SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	HAM SAILING CLUB	Site Address:	RIVERSIDE DRIVE, RICHMOND, LONDON, TW10 7RX.
National Grid Reference:	E516656 N172422		
Site Ref Number:	CTIL149008 VF77168_0 TEF43932	Site Type:[1]	Macro

2. Pre Application Check List

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

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

Site Specific Pre-application consultation with local planning authority

Was there pre-application contact	**Yes**	No
Date of pre-application contact:	16 September 2019	
Name of contact:	Head of Planning	
Summary of outcome/Main issues raised: No response received at the date of this application.		

Community Consultation

Rating of Site under Traffic Light Model:	Red	Amber	**Green**
Outline of consultation carried out: A letter of consultation was sent 16 September 2019 to Councillors Andrée Frieze, Penelope Frost, Gareth Richards, Democratic Services, London Borough of Richmond upon Thames, Civic Centre, Twickenham, TW1 3BZ			
Summary of outcome/main issues raised (include copies of relevant correspondence): No response received at the date of this application.			

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 or functional relationship with the application site.
Outline of consultation carried out with school/college *(include evidence of consultation):* N/A
Summary of outcome/main issues raised (include copies of main correspondence): N/A

[1] Macro or Micro

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:	27 September 2019	

Proposed Development

The proposed site:
The proposed site is found at HAM SAILING CLUB, RIVERSIDE DRIVE, RICHMOND, LONDON, TW10 7RX. For reference purposes only please see below a photograph of the site: -

Application site

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

Type of Structure *(e.g. tower, mast, etc):*	
Description: Installation of a 18metre lattice tower with 6no. antenna at the top. Installation of 4no.dishes. Installation of 2no. GPS Modules above the antenna. Installation of 15no. RRH's fixed to tower leg. Installation of 18no. ERS units fixed to tower legs. Ancillary equipment.	
Overall Height:	18 metres
Height of existing building *(where applicable):*	N/A
Equipment Housing: 2no. 42U Racks	
Length:	760mm
Width:	600mm
Height:	1980mm
Materials *(as applicable):*	Galvanised steel, painted grey (RAL 7035)
Equipment Housing: 2no. ERS Racks	
Length:	620mm
Width:	620mm
Height:	1770mm
Materials *(as applicable):*	Galvanised steel, painted grey (RAL 7035)
Equipment Housing: 1no. CSC cabinet	
Length:	800mm
Width:	660mm
Height:	1770mm
Materials *(as applicable):*	Galvanised steel, painted grey (RAL 7035)

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

In this case the environmental benefits have meant the number of antennas and the overall height of the installation has been kept to minimum.

The proposed apparatus is to be installed at a height of 18metres so as not to compromise on the centre line of the antennas when taking into account the extent of surrounding obstacles that they need to clear, coupled with the extent of the target area in relation to neighbouring sites within the operators single grid network. In this regard, the lowest possible height for the antennas has been progressed here so as to present the optimum angle of projection that allows the antennas to see the target audience as much as possible and so enable a reliable signal to propagate across the target area. Taking this into account and to justify the design yet further, it should be recognised that should the applicant pursue a structure any lower, then this would have a direct impact on the proposed base station performance making it an unsuitable option for the operators to invest in. Its footprint of coverage would be greatly reduced and it may result in the need for another new base station in the area, rather than as proposed just one, so preventing the proliferation of telecommunication in the area. In this respect the height and design of the proposal presents the optimum technical solution and negates the unnecessary need for additional base stations to serve the target audience.

The proposed antennas and their positions on the mast offer the technically preferred solution, in which where possible the antennas will be titled and orientated so as to provide cell specific coverage to the demands of the target area. Taking into account the arrangement and the character and appearance of the area, the extent of development has been kept to a minimum. It is considered that the proposed telecommunications installation on the roof of the building will have a negligible visual impact on the streetscape and skyline given the scale of the apparatus and their position at height within an urban streetscene, in which it would not be uncommon to find such apparatus. Added to this fact ,the proposed mast is to be located amongst trees which are upto 8metres tall. This will help reduce the visual impact of part of the mast and the equipment in the fenced compound from all directions in the area.

The proposed antennas will be fixed on to a number of individual support poles on the mast. The proposed antennas will be left in their manufactured grey form so as to reduce their visual prominence against the skyline. In this regard although the proposed antennas will be seen from wider vantage points, it is considered that the level of visual impact has been kept within reasonable bounds when taking into account the extent of development balanced against the operational requirements of the operators. Also as the proposed telecommunication development will provide multiple technology platforms i.e. 2G, 3G and 4G for both operators, thus catering for the areas connectivity demands.

The proposed equipment cabinets are less than 2.5m^3 each and will be located in the proposed fenced compound. 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.

In light of the above and the site's context, it is considered that the design of the mast itself and the ancillary development associated will have a minimal impact upon the visual amenity of the area. The proposal as a whole is justified and strikes a good balance between technical constraints and environmental considerations. Furthermore it is considered that there is a raft of material considerations that act in favour of this case which would outweigh any resultant minimal harm identified.

Technical Information

International Commission on Non-Ionizing Radiation Protection Declaration attached (see below) International Commission on Non-Ionizing Radiation Protection public compliance is determined by mathematical calculation and implemented by careful location of antennas, access restrictions and/or barriers and signage as necessary. Members of the public cannot unknowingly enter areas close to the antennas where exposure may exceed the relevant guidelines. When determining compliance the emissions from all mobile phone network operators on or near to the site are taken into account. In order to minimise interference within its own network and with other radio networks, Telefonica 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 Telefonica'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.	**Yes**	No

3. Technical Justification

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

A new base station site is required in this location in order to maintain existing network coverage and capacity, as well as catering for added multiple technologies, most notably 4G for Telefónica, commonly known as O2 together with the provision for future 5G.

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

Furthermore the new Code of Best Practice on Mobile Phone Network Development published by the Mobile Operators Association (MOA) in June 2016 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.

Mobile UK in their publication **Councils and Connectivity - How local government can help to build mobile Britain** states:- *"The UK's mobile connectivity is getting better and better. Indoor call coverage from all four mobile networks is now available in 92% of UK premises; data coverage from all operators is now available in 88% of UK premises. This has been achieved by the mobile industry investing billions of pounds every year into network capacity, coverage and capability.*

The investment in mobile infrastructure will continue and it will evolve. Just as the use of 4G mobile technology becomes widespread, the adoption and use of 5G mobile technology needs to be planned and implemented. Getting this right is important for three reasons:

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

The mobile industry has been able to enhance mobile connectivity across most of the country. But there is more to be done:
• There is demand for mobile connectivity in areas where geography, logistics or economics – or a combination of all three – make it difficult.
• Mobile network capacity needs to grow to meet the demand of mobile users, who are consuming ever increasing amounts of data.

Local government has a key role in addressing these issues because the mobile industry cannot address them alone. Therefore, this report makes recommendations and offers guidance for how mobile network operators and local government can collaborate to create an environment that encourages the build of mobile infrastructure. The recommendations and guidance are presented under three themes:
• Adopting a proactive approach – Leadership and political will can provide impetus that improves the mobile connectivity outcomes for residents.
• Planning for the long-term – Because of its importance to economic outcomes, mobile connectivity needs embedding into every aspect of local government's strategic thinking.
• Build partnerships and share best practice – The full potential of mobile connectivity cannot be realised unless there is collaboration and exchange of ideas.

The recommendations and guidance under these themes have been designed so that they can be applied despite significant financial pressures faced by local government, e.g. Local Authority spending on planning and development services fell by more than 50% in real terms between 2011-12 and 2016-17.

It is important to note that alongside the recommendations made in this report other improvements are required to streamline network rollout – such as reduced regulatory burdens, a consistent planning regime, and a supportive tax system. As such, while the recommendations discussed in this document will provide opportunities to improve the environment mobile operators and local government work within, they are not guarantees to enhance connectivity and coverage."

4. 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)

Address	**NGR**	**Reason for discounting**
Grey Court School - Main Building Ham Street Richmond Upon Thames Surrey TW10 7HN	517414 517446	There are a number of buildings which are low rise and have pitched roofs. This is situated in the Conservation Area and the preferred option is more suitable in the search area. For these reasons this site has been discounted.
Ferrymoor SW's Juction of Ferrymoor and Ashburham Road Richmond Upon Thames Surrey TW10 7SE	516854 172244	A streetworks option in a residential area. The visual impact of an installation will be high. The preferred option at Ham Sailing Club is a better solution than a streetworks due to higher structural capacity. This site has been discounted for these reasons.
Croft Way SW's Junction of Croft Way / Ashburnham Road Richmond Upon Thames Surrey TW10 7NR	516855 172413	A streetworks option in a residential area. The visual impact of an installation will be high. The preferred option at Ham Sailing Club is a lattice tower and a better solution for both operators than a streetworks due to higher structural capacity. This site has been discounted for these reasons.

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

N/A

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

The site is found upon a plot of land at the entrance to Ham Sailing Club set back from the highway. The application site is positioned along a main arterial route through the operators intended coverage area, which is predominantly urban in character with mainly residential properties.

Additional relevant information (planning policy and material considerations):

Local Planning Policy

It is acknowledged that the Council's approach to the plan-led system has evolved over the years. The Core Strategy is normally the key document that forms the new Development Plan and this is supported by various types of detailed information about the local and sub-regional matters. As a result decisions will be made in accordance with the adopted Development Plan and/or saved policies unless material considerations indicate otherwise.

In this regard, the London Borough of Richmond upon Thames Local Plan has now been adopted by the Council

Policy LP 33

Telecommunications

The Council will promote the enhanced connectivity of the borough through supporting infrastructure for high speed broadband and telecommunications. Applications for telecommunications development (including for prior approval under Part 16 of the General Permitted Development Order, or any other such future Order) will be considered in accordance with national policy and guidance and the following:

1. The applicant will need to submit evidence to demonstrate that all options for sharing of existing equipment, including with other operators, and erecting masts on existing tall buildings or structures, have been fully explored before considering the erection of new structures or facilities.

2. Visual impacts of telecommunications proposals should be minimised, in line with policies on Local Character and Design, particularly on roof tops.

3. The applicant has demonstrated that the development will operate within the International Commission on Non-Ionizing Radiation Protection Guidelines for public exposure.

National Planning Policy Framework (2018)

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

10. Supporting high quality communications
112. Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) and full fibre broadband connections. Policies should set out how high quality digital infrastructure, providing access to services from a range of providers, is expected to be delivered and upgraded over time; and should prioritise full fibre connections to existing and new developments (as these connections will, in almost all cases, provide the optimum solution).

113. The number of radio and electronic communications masts, and the sites for such installations, should be kept to a minimum consistent with the needs of consumers, the efficient operation of the network and providing reasonable capacity for future expansion. Use of existing masts, buildings and other structures for new electronic communications capability (including wireless) should be encouraged. Where new sites are required (such as for new 5G networks, or for connected transport and smart city applications), equipment should be sympathetically designed and camouflaged where appropriate.

114. Local planning authorities should not impose a ban on new electronic communications development in certain areas, impose blanket Article 4 directions over a wide area or a wide range of electronic communications development, or insist on minimum distances between new electronic communications development and existing development. They should ensure that:
a) they have evidence to demonstrate that electronic communications infrastructure is not expected to cause significant and irremediable interference with other electrical equipment, air traffic services or instrumentation operated in the national interest; and
b) they have considered the possibility of the construction of new buildings or other structures interfering with broadcast and electronic communications services.

115. Applications for electronic communications development (including applications for prior approval under the General Permitted Development Order) should be supported by the necessary evidence to justify the proposed development. This should include:

a) 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, technical site or military explosives storage area; and

b) for an addition to an existing mast or base station, a statement that self-certifies that the cumulative exposure, when operational, will not exceed International Commission guidelines on non-ionising radiation protection; or

c) 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.

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

Code of Best Practice on Mobile Phone Network Development (2016)
1.3 The principal aim of this Code is to ensure that the Government's objective of supporting high quality communications infrastructure, which is vital to continued economic prosperity and social inclusion for all, is met. The development of such infrastructure must be achieved in a timely and efficient manner, and in a way which balances connectivity imperatives and the economic, community and social benefits that this brings with the environmental considerations that can be associated with such development.

2.1 The continued expansion and development of mobile networks is a key element of the National Infrastructure Delivery Plan 2016 – 2021. This recognises that digital communications are now a crucial component of everyday life, with improvements in connectivity being key to a vibrant economy.

2.2 Consumers, businesses and public bodies increasingly rely on mobile communications and expect to receive a signal wherever they are. Coverage in rural areas is recognised as a vital component for maintaining economic activity and social inclusion.

4.1 As technology has evolved, we have been able to do more and more with our mobile devices. Second Generation (2G) technology gave us voice calls and text messages, and Third Generation (3G) gave us access to the Internet and other data on the move. More recently, 4G brings superfast mobile broadband at speeds roughly equivalent to those you would expect from a fixed broadband connection. At the same time customer expectations have evolved with the technology – the expectation is that they will always be connected and able to access services in exactly the same way as fixed broadband for personal, educational and business purposes.

4.3 In line with the NPPF, Operators anticipate maximising the use of their existing network infrastructure for the provision of 4G services, and are also similarly upgrading their 3G network infrastructure to improve capacity and coverage. However, this does not mean that there will not be a need for any new base stations. For example, more base stations will be needed in areas where there has previously been only limited or no coverage, and where coverage and capacity needs to be enhanced in line with Government commitments and customer demand. Similarly, some new sites will be required to replace existing sites that are lost, for example, through redevelopment of an existing building. Some existing masts may need to be redeveloped or replaced to enable an upgrade in services to take place.

5.1 Mobile phones and other devices are now everywhere. Mobile connectivity is now about far more than simply making calls and texts, but is also about mobile broadband. The majority of mobile phones in the UK are Internet-enabled smartphones, and large numbers of people also now
own tablet devices.

5.2 Even when they have a fixed broadband connection available, people are increasingly choosing to access the Internet using a mobile device, and the numbers doing so are growing, as ownership of Internet enabled devices rises.

5.3 By the start of the second decade of this century, the greatest increase in traffic across mobile networks was in data, i.e. Internet use. As the Government's productivity plan, '*Fixing the Foundations: Creating a More Prosperous Nation*' states 'reliable and high quality fixed and mobile broadband connections support growth in productivity, efficiency and labour force participation across the whole economy. They enable new and more efficient business processes, access to new markets and support flexible working and working from home'.

5.9 Increasing consumer demand, especially for data is putting demands on mobile operators for improved connectivity and more capacity on their networks. This is driven by the widespread adoption of smartphones and the rapid uptake of tablet devices, and the way consumers are now using them, often choosing to do so when they have a fixed connection available. In addition, the Government has ambitious aspirations for improving connectivity and coverage, especially in rural areas. All these factors result in the need to continually upgrade and improve mobile networks, which will not function without the necessary infrastructure on which they rely.

6.6 In urban areas, increased call and data transfer volumes put high demand on the networks, potentially leading to the need for more infrastructure. In some urban areas, such as conservation areas, the number of potential sites suitable for base stations might be constrained.

London Plan (2016)

The London Plan sets out the Mayor's planning strategy for Greater London and contains strategic thematic policies, general crosscutting policies and more specific guidance for sub-areas within the Metropolitan Area. In Paragraphs 1.38-1.41 *'Ensuring the infrastructure to support growth'*, the London Plan recognises the strategic importance of providing the necessary infrastructure, including modern communications networks, that the city requires to secure its long-term growth. Such matters are further echoed by the Mayor's Offices long term strategy as documented in the London Infrastructure Plan 2050.

It is considered that the Vodafone and Telefónica networks are an integral element in securing the Mayor's vision for the delivery of modern communications networks across London. More specifically, the proposed development is entirely consistent with and will help to implement the strategic objectives contained in Policy 4.11 'Encouraging a Connected Economy' of the London Plan. Policy 4.11, and its written justification, is clearly supportive of the proposal and the role that it will perform in allowing Vodafone and Telefónica to provide additional 3G and 4G coverage to the surrounding area.

The aim of the Infrastructure Plan is to enable for fast, ubiquitous access to the internet from mobile and fixed devices. Chapter 16 of the Plan indicates how the London Mayor's Office shall support an economically viable mix of technologies including fibre broadband, mobile broadband and future methods of wireless internet delivery to

address the capacity crunch in the short term as well as aiming to make London the first capital city in the world to deploy 5G in the 2020s. This document is supported by the report Raising London's High Speed Connectivity to World Class Level. As detailed within these Digital Connectivity is now considered the fourth utility. Internet access not only affects the productivity of businesses and proves essential to the future growth of many firms, it is also vital for many residents to take part in modern society as more services move online.

The Mayor's Office shall work with central government and London's local authorities to ensure that strategic communication networks are enabled rather than inhibited by the planning and other regulatory systems whilst ensuring the utility works themselves are properly managed.

The Vodafone and Telefónica networks are integral elements in securing the Mayor's vision for the delivery of modern communications networks across London. More specifically, the proposed development is entirely consistent with and shall help to implement the strategic objectives contained in the London Plan and London Infrastructure Plan.

National Infrastructure Delivery Plan 2016 – 2021 (2106)

Central Government's Infrastructure and Projects Authority who report to HM Treasury and Cabinet Office have produced a national plan that aims to improve the planning and delivery of infrastructure based projects and in turn will help to increase investment in the UK and accelerate achieving.

Chapter 7 relates to Digital Communications in which it is said in paragraph 7.1 that *"Digital communications are now a crucial component of everyday life. Technologies such as mobile phones and broadband have revolutionised the way we work, socialise and enjoy our leisure time. Improvements in connectivity mean the UK is rapidly embracing a vibrant digital economy, currently worth around £120 billion a year.1 Over 30% of UK premises have taken up superfast broadband and there are more than 23 million 4G subscriptions."*

It then goes on to state in paragraph 7.2 that *"Reliable and high quality fixed and mobile broadband connections support growth in productivity, efficiency and labour force participation across the whole economy. They enable new and more efficient business processes, open-up access to new markets and support more flexible working practices."*

It is also recognised in paragraph 7.4 that *"Demand for digital services and applications will continue to rise rapidly, with a consequent acceleration in the amount of data being carried over networks. Over the next decade we can expect the emergence of new services, applications and devices which will create additional demands on networks. To support this demand, the UK needs infrastructure that is high capacity, reliable, resilient, secure, affordable and fast."*

It is acknowledged in paragraph 7.10 that *"The government will work to provide greater freedoms and flexibilities for the deployment of mobile infrastructure, including reducing planning restrictions for existing telecoms infrastructure and allowing taller new ground based masts to be built."*

The National Infrastructure Delivery Plan details key projects and programmes including voice coverage to 90% of the UK geographic area by the end of 2017. With regards 4G rollout it is said that by 2017, 98% of premises should have access to 4G mobile broadband.

Planning Assessment

From the outset, it should be recognised that a new site will always be a noticeable alteration to those residents and regular passers by found closest. However it should be appreciated that the visibility of a development does not automatically result in an overwhelming adverse harm occurring.

In light of the above it is considered that the planning assessment of this case should concentrate on whether the proposed new site compared to the existing surroundings are significant as to outweigh any other material planning matters. Indeed it should also be ascertained as to whether there is still a need for the base station, whether the change can be justified. Also the latest proposal subject to this application should be reviewed against the up to date planning policy regarding telecommunications development.

It has been a longstanding Government policy objective to encourage telecommunications operators, wherever viable, to share masts and sites as a means of minimising overall mast numbers. The NPPF states that local planning authorities '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'.

Operators also support site sharing wherever viable. If operators are able to share sites and install more equipment on each site it reduces the overall visual impact of network infrastructure, because 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, such as CTIL, the joint venture between Vodafone Ltd and Telefonica UK Ltd. In this case, there is a need for a new site and this suitable greenfield site is the best solution to minimise the overall visual impact to the residential areas to the east and wider areas.

As discussed previously with regards the choice of design, it is considered that the appearance of the new mast has been designed to minimise the impact to the adjacent residential properties and the visual amenity of the area. The proposal has dual user and multi-technology capabilities, whereby the amount of equipment deployed is at its technical minimum and is justified in order to fulfil the aforementioned network demands. In this regard and when balanced against the other material planning matters as below, it is considered that the overall appearance of the proposal is acceptable.

With regards the need for the development it has been highlighted earlier that the area requires a new site in order to meet the existing and future demands of mobile users. In this respect it's essential in providing network coverage for both Vodafone and Telefónica. The Government encourage the growth and provision of a modern telecommunications infrastructure, in particular 4G and future 5G, in which it should be recognised that mobile coverage is a key component that will aid social and economic prosperity.

The proposed radio base station is at HAM SAILING CLUB, RIVERSIDE DRIVE, RICHMOND, LONDON, TW10 7RX in which the surrounding land uses are predominantly residential and leisure. The physical amount of equipment required on site has been kept to an operational minimum in order to help mitigate its impact. These are all considered features and a context that would help assimilate the change in form into this particular environment. The proposed equipment would be read at height, in which when viewed in perspective and taking into account the relatively small scale nature of the apparatus, it is considered that the proposal would not appear incongruous within the immediate or wider streetscene.

The proposed new site in this case can be justified by the technical need for improved coverage together with the need to ensure the antennas of both operators are above the immediate and wider built and natural clutter such as buildings or trees which would interfere with the effective propagation of the radio signal from the antenna. The proposed antenna are pole mounted in order to accommodate to provide multiple technologies from a single site, whilst they have been positioned on individual support poles to allow for these antennas to be orientated and tilted so as to provide the optimum level of coverage to the area. It is highlighted that it is the technical requirements to deliver multiple technologies for two operators that have dictated the design of the proposal in this instance. It is considered that the proposed change in form from the existing installation is not considered to be so marked that it would appear visually obtrusive given its context and when balanced against the benefits of the proposed upgrade.

In light of the above, it is considered that the proposal would not be overly intrusive in this particular environment. Taking all matters into account, it is the applicant's opinion that the visual impact as a result of the proposed changes would not outweigh the other material merits of this case.

Health & Safety

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

It should be recognised that it has been long since established that it is Central Government's stance that the planning system is not the appropriate mechanism for determining health safeguards. It remains their responsibility to decide what measures are necessary to protect public health. Most notably they take the stance that if a proposed development meets the ICNIRP guidelines for public exposure it should not be necessary for a Local Planning Authority, in processing and determining a planning application 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. Telefónica and Vodafone are committed to ensuring that all new and upgraded installations are ICNIRP compliant. In this regards there should be no basis for this case to be refused on health and safety grounds or for reasons relating to public concerns about the perception of health fears. An ICNIRP compliance certificate is attached as part of this submission, as required by NPPF, in which it takes into account the cumulative effect of the radio frequency emissions from the proposed installation. Albeit the proposal has dual user capabilities and seeks to provide multiple

technologies, the levels from the proposed development will be many times lower than the ICNIRP standards in all publicly accessible areas around the installation. In the light of this, it is clear that the weight to be given to such health and safety concerns should not be so great as to warrant a refusal of the case on these grounds.

Contact Details

Name: (Agent)	Craig Ashworth	Telephone:	0161 214 1730
Operator:	Telefónica UK Limited	Fax no:	n/a
Address:	Mono Consultants Ltd Steam Packet House 76 Cross Street Manchester M2 4JG	Email:	craig.ashworth@monoconsultants.com
Signed:		Date:	30 September 2019
Position:	Surveyor	Company:	Mono Consultants Ltd on behalf of Telefónica UK 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/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.

1. 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 (sometimes called 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.

2. 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.

3. 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.

4. 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'.

5. 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.

6. 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.

7. 2.5 Technical Requirements

Vodafone / 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.

8. 3.0 SITE SELECTION PROCESS

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

9. Following a technical review which identifies need, Vodafone / 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.

10. 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.

11. 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.

12. 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.

13. 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.

14. A plan for local consultation is drawn up, and where appropriate, a consultation exercise is undertaken with the local community.

15. 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.

Vodafone and Telefónica are committed to ensuring the number and visual impact of any additional sites is minimised.

16. **4.0 PLANNING POLICY GUIDANCE ON TELECOMMUNICATIONS**

17. 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 para. 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 Para. 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."

18. 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.

19. 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.

20. 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

HEALTH AND MOBILE PHONE BASE STATIONS

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 masts are not in any way harmful or dangerous.

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

Vodafone and Telefónica ensure that our radio base stations are designed, built 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 of times lower than the ICNIRP general public guidelines.

Research Reviews

The World Health Organisation notes that "*In the area of biological effects and medical applications of non-ionizing radiation approximately 25,000 articles have been published over the past 30 years. Despite the feeling of some people that more research needs to be done, scientific knowledge in this area is now more extensive than for most chemicals* (http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html). The scientific community have collated, summarised and assessed these publications into research reviews. The most influential in the UK being the Mobile Phones and Health Report (also known as the Stewart Report) 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.

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 is 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. One of the recommendations of the Stewart report was a research programme to address uncertainties regarding mobile phone base stations and health. This programme was called the Mobile Telecommunications and Health Research (MTHR) Programme. The final report from this programme was published in February 2014. The report noted that the research conducted found no evidence of biological or adverse health effects from the radio waves produced by mobile phones or their base stations.

Since the Stewart Report, over 30 further reviews have been carried out, carefully considering many hundreds of pieces of research. Most have made similar recommendations and have come to 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 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.

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

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. They protect all members of the public 24 hours a day. In addition, precautionary measures have been taken into account when setting relevant guideline limits for the public (i.e. in the UK a safety factor of 50 times is applied to the public exposure guideline).

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

An ICNIRP certificate is provided with every planning application and this verifies that the mobile phone base station, when operational, will meet the precautionary ICNIRP guidelines. We also provide further documentation

to clarify that the ICNIRP certificate addresses emissions from all mobile phone network operators' equipment at the proposed site.

1 ICNIRP Guidelines

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

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

http://www.icnirp.org/

Public Health England (formally **HPA)**

https://www.gov.uk/government/collections/electromagnetic-fields

Or contact:
EMF Enquiries, CTIL
The Exchange, Arlington Business Park, Theale, Berks, RG7 4SA
Tel. 01753 564306, community@ctil.co.uk

Our ref: CTIL149008 VF77168_0 TEF43932

Head of Planning
London Borough of Richmond upon Thames
Planning Enquiries (Development Control)
2nd Floor Civic Centre
Twickenham
TW1 3BZ

30 September 2019

Dear Sir or Madam,

CLARIFICATION OF THE DECLARATION OF ICNIRP COMPLIANCE ISSUED AS PART OF THE PLANNING APPLICATION ATTACHED FOR THE PROPOSED SITE AT HAM SAILING CLUB, RIVERSIDE DRIVE, RICHMOND, LONDON, TW10 7RX. NGR E516656 N172422

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

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

This ICNIRP declaration takes into account the cumulative effect of the emissions from the proposed installation and all radio base stations present at, or near, the proposed location.
The radio emission compliance calculation is based upon the maximum possible cumulative values.

All operators of radio transmitters are under a legal obligation to operate those transmitters in accordance with the conditions of their licence. Operation of the transmitter in accordance with the conditions of the licence fulfils the legal obligations in respect of interference to other radio systems, other electrical equipment, instrumentation or air traffic systems. The conditions of the licence are mandated by Ofcom, an agency of national government, who are responsible for the regulation of the civilian radio spectrum. The remit of Ofcom also includes investigation and remedy of any reported significant interference.

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

If you have any further enquiries concerning the "ICNIRP Declaration" certificate or anything else in this letter then please contact the CTIL EMF UNIT on 01753 564306.

Yours faithfully,

PROJECT MANAGER
Mono Consultants Ltd

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

Our ref: CTIL149008 VF77168_0 TEF43932

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

("ICNIRP Declaration")

Telefonica UK Limited
260 Bath Road
Slough
Berkshire
SL1 4DX

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

HAM SAILING CLUB, RIVERSIDE DRIVE, RICHMOND, LONDON, TW10 7RX. NGR E516656 N172422

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 Protection (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 30 September 2019

Signed

Name Mark Armstrong

Position Project Manager