SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:	Epping Forrest College	Site Address:	Epping Forrest College, Block B, Borders Lane, Loughton, Essex, IG10 3SA
National Grid Reference:	543696, 196440		
Site Ref Number:	93888	Site Type:[1]	Macro

2. Pre Application Check List

Site Selection (for New Sites only)

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: N/A		
Were industry site databases checked for suitable sites by the operator:	**Yes**	No
If no explain why: N/A		

Site Specific Pre-application consultation with local planning authority

Was there pre-application contact:	Yes
Date of pre-application contact:	25/09/2020
Name of contact:	N/A

Summary of outcome/Main issues raised:

A consultation letter, associated plans and proposed consultation plan were sent to Epping Forest District Council on 25/09/2020. A consultation response had not been received at the time of writing. Lines of communication will remain open throughout the application process.

Community Consultation

Rating of Site under Traffic Light Model:	Red	**Amber**	Green

Outline of consultation carried out:

The proposal was rated Amber in accordance with the traffic light consultation model in the Code of Best Practice on Mobile Network Development (published 2016). The pre-application consultation plan adhered to best practice guidance.

Pre-application consultation was undertaken with the Council Members for the Ward in which site is located and Parish Council and occupiers of the below properties:

- 1 - 15 College Close, IG10 3FD
- 19 & 21 The Square, IG10 3FE

A consultation letter and supporting information were posted or emailed to the consultees on 25/09/2020.

[1] Macro or Micro

Summary of outcome/main issues raised (include copies of relevant correspondence):

A consultation response had not been received at the time of writing. Lines of communication will remain open throughout the application process.

School/College

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

The following educational facilities were identified:

- New City College Epping Forest Campus, Borders Lane, Loughton, IG10 3SA

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

A consultation letter and supporting information was posted to the consultee on 25/09/2020.

Summary of outcome/main issues raised (include copies of main correspondence):

A consultation response had not been received at the time of writing. Lines of communication will remain open throughout the application process.

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 – applies to applications for Prior Approval.		

Developer's Notice

Copy of Developer's Notice enclosed?	**Yes**	No
Date served:	N/A – Full Planning Application	

3. Proposed Development

The proposed site:

3.1 EE and H3G (Three) had a radio base station located on the rooftop of Epping Forest College Mid. Building, Epping Forest College, Borders Lane, Loughton, Essex, IG10 3SA which provided network coverage to the surrounding area. This area is being redeveloped and therefore, the Operators needed to vacate this building. A temporary mast has now been erected to remedy the shortfall in coverage from the removed equipment, but a permanent solution is required. The Operators are seeking to go on the rooftop of a prospective building, which forms part of the redevelopment of the campus area.

3.2 The Operators have identified that a new block of buildings, yet to be constructed as part of the college's redevelopment, is a suitable location for the replacement apparatus. Once this building is complete, the equipment would be placed upon the rooftop. The application site is located on the rooftop of Epping Forest College, Block B, Borders Lane Loughton, Loughton, Essex, IG10 3SA. This prospective multi-storey building is approximately 17m high and built with brick material. The building is not statutorily or locally listed and does not form part of any heritage land designations.

Figure 1. Aerial view of the College site denoted with red arrow and local context. Map source: Google.

3.3 The Application Site, on the rooftop of a building, provides an excellent town planning solution and ensures that network coverage will be continuous and enhanced. The use of existing buildings for telecommunications sites is supported by National Planning Policy Framework.

Enclose map showing the cell centre and adjoining cells if appropriate:
Network information is provided separately within this application.

Type of Structure *(e.g. tower, mast, etc):*

Description:

Installation of assorted steelwork to support 6no antenna apertures & 3no 600mm dishes; installation of 8no cabinets; ancillary development thereto.

All cabinets expect 1no. meter cabinet, will be installed upon the roof. The meter cabinet will be positioned at ground level. Ancillary apparatus includes steelwork, fixings and supporting electrical equipment. Please refer to submitted plans for full details.

Equipment housing cabinets

1No. Meter Cabinet (1.2 x 0.5 x 1.5m)
1No. Link AC Mk5B (1.2 x 0.6 x 1.8m)
1No. D-Airo (1.5 x 0.6 x 2.1m)
1No. FURO (0.75 x 0.6 x 2.1m)
1No. APM5930 (0.64 x 0.6 x 2.165m)
3 No. Outdoor Cabinets (0.77 x 0.77 x 2.1m)

Overall Height:	approx. 21.35m (top of highest support structure)
Height of existing building *(where applicable):*	Approx. 17.00m
Equipment Housing*:*	
Length:	See above and submitted plans
Width:	See above and submitted plans
Height:	See above and submitted plans
Materials *(as applicable):*	
Tower/mast etc – type of material and external colour:	Antennas & dishes – white plastic/steel Support structures – galvanised-steel
Equipment housing – type of material and external colour:	Cabinets – grey/green steel

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

Antennas, dishes & supports

3.4 The equipment layout and design are based on the principle of meeting operational requirements of the mobile operators EE and Three, whilst minimising impact on the appearance of the host building and its surroundings, as far as technical constraints allow.

3.5 The base-station has been designed to accommodate replacement apparatus, allowing provision of 2G, 3G and 4G mobile connections to the surrounding area to continue. It has also been designed to accommodate new 5G technology, introducing ultra-fast mobile connectivity capable of operating the 'Internet of Things'. This replacement and upgraded infrastructure will provide higher mobile down-load speeds and more reliable, quicker phone connections. There would be increased capacity to provide services to a higher number of people at the same time. The base-station is being future-proofed for future technology deployment.

3.6 These improved services can only be provided by antennas that are larger in scale than the ones that need to be placed. This element of the design is informed by the fact that the mobile operator Three and EE will share the apparatus, and because of the higher technical capability of the antennas. Hence the proposed high-capacity antennas.

3.7 The number and scale of proposed antennas/dishes is informed by the number of communication services being provided (4G, 5G etc.); the fact that the base-station will be multi-operator meaning that both EE and Three require apparatus; and because of the high technical capability of 5G services.

3.8 The antennas must be allowed to unrestrictedly emit a radio signal, meaning they need to be sited at an elevated position at the edge of the rooftop to enable the radio signal to clear surrounding structures, such as buildings and trees, with the aim of avoiding interference. The radio frequencies that 5G operates at is

particularly sensitive to interference from solid objects, which necessitates securing the antennas to elevated steel support frames at the height proposed, as outlined in the supplementary document included within the application '*5G and Future Technology'.*

3.9 The antenna height is determined by a specialist network radio engineer using specialist software which factors in the area where coverage is required, the relationship between the selected site location and existing cell sites in the linked network and variances in land levels amongst other things. In this instance, 21.35m metres has been calculated as the minimum height necessary to replicate as closely as possible the existing coverage.

3.10 The layout of the antennas is informed by physical constraints of the rooftop and local area, and the outcome of software modelling which positions the antennas in such a way that they collectively provide 360-degree coverage to the surrounding area. Similarly, the dishes must connect to other base-stations in the wider network by microwave link. As such, they require 'line of sight' which an unobstructed path to neighbouring base-stations.

3.11 The dishes will be located on the rooftop at 17.05 and 17.55 metres where they can have a clear connection to the core network – ensuring that a seamless connection is achieved between the cells above any obstructions. The antennas for this site will supply 2G, 3G and 4G connection for the area as well as accommodate 5G once it becomes available.

3.12 The aforementioned factors have informed the design of the proposed equipment which is of the minimum amount and scale possible, while still meeting structural and radio planning requirements.

Equipment cabinets

3.13 The antennas must connect to the proposed equipment housing cabinets by electrical cable feeders. The equipment cabinets, an essential component of the base-station, must be located as close to the antennas as possible in order to minimise electrical power losses during operation.

3.14 The location and scale of the cabinets in the context of the host building, ensures that they would not be highly visible from ground-level, nor greatly affect its appearance.

Technical Information

	Yes	No
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, EE and Three operate their network in such a way the radio frequency power outputs are kept to the lowest levels commensurate with effective service provision As part of EE and Three's networks, 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 which is the subject of this application, accords with all relevant legislation and as such will not cause significant and irremediable interference with other electrical equipment, air traffic services or instrumentation operated in the national interest.		

4. Technical Justification

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

4.1 The principle aim of the proposal is to replace communications coverage from an operational base-station which was decommissioned. EE and Three – two of the major licenced mobile operators in the UK – provided communication services from the rooftop of Epping Forest College Mid. Building, Epping Forest College, Borders Lane, Loughton, Essex, IG10 3SA. This building is being redeveloped and therefore could no longer accommodate the apparatus. The Operators are seeking to install their equipment on to a prospective building, which forms part of the college redevelopment scheme.

4.2 The proposal is required in order to allow the continued provision of 2G, 3G and 4G mobile connections to the surrounding area. The consequence of not doing so is that users of the network would find that the services they previously had access to are either limited or removed. The provision of poor communication services has well recognised economic and social impacts on communities and businesses. The base-station would also provide new 5G services, introducing ultra-fast mobile connectivity capable of operating the 'Internet of Things'. This upgraded and replacement infrastructure will provide higher mobile down-load speeds and more reliable, quicker phone connections.

4.3 Importantly, the base-station would provide increased network capacity, allowing quality service provision to a higher number of people at the same time. Improving cellular connectivity is led largely by demand. The very high level of mobile phone use in the UK requires the installation of additional/upgraded base stations to provide the necessary connections.

4.4 Ensuring that the current network coverage is replicated is of vital importance, especially given the current circumstances in which the country finds itself; with a significant proportion of the workforce displaced into working from home and increasingly reliant on the existing mobile networks.

4.5 Base stations are low powered radio transmitters which have a limited range, meaning that they need to be located close to the area requiring coverage. When an operational base-station is lost from the network it leaves a very specific "gap" in coverage within the established network pattern which needs to be filled. The consequence of not doing so is that users of the network would find that the services they previously had access to are either limited or removed. A temporary mast is now in place until a permanent solution can be implemented. The provision of poor communication services has well recognised economic and social impacts on communities and businesses.

Public Benefits

4.6 High-quality communications infrastructure is essential for sustainable economic growth and that high-speed broadband technology and other communications networks can also play a vital role in enhancing the provision of local community facilities and services.

4.7 Ofcom's 2018 Communications Market Research Report[2] shows that smartphones are owned by four of every five UK consumers. While take-up of fixed broadband has plateaued at 80%, accessing the internet on a mobile phone continues to grow, from 66% in 2017 to 72% in 2018. Demand for data continues to grow rapidly for UK consumers, with 1.9GB consumed by an average mobile subscription per month in 2017, (up from 1.3 GB the previous year). The report found that more than seven in ten now use their mobile to access the internet.

4.8 More than any previous generation of mobile networks, 5G has the potential to improve the way people live, work and travel, and to deliver significant benefits to the economy and industry through the ability to connect more devices to the Internet at the same time. 5G will have the ability to handle demand, offering faster download and upload speeds and enabling more devices to simultaneously access the mobile internet[3]. This proposal would provide higher mobile down-load speeds and more reliable, quicker mobile phone connections.

4.9 The UK Government recognise the benefits to commerce, industry and the public in general, and so places great emphasis on the benefits of mobile telecommunications to modern life and this is promoted throughout the planning system. Paragraph 122 of the NPPF (2019) states that *"Advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. Planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technology (such as 5G) ..."*

4.10 The NPPF takes account of the growth of the industry and technology, of the new social and economic demands for communications, and of the Government's environmental policies. This proposal, to enable EE and Three to provide improved network capacity to the surrounding area, will assist in achieving these objectives within this busy area.

4.11 The very high level of mobile phone use and ownership within the UK population is a very clear indication of the public's overwhelming acceptance of the benefits of mobile communications, which requires the installation of base stations to provide the necessary connection between the mobile phones and the UK telecommunications network.

4.12 This support for the improvement to the mobile communications network including 5G services was also set out in "Collaborating for Digital Connectivity" of March 2019[4]. The Government acknowledges that such infrastructure is essential for communities to benefit from faster economic growth and greater social inclusion. Ministers stated: '…*We would also like the UK to be a world leader in 5G, with the majority of the population covered by a 5G signal by 2027'*.

4.13 The latest amendment to Part 16 of Schedule 2 to the General Permitted Development Order (England) came into force in 2016, increasing the permitted development rights for installation of communications apparatus, demonstrating the importance that the Government attributes to delivering critical mobile digital infrastructure. In April 2021, the Government launched a consultation entitled *'Changes to permitted development rights for electronic communications infrastructure: technical consultation'*[5] which looks at how to implement the proposals that were consulted on in August 2019, demonstrating sustained commitment for Government to enable the smooth rollout of the latest digital technology. The Minister for Digital Infrastructure, Matt Warman MP, outlines in this consultation:

> ***'Digital connectivity is – now, more than ever – vital to enable people to stay connected and businesses to grow****. The demand for mobile data in the United Kingdom is increasing rapidly, and the* ***COVID-19 pandemic has highlighted how important it is that we all have access to reliable, high quality mobile connectivity.***
>
> *It is welcome that all four Mobile Network Operators have started to deploy 5G networks, meaning 5G is now available in over 200 towns and cities across the United Kingdom.*
>
> *We must, however,* ***continue to ensure people have access to fast, reliable digital connectivity and mobile coverage****. The planning system plays a key role in delivering the infrastructure that we need as households and businesses become increasingly reliant on mobile connectivity.'*

[2] https://www.ofcom.org.uk/__data/assets/pdf_file/0022/117256/CMR-2018-narrative-report.pdf
[3] Mobile UK: https://www.mobileuk.org/5g-benefits
[4] Collaborating for Digital Connectivity 2019: http://democracy.epsom-ewell.gov.uk/documents/s17211/Telecommunications%20Equipment%20Wells%20Road%20Appendix%203.pdf
[5] Permitted Development rights - Open Consultation April 2021: https://www.gov.uk/government/consultations/changes-to-permitted-development-rights-for-electronic-communications-infrastructure-technical-consultation/changes-to-permitted-development-rights-for-electronic-communications-infrastructure-technical-consultation

4.14 These proposals to build on the expanded permitted development rights for communications infrastructure, further demonstrate this significance of critical mobile digital infrastructure to the public interest and highlights the importance of delivering 5G services in particular, and furthermore the importance of digital connectivity to the economic and social objectives of government.

4.15 This consultation is relevant to the application, as not only does it highlight the crucial need for the proposal but also, the Government's continued support and commitment to improving digital connectivity in England. Enhancing the mobile networks is of vital national importance in the short term, and it is significant that telecoms has been designated as "critical work" during this time, but it is anticipated that the current shift towards homeworking and online services will persist, to a lesser degree, in the future. It is vital that this critical infrastructure is in place throughout the UK to meet this demand.

4.16 Mobile connectivity is becoming ubiquitous, and the expectation is that it should be available throughout the country. Ofcom's Connected Nations 2020 UK report[6] explains the important role of Mobile Networks Operators (MNO's) such as EE and Three:

> *"**We expect MNOs to leverage other benefits of 5G as they continue to rollout their networks and to provide connectivity solutions for both consumers and businesses**. This includes private networks for businesses, which will facilitate greater control and privacy in addition to connectivity. (emphasis added)*
>
> *5G will continue to target a range of other applications (e.g. manufacturing, logistics, agriculture, automotive, energy, media & entertainment and healthcare sectors) to deliver benefits to consumers, businesses and organisations. 5G (3GPP Release 16 & 17) has features such as near instantaneous network response (a latency of only a few milliseconds) and high reliability which are key enablers for these applications…"*

4.17 The benefit of having a strong and resilient network has been highlighted over the past year, following the sudden shift in the network requirements due to the COVID-19 pandemic. The Government Minister of Digital Infrastructure, Matt Warman, stated during a Keynote speech, at a Connected Britain Event in September 2020[7]:

> *"The world is in the middle of a digital revolution. **COVID has accelerated this process, digitising almost every part of our everyday lives and making the infrastructure that connects us more important than ever. That's why it is at the top of the government's agenda…***
>
> *We are taking forward legislative reforms to make it easier for you to deploy broadband in blocks of flats and to deploy or upgrade mobile phone masts." (emphasis added)*

4.18 The recognised public benefits of 5G are not just localised. PricewaterhouseCoopers (PwC) recently published an analytical forecast and review of the global economic impact of 5G[8]. This report outlines:

> *'**For policy-makers and governments, the key is to regard 5G as fundamental societal infrastructure**: a platform that, by providing ubiquitous, superfast broadband, will influence the competitiveness of nations' economies and their ability to develop their own sunrise industries and technologies. **Policy-makers should look to encourage and provide incentives for 5G investments as quickly as possible.'***

4.19 The London Assembly states[9]:

> *'Londoners need to be able to access digital connectivity they require to take up increasingly digitally delivered services. **The number of connected devices – whether on the person, in the home, the street or workplace – is growing at a huge rate and Ofcom estimates it will increase 12-fold by 2026**, with mobile data usage growing at over 30 per cent a year. City, boroughs, providers and **developers must all work together to ready the capital for full fibre and 5G, to cope with growing capacity needs and serve hard-to-reach areas.'***

4.20 On a wider scale, the proposal would contribute towards the country's connectivity and digital economy future. Mobile telecommunications are vital for the UK's economic competitiveness and in promoting social inclusion, and, on a local scale, it is important to ensure the improvement of telecommunications networks in this area.

[6] https://www.ofcom.org.uk/__data/assets/pdf_file/0024/209373/connected-nations-2020.pdf
[7] Connected Britain 2020: https://www.gov.uk/government/speeches/matt-warmans-keynote-speech-at-connected-britain-2020
[8] PwC - The global economic impact of 5G: https://www.pwc.com/gx/en/tmt/5g/global-economic-impact-5g.pdf
[9] London Assembly: https://www.london.gov.uk/what-we-do/business-and-economy/supporting-londons-sectors/connectivity/digital

4.21 The expectations are that future telecoms technology will support government policy regarding digital inclusion; improvements in health and social care; assisting in local economic growth; advancing the development of Smart Cities and supporting innovative uses throughout the transport sector for both personal and public travel.

4.22 In addition to the current provision of commercial communications services, EE has been awarded a contract by the Home Office to provide the new Emergency Services Network (ESN) that will shortly replace the current Airwave system used by the emergency services and will deliver this through a combination of existing sites in the network and some new installations, where there is a requirement. Over 300,000 emergency services users, including Police, Fire & Rescue and Ambulance, will use 4G and 5G voice and data services provided by the ESN[10]. This is even more crucial with the substantial increase in demand due to COVID-19.

5. Site Selection Process

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

Alternative sites considered and not chosen:

Site Type	**Site name and address**	**National Grid Reference**	**Reason for not choosing site**
N/A	N/A	N/A	N/A

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

The Operators have been asked to vacate their equipment from a college building that is being redeveloped. Once this building has been redeveloped and construction is complete, the operators will utilise this new building to host their equipment.

Paragraph 113 of the National Planning Policy Framework (NPPF) sets out that *"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."*

6. Additional relevant information (include planning policy and material considerations):

6.1 There is no evidence of protected species at this location, with the surrounding area consisting of largescale development and buildings. The proposal will subsequently not have any potential negative impacts on any sensitive habitats or species.

6.2 The application site is not located within a designated area or near any heritage assets (Figure 2), and it is considered that the proposal will not bring about substantial harm to the character of the area but will bring benefit to the public through retained and improved connectivity and communications services. It is considered that this location offers an excellent town planning and environmental solution.

[10] https://www.gov.uk/government/publications/the-emergency-services-mobile-communications-programme/emergency-services-network

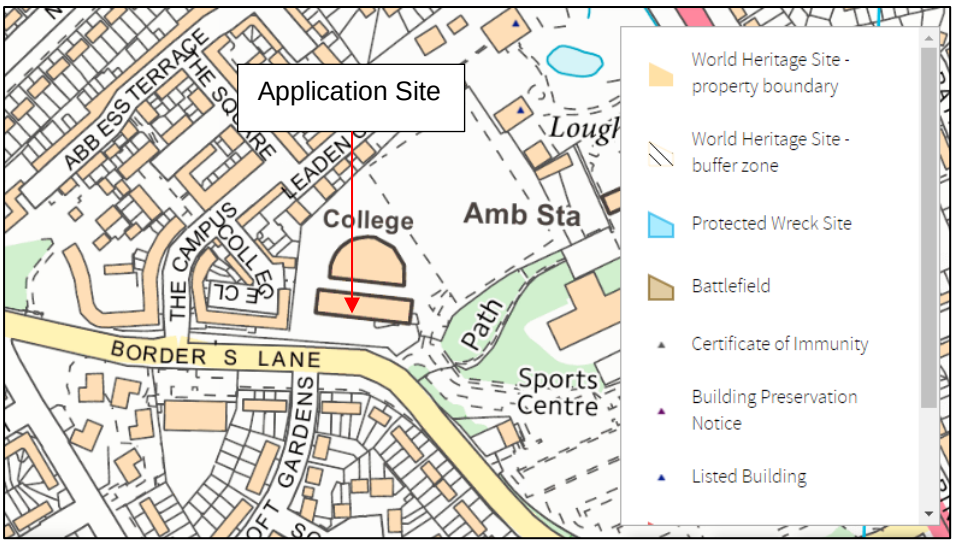

Figure 2. Application site in relation to Listed Buildings. Map Source: Historic England.

6.3 It is considered that the proposal utilises the most suitable design available to meet the technical requirement within the very specific technical constraints. The choice of design at the application site is governed by two main factors; the context and visual amenity of the area; and the technical requirements.

6.4 The antenna apertures have been kept as low in height as possible. The height of the proposed antennas will avoid the radio signal being clipped by the roof-edges. The proposed equipment housing cabinets will be arranged together and neatly at roof level and so will not be readily visible from street level due to their location and size. One meter cabinet will be positioned at ground level, adjacent the host building and would not appear as incongruent within the street scene.

6.5 The antenna apertures will be visible; however, their impact has been mitigated as far as practicable by the proposed design. The proposed structure has been reduced to its lowest height which also ensures the operational effectiveness of the base station. Any further reduction in height would have a serious and detrimental impact on the achievable network coverage. Importantly, the antennas are split into 3No. clusters (2No. antenna apertures per cluster). This avoids need for a single large-scale support structure, accommodating all antennas and dishes, which would appear by incongruous. This area is a well-established telecommunications site thus ensuring an installation upon a rooftop here, will not look incongruous within the local area.

6.6 Dishes provide a link between base stations within the network. The size and height of the dishes is determined by the location of these surrounding neighbour cells. In this instance, 3no transmission dishes are required. The size and number of dishes has been kept to the minimum required for operational efficiency and the associated impact of this addition on the surroundings would be minimal.

6.7 On balance, this proposed location is considered to be the optimum location in terms of siting and design, with the limited harm it may impose on the surrounding area being outweighed by the provision of continued and enhanced services to the area in the public interest. As such, equilibrium will be achieved between technical requirements and environmental impact.

6.8 Due consideration has been given to the process and the proposal put forward is the best available option – it both achieves the technical requirements and does not bring unacceptable harm to the character of the area.

6.9 As outlined, this site is required to replace the existing coverage that will be lost once the existing mast is decommissioned. Additionally, this community will be at the forefront of the next generation of technology (5G) as this site will be 5G ready. It is therefore considered that any visual impact caused by this proposal is greatly outweighed by the public benefits of ensuring that the established mobile network coverage is continued to the wider area.

Wider Planning Policy

Development Plan

6.10 Section 70 of the Town and Country Planning Act 1990 (as amended) requires planning applications and appeals to be determined having regard to the provisions of the Development Plan and other material considerations. Section 38 of the Planning and Compulsory Purchase Act 2004 requires applications and appeals to be determined in accordance with the Development Plan unless material considerations indicate otherwise.

6.11 The current adopted Development Plan for the Epping Forest district comprises a mix of saved policies from the 1998 Local Plan and adopted 2006 Alterations. Policies in these documents have been reviewed, saved policy U6 of the 1998 plan which refers to telecommunications installations. No conflict has been identified between this specific policy or any other aspect of local level policy and the proposal.

National Policy

National Planning Policy Framework

6.12 The government sets out its national policy objectives for electronic communications in Section 10 'Supporting high quality communications' of the National Planning Policy Framework (February 2019) (NPPF):

'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.'* (para. 112)

'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.'*

UK Digital Strategy

6.13 The UK Digital Strategy, published by the Department for Digital, Culture, Media & Sport in March 2017, provides evidence of the public benefits of communication services:

*'****Broadband and mobile must be treated as the fourth utility****, with everyone benefiting from improved connectivity. This will play a crucial role in ensuring that everyone, wherever they live and however they connect, can make full use of digital services and benefit from participation in the digital economy. Improved connectivity also increases innovation and productivity across the economy, bringing* ***significant economic rewards****'*

*'****5G*** *is the next generation of mobile connectivity, and is currently in development. It is expected to represent a significant upgrade: providing* ***ultrafast, low latency, and more reliable mobile connectivity, able to handle our ever-increasing data requirements****. This should present huge opportunities to boost productivity and grow the economy. In addition to giving consumers and business users high quality connectivity, it will also support the development of the* ***Internet of Things: the rapidly-increasing number of connected devices, from connected cars to digital health applications.'***

Future Telecoms Infrastructure Review

6.14 The Department for Digital, Culture, Media & Sport published its findings of the Government's Future Telecoms Infrastructure Review in 2018. The review highlights the important and far reaching role of 5G infrastructure:

'Alongside finishing the roll out of 4G networks to meet existing mobile demand, we want the UK to be a world leader in 5G to take early advantage of this new technology. We have set a target that the majority of the population will have 5G coverage by 2027.'

'The technical capabilities and performance characteristics of 5G are clear. ***5G*** *is expected to deliver faster and better mobile broadband services to consumers and businesses, and to* ***enable innovative***

***new services for industry sectors, including manufacturing, transport, immersive technologies and healthcare**.'*
(p 10)

Ofcom reports

6.15 Ofcom's annual Communications Market Reports identified trends which demonstrate reliance on reliable mobile connections:

*'We all need high-quality communications. In the modern world, a huge amount of our time is spent using communications services: for work, to stay in touch with family and friends, and in order to go about our daily lives. **Our ability to access and use reliable mobile and broadband connections has become fundamental to the way we work and live, and to the ability of businesses of all sizes to thrive**. For many people, internet connectivity is now as essential as gas or electricity, and access to traditional television, radio, fixed phone lines and postal services continue to remain important.'* (2016 report)

Policy Appraisal

6.16 Planned economic and residential growth cannot be sustained without the provision of essential utility infrastructure, including access to reliable, resilient and high-speed electronic communications. The proposal would increase the capacity of the base-station to enable it to more effectively serve a higher number of people.

6.17 The proposal seeks to replace an existing base station that was decommissioned from the college campus due to redevelopment. The Operators are seeking to replace the equipment and install it on to the roof of a building that forms as part of this redevelopment. There would be no increase in the overall number of base stations operating locally.

6.18 The proposal obviously meets the criteria of utilising a building for the equipment, as part of a site-sharing arrangement. New capability would be provided without establishing an additional ground-based mast. The proposal therefore adheres to para. 113 of the NPPF.

6.19 The surrounding area is accustomed to rooftop telecommunications equipment, and this helps ensure that the proposal would not appear isolated, nor as an alien imprint on the skyline. Those aspects of the proposal that would be visible, would generally only be partially so and, its form would not register as discordant with the roofscape, thus it would not result in significant harm to surrounding area or wide range views.

6.20 The NPPF, recognise that the latest communications capability is essential to support the growth of service-based economies like Loughton and promote social wellbeing. The role of communications in facilitating practices which promote sustainability such as the operation of autonomous vehicles and home working, is also important.

Other Material Considerations

6.21 The following are examples of appeal decisions by the Planning Inspectorate where the Inspector awarded considerable weight to the public need for critical communications infrastructure. All cases below relate to the installation of new rooftop base stations within Conservation Areas. The application site is not within a Conservation Area, which should weigh in its favour. The following appeals were all allowed.

1. APP/G2625/W/20/3254990 – MBNL vs Norwich City Council

*'However, the harm must be considered in the context of the special attention I must pay to the desirability of preserving or enhancing the character or appearance of the CA. **I afford considerable importance and weight to this statutory duty. This does not amount to a direction to refuse proposals that harm, and thus fail to preserve, designated heritage assets, but it provides a strong presumption in favour of preservation**.*

*In applying the balancing test of paragraph 196 of the Framework, **I consider that the benefits identified above substantially outweigh the harm that would arise from the proposal's impact on the character and appearance of the CA**. Thus, **I find that the material harm that would arise from the proposal would be outweighed by its substantial public benefits.'***

2. APP/V5570/W/20/3246770 - Cornerstone Telefonica and Vodafone vs London Borough of Islington

*'**I have found that the proposal would fail to preserve the character or appearance of the CGCA (Conservation Area)** and would cause a minor level of less that substantial harm to the heritage significance of the CGCA and various other designated assets through development within their settings. I have also identified associated policy conflicts. Indeed, the proposal conflicts with the development plan when read as a whole.*

***However, I have also found that the proposal would deliver significant public benefits through improved digital communications networks. These benefits would outweigh the heritage harms** that I have identified. Thus, material considerations indicate that, in this instance, the proposal should be determined other than in accordance with the development plan.'*

3. APP/V5570/W/20/3251047 - CTIL and Telefónica (O2) Vs. Council of the London Borough of Islington

*'there would be a considerable public benefit arising from the provision of improved digital communications networks in this busy commercial area, and I consider that this carries significant weight […] **the proposal would fail to preserve or enhance the character or appearance of the Bunhill Fields and Finsbury Square Conservation Area, and would cause less than substantial harm to the significance of the Conservation Area as a designated heritage asset**.*

*In this respect I have also found conflict with planning policies, and indeed the proposal would conflict with the development plan as a whole […] However, I have also found that a **significant public benefit would be delivered through the provision of improved mobile communications networks, which would outweigh the limited harm to the heritage asset which I have identified.'***

7. Summary

7.1 The application seeks planning permission for proposed communications equipment to be installed at Epping Forest College. The principle aim of the proposal is to replace communications coverage from an operational base-station which has been decommissioned from the network due to redevelopment in the area. In addition to replacing coverage, the proposal will also result in improved communication services including by increasing the capacity of the network and by introducing 5G services.

7.2 EE and Three – two of the major licenced mobile operators in the UK – presently provides communication services from the rooftop of Epping Forest College Mid. Building, Epping Forest College, Borders Lane, Loughton, Essex, IG10 3SA. This building is to be redeveloped and can therefore no longer accommodate the apparatus however, once this redevelopment is completed, the Operators will utilise a new building block to host their equipment.

7.3 The equipment layout and design are based on the principle of meeting operational requirements of the mobile operators, whilst minimising landscape and visual impact as far as technical constraints allow. The proposal amounts to a minimal change to the appearance of the prospective host building to enable far reaching public benefits for the surrounding area. The Operators EE and Three would share the site, thereby minimising the number of structures required and associated sites.

7.4 The proposal would not only ensure that thousands of residents, businesses and commuters do not experience a loss, or poorer connectivity for their mobile devices, it would also provide upgraded services. Modern communication services have evident social, economic and environmental implications. This includes the mobile's role in providing social and digital inclusion to communities; economic competitiveness by serving businesses in the area; and supporting sustainability objectives such as enabling homeworking, reducing transport congestion and greenhouse gas emissions.

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