	
Length:		1840mm
Width:		440mm
Height:		1400mm
Equipment Housing:	Meter Pillar	
Length:		378mm
Width:		182mm
Height:		872mm
Tower/mast etc – type of material and external colour:	Galvanised steel – colour coated dark green (RAL 6009) unless otherwise requested.	
Equipment housing – type of material and external colour:	Galvanised steel – colour coated dark green (RAL 6009) unless otherwise requested.	

Reasons for choice of design:
Telefónica and Vodafone have a common interest in providing coverage from the same site and are seeking to mast share together. In this instance Vodafone, are acting as the lead operator whilst Telefónica UK Limited is referred to as the sharer. Technological advances and the Cornerstone agreement has enabled a mast share structure that breaks the barriers of conventional mast share schemes which in the past have typically involved tall heights due to the separation needed between sets of stacked antennas and or large exposed antenna head-frames. Aware that some standard mast designs with separate operator exposed antennas can appear incongruous within a particular street scene, it is highlighted that the antennas would be concealed within a cylindrical shroud which would be integral to the upper most section of the monopole. The overall height of the proposed column at 10.4 metres to top has been kept to its technical minimum so as to allow for adequate coverage to the target area whilst the dimensions of the structure are the thinnest available so as to be able to support two operators sets of antennas. Similarly it was previously the case that streetworks style installations could not be shared and were used as single operator base stations. Taking advantage of the Cornerstone initiative, it is of note that both sets of antennas 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 the proposed column as a whole, to the naked eye the mast share monopole gives the illusion of a single operator installation. Furthermore 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. It has been suggested that the proposed pole will be colour coated dark brown in order to give the installation the appearance of a timber telegraph pole thereby reducing its visual prominence in a street which contains mature trees. While we have suggested a dark brown colour for the proposed pole, we would be willing to use any colour coating suggested by the Council if it was considered beneficial in minimising visual impact.

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.

It is of note that the proposed equipment cabinet is small for a telecommunications development (not more than 2.5m^3) and will be located alongside the monopole. The proposed equipment cabinet has an appearance similar to existing utility 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 setting. 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.

4. Technical Information

ICNIRP Declaration attached ICNIRP 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 the site are taken into account.	**Yes**	No

Frequency:	2100 MHz
Modulation characteristics[2]	UMTS
Power output (expressed in EIRP in dBW per carrier) In order to minimise interference within its own network and with other radio networks, Telefónica and Vodafone 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 Telefónica and Vodafone separate networks, the radio base station that is the subject of this application will be configured to operate in this way.	Maximum 32 dBW
Height to underside of antennas (metres above ground level)	7.08 metres

5. Technical Justification

Enclose predictive coverage plots.

Reason(s) why site required e.g. coverage, upgrade, capacity (map attached if required):
Telefónica and Vodafone are both Electronic Communications Code Systems Operators licensed under the terms the Communications Act 2003 to provide mobile personal communications networks in the UK. In order to improve the level of service it provides for their customers in line with its licence requirements, both companies are constantly developing their networks, as well as refining and modernising their equipment. The dynamic

[2] The modulation method employed in GSM is GMSK (Gaussian Minimum Shift Keying) which is a form of Phase modulation
The modulation method employed in UMTS is QPSK (Quad Phase Shift Keying) which is another form of Phase Modulation

nature of technological advances in the telecommunications industry, coupled with the demands from subscribers to provide new and better quality services, dictates a continual reinvestment programme in the infrastructure behind the use of mobile devices. Operators are currently involved in developing new sites to provide coverage to areas which have not benefited from access to the full services they offer and to areas of their existing network where increased capacity or improved service quality is required.

Many more people now use mobile devices for personal and business purposes and to a large proportion of the UK population; the use of a mobile phone is now considered an essential part of people's everyday lives both at work and in their leisure time. These customers legitimately demand and expect to have adequate signal coverage and capacity for their mobile devices throughout the country. Mobile phones are now intrinsic to our personal and professional lives and with that people expect they will be able to use their devices when and wherever they need them. However it remains the case in some areas and at particular times of the day, capacity on mobile networks may not keep up with demand, creating network congestion, poor download speeds and service disconnections. Combating these technical deficiencies is at the forefront of the origins of a new search cell instruction and the need to upgrade exiting base station sites in an operator's network.

The ownership and use of mobile devices has changed dramatically since its mass market conception in which the introduction of pre-pay mobile tariffs in the late 1990s led to rapid growth in mobile phone take-up. This resulted in fierce competition between operator providers which lead to falling prices meaning mobile phones and usage are a lot more affordable to the general consumer market. As the cost of a handsets and bundle packages has fallen this has coincided with the decline in use of fixed line calls, whereby according to the independent regulator and competition authority, Ofcom, in 2006 household mobile take-up passed that of fixed lines for the first time.

Although the main functionality of mobile phones to support voice calls and messaging remains at its core, in recent years the emergence of smart phones and high-spec wireless devices has put added pressures on operators networks as customers demand reliable data streaming and coverage capacity. Indeed the increasing ownership of smart phones is driving significant increases in the number of people accessing the internet on mobile phone networks, creating the emergence and growth of the 'pocket internet'. According to Ofcom research data volumes over mobile networks increased by 240% in 2009, in which this demand has put significant strain on operators existing networks infrastructure and thus the need for more base stations. Ofcom have reported that over a quarter of the population in the UK said they have a smart phone, more than double the number two years ago, in which 23% of adults are reported to access internet content and/or send emails from their mobile phones. In this respect many consumers have commented that typical mobile speeds and usage caps are insufficient for the use of data-hungry mobile devices seeking to download music, video content and applications. Indeed internet-based communications services such as social networking sites and instant messaging has put added pressure on mobile phone networks as the growth in the average time spent online can be attributed to the use of the internet becoming more mainstream and accessible via mobile devices.

Ofcom have noted that many households now have a variety of means of telecommunications available at their finger tips from their use of satellite systems, fixed line telephones, broadband and mobile phones. However there has been a growth in the proportion of mobile-only homes as network providers increase the amount of minutes that are bundled within mobile contract line rental and market dongle support, meaning that it is not always necessary to have a landline in order to be able to access the internet. In-building coverage and capacity is a key objective of the operators infrastructure rollout and upgrade, however given the very nature of mobile devices which can be taken and used wherever they are needed, this has resulted in the need for high threshold levels of 3G coverage to provide this service to its customers. Indeed in light of the use of smart phones, SIM card enabled tablets as well as mobile supported satellite navigation systems, this means that in car and outdoor signal strengths need to provide adequate and reliable coverage for the use of hand portable devices. According to YouGov, satisfaction among mobile users with 'staying connected' has seen the steepest declines of all network-related attributes, with 20% of mobile broadband rating their experience as poor in July 2009, compared to 9% in June 2008.

In light of the above it is emphasised that the only reason an operator seeks to place a base station anywhere is to improve the service to its customers. PPG8 confirms that local planning authorities should not question the need for a proposed telecommunications development. Indeed it would not be financially viable for operators to develop their existing networks further and invest time and monies into any particular case, if there was no demand for the mobile phone service it seeks to provide. Irrespective of the above, to many, the correlation between their own personal mobile phone usage as opposed to the wider customer needs and demands in a particular area are unrelated matters. Given peoples expectations that their mobile devices will function regardless when and wherever they need them, it should not be taken for granted that there is a robust telecommunication infrastructure behind their use. Therefore a base stations contribution within the operator's network should be seen as an important economic driver and material planning consideration.

A site is required in this location in order to provide 3G coverage for both Telefónica and Vodafone to this area of London.

The transfer of data, video and internet connections require a high quality signal as they are not as easily modulated or corrected by the handset as the voice. This in turn results in the requirement for an increased number of sites for antennas and masts to provide the service. Due to the increased data transfer, the location of 3G base station sites is even more critical. Base stations must be located where local demand exists in order to provide the required levels of service otherwise the network will not function.

This site is required not only to provide an 'on-street' service in this area but also good quality 'in-building' coverage which is increasingly important as there is growing reliance by both businesses and householders on mobile technology. To enable good quality 'in-building' coverage this area a minimum level of urban coverage is required. The coverage plots enclosed with this application clearly demonstrate the level of coverage that would be achieved from this site for Vodafone and Telefonica, particularly showing how the proposed site would go a long way in improving the level of coverage in the vicinity of the proposed site. In these circumstances there is an obvious need for a signal in this area.

Further detail regarding the general operation of the Telefónica and Vodafone 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.

6. Site Selection Process – alternative sites considered and not chosen

- Huxley Theatre, Regents Park Zoo, London. NGR E528165 N183581 – The landlord is not interested in accommodating telecommunications equipment on their land.
- Albert Gate Building, Regents Park Zoo, London. NGR E528142 N183496 – The landlord is not interested in accommodating telecommunications equipment on their land.
- Regents Park Zoo, London, NGR E527975 N183408 – The landlord is not interested in accommodating telecommunications equipment on their land.
- 31 Kings Court, Prince Albert Road, London. NGR E527619 N183507 – Despite numerous approaches to the landlord, no response has been forthcoming. We therefore have to assume they are not interested in Vodafone's and Telefónica's proposal.
- Prince Albert Court, London. NGR E527674 N183544 – Despite numerous approaches to the landlord, no response has been forthcoming. We therefore have to assume they are not interested in Vodafone's and Telefónica's proposal.
- 23 Prince Albert Road, Prince Albert Road, London. NGR E528125 N183679 – Despite numerous approaches to the landlord, no response has been forthcoming. We therefore have to assume they are not interested in Vodafone's and Telefónica's proposal.

General Background

As an electronic communications network operator, Telefónica and Vodafone have the benefit of Permitted Development rights under Part 24 of Schedule 2 to the Town and Country Planning (General Permitted Development) Order 1995 (as amended). This is a GPDO application to Camden Council.

As highlighted previously, the Telefónica Group have formed a strategic partnership with the Vodafone Group to share their mobile assets across Europe. In the UK this project is called 'Cornerstone' in which it means Telefónica UK Limited will be working closely with Vodafone UK Limited to pool their resources so as to save on infrastructure costs and make substantial improvements to their 2G and 3G networks. In essence this exclusive agreement between the two aforementioned operators breaks barriers in addressing the historical limitations encountered in conventional mast share schemes, in which it will allow both organisations to consolidate the number of base stations they require through sharing each others sites and in turn significantly reduce the

environmental impact of network development.

The proposal is considered against the following planning policies.

Planning Policies

Local Planning Policy

It is recognised that Section 38 (6) of the Planning and Compulsory Purchase Act 2004 states that; *"If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise".*

The development plan is provided by the Camden Local Development Framework which was adopted in November 2010. There are no specific policies relating to telecommunications development within the Local Development Framework. Due to the peculiar nature of telecommunications development we believe PPG8 should be given greater weight than the more generic policies within the Core Strategy or Development Policies documents.

National Planning Policy

PPS1 - Delivering Sustainable Development (2005)
Planning Policy Statement 1 (PPS1) sets out the overarching planning policies on the delivery of sustainable development through the planning system, in which it replaces PPG1 "General Policy and Principles". It is recognised by many that telecommunication networks are a core infrastructure asset for any modern economy, and local authorities need to plan positively for their installation and long term use. PPS1 advocates sustainable economic development whereby it is noted in paragraph 23 that the Government is committed to promoting a strong, stable, and productive economy. In this regard it is noted that paragraph 23 (viii) aims to; *"ensure that infrastructure and services are provided to support new and existing economic development and housing",* in which the rollout and upgrade of telecommunications sites can be justified towards addressing such matters.

PPG 8 – Telecommunications (2001)
PPG8 'Telecommunications' is the national planning document offering guidance to local authorities in the formulation of local plan policy and evaluation of telecommunications developments. Overall aim of PPG8 is to allow for the growth of new and existing telecommunications networks in conjunction with environmental considerations.

Paragraph 1 of PPG8 emphasises the Governments' generally positive approach to telecommunications: *"The Government's policy is to facilitate the growth of new and existing telecommunications systems whilst keeping the environmental impact to a minimum. The Government also has a responsibility for protecting public health."* Paragraph 1, PPG8.

PPG8 goes further in paragraph 2 and states that: *"The aim of telecommunications policy is to ensure that people have a choice as to who provides their telecommunication service, a wider range of services from which to choose and equitable access to the latest technologies".*

Paragraph 7 advises that each telecommunications system have different antenna types, siting needs and other characteristics: *"Planning Authorities should have regard to any technical constraints on the location and proposed development."*

As noted in paragraphs 19 - 23, in order to limit visual intrusion, the Government attaches considerable importance to keeping the number of radio telecommunications masts, and sites for such installations to a minimum by promoting the use of mast sharing.

PPG8 acknowledges the commercial pressures placed on mobile telecommunications systems and that basis of demand for such services, confirming that: *"These systems are demand-led. Increase in the use of mobile phones has meant that operators are continually expanding their networks to accommodate customer requirements of service and quality. The greatest need for base station sites is usually in built-up areas where there is the greatest density of mobile users, and within a mile or two of the main roads, where the demands on network capacity are greatest."* Paragraph 22, PPG8

Paragraphs 12 and 13 of Annex 1 provide guidance regarding the siting and appearance of telecommunications facilities. Factors, which the LPA should consider when assessing applications for ground based masts, include:

The height of the site in relation to surrounding land;
The existence of topographical features and natural vegetation;
The effect on the skyline or horizon;
The site when observed from any site, including from outside the authority's own area;
The site in relation to designated areas;
The site in relation to existing masts, structures or buildings; and
The site in relation to residential property.

Code of Best Practice on Mobile Phone Network Development (2002)
The Code of Best Practice was published in November 2002 and produced jointly by all Mobile Phone Operators, and representatives of Central and Local Government. It provides clear and practical advice to ensure that delivery of significantly better and more effective communication and consultation between operators, local authorities and local residents.

The limits of permitted development are summarised in the Code of Best Practice on Mobile Phone Network Development. In paragraph 66 there is particular reference to equipment cabinets less than 2.5 metres in volume.

Paragraph 126 acknowledges the options for design used by an operator will be affected by site conditions, technical constraints, landscape features and capacity requirements. The main options would include mast and or site sharing; and installation on existing buildings and structures.

With regards mast and site sharing it is stated in paragraph 127 that: *"it has been a longstanding Government policy objective to encourage telecommunications operators, wherever practicable, to share masts and sites as a means of reducing overall mast numbers."*

Paragraphs 140 - 145 identify general design principles in which camouflaging or disguising equipment is considered materially appropriate. In reducing the environmental and visual impact of a ground based installation the Code of Best Practice promotes the use of simple and uncomplicated designs.

Concerning the erection of new ground based masts, paragraph 148 provides examples of where the environmental and visual impact of the mast can be greatly reduced. Paragraph 148 states:

- *Placing the mast near similar structures. For example, industrial and commercial premises, road signs and lamp posts;*
- *Using simple and unfussy designs. Masts which have complex designs are more likely to dominate and be in discord with the landscape and have adverse visual impacts; and*
- *Appropriate colouring.*

Paragraph 151 – 160 asks operators to bear in mind that there are certain locations where sensitive siting and design are of increased importance and where practicably possible try and avoid whilst there are other certain locations which are more suitable for development.

Reasons for Siting & Appearance

A thorough site search of the search area and sequential approach was undertaken to site selection in accordance with operators' licence obligations and advice in PPG8 and the Code of Best Practice. It has been widely promoted that telecommunications operators should take a sequential approach to site selection, in which the following options are commonly regarded in order of preference: -

- Upgrading an operator's own existing base station(s);
- Using existing telecommunications structures belonging to another code system operator, i.e. Mast sharing;
- Co-location or site sharing alongside existing telecommunications development;
- Installing telecommunication on existing buildings or tall structures including floodlights and National Grid pylons;
- The appropriateness of using small scale equipment; and finally
- Erecting a new ground based mast site.

PPG8 emphasises favourably the use of existing buildings and structures prior to the erection of new ground based installations. It continues with a sequential approach to identifying the best available option before emphasising the importance of limiting the visual intrusion of installations. Telefónica and Vodafone have sought to follow the guidance contained in PPG8 when identifying a suitable location and secondly when choosing an

appropriate design. This has initially focussed upon the use of existing buildings and masts in the cell area rather than erecting a ground based mast and secondly by siting and designing the equipment so as to limit visual impact.

There are no existing masts available in the search area that can be upgraded, other operators' masts that can be shared or existing tall buildings or structures that could be utilised. Therefore, it is also not possible to co-locate alongside existing telecommunications development. The use of small scale equipment is not appropriate as they often serve very small areas such as individual streets and buildings, which are known as microcells and picocells. The site is a macrocell, the largest area of coverage required. Consequently, there is no alternative to a shared ground based monopole structure.

The site in question is found on the footpath adjacent to Prince Albert Road which is lined with trees of up to 15 metres in height along with smaller trees and hedges. There is a regular sequence of 8-9 metre high street lighting columns adjacent to the carriageway along Prince Albert Road. It is considered that the proposed installation of a 10.4m high pole , which would have a similar appearance to a timber telegraph pole, and ancillary equipment would not look out of place in this context. The existing vertical elements in the street scene, including the street furniture and mature trees, would enable the proposal to easily assimilate with its surrounds. The streetpole would be seen within the context and sequence of existing vertical street lighting columns and structures in the street scene and would conform to the general pattern of development along Prince Albert Road.

The diameter of the column is as narrow as physically possible in order to accommodate the required antennas for Vodafone and O2. While the proposed pole would be slightly taller than existing streetlights and the pole itself would be have a larger diameter than the nearby lighting poles, it is not considered that it would have any significant impact on the character and appearance of the streetscene given its siting adjacent to a busy main road lined with trees and hedging and removed from buildings.

Irrespective of the installation's use as a telecommunications base station, it should be appreciated that the introduction of a new item of street furniture will always be, to some degree, a noticeable addition within the public realm, to those regular passers by and to residents found closest. However it should be recognised that visibility or indeed a site's proximity to a particular use does not automatically result in an overwhelming adverse harm occurring. This is argued in the case of the application proposal, whereby the siting of the mast share installation within the constraints of the immediate and wider setting, coupled with the technical limitations towards the scheme's design aesthetics, should be borne into consideration when assessing the proposal in its surroundings.

Always conscious of a proposal's proximity to nearby Conservation Areas, every attempt has been made to minimise the visual impact of the proposal towards the wider context by careful siting and design. The applicant recognised from the outset of their search that the intended target area is primarily recreational in character. Therefore the decision was made to locate a streetworks proposal along this particular stretch of Prince Albert Road as it forms one of the main arterial highways through the area.

It is appreciated that the site will be visible to pedestrians and road users, however it is considered that the siting of the streetpole and ancillary cabinets will not appear as an overly intrusive feature. In close quarters, it is clear that road users will not have their visibility impaired by the proposal. Similarly the scheme has been sited upon a wide pavement, whereby its massing would not impede safe pedestrian movements.

The technical requirements of mobile communication operators such as Telefónica and Vodafone are well documented within PPG8 and this policy guidance is clear that telecommunications development may not always be reflective of other items of street furniture. PPG8 recognises that it is the technical requirements of the telecommunications operator that dictate the height and appearance of some proposed installations, especially when a structure is shared by more than one operator. As is the case with telecommunications development it would be unrealistic to expect that a site specific ground based mast can replicate exactly the height and aesthetics of the existing street furniture or masts deployed by other operators elsewhere. Taking into account the topography and general height of built and natural clutter of the target area, coupled with the very nature of mobile phone technology, it should be appreciated that the antennas need to be sited at height in order to function and provide meaningful coverage.

As well as catering for inherent coverage shrinkage, it should appreciated that base station sites can not be located too close to each other as this can create technical interference within the network. Should a base station be found too close to a neighbouring installation, this will result in competing coverage problems as a base station site tries to become the dominant cell. Similarly should a 3G base station be located too high it will create technical interference issues in the wider network. In this respect the height of the proposed structure at 10.4 metres is technically viable towards controlling where best possible the performance of the site in the wider network. Coupled with the challenges faced when aligning where best possible the Telefónica and Vodafone

networks, which have historically grown organically, this has implicated in smaller search areas less technical flexibility. Therefore it is highlighted that the chosen site is the optimum location within the target area to provide the coverage to the respective Telefónica and Vodafone networks.

To justify the siting of the proposed base station, it is highlighted that all networks are made up of many overlapping cells covering a geographical area over which coverage must be achieved. These cells overlap slightly in order to ensure that a phone call remains continuous as a user moves from one cell to another. When a user nears the edge of a cell, the overlap in coverage ensures that the network will hand over the phone call to the next base station in the adjacent cell with the stronger signal. This ensures that the phone call does not drop or cut out. With the emergence of smart phones which can access the internet, it should be noted that in times of high customer volumes and when demand for data streaming increases, the coverage from a base station site will shrink and effectively leaves localised coverage holes on the edge of a cell. To overcome such issues the coverage footprint from a base station site needs to overlap with the adjoining cells so as to maintain consistent coverage throughout.

Wherever possible the applicant seeks to maximize screening as a backdrop or foreground to a development. However it must be appreciated that in locating close to sizeable objects, these pose a nearfield obstacle towards an installation's coverage performance. When an obstacle is close to a radiating site it creates a considerably larger problem to the signal than an obstacle that is further away, hence the need to clear the obstacle with additional height and optimise the antenna orientations away from obstructions. Taking into account the general height and clutter in the area and the arrangement of the Telefónica and Vodafone antennas, as well as the topography of the target area, it should be recognised that in pursuing an option any lower than 10.4 metres would not allow adequate signal to project across the target area and fulfil the operators' requirements.

Such technical limitation exists for both Telefónica and Vodafone, in which it should be recognised that if separate single operator installations were pursued by Telefónica and Vodafone this does not imply that smaller masts would be technically suitable. Hence the proposed height at 10.4 metres negates the proliferation of unnecessary and or single operator telecommunications development into the wider area.

In light of the character of the target area and the constraints it presents, it is considered that the proposed site represents an appropriate location in which to position a base station. It is considered that the height and design of the dual user streetworks monopole would not significantly impact upon the amenity of the area. It is considered that the proposal would not form an untoward feature within the street scene in which its siting, appearance and height can be justified. In respect it is considered that the proposal strikes a good balance between environmental impact and operational considerations.

Health & Safety

Paragraphs 29-31 and 82-101 of PPG8 provide advice to local planning authorities on the matter of health considerations with respect to making planning decisions about telecommunications development.

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 provided it has been demonstrated that the proposed installation will comply with the ICNIRP guidelines.

Government advice regarding mobile telephone technology and health issues is outlined within the PPG8 (2001) which states: *"it is the Government's firm view 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. In the Government's view, 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."* Paragraph 98, PPG8.

In this instance, Telefónica and Vodafone believe that it is not necessary to consider health effects further, as recommended by PPG8. Both operators are committed to ensuring that all new installations are ICNIRP compliant, and consequently it is considered that there is no basis for this application to be refused on health and safety grounds or for reasons relating to public concerns about health and safety. An ICNIRP compliance certificate is enclosed as part of this submission in which it is of note that the ICNIRP declaration produced by Telefónica and Vodafone takes into account the cumulative effect of the emissions from the proposed Telefónica and Vodafone installation and all radio base stations present, at or co-located near to the proposed installation. RF 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 application on health grounds.

Contact Details

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Signed:		Date:	16 December 2011

Our Ref: CS_14405/VF_80332/O2_46236

The Chief Planning Officer
Camden Council
Town Hall
Argyle Street
London
WC1H 8EQ

16 December 2011

Dear Sir or Madam,

DECLARATION OF CONFORMITY WITH ICNIRP PUBLIC EXPOSURE GUIDELINES FOR THE INSTALLATION OF TELECOMMUNICATIONS EQUIPMENT ON THE FOOTWAY ADJACENT TO PRINCE ALBERT ROAD, LONDON

I refer to the Declaration of Conformity with ICNIRP Public Exposure Guidelines ("ICNIRP Declaration"), which forms part of this submission in relation to the proposed telecommunications installation at the above address.

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 UK Limited 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.

If you have any further enquiries concerning the "ICNIRP Declaration" certificate or the certification process please contact the Cornerstone EMF UNIT on 08454 450 450.

Yours faithfully,

PROJECT MANAGER
Mono Consultants Ltd

Our ref: CS_14405/VF_80332/O2_46236

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

Vodafone UK Limited
Vodafone House
The Connection
Newbury
Berkshire
RG14 2FN

Declares that the proposed equipment at:

Footway adjacent to Prince Albert Road
Camden
London
NGR: E527896, N183607

is designed to be in full compliance with the requirements of the radio frequency (RF) public exposure guidelines of the International Commission on Non-Ionizing Radiation (ICNIRP), 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: 16 December 2011

Signed:

Name: Mr Chris Baker

Position: Project Manager

General Background Information for Telecommunications Development

This document is designed to provide general background information on the development of the Vodafone and O2 networks. It has been prepared for inclusion with planning applications and supports network development proposals with generic information regarding;-

1. Introduction
2. Digital networks
3. Site selection process
4. Planning policy guidance
5. Site or mast sharing
6. Councils
7. Consultation with schools
8. Legal cases
9. Further information

Note - All references in this document refer to England only.

1.0 INTRODUCTION

Over 25 years ago under the Telecommunications Act 1984, a licence was granted to Vodafone and O2 to provide a wireless (or mobile) phone service 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/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, Listed Buildings, and 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 – "2G/3G" OR SECOND/THIRD GENERATION

The Vodafone and O2 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 O2 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 O2 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 3G 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.

Whenever possible, Vodafone and O2 will ensure it complies with planning policy guidance by ensuring apparatus be 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 this frequency, 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. Approximately 66 per cent of Vodafone and O2 sites are located on existing structures or buildings. Vodafone and O2 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.

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 / O2's 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 installation to identify and sequentially discount alternative site options:-

1. Following a technical review which identifies need, Vodafone / O2's radio engineers undertake a desktop analysis to identify the best way of meeting the site requirement. This is completed by using Vodafone / O2's computerised radio propagation modelling tool. This tool shows every site on both 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, adherence to planning and environmental policy, and general sensitivity. 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. The issues associated with the proposal are discussed to obtain their views on the options under consideration. After this review the final preferred option is selected.

7. Finally a site survey provides a full structural analysis of site including identifying 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.

Vodafone and O2 are committed to ensuring the number and visual impact of any additional sites is minimised. Vodafone and O2 will continue to develop and utilise sympathetic and innovative design solutions.

4.0 PLANNING POLICY GUIDANCE ON TELECOMMUNICATIONS

PPG 8 seeks to facilitate the growth of new and existing telecommunications systems whilst keeping the environmental impact to a minimum. It encourages local planning authorities to respond positively to telecommunications development proposals, whilst taking into account other planning policy. This advice is reiterated in the Draft National Planning Policy Framework.

PPG 8 states that fast, reliable and cost-effective communications can attract business to an area. PPG 8 states that good communications can enrich life at home and offer new choices in education, entertainment, shopping and banking.

The Draft National Planning Policy Framework advises that advanced, high quality communications infrastructure is essential for 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 Government's objective for the planning system is to facilitate the growth of new and existing telecommunication systems in order to ensure that people have a choice of providers and services, and equitable access to the latest technology.

4.1 Need for development

PPG 8 advises that operators are required to provide a high quality service, which includes the need to meet customer demand. It states that systems are demand-led, therefore operators are continually expanding their networks to accommodate customer requirements of service and quality.

PPG 8 advises that local planning authorities should have regard to any technical constraints on the location and proposed development. Material considerations include the significance of the proposed development as part of a national network.

The Draft National Planning Policy Framwork advises specifically that local planning authorities should not question whether the service to be provided is needed nor seek to prevent competition between operators, but must determine applications on planning grounds.

4.2 Siting and design

PPG8 identifies that "protection from visual intrusion and the implications for subsequent network development will be important considerations in determining applications. Masts and antennas often require a particular operating height, which allows signals to clear trees and urban clutter. Telecommunications development may therefore need particular locations in order to work effectively." (Paragraph 64 – Appendix).

PPG 8 states "Siting and design concerns may centre particularly on the type of mast and its impact... Its height, ancillary development and the scope for landscaping and screening will also be important considerations. But many of the antennas have special siting needs because they have a limited range or require line-of-sight. Authorities should take account of these needs." (Paragraph 74, Appendix)

In seeking to arrive at the best solution for an individual site, local planning authorities and operators should consider the use of sympathetic design to minimise the impact of development on the environment. It advises that depending upon their location, an appropriately designed single operator mast may have a smaller environmental impact than a shared one.

5.0 SITE / MAST SHARING

Vodafone and O2 actively encourages and supports site sharing for both commercial and environmental reasons. All operators are required to explore site-sharing opportunities under the terms of their licence. Vodafone and O2 has implemented a number of measures to identify and maximise site-sharing opportunities.

Where a new ground based radio base station site is required, every effort will be made to ensure that sufficient land is acquired to accommodate a second operator's equipment. Approximately two thirds of all Vodafone and O2 radio base stations are now located on existing structures, such as buildings, pylons or existing masts.

6.0 COUNCILS

6.1 Moratoria

Government guidance on mobile telecom installations advises that 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 English Government's Code of Best Practice on Mobile Phone Network Development recommends that local authorities develop a register of local base stations based on a map. This is mirrored in the devolved administrations.

The code goes on to say, *"Ideally, all the information should be available to be viewed electronically and in hard copy. Local authorities should ensure that the mast register is kept up to date and may make a reasonable charge if anybody wishes to obtain a copy of any of the information."*

The MOA welcomes the provision of registers of base stations by local authorities in addition to Ofcom's public database of UK base stations. http://www.ofcom.org.uk/sitefinder/

Market research by Ipsos MORI indicates that approximately two thirds of UK local authorities have mast registers.

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 English Government's Code of Best Practice on Mobile Phone 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 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 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 the 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

HEALTH AND MOBILE PHONE BASE STATIONS **March 2010**

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 is 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 O2 ensure that our radio base stations are designed and operated so that the public are not exposed to radio frequency fields above 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 over 1300 peer-reviewed publications on the biological and health effects of radiofrequency (RF) signals, which are used in mobile communication technology. Over the past 20 years many national and international agencies have collated, summarised and assessed these publications in research reviews. The majority of these reviews conclude that there is no scientific evidence that radiofrequency fields from radio base stations cause adverse health effects. These research reviews are used by Governments to develop policy on exposure to radiofrequency signals.

The World Health Organisation (WHO) concluded in 2006 that ***"considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that weak RF signals from base stations and wireless networks cause adverse health effects"***[fact sheet number 304].

Furthermore, the Mobile Telecommunications Health Research (MTHR) programme report, which described the results of this UK research initiative into mobile phone safety to date, did not find any evidence of adverse health effects from mobile phone use or living near radio base stations. This report published in September 2007 concluded: ***"None of the research supported by the Programme and published so far demonstrates that biological or adverse health effects are produced by radiofrequency exposure from mobile phones."*** The report also noted that measurements of radio signals from base stations show that exposures are well below international guidelines.

The MTHR findings are reassuring and consistent with the conclusion that no adverse health effects from mobile phone use have been established. This is reflected in more than 30 independent scientific reviews published in the UK and around the world during the past nine years. Equally reassuring, the MTHR report recognises that, in certain areas, no further research is required.

Compliance with International Exposure Guidelines

All Vodafone and O2 installations are designed, constructed and operated to comply 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).

Furthermore, base stations operate at low power and emit low levels of radiofrequency (RF) fields and 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:

Further health and environmental information is also available on the Vodafone website at: www.vodafone.co.uk (see: Network & Health). A downloadable brochure 'Facts about the Network' also provides a more comprehensive review of research on mobile phones, masts and health.

We encourage wider understanding of the science of RF and health.

The external links on this page are some of the key sources of authoritative information.

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

- **ICNIRP** - http://www.icnirp.org/
  International Commission on Non-Ionizing Radiation Protection, Munich, Germany.

- **HPA** - http://www.hpa.org.uk/HPA/Topics/Radiation/UnderstandingRadiation/1158934607698/
  The Health Protection Agency, a special health authority providing an integrated approach to protecting UK public health.

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

- **UK Mobile Operators Association** - http://www.mobilemastinfo.com/
  An association representing all five UK mobile phone operators.

For further information please contact Vodafone UK or O2 UK:-
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