

Department for
Digital, Culture,
Media & Sport

Code of Practice for Wireless Network Development in England

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Introduction and scope

1. The Code of Practice provides guidance to Code Operators (referred to as ‘operators’ throughout the Code of Practice), including the Mobile Network Operators and wireless infrastructure providers, their agents and contractors, local planning authorities, and all other relevant stakeholders in England on how to carry out their roles and responsibilities when installing wireless network infrastructure. It is also a useful tool for other interested stakeholders such as community groups, amenity bodies and individuals with an interest in mobile connectivity.

2. The aim of the Code of Practice is to support the government’s objective of delivering high quality wireless infrastructure whilst balancing these needs with environmental considerations. It also has an important role in making sure that appropriate engagement takes place with local communities and other interested parties.

3. The Code of Practice covers all forms of wireless infrastructure development, including mobile masts and cabinets. It is recommended that other wireless communications operators follow the principles of this Code of Practice, where appropriate.

4. Led by the Department for Digital, Culture, Media and Sport (DCMS), this Code of Practice has been developed in collaboration with representatives of the mobile network industry, other government departments and public bodies, local planning authorities, and protected landscapes. This document replaces the previous *Code of Best Practice on Mobile Network Development*, which was published in 2016.

Legal framework

5. The guidance provided by this Code of Practice brings together the principles agreed between operators and local planning authorities, in relation to the siting and design of mobile infrastructure, and the approach to consultation and engagement. This Code of Practice sets out best practice when stakeholders are carrying out their responsibilities under the principal legislation. Operators should also adhere to the guidance set out under the Code of Practice for the Electronic Communications Code..

6. This section sets out the principal legislation that applies to the installation of mobile infrastructure.

7. The Code of Practice is best practice guidance. The legislation that applies to this type of development, which includes (at the time of publication)::
    - The Town and Country Planning Act 1990
    - The Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended)

- The Electronic Communications Code (Schedule 3A to the Communications Act 2003)
- The Electronic Communications Code (Conditions and Restrictions) Regulations 2003
- The New Roads and Street Works Act 1991
- The Highways Act 1980
- The Ancient Monuments and Archaeological Areas Act 1979
- The Planning (Listed Buildings and Conservation Areas) Act 1990
- The Wildlife and Countryside Act 1981
- The National Parks and Access to the Countryside Act 1949
- The Environment Act 1995[1]
- The Traffic Management Act 2004
- The Countryside and Rights of Way Act 2000[2]

Policy framework

8. Digital connectivity is vital to enable people to stay connected and businesses to grow. Fast, reliable digital connectivity can deliver economic, social and well-being benefits for the whole of the UK.

9. As the demand for mobile data in the United Kingdom is increasing rapidly, it is important that everyone has access to dependable and consistent mobile coverage where they live, work and travel.

10. The *Future Telecoms Infrastructure Review* (FTIR) and the *National Infrastructure Strategy* set out the government's long-term strategy for meeting its digital connectivity targets and delivering high quality, reliable digital infrastructure that works across the UK.[3]

11. The government has committed to extending mobile coverage across the UK. The government's Levelling Up White Paper has set a mission that the UK will have nationwide 4G coverage, with 5G coverage for the majority of the population by 2020. In support of this, the government and the UK's mobile network operators agreed a £1 billion Shared Rural Network deal to extend 4G mobile geographical coverage to 95% of the UK by the end of the programme.

12. *Next Generation Mobile Technologies: A 5G Strategy for the UK*, and the update to this, set out the government's ambition for the UK to be a global leader in 5G to take early advantage of its potential and help to create a world-leading digital economy that works for everyone. The government also wants businesses and communities

[1] Section 62 of the Environment Act 1995 makes it a duty for all relevant authorities to have regard to National Park purposes when coming to decisions or carrying out their activities.
[2] Includes Section 85, which places a general duty on relevant authorities to 'have regard' to the purpose of conserving and enhancing the natural beauty of an Area of Outstanding Natural Beauty, 'in exercising or performing any function in relation to, or so as to affect, land' in these areas.
[3] *The Statement of Strategic Priorities for Telecommunications, The Management of the Radio Spectrum, and Postal Services* followed the publication of the FTIR and reflects its conclusions.

to benefit from investments in 5G as soon as possible. Through the government's 5G Testbeds and Trials programme we have seen its value to manufacturing, farming, transport networks and healthcare.

13. The planning system plays a key role in delivering the digital infrastructure that we need, in a sustainable and well-designed way, especially as households and businesses become increasingly reliant on mobile connectivity.

14. The *National Planning Policy Framework* ("the NPPF") sets out the government's planning policies for England and how these should be applied. It sets out that the purpose of the planning system is to contribute to the achievement of sustainable development, and at the heart of the NPPF is a presumption in favour of sustainable development.

15. Section 10 of the NPPF sets out the planning policies for communications development in England, and states that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being. The NPPF also sets out that planning policies and decisions should support the expansion of electronic communications networks, including next generation mobile technologies (such as 5G). Other sections of the NPPF set out how these policies should be balanced with other considerations, including conserving and enhancing the natural environment and historic environment.[4]

How wireless networks function

16. Cellular wireless networks use base stations to provide an area of radio coverage. Wireless technology uses the radio spectrum to broadcast radio waves between base stations and devices. Different radio frequencies have different characteristics which, along with the density of cell site locations, affect the extent of coverage and how much data can be carried over the network. Depending on the radio frequencies used, base stations can deliver coverage over a wide area or provide extra network capacity in areas where there is a high demand for network bandwidth.

17. Wireless technology continues to evolve rapidly, and mobile devices are now capable of much more. Second generation (2G) technology gave us voice calls and text messages, 3G led to the launch of smartphones, and 4G, which enabled faster browsing, allowed us to do things like watching videos on the move. 5G, the latest generation of wireless technology, is much faster than previous generations of wireless technology and can offer greater capacity and lower latency, allowing thousands of devices in a small area to be connected at the same time. 5G networks, and future mobile generations, will be vital for a range of Internet of Things uses (IoT) and Smart City applications.

[4] The National Planning Policy Framework - sections 15 & 16.

Principles and commitments

18. Operators should develop their networks and install wireless infrastructure according to the following principles and commitments:

    - *Site sharing and use of existing infrastructure*: make use of existing structures, sites and masts wherever possible to reduce the need for new development. The NPPF states that, when installing mobile infrastructure, the number of masts and sites 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.
    - *Consultation with local planning authorities, local communities and other stakeholders*: participate in dialogue with local planning authorities, along with other relevant stakeholders such as the highways authorities, Area of Outstanding Natural Beauty bodies, Historic England, and Natural England, including pre-application discussions, where appropriate. Maintain clear procedures, and high-quality communication and consultation with local communities and other interested parties. Operators should agree community engagement with local planning authorities and share information as appropriate (see *pre-application consultation with local communities* below*)*.
    - *Standardised and high-quality approach to planning applications, and the notification procedure*: provide standardised supporting documentation for planning applications (where appropriate) within the context of national and local requirements. Ensure planning submissions are of high-quality and provide the necessary evidence to support the application (as per the NPPF).[5]
    - *Prompt responses to enquiries*: respond to complaints and enquiries within a timely manner (see *Review and Enquiries* section below).
    - *Siting and Design*: wireless infrastructure should be deployed in accordance with the guidance set out within this Code of Practice. Where appropriate, equipment should comply with the principles set out in the NPPF and consider any local planning policies, including any local and national design codes. When located in protected landscapes and other designated land, the sensitive nature of these areas must be considered.[6]
    - *Removal of redundant equipment and site restoration:* ensure that when infrastructure is upgraded, any equipment that is made redundant by the upgrade, such as brackets, is removed to benefit the local environment.

[5] Operators will provide a range of supporting information with their planning applications, including a Supplementary Information Template and ICNIRP Declaration (Annexes B and C). The information will not be identical for all applications but should be provided in a standardised format where possible.

[6] Paragraph 115 of the National Planning Policy Framework states that where new mobile infrastructure sites are required the equipment should be sympathetically designed and camouflaged where appropriate; The National Model Design Code provides guidance on the production of design codes, guides and policies to promote successful design. The National Planning Policy Framework makes clear that local planning authorities should ensure that visual tools such as local design codes and guides are used to inform development proposals.

Where a whole site is no longer in use, the site should be restored to its original state.

- *Compliance with guidance laid out in the International Commission on Non-Ionizing Radiation Protection (ICNIRP) public exposure levels guidance*: as required by spectrum licences, comply with international guidelines for limiting exposure to electromagnetic fields (EMF) - including, as set out in the NPPF, providing a statement that self-certifies that ICNIRP guidelines will be met with all applications (see Annex C).

19. Local planning authorities should support the deployment of digital infrastructure by:
    - *Incentivising connectivity:* support the expansion of telecommunications networks, and take a 'joined-up' approach to the wireless infrastructure planning process, including ensuring that Local Plans effectively support the deployment of digital infrastructure.[7]
    - *Facilitating sites:* engage with operators when new sites have been proposed and discuss site requirements.
    - *Engagement with operators*: respond positively to requests for engagement and make decisions in line with national policy and Local Plans. For planning applications, find solutions to issues and ensure timely decisions are made.
    - *Information and communication*: ensure that members of the public can access information about any development proposals within their local area.[8] Send communications promptly to an appropriate operator contact (or their representatives).

Siting and design

20. The government's objective is to deliver high quality, reliable wireless infrastructure whilst ensuring the impact of new network development is kept to a minimum. The siting and design of wireless network infrastructure is central to achieving this. Good siting and design principles should apply to all wireless network development and take into account any site-specific considerations and context. Both can create better places in which to live and work and help make development acceptable to communities.

21. Siting and design should be considered throughout the development process and early discussion between operators, local planning authorities and communities about the location, design and style of the proposals should be encouraged for clarifying expectations and reconciling local and commercial interests.

[7] The Digital Connectivity Portal provides guidance for local authorities and network providers on improving connectivity in local areas, including how local authorities can create a digital strategy and identify a 'digital champion' to lead the process.

[8] Local planning authorities are required to undertake a formal period of public consultation, prior to deciding a planning application - this includes applications for prior approval for development which is subject to permitted development rights. Further information on the public consultation processes can be found at Consultation and pre-decision matters - GOV.UK

22. The choice over the site selection and design of equipment is primarily dependent upon the coverage and capacity requirements and technical constraints of a specific location, although operators should make efforts to reduce visual impacts where possible.

23. There should be a presumption in favour of facilitating sustainable network development and, as such, operators and local planning authorities, as well as all other bodies involved in the deployment process, should work together to ensure connectivity needs are met and find viable solutions to deployment issues.[9]

General siting and design principles

Site selection

24. Operators use a range of sophisticated, computer-based planning tools to predict levels of signal strength and coverage from sites for 2G, 3G, 4G and now 5G. Once an operator has identified a requirement for a new cell site, a suitable site needs to be found. Elements that make a site favourable include: having existing or ready access to a power supply, access to fibre optic cables, vehicular access, and, other buildings and development which may provide a level of existing screening. Operators will typically look to upgrade existing infrastructure prior to considering a new deployment, in particular for initial 5G deployment.

25. When selecting sites for mobile infrastructure, operators should examine local plans and designations for the area, as well as carrying out an in-person site search to identify potential options which meet their requirements. Operators should follow these general siting and site selection principles:

    - *Installation on existing buildings/structures*: where possible, operators should look to use existing buildings/structures for hosting wireless infrastructure, to reduce the environmental impact of installation.[10] Where the erection of a new ground-based mast is required, operators should seek measures to reduce the impact of the development, where possible. For example, measures such as siting near similar structures, screening, and using simple designs and appropriate colouring can help reduce the impact of the new infrastructure in certain locations (see *Design* section below).[11]

[9] Paragraph 11 of the National Planning Policy Framework states that there is a presumption in favour of sustainable development and proposals should be approved without delay where they accord with development plans, or no relevant plan exists.
[10] The National Planning Policy Framework states that the use of existing masts, buildings and other structures for new electronic communications capability (including wireless) should be encouraged.
[11] In selecting sites for new electronic communications infrastructure, paragraph 115 of the National Planning Policy Framework sets out that the number of radio and electronic communications masts, and their installation sites, 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; An

- *Sharing sites/masts*: sharing sites should always be considered as this reduces the total number of sites/masts required for the network and also minimises the visual intrusion caused by wireless infrastructure. This may involve redeveloping an existing site, including installing a replacement mast that can accommodate additional radio equipment. However, the visual impact of site or mast sharing should be considered in the context of each individual location.

26. The installation of all wireless infrastructure requires a balanced approach between the technical needs and constraints of the proposed site and the potential impact of the development. These constraints are set out in detail in the section '*Technical and Operational Considerations*'. The three key technical and operational considerations for installation sites are:

    - *Coverage*: wireless infrastructure needs to provide an appropriate level of coverage over the intended geographical area. This involves ensuring that antennas are elevated sufficiently (often via masts) to provide clear lines of sight for signals.
    - *Capacity:* where existing network infrastructure can no longer meet the demand for network capacity in a particular area, additional sites may be required within that coverage area to meet the demand. This is more likely to be required in densely populated areas or areas of high footfall.
    - *Backhaul*: the radio access network requires a connection to the core network. Backhaul is sometimes provided by a microwave link, which requires a clear line of sight between the two ends of the link.

27. Planning authorities should consider these issues and consider the need for a site within a limited search area alongside the public benefit of improved connectivity. In general, it should not, therefore, be appropriate for planning authorities to seek wider evidence of alternative sites (beyond that required by the NPPF), unless they consider the proposed development is unacceptable having regard to the relevant material planning considerations.[12]

Design

28. The siting of wireless infrastructure will influence which design options are most appropriate for reducing the visual impact. The following design principles are important considerations:

    - *Protecting visual amenity:* a comprehensive assessment of the area should be carried out to ensure that the design solution appreciates the context of its

application for a new site should also include evidence that the applicant has explored the possibility of erecting antennas on an existing building, mast or structure.

[12] Paragraph 118 of the National Planning Policy Framework also states that local planning authorities should not seek to prevent competition between different operators or question the need for an electronic communications system.

location by fitting with both the site and the wider setting. Proposals should take into account protected sightlines, landmarks and vistas. This is particularly important when mobile infrastructure is located in protected landscapes or heritage sites and their settings (see '*Natural Environment and Heritage Assets'* section below).

- *Mitigating visual impacts*: when possible, operators should look to use sympathetic designs, materials and colour (including camouflage where appropriate) to minimise the contrast between infrastructure and the area. Operators should also consider the design principles set out in the NPPF and local planning policies, and consider any relevant local and national design codes.[13]

29. There are factors that can affect the type of infrastructure that will be deployed (set out in more detail below in the section '*Technical and Operational Considerations*'), including location and the coverage and capacity requirements. Planning authorities should be aware of these constraints when considering proposals. In particular:

    - In urban areas, where there is a high level of demand for mobile data, mobile base stations are likely to need to be deployed more densely. In these settings you can expect to see more use of streetwork monopoles and rooftop installations and, in future, we are likely to see a larger number of smaller units (so-called "small cells") deployed on buildings and on street furniture.
    - In rural areas, base stations often need to cover wider geographic areas. Operators may need to use tall masts or lattice towers to provide the required coverage. The location of masts can sometimes be dictated by access to transmission links back to the operator's main network and proximity to a power supply. Coverage in some areas can be limited because of the geography, topography and terrain.

Radio equipment housing (cabinets) principles

30. Cabinets protect radio transmitters and receivers, provide the power source for mobile equipment, and are connected to antennas via cables. Equipment cabinets are likely to be needed at most sites. The cabinets must be of sufficient size to facilitate hosting various operating equipment whilst also allowing air circulation to reduce the potential for overheating.

Planning and visual considerations

[13] Paragraph 115 of the National Planning Policy Framework states that where new sites are required, equipment should be sympathetically designed and camouflaged where appropriate.

31. Colouring: cabinets should be coloured appropriately to match surrounding street furniture or assimilate with the setting[14]. If required, operators should offer a selection of colours to the local planning authority.

32. Siting on highways and footways: obstructions on footways should be minimised. New, upgraded or replacement sites should be sited so that they do not have an adverse impact upon available footway width to maintain unrestricted pedestrian access. This is particularly important for disabled people, and advice on designing an accessible public realm is given in the Department for Transport's Inclusive Mobility guidance document. Where possible, cabinets should be sited parallel to the carriageway edge in order to minimise any obstruction to pedestrians. Equipment should not obstruct cycle routes, including any shared use routes. The Department for Transport's Manual for Streets and Manual for Streets 2 provide applicable guidance on the siting of street furniture in residential areas and on busy urban and rural streets.[15]

33. Highway safety: operators must give due consideration to ensure that new, upgraded or replacement sites do not adversely impact upon highway safety or road junctions. They should comply with visibility and line of site requirements and should not obscure highway nameplates.[16] Operators and highways authorities should work collaboratively in assessing and addressing potential safety issues in order to facilitate network development.

34. Listed buildings/ scheduled monuments and Conservation Areas: the siting of equipment housing adjacent to any listed building and/ or scheduled monument should be avoided. Scheduled monument consent will be required to site any equipment housing (and associated underground ductwork) within a scheduled monument. Siting of equipment in Conservation Areas should take account of Conservation Area Appraisals and Management Plans.

35. Access: equipment housing must not obstruct any existing means of entering or leaving land, including avoiding obstruction of existing vehicular or pedestrian access to properties and public or private rights of way.

36. Trees: equipment housing installed near a tree should conform to the guidelines in the current National Joint Utilities Group Ltd (NJUG) publication Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees - volume 4.

[14] See relevant guidance on the selection and use of colour in development in Areas of Outstanding Natural Beauty and National Parks.
[15] Inclusive Mobility provides further guidance on minimum widths on footways for mobility impaired and visually impaired people is provided on page 5 of Inclusive Mobility. Guidance on footway space requirements for pedestrians is contained in Section 6.3 of Manual for Streets.
[16] See Manual for Streets for urban and rural environments under 40mph; see Design Manual for Roads and Bridges for high speed roads.

Ground-based masts

37. Operators have committed to use existing structures for network deployment wherever viable to reduce the need for new development and minimise visual impact. However, new ground-based masts will sometimes be required to accommodate the ever-increasing coverage and capacity needs of the country. 4G and 5G are likely to require further network densification in order to meet growing customer demand for data. Where higher frequencies are used, with lower signal propagation characteristics, apparatus will need to be located in closer proximity to user devices. The type of mast deployed will depend upon the location and setting, as well as the coverage requirements of the site. There are many ways by which the potential for environmental and visual impact of a ground-based mast can be reduced.

Planning and visual considerations

38. New masts should be sited in accordance with the relevant guidance stated in the section above (paragraphs 31-36). In addition, the following will apply:

39. Mast positioning: all new masts should be sited, so far as is practicable, so as to minimise their impact on their setting, including the landscape and any buildings. This includes siting next to similar structures - streetworks masts, for example, should ideally be sited in line, and in harmony, with existing vertical infrastructure, such as street lighting columns, to minimise their visual impact. Placing a mast within or adjacent to an existing group of trees, vegetation and other natural features can reduce visual impact. Care should be taken to minimise the unnecessary loss of existing trees, though antennas will need to be sufficiently elevated to clear the tree-line and the trees may need to be maintained to prevent growth above a certain level.

40. Colouring and camouflage: where appropriate, masts should be coloured to match their backdrop to minimise contrast in an urban or rural setting. Streetworks monopoles can utilise design features such as shrouding or banding to protect visual amenity, though, for some 5G infrastructure, camouflage design solutions may not be practicable. Simple designs should be encouraged - masts which have complex designs are more likely to dominate and be in discord with the landscape and have adverse visual impacts. Operators and planning authorities should work collaboratively to agree on the optimal design solution on a site-specific basis.

Building-based masts and rooftop installations

41. Operators should look to utilise existing buildings and structures before deploying ground-based equipment. The use of buildings and rooftops by operators as sites for the installation of wireless network equipment has greatly helped to reduce the environmental impact of these networks. The siting and design of building-based apparatus will be dictated by the rooftop on which it is located. As such, building-

based installations will be site-specific in nature and dependent upon the technical constraints of a particular rooftop (see the section below on '*Technical and Operational Considerations*' for the constraints that affect this). However, operators should seek to reduce visual impacts where possible.

Planning and visual considerations

42. Mast positioning: building-based masts have to be sited to provide sufficient coverage for the surrounding area and positioned to avoid shadowing and antenna 'clipping'. 'Clipping' is dealt with by locating antennas nearer the building edge or on taller structures. The height of the surrounding buildings also affects the antenna height. The mast siting should minimise the impact above the roofline, commensurate with technical constraints, and/or avoid creating unnecessary clutter on the rooftop. This includes striving to preserve rooftop amenity and retain existing other uses. When using pole mounts[17], operators should consider, where technically possible, the feasibility of setting apparatus away from the edge of buildings to reduce prominence and minimise the need for potentially intrusive edge protection. Further considerations will need to be taken when installing equipment on structures and/or buildings located in areas where there are heritage assets or within a protected landscape (including within the setting of these areas). Extra care will need to be taken when installing equipment on listed buildings, and within scheduled monuments (see section on '*Listed Buildings and Scheduled Monuments'*).

43. Mast design: although there is no standardised rooftop design (it will depend upon structural integrity, accessibility, surrounding buildings, aesthetics and building-owner requirements), masts and equipment on buildings and rooftops should, as far as practicable, be designed so as to fit and/or respect the architectural style of the building/rooftop. This could include being painted or clad to correspond with the background and/or surroundings and should minimise the impact on important views and skyline.

44. Health and safety: many older buildings are not capable of taking extra weight from wireless infrastructure. These structural limitations may affect potential sites and should be considered as part of the selection process. Building-based masts require ancillary equipment, such as handrails and rooftop grillage, to ensure access and safety compliance. All rooftop installations will be subject to ICNIRP guidelines, which may restrict siting locations on the rooftop. Antennas (particularly 5G antennas which operate at higher frequencies) need to be elevated higher off building rooftops to ensure that exclusion zones can be maintained, particularly when the rooftop is accessible to the public (see Annex C). Where these types of considerations arise, it is vital that operators and local planning authorities discuss and agree solutions to any matters that could restrict siting options.

[17] Pole mounts are used to secure and support telecommunications poles to hold them in place.

Compounds

45. Masts and associated cabinets are sometimes fully enclosed within a compound, particularly in more rural locations. Compounds are generally surrounded by a fence and provide additional security for electronic communications equipment.

46. Operators and planning authorities should engage collaboratively to ensure that compounds are designed so that they are, as much as possible, in keeping with the character of the area, and that the most appropriate materials and colourings are used, for example, for perimeter walls and fencing. In rural areas this could include planting new trees or hedgerows to integrate the site into the landscape.[18]

Natural environment and heritage assets guidance

Protected landscapes

47. Many rural areas of England are covered by National Parks and Areas of Outstanding Natural Beauty designations. In these areas, as well as the Broads, operators should recognise the increased importance of sensitive siting and design, and seek measures to minimise the impact of wireless network development.

48. The NPPF states that great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. It also sets out that development within the setting of these areas should also be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.[19]

49. Section 11A(2) of the National Parks and Access to the Countryside Act 1949, section 17A of the Norfolk and Suffolk Broads Act 1988 and section 85 of the Countryside and Rights of Way Act 2000 require that 'in exercising or performing any functions in relation to, or so as to affect, land' in National Parks and Areas of Outstanding Natural Beauty, relevant authorities 'shall have regard' to their purposes for which these areas are designated.[20] The duty is also relevant in considering development proposals that are situated outside National Parks or Areas of Outstanding Natural Beauty boundaries, but which might have an impact on their setting or protection. Local authorities and statutory undertakers[21] (including Mobile Network Operators) should have regard to these purposes when coming to decisions

[18] Appropriate consideration should also be given to materials used for access/hardstanding.
[19] The National Planning Policy Framework - Paragraph 176.
[20] Section 11A(2) as amended by section 62 of the Environment Act 1995; Section 17A as amended by section 62 of the Natural Environment and Rural Communities Act 2006.
[21] The list of public bodies and persons covered by this duty can be found in the guidance note: Duties on relevant authorities to have regard to the purposes of National Parks, Areas of Outstanding Natural Beauty (AONBs) and the Norfolk and Suffolk Broads.

or carrying out their activities relating to or affecting land within these areas, to deliver the overall achievement of sustainable development.[22]

50. In relation to electronic communications development, the NPPF states that advanced, high quality and reliable communications infrastructure is essential for economic growth and social well-being, and that planning policies and decisions should support the expansion of wireless communications networks, including next generation mobile technology. Planning authorities, and those who represent rural areas, should recognise the importance of access to reliable mobile broadband and services for those who live and work in rural communities, including coverage for the emergency services network. The benefits of high quality wireless connectivity to the rural economy are far reaching - better wireless infrastructure will give rural communities greater choice and access to services, allow businesses to grow, and have positive impacts on healthcare, education, tourism, and remote working.[23]

51. A Joint Accord has also been agreed between National Parks England and the Mobile Network Operators which aims to help communities living in National Parks benefit from consistent high quality connectivity; protect the special qualities of the National Parks by minimising any adverse environmental impacts; and support close working between the Mobile Network Operators and National Park Authorities to achieve these aims.

52. Operators and planning authorities should work collaboratively to ensure that where network deployment is required to provide connectivity in these areas, it is carried out in a way that provides positive benefits to communities, whilst respecting the sensitive nature of these areas (including considering any technical constraints). Operators are advised to seek a meeting at the earliest possible opportunity with the relevant protected landscapes representative.[24]

Designated nature conservation sites and protected species

53. A site of special scientific interest (SSSI) is designated under the Wildlife and Countryside Act 1981 (as amended).[25] Planning authorities and operators, when exercising their statutory functions on this land, need to be aware that the features of Sites of Special Scientific Interest may be affected, directly or indirectly, and avoid or mitigate any adverse impacts. The NPPF provides the highest level of protection for these areas.[26]

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[22] Also see relevant management plans for National Parks, the Broads and Areas of Outstanding Natural Beauty which help to set out the strategic context for development. They provide evidence of the value and special qualities of these areas, and provide a basis for cross-organisational work to support the purposes of their designation.
[23] Also see https://srn.org.uk/ for the potential benefits the Shared Rural Network programme will bring to these areas.
[24] Including the relevant National Park Authority, the Broads Authority, or AONB Partnership or Conservation board.
[25] Amended primarily by the Countryside and Rights of Way Act 2000.
[26] The National Planning Policy Framework - Paragraph 180.

54. The legislation places a general duty on all public bodies to take reasonable steps to further the conservation and enhancement of the special features of sites of special scientific interest. Natural England expects that public bodies will take full account of these responsibilities under this duty whenever their actions may affect sites of special scientific interest. Consent may be required from Natural England in some cases.[27]

55. In most cases, permitted development rights do not extend to sites of special scientific interest.

56. Designated nature conservation sites of international importance or 'Habitats Sites' have additional protection as under the Conservation of Habitats and Species Regulations 2017 (as amended) and the NPPF.[28] Additional approval from the planning authority, or a habitats regulations assessment, may be needed to ensure compliance with these regulations. Natural England is a statutory consultee in such cases.[29]

57. Impacts on protected species protected by legislation also need to be considered. A protected species mitigation licence may be required from Natural England in some cases. Natural England has prepared guidance on protected species for developers.[30]

Heritage assets

58. Heritage assets are an irreplaceable resource and the NPPF requires that they are conserved in a manner appropriate to their significance.[31] The NPPF requires planning authorities to assess the significance of heritage assets affected by proposed development and take this into account to ensure that any conflict between the conservation of the heritage asset and its setting and any aspect of the proposals is avoided or minimised.[32]

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[27] Sites of special scientific interest: managing your land - GOV.UK

[28] The National Planning Policy Framework defines a habitat site as 'any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations, including candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation, Special Protection Areas and any relevant Marine Sites'.

[29] Habitats regulations assessments: protecting a European site - GOV.UK; General guidance on when to obtain advice from Natural England and Environment Agency on these and other natural environment issues can be found at Habitats regulations assessments: protecting a European site - GOV.UK.

[30] Prepare a planning proposal to avoid harm or disturbance to protected species - GOV.UK

[31] The National Planning Policy Framework defines heritage assets as 'A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing)'.

[32] The National Planning Policy Framework - Paragraph 195.

59. The siting and location of any wireless infrastructure can be critical to visual impact. Operators should therefore consider how harm to heritage assets from both the process of installation of equipment, and subsequent visual impacts, can be avoided or minimised. Appropriate expertise should be sought in order to understand the significance of affected assets and the impact of the proposals on that significance.

60. Where proposals would impact a designated heritage asset[33], the NPPF requires that great weight should be given to the asset's conservation (the more important the asset, the greater the weight should be), and that any harm requires clear and convincing justification[34]. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.[35]

61. Particular care should therefore be taken for sites that are located within heritage assets or their settings to ensure that they are conserved in accordance with the requirements of the NPPF.[36] The design and siting of equipment should, as far as possible, avoid or minimise impacts on local context and character, and the significance of heritage assets or their setting. This may include visible installations on modern buildings that are within conservation areas or are in close proximity to listed buildings.[37] Adverse visual impacts are not the only impacts relevant to heritage assets, for example, the laying of cables can result in the disturbance or loss of archaeological deposits. There are likely to be cases where it will not be possible to avoid harm, and therefore it is important to mitigate harmful impacts through design or positioning, and therefore solutions should be explored to ensure the proposal of least impact is progressed. Early engagement with the local planning authority, and where appropriate Historic England, is advised.[38]

62. In considering any proposals on a listed building or scheduled monument, operators and planning authorities should be aware that any such developments require listed building consent from the local planning authority/scheduled monument consent from the Secretary of State, irrespective of whether planning permission or prior approval is required.

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[33] A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.
[34] The National Planning Framework - Paragraphs 199-200.
[35] The National Planning Policy Framework - Paragraph 202.
[36] The National Planning Policy Framework defines "setting of a heritage asset" as: The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
[37] The National Church Institutions (NCIs) of the Church of England, the Department for Digital, Culture, Media and Sport (DCMS) and the Department for the Environment, Food and Rural Affairs (Defra) signed an accord in 2018 to encourage the Church of England to use its buildings and other property to improve broadband, mobile and WiFi connectivity for local communities.
[38] Advice from Historic England should be sought in cases which would impact Grade I and II* listed buildings, scheduled ancient monuments or conservation areas, and their settings.

63. Where heritage sites and assets require service provision, infrastructure will be needed within or in close proximity to them. Operators and the relevant bodies should work collaboratively to ensure the proposal of least impact is progressed, while considering technical constraints and the need to provide connectivity in these areas.

Technical and operational considerations

64. All wireless network installations are principally guided by the technical need for the site and the technical constraints placed upon transmitting a signal. The siting and design of such installations must therefore be balanced between visual impact and these needs and constraints. As set out in the siting and design section above, the three primary technical and operational considerations for installation sites are: ensuring that wireless infrastructure provides an appropriate level of coverage over the intended geographical area; ensuring that sites have sufficient capacity to meet user demand; and, requiring a connection to the wider network 'backhaul'.

65. Planning authorities should take account of these constraints, and those set out below, on network deployment and siting and design, when considering proposals.

5G network deployment considerations

66. With the introduction of 5G, more equipment will be required to provide coverage and capacity. 5G, as well as 4G, are data-driven technologies, and high volumes of data will be transmitted between base stations and wireless devices. 5G will require a denser network of base stations than previous generations, including more fixed line fibre optic cable for reliable and high capacity backhaul. The siting of 5G installations will be more constrained and guided by these special technical and operational considerations.

67. Due to the scale and technological constraints of 5G equipment, in some cases previous camouflage design solutions, such as tree mast designs and concealing antennas in flagpoles, may not be practicable or suitable. In these cases, simple designs with particular attention to colouration and finishes may help reduce visual impacts on a site-specific basis.

Power accessibility in rural areas

68. Mobile base stations require a power supply to function. In urban areas this is rarely a problem, but it can sometimes be a challenge to find suitable connections in rural areas. Often it is not commercially feasible to install a new power source to a remote site and wayleaves with third party landowners can be required to deliver the power.

Site sharing and structural loading

69. Operators should seek to share sites where possible, site sharing reduces the number of sites required and network proliferation. However, site sharing means that masts must safely accommodate equipment for all technologies (2G- 5G) from multiple operators. Existing masts may be required to be strengthened or replaced with a larger, lattice-type structure. This may be desirable and more appropriate in rural areas, but less so in more urban environments, where greater densities of base stations will be required.

Site accessibility and availability

70. Access to a site is required for build and maintenance. Base stations may require heavy duty machinery to install them, whilst maintenance work sometimes requires specialist equipment. Access is often subject to permission from third parties who may not grant it and therefore this can limit the number of viable sites.

71. An agreement, or code agreement, is often needed by Code Operators and landowners in order to access land and install wireless infrastructure.[39] However, it is not always possible for an operator and a landowner to reach agreement and this limits the number of sites available to operators for locating their equipment. In addition, the Notice to Quit (NTQ) provisions within code agreements mean that sites have to be relocated. Where NTQs are proposed, the existing coverage and capacity will be removed and as such a replacement site is needed within close proximity to where the existing site was located.

Topography

72. The physical layout of an area can have a significant impact on how radio signals travel. Radio signals will be blocked when they encounter raised land and therefore need to be transmitted over these areas to provide coverage. The taller the base station, or the higher its position on raised land, the better it can enable a larger area to be covered.

Consultation and applications

73. Consultation and engagement are vital for ensuring the installation of electronic communications infrastructure is carried out in a transparent and appropriate way. The type and level of consultation and engagement required will depend on a number of factors, and should therefore be decided on a case by case basis. In general, it is expected that there will be a greater level of consultation for a new site

[39] The Electronic Communications Code is set out in Schedule 3A of the Communications Act 2003.

as opposed to upgrades to an existing site.[40] In all instances, it is important for all parties involved in the process to take a positive approach to consultation and engagement.

74. High-quality applications are essential and this includes ensuring the information provided in the application is of a good standard. The application information should be complete and straightforward. This allows stakeholders with an interest in the development to understand what is being proposed and its likely impact. It will also benefit applicants by avoiding unnecessary time and effort spent explaining the proposals, and can help allay concerns caused by ambiguous and incomplete information. In addition, good quality submissions are likely to result in more timely and better informed decisions by local authorities.

75. Operators should adhere to the guidance on consultation and application set out below, in order to achieve the required quality of engagement and applications.

Pre-application consultation

76. Pre-application discussions are important in helping to identify the most appropriate solution for any proposed individual development. Consultation is important for ensuring the appropriate design and siting for wireless infrastructure and should take place as part of the pre-application process, where appropriate. Effective consultation also enables local planning authorities to give feedback on the planned installation of wireless infrastructure in a timely manner and provides transparency for the public.

77. Operators should identify and consult with all relevant stakeholders at the earliest possible opportunity. This will always involve engaging with the local planning authority but there will be instances when it should include other stakeholder groups, such as executive agencies and non-departmental government bodies, statutory consultees, protected landscape bodies, and community groups. The extent of pre-application consultation will depend on the scale and sensitivity of the proposal. Once contacted, the stakeholder should engage with the consultation process, including providing prompt and timely responses, as engagement is at its most effective when approached as a partnership. Each party should provide a clear point of contact for the consultation.

Pre-application consultation with local authorities

78. Meaningful pre-application consultation is highly valuable. It should be seen as a two-way partnership between the operator and the local planning authority and, if conducted in this way, it can lead to a more efficient process and better outcomes for

[40] Operators can refer to the Traffic Light Rating System as a general guide for consultation and engagement requirements.

all involved. Pre-application discussions are important in helping to identify the most appropriate solution for any individual development.

79. Where multiple installations are planned over an area, it is useful for the operator and the local planning authority to discuss the rollout plan. Operators should highlight their wider plans where relevant and local planning authorities should be open to having this engagement. Strategic-level engagement can build understanding of the proposals, set out expectations and establish ways of working.

80. It is beneficial for operators and local planning authorities to meet to discuss the proposal prior to submitting an application to allow the planning authority to comment on the appropriateness of the siting and design of the proposals, as well as allow the operator to explain how the installation supports the rollout of wireless infrastructure in the local area.

81. Formal pre-application consultation may be of particular importance where the proposal is located in, and likely to have an impact on, protected landscapes or heritage sites and their settings. In these cases the operator should engage with the relevant local planning authority (including National Park authorities) at the earliest possible stage to discuss the proposal prior to submitting a formal application.[41]

82. The operator should seek to provide all necessary information in relation to the proposal at the first available opportunity. At the pre-application consultation stage the operator may provide the following information to the planning authority:

    - an explanation of their needs in a particular area;
    - details of the location and type of telecommunications equipment or structure intended to be constructed;
    - details of any other telecommunications equipment on the building or site;
    - the area of search and details of possible alternative options, which may include other methods of providing the required coverage (where appropriate and requested by the planning authority), and;
    - design options, and where required, an outline of measures to mitigate visual impacts for particular sites.[42]

83. Local planning authorities may charge fees for pre-application services. However, they should consider the extent to which pre-application consultation fees and any associated formal process are appropriate, particularly for strategic level meetings pre-rollout, and relatively minor upgrades or replacement sites. If any pre-application consultation fees or charges are imposed then these should be based on a cost recovery basis only.[43] Local Authorities should provide meaningful, site-specific feedback on proposals during pre-application consultations.

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[41] Where relevant, the operator may also wish to consult with other parties such as Historic England and the respective Area of Outstanding Natural Beauty body at this stage.
[42] This consultation period should be a minimum of 14 days.
[43] Section 93 Local Government Act 2003; also see the Local Government Association's Pre-application Suite,which provides advice on calculating the cost of pre-application services.

Pre-application consultation with local communities

84. For some applications, it may be appropriate for the operator to consult with local residents. For example, a greater level of community consultation may be considered for a new site or where there is a high-level of community interest in development, though the type of engagement should be considered on a case by case basis. Operators should discuss and agree this requirement with the local planning authority. Forms of community engagement which may be appropriate include:

    - Consultation/Notification letter to local residents, communities and their representatives, including parish and town councils
    - Site Notice
    - Key stakeholder briefing
    - Leaflets

Consultation with schools

85. Where it is proposed to install, alter or replace a base station in the vicinity of a school or college, operators should discuss the proposed development with the relevant body of the school or college before submitting an application to the local planning authority.[44]

86. Operators should agree with the planning authority which schools and colleges should be consulted on a case by case basis, and this should form part of the consultation plan shared with the planning authority. In determining whether a school or college should be consulted, the following factors should be taken into account by operators and planning authorities:

    - The proposed site is on school or college grounds;
    - The site is on a main access point used by pupils or students to the school or college;
    - The planning authority has requested consultation with the school or college; and,
    - The school or college has requested to be included in any consultation.

87. At a minimum, the operator should send a consultation letter or email to the school or college. This should be sent by recorded delivery in the case of a letter, or an email that is saved and referenced within any subsequent application. Correspondence should be addressed to the head teacher or principal, and the chair of governors (or equivalent). The operator should wait a minimum of 14 days from the recorded

[44] A school is an institution providing education for children within the nursery (2-5), primary (5-11), and secondary (11-16) education ranges. A college of further education is an institution providing full- or part-time education for students over the age of 16. This includes sixth form colleges (16-19).

delivery of the letter to allow an opportunity for the school to respond prior to submitting an application for planning permission or prior approval.

88. As per the National Planning Policy Framework, planning applications and prior approval applications should include information on the outcome of such consultations with schools and colleges.[45]

Consultation with other stakeholders

89. Operators should assess whether they should undertake pre-application consultation and publicity, including where prior approval is not required, with statutory consultees and other interested groups on a case by case basis. Stakeholders that fall into this category could include Area of Outstanding Natural Beauty bodies, Historic England, Natural England, the Environment Agency, the Health and Safety Executive, and the Church of England.[46]

Consultation with safeguarding stakeholders

90. Operators should notify the appropriate aerodrome safeguarding stakeholder where the proposed development is within a safeguarding area.[47] Evidence of this notification is required where the prior approval process applies.[48]

Consultation record

91. To ensure complete record keeping of the consultation process, a copy of the operator's completed consultation assessment should be retained on the operator's site files and recorded as part of the consultation plan. This will ensure accurate records that can be referred back to in discussions with the local authority in respect of any subsequent planning submission. Copies of the outcome of any consultations undertaken and any responses should be included with any subsequent application if required by the planning authority.

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[45] See paragraph 117a of the National Planning Policy Framework.

[46] Planning law prescribes circumstances where local planning authorities are required to consult specified bodies or 'statutory consultees' prior to a decision being made on an application - See the Town and Country Planning (Development Management Procedure) (England) Order 2015. The Town and Country Planning (General Permitted Development) (England) Order 2015 also sets out statutory consultees for applications of prior approval. Where beneficial, operators may seek to engage with these bodies as part of their pre-application consultation process.

[47] Safeguarded areas include aerodromes and technical sites as set out in Annex 1 - The Circular: The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002.

[48] See regulations 8B of the Electronic Communications Code (Conditions and Restrictions) Regulations 2003 (as amended) and paragraph A.3(3) of Part 16 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended).

Applications

92. There are three types of planning permission that cover the installation of wireless infrastructure[49], these are:

    - permitted development with the requirement to notify;[50]
    - permitted development with the requirement for prior approval;
    - planning permission that requires a planning application to be submitted to the relevant planning authority.[51]

93. As the information required by a planning authority is broadly the same for applications for prior approval and for planning permission, these are treated the same for the purposes of best practice within this document.

Permitted development - prior notification

94. Not all telecommunications development that benefits from permitted development rights will require the prior approval of the local planning authority. In these cases, the operator must provide the local planning authority with written notice of its intention to install and a description of the apparatus and location it proposes to install it. It can then exercise the permitted development right after 28 days' notice. This is sometimes referred to as a 'regulation 5 notification' or 'code notification'. The local planning authority may within this period give written notice of conditions with which they wish the operator to comply in respect of the installation of the equipment. Operators should respond positively and promptly to any requests for engagement from local planning authorities and work towards solutions where reasonable concerns are raised about the proposed development.

Prior approval and planning permission

95. The quality of information submitted as part of an application for telecommunications development is very important. It should always be clear, accurate and complete. The information should also be site-specific where appropriate. Good quality submissions can help explain to consultees and local people, as well as officers and elected members, exactly what is being proposed and its likely impact. By adopting high standards, unnecessary time and effort in trying to explain proposals can be avoided and help allay concerns that ambiguous and incomplete information can

[49] Section 57 of The Town and Country Planning Act 1990 sets out development that requires planning permission and Part 16 of Schedule 2 of The Town and Country Planning (General Permitted Development) (England) Order 2015 covers permitted development rights for electronic communication infrastructure.

[50] Regulation 5 of the Electronic Communications Code (Conditions and Restrictions) Regulations 2003 (as amended).

[51] Development may also require Listed Building Consent or Scheduled Monument Consent. See the Planning (Listed Building and Conservation Areas) Act 1990 and Ancient Monuments and Archaeological Act 1979.

cause. In addition, good quality submissions are likely to result in faster and better informed decisions. Local authorities should seek to provide straightforward templates as part of their planning process and align these with other local authorities where possible.

96. An application to the planning authority for planning permission or prior approval will normally be made via the planning portal. Planning legislation sets out validation requirements for applications for planning permission and prior approval applications.[52]

97. National planning policy also states that applications should be supported by the necessary evidence to justify the proposed development. This should include a declaration as to compliance with the ICNIRP guidelines.[53]

98. Operators may provide additional information beyond the statutory requirements where appropriate. This could include:

    - Drawings - along with the location plan that shows the application site in relation to the surrounding area, operators should consult the relevant local list of information requirements for any additional plans and drawings that will be necessary to describe the proposed development.
    - Maps - a map of an appropriate scale should be supplied to highlight all alternative sites that have been considered and discounted, including existing masts and structures.
    - Photo montage - a photo montage is helpful to portray the siting and design of the wireless infrastructure, particularly when infrastructure is being installed on a heritage site or in a protected landscape. This will generally consist of a before and after photomontage of the radio base station, fencing, landscaping and access (where applicable), and when requested, a Landscape and Visual Appraisal should be provided.

99. Applications should be submitted via the planning portal and the determination period starts once a valid application has been received by the local planning authority, that being day one of the determination period. Where a planning portal is not used, the application should be sent by recorded delivery, with the determination period starting once the application has been received by the local planning authority.

[52]See the Town and Country Planning (Development Management Procedure) (England) Order 2015 and the Town and Country Planning (General Permitted Development) (England) Order 2015. Also see Planning Practice Guidance - Making an Application for further guidance on validation requirements and application information

[53] See paragraph 117 of the National Planning Policy Framework. This sets out that, when submitting planning applications (including applications for prior approval under the General Permitted Development Order), mobile operators should certify that the installation will operate in full compliance with the requirements of the radio frequency (RF) public exposure guidelines of the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

100. Where appropriate, operators should provide supplementary information to their application, a supplementary information template can be found in Annex B, although supporting information may be presented in a different format.

Timescales

101. Under the prior approval regime a local authority has 56 days, beginning with the date on which it receives a valid application, in which to make its determination and to notify the applicant of the decision to give or refuse such approval. If no decision is made, or the planning authority fails to notify the developer of its decision to refuse the application within the 56 days, permission is deemed to have been granted.

102. Confirmation should be sent to the developer of the date on which the application has been received by the planning authority, and the planning authority is satisfied that it is valid. The date a valid application is received is day 1 of the 56-day period. It is advisable that the expiry of that period is communicated promptly to all relevant planning authority staff.[54]

103. It is not sufficient for a planning authority simply to have made a decision regarding the application. Such a decision must be communicated to the applicant in a formal written notice, which must be received by the applicant before the end of the last day of the 56-day period. The authority therefore needs to bring such a notice to the attention of the applicant.

104. For applications for both planning permission and prior approval, operators and local planning authorities may agree to extensions of time for the determination of such applications in writing.[55] Both parties should consider the merits of doing so where the planning authority asks the applicant to consider an agreed extension of time. This may be mutually beneficial where the proposed development is complex or sensitive and further engagement is required. Any such agreement must be in writing and set out the timescale within which a decision is expected.

Delegation

[54] The development may only commence after: the planning authority has stated in writing that prior approval is not required; the authority has stated in writing that prior approval is required, and has given such approval in writing before the end of the 56-day period; the authority has stated in writing that prior approval is required, and the 56-day period has expired without the authority having notified the applicant in writing that approval is given or refused; or, the 56-day period has expired without the authority having notified the applicant in writing whether prior approval is required.

[55] Article 7 of the Town and Country Planning (General Permitted Development) (England) Order 2015 and Article 34 of the Town and Country Planning (Development Management Procedure) (England) Order 2015, allow for agreed extensions to determination periods for prior approval applications and planning applications.

105. The 56-day period may make it difficult for planning authorities to use the committee system in determining prior approval applications and therefore effective arrangements to delegate decision-making to officers may be needed.

106. An officer may take executive action on behalf of the council to determine:

- whether or not prior approval is required;
- if prior approval is required whether to approve or refuse consent; and,
- planning applications for telecommunications development.

107. The planning authority should consider the circumstances in which elected members should make the decision (within the time allowed).

Publicity following application

108. Additional publicity for prior approval applications should be considered to allow people likely to be affected by the proposed development to make their views known to the local authority. Where planning authorities consider additional publicity with respect to prior approval applications may be helpful, they should give due consideration to:

- the relevance and amount of information to be made available;
- the timeliness for providing and evaluating this information;
- access to this information; and,
- any special needs of the local community.[56]

Specialist advice and training

109. Certain aspects of telecommunications development (whether in relation to prior approval or planning applications) are complex, and specialist advice may be required to verify whether or not certain technical constraints or arguments are valid. Where the planning authority considers that specialist advice in relation to a certain proposal may be necessary, this should be sought at the earliest opportunity in order to reduce any delays in determination.

110. Given the continuing scale and pace of change in the telecommunications industry, it is important that all who are involved in the planning aspects, including agents and consultants, keep up to date with legislation and the latest guidance and technological advances so that at all times the public receive the highest quality of advice. Local planning authorities should look to maintain an appropriate level of knowledge on telecommunications for their planning officers and members of planning committees. Consideration should be given to encouraging planning officers, as well as elected members, to take up opportunities to attend professional development workshops on technological developments within telecommunications.

[56] The Traffic Light Rating system can provide a guide for when additional publicity should take place.

111. Where resources allow, planning authorities may consider appointing a specialist officer(s) who are familiar with the special operational and technical considerations of telecommunications development and can be the main point of contact. Local authorities could also look to appoint a Digital Champion, and/or Digital Infrastructure Coordinator to work closely in partnership with network operators to develop, implement and advocate a local area digital infrastructure strategy in line with other local policies and priorities.[57]

Review and enquiries

Monitoring and review

112. To ensure the effectiveness of the Code of Practice is kept under review, the Code of Practice Working Group (see Annex D) will meet on a biannual basis. These meetings will be convened and chaired by DCMS. The meetings will provide an opportunity for stakeholders to input on how the Code of Practice is operating and confirm all stakeholders are complying with its provisions, and facilitate engagement and resolution regarding the application of the Code of Practice.

Enquiries

113. Operators have processes in place to handle enquiries from members of the public and other parties about wireless network development.[58]

114. For enquiries concerning the application of the Code of Practice, these should be directed to Mobile UK (info@mobileuk.org) in the first instance.[59] Operators will provide an update on enquiries they have received related to the Code of Practice at the relevant review meeting (see above), including any agreed metrics to measure the effectiveness of the Code of Practice.

[57] See guidance on Digital strategy and leadership and the Digital Connectivity Portal.
[58] General enquiries about mobile network infrastructure should be directed to the relevant operator.
[59] Mobile UK can also be contacted at: 1 Carnegie Road, Newbury, Berkshire, RG14 5DJ

Annex A: Glossary

5G: The fifth generation of mobile technology.

Antenna: a device that transmits and receives radio waves.

Area of Outstanding Natural Beauty (AONB): the primary purpose of an AONB designation is to conserve and enhance the natural beauty of the area.

Backhaul: transmission of signals from a cell site or mast which is part of the radio access network to the core or backbone network.

The Broads: The Broads National Park is managed by the Broads Authority for the purposes of conserving and enhancing the natural beauty, wildlife and cultural heritage of the Broads; promoting opportunities for understanding and enjoyment of the special qualities of the Broads by the public; and protecting the interests of navigation.

Code Operator: Code Operators exercise Code rights under the Electronic Communications Code. Operators can include providers of electronic communications networks and providers of infrastructure systems. The operator must normally have been granted operator status by Ofcom under section 106 of the Communications Act 2003.

Designated Heritage Asset: a World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.

Electronic Communications Code: the Electronic Communications Code ('the Code') is set out in Schedule 3A of the Communications Act 2003 and is designed to facilitate the installation, maintenance and upgrade of electronic communications, through a statutory framework of specific duties, obligations and protections that apply to the deployment of digital communications networks by Code Operators.

General Permitted Development Order: The Town and Country Planning (General Permitted Development) Order 2015 grants planning permission for different types of development in specified circumstances. The permissions granted by the Order are commonly known as permitted development rights.

Historic England: a public body that champions and protects England's historic places.

ICNIRP: an independent non-profit organisation, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) provides scientific advice and guidance on the health and environmental effects of non-ionizing radiation.

Internet of Things (IoT): a system of interrelated, internet-connected devices that are able to collect and transfer data over a wireless network without human intervention.

Latency: the delay before a transfer of data begins following an instruction for its transfer.

Local Planning Authority (LPA): the public authority whose duty it is to carry out specific planning functions for a particular area. All references to local planning authority apply to the district council, London borough council, county council, Broads Authority, National Park Authority and the Greater London Authority, to the extent appropriate to their responsibilities.

Local Plans: are prepared by the Local Planning Authority (LPA), usually the Council or the National Park authority for the area. Local plans set out a vision for the future of each area and a framework for addressing housing needs and other economic, social and environmental priorities.

Listed Building: a listed building, or listed structure, is one that has been placed on one of the four statutory lists maintained by Historic England.

Macro site: a macro site is a cell in a mobile phone network that provides radio coverage served by a high power cell site (tower, antenna or mast).

Mast: a structure that supports antennas at a height where they can satisfactorily send and receive radio waves. Masts are typically of either a lattice design (used more in greenfield areas) or monopole style (used in more urban areas). Masts themselves play no part in the transmission of the radio waves for mobile telecommunications.

Monopole Mast: a ground-based mast of non-lattice structure. Monopoles are usually deployed in the urban or suburban street scene to provide extra capacity or coverage for a network.

National Highways: formerly Highways England, is a government-owned company charged with operating, maintaining and improving motorways and major A roads in England.

National Park: the purpose of a National Park designation is to conserve and enhance the natural beauty, wildlife and cultural heritage and promote opportunities for understanding and enjoyment of the special qualities of National Parks by the public. In carrying out these purposes, National Park Authorities are also required to seek to foster the economic and social well-being of local communities in the National Park.

National Parks Joint Accord/Memorandum of Understanding: an accord signed (2018) by National Parks England and Mobile UK to complement the Code of Practice to recognise the special nature of National Parks and the public benefit of mobile telecommunications.

Natural England: a non-departmental public body in the United Kingdom sponsored by the Department for Environment, Food and Rural Affairs. Their purpose is to help conserve, enhance and manage the natural environment for the benefit of present and future generations, thereby contributing to sustainable development.

Network capacity: the amount of traffic that a network can handle at any given time.

Network resilience: the ability to provide and maintain an acceptable level of service in the face of faults and challenges to normal operation.

Notice to Quit: a notice given by a site provider to an operator that brings a Code agreement to an end.

Permitted development rights: a national grant of planning permission which allows certain building work and change of use to be carried out without having to make a planning application. Permitted development rights are subject to conditions and limitations to control impacts and to protect local amenity.

Prior approval: prior approval means that a developer has to seek approval from the local planning authority that certain elements of the development are acceptable before work can proceed. The matters for prior approval vary depending on the type of development - for mobile network development these include the siting and appearance of the equipment to be deployed.

Protected Landscapes: nationally important landscapes that are protected by law. Includes National Parks, the Broads, and Areas of Outstanding Natural Beauty.

Radio equipment housing: radio equipment housing, or equipment cabinets, protect radio transmitters and receivers from damage and can range in size from a small cabinet to a purpose-built cabin serving several operators.

Radio spectrum: is part of the electromagnetic spectrum. Different spectrum bands have different characteristics, which affect the extent of coverage and how much data can be carried.

Scheduled Monument: a nationally important archaeological site or historic building, given protection against unauthorised change.

Shared Rural Network: the Shared Rural Network (SRN) is a programme that will be delivered by the government and mobile network operators. The agreement will see the government and industry jointly invest over £1 billion to increase 4G mobile coverage throughout the UK to 95% geographic coverage by the end of the programme.

Sites of special scientific interest: sites designated by Natural England under the Wildlife and Countryside Act 1981.

Small Cells: small cells are wireless network access transmitters, used to extend network coverage and additional capacity in specific locations. Small cells typically have a small range and operate at much lower power levels than larger mobile base stations.

Annex B: Supplementary information template

SUPPLEMENTARY INFORMATION

1. Site Details

Site Name:		National Grid Reference:	
Site Address:			
Site Ref Number:		Site Type:	

2. Pre-application Checklist

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:	
Name of contact:	

Summary of outcome/Main issues raised:	

Annual area wide information to planning authority

Has annual area wide information been provided?	Yes/No
If no explain why	
Summary of issues raised	

Community Consultation

Rating of Site under Traffic Light Model: Red Amber Green
Outline of consultation carried out:
Summary of outcome/main issues raised (include copies of relevant correspondence):

School/College

Location of site in relation to school/college (include name of school/college):
Outline of consultation carried out with school/college (include evidence of consultation):
Summary of outcome/main issues raised (include copies of main correspondence):

Civil Aviation Authority/Secretary of State for Defence/Aerodrome Operator consultation

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:		

Developer's Notice

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

3. Proposed Development

The proposed site:

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

Type of Structure (e.g. tower, mast, etc):	
Description:	
Overall Height:	
Height of existing building (where applicable):	Metres
Equipment Housing:	
Length:	Metres
Width:	Metres
Height:	Metres
Materials (as applicable):	
Tower/mast etc – type of material and external colour:	
Equipment housing – type of material and external colour:	

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

Health and Safety - including ICNIRP compliance

4. Technical Justification

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

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

5. Site Selection Process

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

Site Type	Site name and address	National Grid Reference	Reason for not choosing site

If no alternative site options have been investigated, please explain why:
Land use planning designations:
Additional relevant information (include planning policy and material considerations):

Confirmation that submitted drawings have been checked for accuracy

Name (Agent):		Telephone:	
Operator:			
Address:		Email Address:	
Signed:		Date:	
Position:		Company:	

Annex C: ICNIRP declaration and rooftop deployment constraints and solutions

ICNIRP Declaration

Address *Agent Address*

Dear Sir/Madam

CLARIFICATION OF THE DECLARATION OF ICNIRP COMPLIANCE ISSUED AS PART OF THE SUBMISSION ATTACHED FOR SITE (INSERT SITE REF NO.) AT (INSERT SITE ADDRESS)

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

The "ICNIRP Declaration" certifies that the proposed site shall be operated to be in full compliance with the requirements of the radio frequency (RF) guideline limits of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) for public exposure and UK legislation.

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.

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 me.

Yours faithfully

The Project Manager

Insert agent name
Insert position in organisation
Insert company name
Insert email address

Insert direct telephone number

(for and on behalf of ….)

Address *Agent Address*

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

Name and address of Lead Operator

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

Insert address
Insert address 2
Insert town
Insert county
Insert Postcode

Insert NGR

shall be operated to be in full compliance with the requirements of the radio frequency (RF) public exposure limit of the International Commission on Non-Ionizing Radiation Protection (ICNIRP)and UK legislation.

Date:	*Insert Date*
Signed:	*Project Manager to sign*
Name:	*Insert Project Manager's name*
Position:	*Project Manager for (Company)*

Rooftop deployment constraints and solutions

Scenario 1.

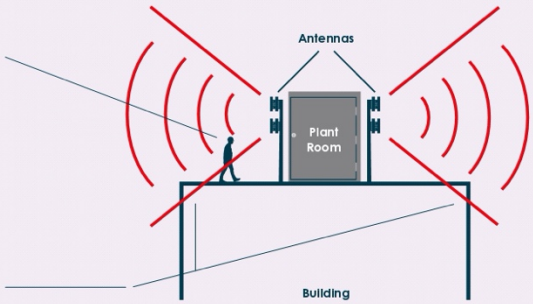
Antennas are of low elevation and set back from the rooftop edge.

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has developed exposure limits adopted by the UK Government. All mobile network operator installations are designed to comply with the ICNIRP exposure limits as adopted in European Union directives and UK legislation.

This scenario might be considered the most visually sympathetic solution as antennas are both set back from the rooftop edge and are of lower elevation. However, the below example is not an ICNIRP compliant design, and therefore would not be proposed.

The person shown is within the exclusion zone – this is not ICNIRP compliant, as the antennas are too low.

With the antennas positioned here "clipping" occurs. This is when the radio frequency signal propagation from an antenna 'clips' the building edge and would result in exclusion zones over sections of the rooftop. This will impact radio performance and service provision to the point that the solution is not viable.



Each Scenario is indicative and a simplified version to demonstrate the technical constraints and solutions. Although 2D was used for simplicity, antennas must be carefully sited at locations on a building to provide 360 degree coverage, and must always be ICNIRP compliant.

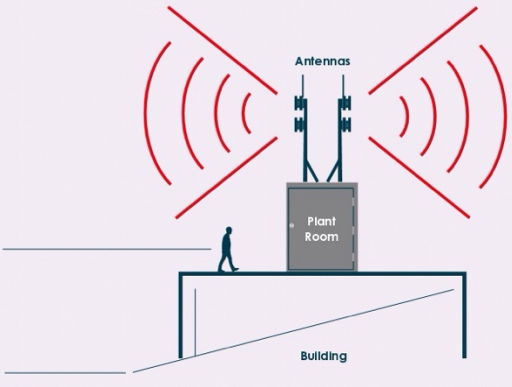
Scenario 2.

Antennas are set back from the rooftop edge and must be elevated.

This scenario is sometimes considered a more visually sympathetic solution, as the antennas are sited away from the rooftop edge. This solution means the antennas must be placed higher, which typically requires more robust support structures, and the essential additional height and bulk can be less desirable in some situations.

The person is accessing the rooftop and is not in the exclusion zone. As the antennas are of sufficient height, there is no RF 'clipping' and the rooftop remains accessible, which may be necessary for access to plant, maintenance or fire escape. The rooftop is safe to access and this ensures that the design remains ICNIRP compliant.

No rooftop edge clipping occurs – ICNIRP compliance is achieved, and there will be no impact upon radio performance or service provision – the design solution remains viable.



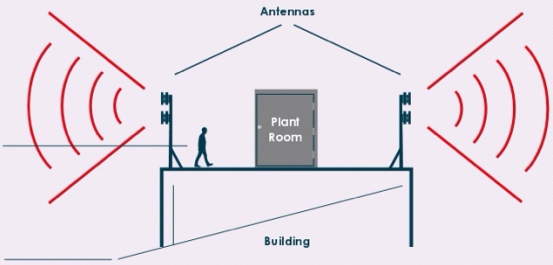
Scenario 3.

Antennas are near edge of rooftop, but less elevation may be required.

This scenario is sometimes considered a less visually sympathetic solution as the antennas are sited on the rooftop edge. However, with this solution there is a reduced necessity for additional antenna elevation, which typically means less structural bracing is needed. The reduced necessity for additional elevation and bracing can, in practice, be the most visually sympathetic solution in some situations, albeit closer to the rooftop edge. This is especially true on medium height to tall buildings, where the natural elevation of the building takes it away from the public realm and provides sufficient antenna elevation for viability.

The person is accessing the rooftop and is not in the exclusion zone. Antennas propagate outward – siting at the edge with outward orientation means that the rooftop remains accessible and there is no rooftop 'clipping'.

ICNIRP compliance is achieved and there will be no impact upon radio performance or service provision – the design solution remains viable.



Annex D: Code of practice working group members

1. This Code of Practice was developed by a Working Group made up of representatives from the following organisations:

    - The Department for Digital, Culture, Media and Sport
    - The Department for Levelling Up, Housing and Communities
    - The Department for Environment, Food and Rural Affairs
    - The Department for Transport
    - Mobile UK
    - Cornerstone Telecommunications Infrastructure Limited
    - Mobile Broadband Network Limited
    - Cellnex UK
    - Wireless Infrastructure Group
    - Local Government Association
    - Planning Officers Society
    - National Association of Areas of Outstanding Natural Beauty
    - National Parks England
    - Ofcom
    - Historic England
    - Natural England
    - National Highways