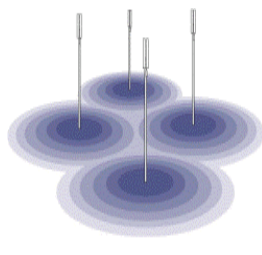


Oxford City Council

Telecommunications

Supplementary Planning Document

Draft for Consultation



Note photograph images may be reviewed prior to adoption.

April 2007



Responding to this consultation

Please email, post or fax your comments on this draft SPD to the contact details below. All responses should be received by the City Council by **4.30pm on Friday 1st June 2007**. This SPD, its accompanying Sustainability Appraisal and a comment form are available for downloading at:

<http://www.oxford.gov.uk/spd>

Planning Policy
Oxford City Council
Ramsay House
10 St. Ebbes Street
OXFORD
OX1 1PT

Fax: 01865 252144
planningpolicy@oxford.gov.uk

If you have any questions or would like clarification on any aspect of the document, please contact Matthew Bates:

Matthew Bates
Tel: 01865 252277
mbates@oxford.gov.uk

Translations available

অনুবাদের ব্যবস্থা আছে
提供有翻譯本
तरजमे उपलब्ध हैं
उत्तममे मिल सकदे हन
ترجمہ دستیاب ہے

T: 01865 252735

Front page photos:

1	2	3
4	5	6
7	8	9

1. Camouflage painted monopole (Source: Vodafone)
2. Phone mast combined with street furniture, Birmingham (Source: Vodafone)
3. Microcell antenna mounted on a building in Oxford City centre (photo by author)
4. Antenna disguised as a chinney (Source: Stappard Howes, Chertsey., Surrey)
5. Diagram showing how a cell network operates (Source: Ofcom website <http://www.ofcom.org.uk>)
6. 'Tree mast' at Bartlemas, Oxford (photo by author)
7. Antennas on weathervane of Grade II Listed church, Windsor (Source: Vodafone)
8. Streetworks monopole alongside light column, Oxford (photo by author)
9. Phone mast disguised as traditional street furniture (Source: T-mobile)

CONTENTS

Section 1: The mobile phone network	Page 4
Section 2: Planning objectives	Page 6
Section 3: Procedure for new proposals	Page 8
Section 4: Submission content	Page 12
Glossary	Page 16
Appendices	
Appendix 1: Policy CP.24 (extract from Oxford Local Plan 2001-2016)	Page 17
Appendix 2: Siting and design: OLP policies	Page 18
Appendix 3: Summary of Traffic Light Model for public consultation	Page 19
Appendix 4: Checklist for application submission	Page 21
Appendix 5: HRIA template	Page 22
Appendix 6: Technical information	Page 24
Appendix 7: Useful contacts and resources	Page 25

SECTION 1: THE MOBILE PHONE NETWORK

Purpose of SPD

1. The adopted Oxford Local Plan 2001-2016 (OLP) includes **Policy CP.24 – Telecommunications**, concerning proposals for telecommunications network development. The Policy seeks to balance environmental, visual, amenity and health concerns with future development needs of the mobile technology networks.
2. This Supplementary Planning Document (SPD) sets out in detail the City Council's policy and procedure on different types of telecommunications development, to support Policy CP.24. Areas of guidance include:
 - background to how the networks operate;
 - overview of national and regional policy;
 - guidance on consultation;
 - outline procedure for network development and new proposals;
 - information expected as part of a submission for telecoms development;
 - design and siting guidance (including policy on site sharing);
 - dealing with health concerns.

Background

3. Mobile phone technology continues to be a growing industry. In September 2006, the industry estimated there were more than 65 million mobile phones in use in the UK.¹ Five companies are currently licensed by the Government under the Telecommunications Act 1984 to operate mobile phone networks in the UK. They are:
 - '3' (formally Hutchinson 3G)
 - O2 (formally BT Cellnet)
 - Orange
 - T-Mobile (formally One 2 One)
 - Vodafone

4. Most mobile phones operate on the 'second generation' or 2G network, which is already well established. The development of a new 'third generation' or 3G network, is providing additional mobile services such as emails, video conferencing and other high capacity data transfer. 3G licenses issued by Government require that each operators' network covers 80% of the UK population with mobile phone reception by the end of 2007, although development of the 3G networks are likely to continue as overall network capacity is increased. 3G is currently responsible for the majority of new mobile network infrastructure.
5. **Figure 1** shows in simplified form how a network operates. The network consists of a system of coverage cells, which in urban areas are generally 200-500 metres apart in towns (although this can vary depending on the number of users, land use and topography). A base station in the cell centre, which emits and receives radio signals to and from mobile phones in use. There are a number of resources available which explain in more detail how the mobile phone network works. Some of these are listed in **Appendix 7**.

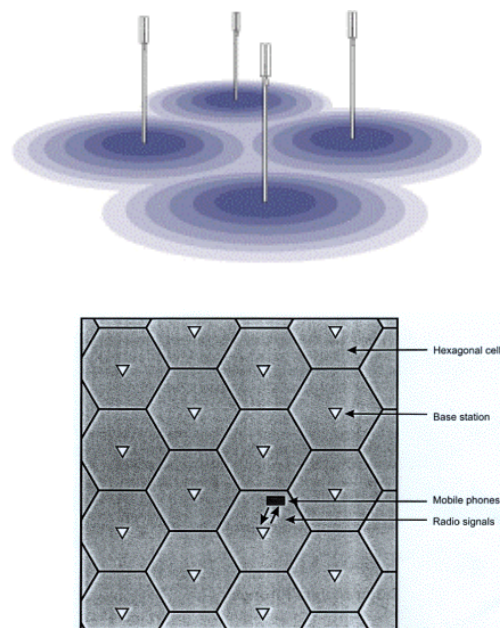


Figure 1 How the network operates

¹ Mobile Operators' Association, September 2006

6. There are four 2G networks in the UK (one for each of the operators listed above, except '3'). All these networks have different cell boundaries.
7. Five 3G networks are provided separately by the commercial telecommunications operators. The 2G network operators can normally modify their existing 2G sites to incorporate the new 3G networks. However, because 3G operates at a higher frequency, the cells created by base stations are smaller than their 2G counterparts. Additional base stations are often required to fill in gaps in the 3G coverage; this is illustrated in **Figure 2**. The '3' network only operates on a 3G system, and is therefore developing their network from scratch.

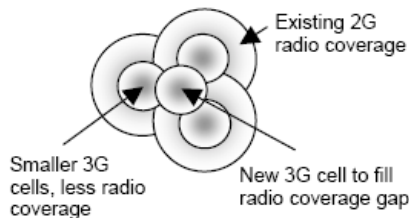


Figure 2 3G cell network rollout

8. As well as the conventional mobile phone networks, other radio-based communications systems are also operational in the UK. An example is TETRA (Terrestrial Trunked Radio), which has been used to develop the Airwave emergency services radio system. The Airwave network was completed in 2005. Radio masts and antennas are also used by the railway industry (these are currently classed as permitted development by national planning regulations, if for operational use). **Wi-Fi is a further radio-based technology which allows wireless computer internet access, and which is becoming commonplace.**

Exposure to radiowaves

9. Mobile phones and their base stations transmit and receive radio signals using electromagnetic frequencies (EMF). These can also occur naturally from the earth's magnetic field or from a range of sources such as domestic appliances, power lines and electric trains.

10. In recognition of public concern about the possibility of health effects from EMF emissions from mobile phones and associated base stations, the Government set up in 2000 an Independent Expert Group on Mobile Phones, chaired by Sir William Stewart. Key conclusions of the group's report (usually referred to as the 'Stewart Report') were that:

- the balance of evidence indicates that there is no general risk to the health of people living near to base stations where the exposures are only small fractions of guidelines;
- a precautionary approach to mobile phone technology was nevertheless justified by gaps in scientific knowledge;
- lower guideline thresholds for public exposure to EMF should be adopted as a precautionary measure.

11. The lower guideline thresholds referred to are set by the International Commission on Non-ionizing Radiation Protection (ICNIRP). These are lower than the previously used guideline thresholds set by the National Radiological Protection Board (NRPB), by a factor of between 6.5 and 11 within the mobile phone frequency range (in terms of power density).² Since publication of the Stewart Report, and the subsequent revision of Government and Industry policy on the issue, the ICNIRP reference levels for public exposure to EMF are adhered to in relation to all mobile phone technology.

² Mobile Phones and Health. Report of the Independent Expert Group on Mobile Phones (2000), paragraph 6.31

SECTION 2: POLICY FRAMEWORK

12. All planning decisions have to be taken in accordance with the development plan unless other material considerations indicate otherwise. Account must also be taken of national planning policies and advice issued by the Government. The paragraphs below summarise the main relevant advice arising from Government guidance and the emerging Regional Spatial Strategy.

Oxford Local Plan 2001-2016 (OLP) (adopted November 2005)

13. Policy CP.24 forms the basis of this SPD, and is set out in full in **Appendix 1**. There are a number of other policies in the OLP which may also be material in terms of location and appearance, an overview of these is given in **Appendix 2**.

Planning Policy Guidance 8: Telecommunications (PPG8) (2001)

14. PPG8 sets out the Government's advice on planning for telecommunications development, and is a material consideration in determining planning applications and applications for prior approval. The guidance is based on the following principles:

- to facilitate the growth of new and existing telecommunications systems, while keeping the environmental impact to a minimum;
- ensure consumer choice, in terms of provision and services available;
- emphasis on national policies for the protection of the countryside and urban areas;
- consider the significance of, and need for, the proposed development as part of a national network;
- Local Planning Authorities should not seek to prevent competition between different operators, and should not question the need for the system which the proposed development is to support.

15. Specific recommendations made in PPG8 include strong support for mast and site sharing, where this represents the optimum environmental solution; use of existing buildings to mount antennas; support for innovative design solutions, and the submission of a certificate to demonstrate compliance with ICNIRP thresholds for public exposure to radiofrequency (RF) emissions. It also encourages operators and local planning authorities to carry out annual discussions about rollout plans for each authority's area.

The Code of Best Practice on Mobile Phone Network Development (2002)

16. In 2002, the Office of the Deputy Prime Minister issued a Code of Best Practice. This provides Government best practice guidance for both local authorities and network operators on developing the mobile phone network. It also recommends procedural (but mainly non-statutory) standards for consultation arrangements, and information which should be submitted to local planning authorities as part of the planning process. The Code is likely to be revised in coming years, in the light of practical experience.

17. The City Council supports the key principles expressed in the Code, namely effective and meaningful public consultation, and ensuring transparency of information. These principles have been applied throughout this SPD. The City Council also supports the 'Operators' Ten Commitments', which were adopted by the main mobile network operators to demonstrate their willingness to address community concerns. In relation to the planning process, the Ten Commitments pledge thorough consultation and communication both before and during the formal planning application stage, and co-operation on site sharing.³

³ The Operators' Ten Commitments are set out in full in the Code of Best Practice on Mobile Phone Network Development (ODPM, 2002) (Annex C), and on the Mobile Operators' Association website (see **Appendix 7** for details)

Draft South East Plan (SEP) (2006)

- 18.** The SEP will, when adopted, constitute the Regional Spatial Strategy (RSS) for the South East, and will therefore form part of the Development Plan. The Draft SEP was submitted to the Government in March 2006, and the final document is likely to be adopted in early 2008. The Draft SEP supports improvements to communications technology that increases access to goods and services without increasing the need to travel.

SECTION 3: PROCEDURE FOR NEW PROPOSALS

Types of development

19. Telecommunications development falls into four main categories, each having a different set of statutory procedures and conditions. The following paragraphs summarise the main types of development falling into each category, conditions which apply, and the formal decision-making process. **Note that this is a broad outline of planning procedure, and should under no circumstance be interpreted as the law.**⁴

'De minimis' equipment

20. Many microcell and picocell type base stations (see **Glossary**) are so small that they are barely noticeable, and are not therefore classed as development. These often look like burglar alarms on the outsides of buildings. These do not normally need planning permission, however the City Council still expects 28 days' prior notification (see paragraph xx below). However full permissions will be needed where development constitutes works to a listed building (see advice below).



Example of a microcell antenna which could be classed as 'de minimis'

⁴ Advice in paragraphs 20 to 27 is a summary interpretation of the planning regulations applicable to the Electronic Communications Code Operators, who are defined by the Communications Act 2003 (As Amended). It is not intended to state or substitute the law. Refer to Parts 24 and 25 of the Town and Country Planning (General Permitted Development) (Amendment) (England) Order 2001 (As Amended) for the full regulations relating to telecommunications development classed as permitted development.

Permitted development **not requiring** prior approval

21. This includes antennas on a building or similar structure where the antenna is less than 4 metres in height, and radio equipment housing with a volume of 2.5m³ or less, unless in a Conservation Area or Site of Special Scientific Interest (SSSI) or on a listed building (see below). The following conditions apply to telecommunications permitted development:
- antennas and apparatus shall, as far as practicable, be sited so as to minimise its effect on the external appearance of the building;
 - antennas and apparatus will be removed as soon as reasonably practicable after it is no longer required for telecommunication purposes
22. The City Council will expect to be notified of any such development at least 28 days prior to implementation, during which time it will endeavour to advise the developer of any issues over which it has concerns.

Permitted development **requiring** prior approval

23. This includes any mast 15m or less in height, or any antenna on a building or structure where the antenna would exceed the height of the building by 4m or more. It also includes radio equipment housing with a volume in excess of 2.5m³, and some development ancillary to radio equipment (e.g. fences, access roads). Development within a Conservation Area or SSSI is excluded from permitted development rights.
24. There are additional procedural conditions on this type of development, whereby the City Council has 56 day period to notify applicant whether prior approval is required, and whether the design and siting are acceptable. The developer gains deemed consent if the City Council does not respond within 56 days of receiving application. In practice, prior approval applications are treated in the same way as

applications for full planning permission, and there is the same requirement to formally consult the public. The City Council's procedures and policy for prior approval applications are set out below.

Full planning permission

25. Development which is not classed as permitted development will be subject to full planning permission. This includes:
- ground-based masts exceeding 15m in height (except like-for-like replacement);
 - some roof-mounted antenna more than 6m in height (depending on height of the building);
 - some building-mounted antennas facing a highway within 20m of the building;
 - where it would result in more than 2 antenna systems on a building less than 15m high, or 3 antenna systems on a building 15m high or more;
 - development on a listed building or scheduled ancient monument
 - development in a Conservation Area or Site of Special Scientific Interest (SSSI)
26. Where full planning permission is required, the City Council will normally determine the application within eight weeks of it being registered, including a three week period for public comment. Planning permission must be granted before development can proceed.

Listed Building Consent

27. Listed building consent is required for works to a listed building (internal or external) that in any way affect its special interest as a listed building. The timescale for determination is the same as for a planning application. Works to Grade I and II* listed buildings have to be vetted by the Government Office before a decision can be issued. Further advice is set out below.
28. The planning authority should be informally involved in planning telecoms networks well ahead of any formal submission. A procedural framework for this process is set out in the following section.

The Annual Rollout

29. All five main network operators have committed to submitting details of all their proposed development sites for the forthcoming year, on an annual basis. This information is normally submitted in the autumn of each year. The City Council is committed to making this information publicly available, and will publish on their website a map of proposed sites from the information submitted by the operators. Copies of this map, and all information submitted, will also be available at Planning Reception for public viewing.
30. On receipt of the Annual Rollout, the City Council will normally invite the operators to a meeting, to discuss the pattern of development proposed. The City Council may comment on particular sites where concerns have been identified, and point out areas where it believes there is scope for sharing sites or infrastructure.
31. The City Council will also indicate areas in Oxford where there are significant development proposals, and encourage operators to take account of the location and type of new development when planning their networks. Operators and site developers should ensure that all development proposals integrate network infrastructure into the overall scheme.
32. Operators will be expected to take account of all comments made by the City Council in response to the Annual Rollout when submitting planning applications and prior approval. However such comments will, in all cases, be made in an informal capacity, and will not therefore prejudice any future formal recommendation to or decision by the City Council.

Pre-application discussion

Proposals requiring planning permission or prior approval

33. Both PPG8 and the Code of Best Practice make clear that operators are expected to engage the City Council, and in some cases local residents, schools and colleges, in pre-

application discussions. The City Council's Statement of Community Involvement (SCI) strongly encourages developers to consult the Council and community at an early stage, and to consider arranging a local meeting. The Code of Best Practice sets out different levels of consultation appropriate to different site circumstances, under a system referred to as the Traffic Light Model (TLM). The rating assigned (either green, amber or red), which should be pre-agreed between parties, will then be used by the applicant to draw up a 'consultation plan' (which should be included in a consultation statement).

34. **Appendix 3** gives a summary of the TLM. Prospective developers must understand Oxford's character as a unique mix of dense urban (mainly residential) development, interspersed with sensitive areas of open landscape, sixteen conservation areas, and a historic City centre of world significance. These features should be reflected in the traffic light rating.
35. The City Council expects applicants to submit plans and information to the planning department for pre-application comment **at very least 14 days in advance of a formal application. Earlier submission will however allow officers to feed into the consultation plan, and comment on the proposal, in a more meaningful way.** Early pre-application discussions allow the City Council to suggest alternative sites which may be preferable to the one proposed. This stage also allows officers to clarify information which will be required as part of the formal planning submission. Outside of this timescale, the City Council cannot guarantee a response to pre-application submissions.
36. We will expect submission of the following information at the pre-application stage:
- details of search area and pre-proposal coverage plot;
 - indicative list of feasible alternative sites that have been assessed;

- plans and elevations to scale, to indicate the scale and appearance of the proposal;
- a framework HRIA, to outline the format of information to be submitted on radiofrequency emissions (see Section 4) below;
- a draft consultation plan, including details of any public consultation already conducted.

Permitted development proposals not requiring prior approval

37. Some telecommunications base stations can be installed under permitted development rights, or as *de minimis* development⁵. There is no statutory requirement to notify local authorities of such developments, however best practice suggests that operators should nevertheless carry out this task. The City Council will expect to be informed of all permitted development proposals at least 28 days before the commencement of work on site, such that it can pass on any local concerns to the operator.
38. The City Council will also wish to satisfy itself that the conditions for permitted development have been met. The City Council will expect operators to submit scale plans and elevations at the time it informs the Council of its proposals. Operators should submit supporting information in accordance with the checklist in **Appendix 4**, where the proposal would be rated amber or red under the TLM.

Proposals involving works to a listed building

39. The City Council encourages prospective applicants to discuss preliminary proposals as for other types of application. Preliminary work should include an analysis of the architectural and historic interest of the host building and an assessment of how the proposals may impact on that special interest. Further advice should be sought from a conservation officer.

⁵ See Table 1

Formal submission

40. A formal application has to be made to the City Council planning department for all telecoms developments requiring planning permission or prior approval. This should not be submitted until informal consultation has taken place, as agreed with the City Council, and the applicant has done all they can to address any concerns expressed.
41. The formal submission must include all information required by OLP Policy CP.24, in line with the guidance in this document. It should also conform to Code of Best Practice principles and procedures. Applicants are recommended to complete the checklist in **Appendix 4** when preparing their submission.
42. When an application for planning permission, prior approval or listed building consent is submitted, the City Council will advertise the application in the local newspaper. The City Council may ask the developer to display a notice on site, in a location which is clearly visible from the public highway, and will send letters of notification to local households. Anyone can comment on a proposal within 21 days of the application being advertised.
43. The City Council will determine planning and prior approval applications based on the information submitted at the time the application is registered, and any subsequent information submitted in good time. Applications will be refused which do not comply with the OLP saved policies and LDF documents, including this SPD. Objections to an application made on valid planning grounds will be taken into consideration.

Proposals requiring full planning permission

44. Proposals which require full planning permission are normally determined within 8 weeks of registration with the Planning Department. This type of development cannot be implemented until planning permission has been granted.

Proposals requiring prior approval

45. Proposals which require prior approval for siting and design must be determined within 56 days of the City Council receiving an application. The application content must as a minimum comply with the relevant regulations in the GPDO (as amended) and PPG8 Annex 1 (or any future replacement) for the City Council to accept it. Additional information must also be submitted in line with the guidance set out in this SPD.

SECTION 4: SUBMISSION CONTENT

Consultation statement

46. The Oxford Statement of Community Involvement (SCI) states that all planning applications should be accompanied by a brief statement of consultation, outlining what pre-application consultation took place, its results and how these have been taken into account in the final application. This requirement is particularly important for telecommunications development, given its sensitive nature.

47. A draft consultation statement should ideally have been submitted at the pre-application stage. This draft should be revised if necessary, following the City Council's involvement in the consultation plan during the pre-application stage, and should include:

- details of the TLM assessment methodology and outcome;
- whether any public representative, school, college or other organisation has been consulted; the relevant contact(s) approached; the method and date(s) of consultation, and the outcome;
- details of any wider public consultation by voluntary notice, letter or leaflet (e.g. local residents), including date(s) sent/posted, consultees' addresses, the information that was provided, and summary responses;
- details and date(s) of any public or stakeholder meeting that has been attended, including issues discussed, outcomes and actions proposed.

Plans, drawings and elevations

48. All plans, drawings and elevations should be to scale, and should accurately show all existing surrounding features and structures, whether built or natural. In particular, it is important to show clearly all features which may have an impact on the visual acceptability (or otherwise) of the proposal. Details of mitigation measures (such as planting), and colouring or camouflage of equipment, should also be made clear.

49. The City Council will expect submission of a photo montage, accurately portraying the proposed development from significant or important viewpoints.

Need for development

50. Policy CP.24 requires developers to demonstrate the need for proposed telecommunications development. Applicants must therefore submit coverage plots, shown on Ordnance Survey base map, to show the level of network coverage within the target area both before and after the proposed development. The information should be shown in a way that makes clear the relative signal strength, for example 'in-building coverage', 'in-car coverage', 'outdoor coverage', etc. This information should be accompanied with a brief justification for the increased level of coverage sought, which should specifically relate to the needs of the local area.



Coverage plot where blue areas represent low ('outdoor only') levels of network coverage
06/01135/T56 – prior approval granted

Alternative sites and site shares

51. Policy CP.24 also requires developers to show that alternative existing telecoms sites are unavailable for site sharing. Developers must therefore submit evidence that other sites are unsuitable where a new site is proposed.

52. The City Council maintains a map database of operational and proposed sites, based on the main network operators' annual rollout plans. This is available to view on the City Council's website (see **Appendix 7** for website address).

Before submitting an application, applicants should refer to this, and should also liaise with the other main operators, to check whether there is any opportunity for site or mast sharing within their search area. The City Council may ask for evidence that appropriate enquiries have been made in this respect. A map showing the search area on an OS base, and all existing telecoms sites and alternative new sites within this area, should be included in the supporting statement.

53. Applicants should also make site visits within the search area, to assess whether other buildings or structures are potentially suitable for the development proposed. The City Council will look for evidence that site visits have been carried out, and that appropriate enquiries are made as to whether alternative existing buildings and structures are available or suitable.
54. Where a potentially suitable site is found to be unavailable (for example where a building owner is unwilling to allow use of their property), this should always be confirmed in writing or by email. Occasionally, an applicant may make persistent failed attempts at contacting a potential site owner. Therefore, all correspondence and telephone calls should be logged, and where applicable it should be demonstrated that all available means of contact have been exhausted.
55. All alternative sites assessed should be listed in the supporting statement. The list should include clear site references, and should detail for each site the reasons for rejection. Supporting justification, such as letters or emails from unwilling landowners, should be appended⁶ for each rejected site. Any reasons for rejection made on technical or design grounds should be supported by a description and, if helpful, illustration to show exactly what the constraint is. (Reasons simply stating

'rejected due to technical constraints' or similar will not be accepted.)

Design and siting

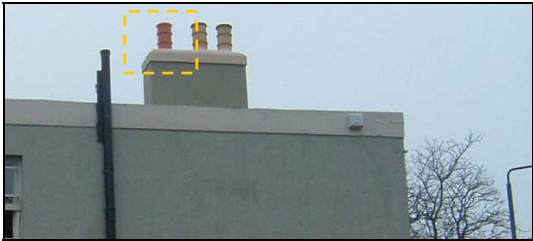
56. Mobile phone masts and antennas should always be located and designed to respect their context, and the amenity of those living, working or spending time in the locality. Applicants will be expected to submit a design statement, to show how the proposed equipment has been designed to minimise visual impact. The design statement should also describe how the equipment has been sited as visually unobtrusively as possible in relation to its context. The statement may need to refer to alternative siting and design options considered and rejected, and give reasons why.
57. There are a large number of environmentally sensitive areas in Oxford, where special regard must be had to siting and design. Key OLP policies are summarised in **Appendix 2**. For example impact on conservation areas and listed buildings, view cones and the historic skyline, the Oxford Green Belt, and designated nature conservation sites will be material. Where proposals may impact on listed buildings or conservation areas, the design statement will specifically need to examine the impact on the building or historic environment.



Listed buildings: (1) Antennas disguised as weathervane (2) Poorly sited antennas

58. The City Council is aware that there are numerous design solutions available to mobile network developers, and will need to be satisfied that the most appropriate design has been chosen.

⁶ Any third party should be made aware in advance that their correspondence may be included in public planning files. If there is objection to this, the planning officer should be informed, and may still require confidential sight of such correspondence.



Camouflage: (1) & (2) Antennas disguised to blend in with building features (source: Stappard Howes, Chertsey., Surrey) (3) Overly prominent or multiple antennas detract from streetscene (Summertown, Oxford)

59. In general, telecommunications equipment should be painted an appropriate colour, to relate to background and surroundings or existing features. Prominent building mounted antennas and equipment should be appropriately disguised and camouflaged, to blend in with the building and streetscape. Equipment cabinets should be kept to a minimum, and should be as small and unobtrusive as possible. Further examples and advice can be obtained from sources given in **Appendix 7**.
60. All painting and screening must be well maintained. A condition may be imposed on planning consents to ensure regular maintenance.
61. Where proposed development may affect a footpath or the public highway, applicants should have regard to the impact of equipment siting on pedestrian movements and visibility plays for all highway users. Good, safe access for service vehicles to the proposed apparatus should also be demonstrated. The City Council

will consult the local highway authority on these matters where appropriate.

Practice note: 'Tree Masts'



Masts disguised as trees may be appropriate in certain contexts, to address visual impacts. However the following will normally apply:

- must be well screened by, and mix well with, real trees
- minimise 'silhouette' of mast form against the sky and other contrasting backgrounds
- surrounding trees must be protected by a TPO
- a planning condition may be imposed to ensure regular tree pruning
- careful choice of materials and paint, to ensure a well maintained appearance

62. The City Council will support proposals which utilise existing or replacement street furniture (e.g. street lighting columns), on a case-by-case basis where this represents the best overall solution, and subject to the legal, technical and policy requirements of the Local Highway Authority.⁷



Example of replacement street light incorporating a base station (Source: Agent for T-mobile)

⁷ See Appendix 7 for contact details for the Local Highway Authority.

Future network capacity

63. Policy CP.24 requires that the developer consider the need to design in additional site or mast capacity, to take account of future demands. This includes potentially making provision for other network operators in the future, whether on a new mast, or by means of considerate siting on an existing structure or building to allow space for further installations. Consideration of this issue should help to rationalise the future spread of network infrastructure, and reduce urban clutter.



Multiple masts can cause unacceptable clutter (examples in Oxford area)

64. The City Council accepts that there may be technical and design constraints on achieving additional spare capacity in many cases. For example, providing spare capacity on a standard monopole mast may necessitate increasing the height and bulk of the mast such that the design is unacceptable. Nevertheless, in cases where additional future capacity has not been included, the design statement needs to explain why this is not feasible or practicable. Developers may be expected to provide illustrative material (such as elevations or a photo montage) to demonstrate why future capacity has not been provided.

65. The City Council will also consider the availability of any new technologies which allow further rationalisation and sharing of mobile network infrastructure, and which may bring significant environmental benefits. Developers may be expected to take advantage of any future system which reduces the need for potentially obtrusive masts, antennas or equipment in Oxford.

Health and Radiation Impact Analysis

66. Health considerations and public concern can in principle be material considerations in determining telecommunications applications. The City Council fully acknowledges that the balance of scientific evidence to date indicates that there is no general risk to the health of people living near to base stations, but also fully recognises the need for a precautionary approach given the gaps in scientific knowledge. The Council will therefore encourage developers to position antennas in a way which minimises the likelihood of objection due to perceived health risk, e.g. to avoid the beam of greatest intensity falling on any school or nursery in the area.

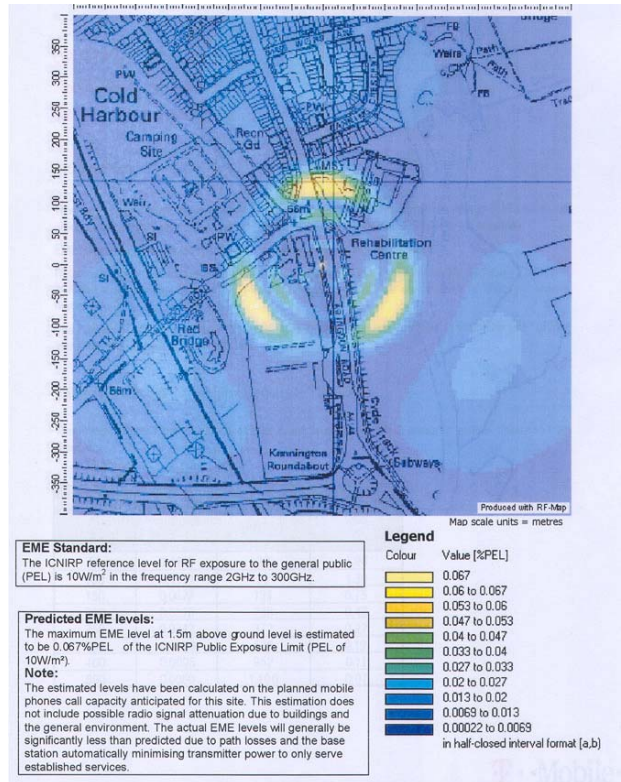
67. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has recommended maximum public exposure guidelines for radiofrequency (RF) radiation emission. Government guidance states that all mobile phone base stations must comply with these standards, and that a certificate showing compliance with the ICNIRP guidelines is submitted with all applications for planning permission or prior approval. The City Council accepts the ICNIRP guidelines as an appropriate precautionary standard, on the basis of current scientific evidence.

68. The City Council will require the submission of further detail on expected RF emission, presented in a way which transparently and proactively addresses likely concerns. Applicants must show how, and to what degree, the proposal complies with ICNIRP standards by submitting a Health and Radiation Impact Analysis (HRIA). **Appendix 5** sets out a template for the HRIA, which should include:

- Front cover giving site reference and title of 'Health and Radiation Impact Analysis'.
- Introduction to set out purpose and content.
- A concise background and context, including brief explanation of how RF exposure relates to our day-to-day lives, and reference to appropriate up-to-date scientific research on their effects.

- A plot representing expected beam patterns and intensity, as measured against the ICNIRP maximum exposure levels applicable, overlaid on an Ordnance Survey base map (an 'RF Contour Plot').⁸ This should, as far as possible, be based on cumulative RF emissions including any existing antennas.
- Non-technical explanation of RF contour plot, to explain how the beam pattern represents the optimum solution for addressing public health concern, within reasonable technical constraints.

69. Technical terms and figures should be clearly explained in the HRIA, and appropriate commentary provided. However detailed technical data should be appended to the main report. This should include the completed technical information and justification details required by the Code of Best Practice Supplementary Information Template (Annex F, parts 4 and 5). A completed and signed Certificate of Compliance with ICNIRP guidelines should also be appended.



Example of an RF Contour Plot

⁸ Whilst the City Council encourages submission of a RF contour plot to accompany all applications, this particular requirement may be relaxed where a 'green' TLM rating has been agreed with the City Council, i.e. the proposal is not situated near any schools, colleges or residential properties. This should always be discussed with the Case Officer at the pre-application stage.

GLOSSARY

2G ('Second Generation') The international operating standard currently used by most mobile telephone users, also called **GSM**. 2G systems operate at a frequency of 900 or 1800 MHz.

3G ('Third Generation') The newest operating standard currently being rolled out by the main network operators, which allows high speed data capabilities and multimedia facilities. Also called **UTMS**. 3G systems operate at a slightly higher frequency of 1900 or 2100 MHz.

Alternative Site Assessment An assessment of the suitability of all potential sites for a base station within the operator's search area. This can include a variety of factors, such as visual amenity, technical suitability and land or building ownership.

Annual Rollout The main network operators have committed to sharing with local authorities all sites where they would like to put new base stations, over a year. This information is passed on to the City Council each Autumn.

Antenna The part of a base station which sends and receives radiowaves to mobile phone handsets. They are normally supported at height by a mast, and are sometimes hidden or disguised.

Base station A set of mobile phone transmitters, antennas and other associated apparatus used to create a coverage cell.

Coverage cell The area of network coverage provided by one set of mobile phone transmitters and associated apparatus.

Coverage plot A map-based plot of the various predicted levels of mobile phone network coverage generated by one or more base stations.

De minimis Small changes to the built environment which are not considered as development, and are not therefore subject to planning law. Building mounted microcells (see below) often fall into this category.

Electromagnetic Frequency (EMF) The type of electric and magnetic wave energy which includes the radiowaves used by mobile phone networks.

Health and Radiation Impact Analysis (HRIA) An analysis of the amount of electromagnetic radiation likely to be generated by a telecommunications installation, to be set out in the context of public health concerns.

ICNIRP This stands for 'International Commission on Non-Ionising Radiation Protection'. Their standards are used in the UK and Europe for public exposure to mobile phone radiowave emissions.

Lattice mast A type of ground-based mobile phone mast that has a lattice structure, which is normally used for supporting large or multiple antennas.

Macrocell The most powerful type of base station, which provides the main capacity and coverage for the mobile phone networks.

Microcell Less powerful base stations, often mounted on the sides of buildings, which provide infill coverage and additional capacity in urban and suburban areas.

Monopole A type of ground-based mobile phone mast commonly used in urban settings, which looks like a large vertical pole (similar to a telegraph pole).

Network Operator There are five main operators in the UK, each of which manages its own network to provide coverage to its mobile phone users.

Permitted Development Development which is exempt from express planning consent as set out in the General Permitted Development Order 2001 (as amended).

Picocell The smallest type of base station, usually located inside buildings to boost network coverage and capacity.

Prior Approval A type of permission required for the siting and design of some telecommunications development which has permitted development rights. Such applications must be decided within 56 days or the developer automatically has deemed consent.

Radiofrequency (RF) Electromagnetic radiation used for telecommunications.

RF contour plot A map-based plot of predicted electromagnetic radiation emissions arising from a particular base station, which will relate to ICNIRP standards.

RF emissions profile A profile of electromagnetic radiation emissions arising from a particular base station, normally relating to ICNIRP standards, which can be expressed in a number of different forms.

Stewart Report An independent report published in 2000 by the Independent Expert Group on Mobile Phones, which made recommendations on the use of mobile phones and networks in relation to health.

Traffic Light Model (TLM) The system used by prospective applicants to assess the level of consultation likely to be needed for a particular telecommunications development. The model takes into account likely sensitivity in terms of environment, planning and community concern, and results in a Traffic Light Rating (TLR).

Policy CP.24 from Oxford Local Plan 2001-2016

2.22 Telecommunications

2.22.1 Some telecommunication development may take place as permitted development. Telecommunication operators wishing to carry out development under the General Permitted Development Order (GPDO) are advised to carry out discussions with the City Council before doing so. Pre-application discussions with the City Council should also take place when prior approval or a full planning application is to be submitted. When seeking planning permission or prior approval, telecommunication operators are required to provide clear evidence that they have fully investigated options for using existing buildings, site sharing and alternative sites. When seeking permission for new sites for telecommunication development, applicants must demonstrate that they have made provision for future demands and site sharing.

2.22.2 Where planning permission is required, the City Council will take account of technical constraints on locating such equipment, the operational requirements, and the legal obligations of telecommunications operators. However, this must be balanced against the need to avoid, as far as possible, the use of unsightly equipment. The planning system should provide for such development, including new forms of broadcasting. The City Council recognises the importance of always ensuring the best outcome in environmental terms, particularly when considering the suitability of mast and site sharing. In addition, developers should minimise any visual impact through careful siting and sensitive use of materials, colour and design of telecommunication equipment. They should also look for ways to disguise or camouflage proposed facilities. Visual impact is of particular concern in listed buildings, conservation areas, green belt, and areas of safeguarded land.

2.22.3 There is significant public concern about health considerations in relation to telecommunication development. The siting of telecommunications equipment raises environmental concerns regarding health and noise issues. However, scientific research on the health implications of telecommunications development is currently inconclusive. Health considerations and public concern can in principle be a material consideration in determining applications for planning permission and prior approval.

2.22.4 Developers can reduce concerns over the health impact of telecommunications development by submitting information on this matter alongside proposals for new equipment. This should be in the form of a Health and Radiation Impact Analysis (HRIA) which provides details on the expected microwave and other radiation from the proposed equipment and how this relates to the EU ICNIRP guidelines. The City Council will issue further information on the content of an HRIA, from time to time, as a Supplementary Planning Document.

POLICY CP.24 - TELECOMMUNICATIONS

Planning permission, or prior approval, will only be granted for the installation of external apparatus necessary for the transmission or receipt of telecommunications where it is demonstrated that:

- a. alternative existing sites are unavailable for site sharing, and applicants have fully explored the possibility of erecting antennas on an existing building, or other structure, and have demonstrated the need for the development;
- b. the siting and appearance of the apparatus, including any location or landscape design requirements, have been designed to minimise the impact on amenity;
- c. installations are sited to be as unobtrusive as possible;
- d. applicants who propose to carry out telecommunications development have considered the need to include additional capacity to take account of the growing demands for network development, including that of other operators; and
- e. applicants have submitted a Health and Radiation Impact Analysis (HRIA).

APPENDIX 2

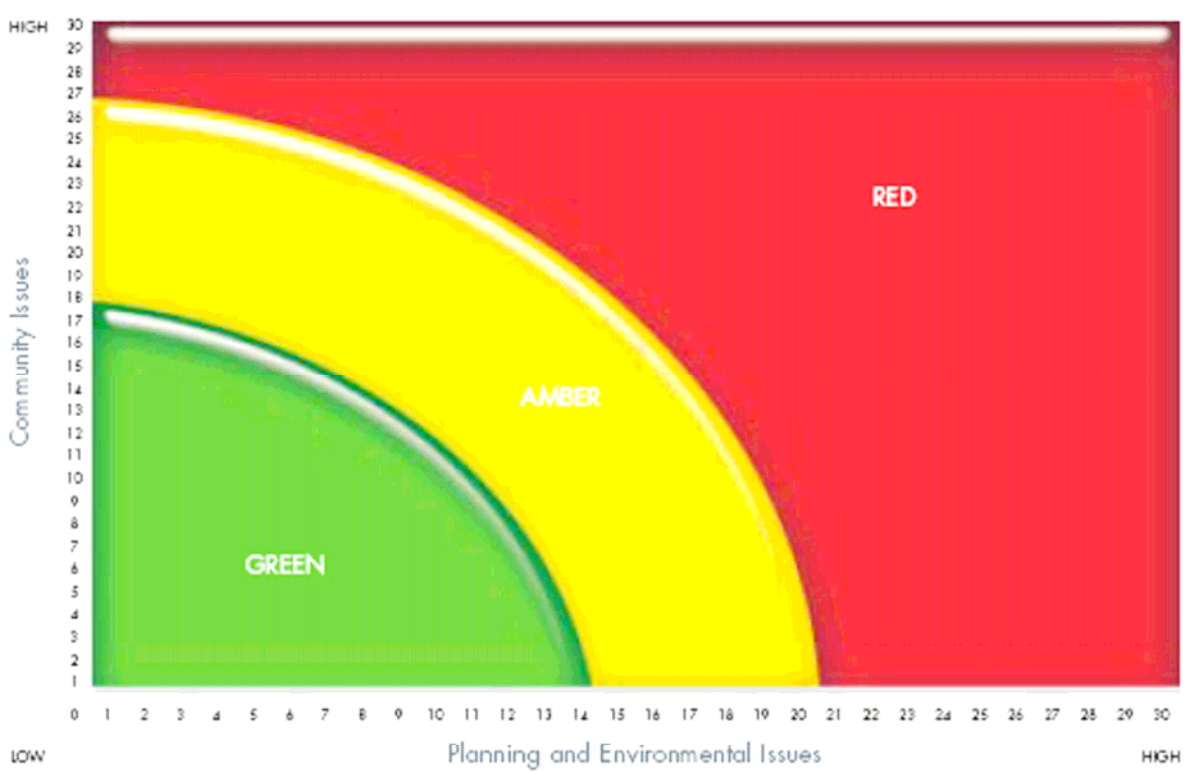
Siting and design: relevant OLP policies

The table below is a list of OLP policies which may be particularly relevant to the siting and design of telecommunications apparatus. Reference should in all cases be made to the full policies and supporting text in the Oxford Local Plan 2001-2016. Note that OLP policies will, over time, be superseded by the emerging Local Development Framework (LDF).

Context	OLP Policies
The historic environment	<p>Conservation Areas and their settings (HE.7) Listed Buildings and their settings (HE.3) Buildings of Local Interest (HE.6) View Cones (HE.9) High Buildings Area (HE.10) Important Parks and Gardens and their settings (HE.8) Nationally Important Monuments (HE.1) Archaeological deposits (HE.2)</p>
Sensitive landscapes and the natural environment	<p>Oxford Green Belt (NE.1, NE.2) Safeguarded Land (NE.3) Oxford's watercourses (NE.6) Trees and hedgerows (NE.15, NE.16) Biodiversity value (NE.17) Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) (NE.18) Sites of Local Importance for Nature Conservation (SLINC) and Local Nature Reserves (LNR) (NE.19) Wildlife corridors (NE.20)</p>
Urban design (general)	<p>Efficient use of land (CP.6) Urban design (CP.7) Designing development to relate to its context (CP.8) Landscape design (CP.11)</p>

Summary of Traffic Light Model for Public Consultation

The Traffic Light Model must be used to give an overall Rating for each proposed site. The Model combines elements of subjectivity and objectivity and is intended as a guide to the degree of consultation necessary. Once the Rating has been determined then the Consultation Strategy is used to provide the options available in respect of the level of public consultation. It is important to seek LPA input into the process. The rating for each site is to reviewed at least once – in particular after pre-application consultation.



Scoring system (outline) (0 = nil impact, higher figures = greater impact)

Community issues (vertical axis)	Views and attitudes of local communities	Social political (e.g. Council policy, previous planning decisions)	Media (interest and coverage)
Score	0-15	0-10	0-5
Planning and environmental issues (horizontal axis)	Sensitive land use (in relation to homes, schools, nurseries, playgrounds, hospitals etc)	Siting and appearance (screening, impact on skyline, townscape clutter, historic environment, height & appearance etc.)	Planning (planning policies relating to site; site history)
Score	0-15	0-10	0-5

What types of sites might be rated...		
green	amber	red
<ul style="list-style-type: none"> site shares on structures well away from residential property and/or schools; industrial land use; beside main highways, away from residential properties. 	<ul style="list-style-type: none"> streetworks located within mixed commercial/residential areas, though not close to boundaries of residential properties; rooftop installation on office or other commercial building, not close to schools; ground-based towers in greenfield sites, close to recognised statutory designations or heritage sites. 	<ul style="list-style-type: none"> streetworks located close to residential property, residential boundaries, schools & nurseries; base stations in close proximity to schools, including school grounds; rooftop installations either on residential buildings, schools or colleges, or very close to such sites; ground based towers located in recognised statutory designations or heritage sites installations in/near to historic monuments

The information in this table is based on informal advice given in "**Working with the Community: Handbook on mobile telecoms community consultation for best siting practice**" (MOA, 2004)

TLM Consultation strategy (see main text of SPD for the City Council's guidance on consultation in Oxford)

green	amber	red
<i>Pre-application stage</i>		
<ul style="list-style-type: none"> contact with LPA; meeting with Officer. 	<ul style="list-style-type: none"> contact with LPA; meeting with Officer; letter to Ward Councillor; letter to Parish Council. <p><i>Optional</i></p> <ul style="list-style-type: none"> 'tour of options' with LPA neighbour & stakeholder consultation mail shot voluntary consultation notice informal 'drop-in' session key stakeholder briefing session 	<ul style="list-style-type: none"> contact with LPA; meeting with Officer; letter to Ward Councillor; letter to Parish Council. <p><i>Optional</i></p> <ul style="list-style-type: none"> 'tour of options' with LPA neighbour & stakeholder consultation mail shot voluntary consultation notice informal 'drop-in' session key stakeholder briefing session leaflets deposited in community venues public notice in local press
<i>Application stage</i>		
	<p><i>Optional</i></p> <ul style="list-style-type: none"> site meeting with planning officer on site visual demonstration attend planning committee meeting 	<p><i>Optional</i></p> <ul style="list-style-type: none"> site meeting with planning officer on site visual demonstration attend planning committee meeting

APPENDIX 4

Checklist for submitting an application for planning permission or prior approval

Information to be submitted	Relevant part of SPD	Tick
Consultation statement		
Site location plan (to scale)		
Site layout plan (to scale)		
Elevations (to scale)		
Search area plot (indicating alternative sites considered)		
List of alternative sites assessed (with reasons for rejection)		
Coverage plots (showing existing and proposed coverage)		
Design statement (to include designing in future capacity)		
Health and Radiation Impact Assessment		

Health and Radiation Impact Analysis Template

The HRIA should provide objective information on radiofrequency emissions from the proposed apparatus specifically relating to the location in which it is sited. It should be a separate bound document but should be submitted alongside other application details required. The document should be presented simply and succinctly, so as to be understood by a wide range of readers, whilst providing a full, transparent description of the radiofrequency emissions and **how they relate to the site context**.

Technical terms and figures should be clearly explained, and appropriate commentary provided. However detailed technical data should be appended to the main report. This should include the standard best practice template as set out in the Code of Best Practice (Annex F, parts 4 and 5).

The following template should be used when preparing a HRIA.

Front Cover

“Health and Radiation Impact Analysis for [*insert brief description of proposal and site address*]”

“Report of [*name, job title and qualifications of author*] on behalf of [*name of operator*]”

Introduction

Brief introduction to set out purpose and content of document.

Background and context

Brief simple explanation of how EMF and RF exposure relates to our day-to-day lives.

e.g. “Electromagnetic fields are present everywhere in our environment. Manmade sources include domestic appliances such as TV, radio and microwave ovens, as well as mobile phones themselves....” etc.

Include explanation of how precautionary principle is built into network development.

e.g. “The mobile phone industry has committed to ensuring a precautionary approach is used in developing the mobile phone network. This company has committed to ensuring that all their mobile phone base stations comply with internationally set guidelines on radiofrequency exposure [cross-reference to ICNIRP], which in themselves are many times below those imposed in Britain by the National Radiological Protection Board...” etc.

Refer to up-to-date scientific research evidence – include balanced summary of knowledge to date.

Include brief review of national site audit programmes.

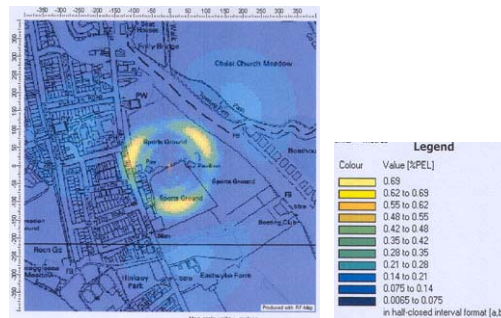
Table continues...

Technical summary

Include summary of technical specifications for the proposal, e.g. maximum power output & frequency range, and how this relates to maximum exposure quotient. (Append relevant figures.)

Radiofrequency Profile

Include a RF emissions profile specific to the site and its surrounding land uses. This should be a radiofrequency emissions contour plot (overlaid on an OS base map, showing site location, and colour key referring to ICNIRP* maximum levels). The plot should, as far as possible, include emissions from any existing antennas on the site. (**Note that any alternative presentation of RF profile should be discussed with a planning officer at the pre-application stage.**)



Include non-technical explanation of RF contour plot, to explain how the beam pattern represents the optimum solution for addressing public health concern, given reasonable technical constraints.
e.g. "The plot shows that the highest possible radiofrequency field strength falls within an area of predominantly open space. Even here, the beam intensity is less than 0.5% of the ICNIRP safety level for public exposure. The existence of building walls and structures will further reduce the level of exposure to even lower levels..."
etc.

Describe how sensitive land uses have been taken account of in designing apparatus and positioning antennas.

State **maximum exposure quotient in relation to ICNIRP* guidelines.**

Conclusion

Brief conclusion to summarise the information described above and how this addresses public health concerns.

Technical appendix

Include copy of **signed and dated** Certificate of Compliance with ICNIRP standards.

Include any detailed technical information referred to in the main report (see also **Appendix 6.**)

Include technical details required by the Code of Best Practice Supplementary Information Template (Annex F, part 4 – see **Appendix 6.**)

* International Commission on Non-Ionising Radiation Protection

APPENDIX 6

Technical information

Developers should append the following information as part of the HRIA:

Maximum licensed power output		dBW
EiRP Power Output of each existing RF source already on the site (list)		dBW
Maximum exposure quotient in relation to ICNIRP guidelines ⁹ (at beam of greatest intensity)		

Developers must include the following declaration appended to the HRIA (taken from the Code of Best Practice on Mobile Phone Network Development)

	Yes	No
<p>ICNIRP Declaration attached</p> <p>ICNIRP public compliance is determined by mathematical calculation and implemented by careful location of antennas, access restrictions and/or barriers and signage as necessary. Members of the public cannot unknowingly enter areas close to the antennas where exposure may exceed the relevant guidelines.</p> <p>When determining compliance the emissions from all mobile phone network operators on the site are taken into account.</p>		

Frequency	
Modulation characteristics ¹⁰	
<p>Power output (expressed in EIRP in dBW per carrier)</p> <p>In order to minimise interference within its own network and with other radio networks, (NAME OF OPERATOR) operates its network in such a way that radio frequency power outputs are kept to the lowest levels commensurate with effective service provision.</p> <p>As part of (NAME OF OPERATOR)'s network, the radio base station that is the subject of this application will be configured to operate in this way.</p>	
Height of antenna (m above ground level)	

⁹ The total exposure due to all of the radio signals acting together can be calculated from the data acquired from specialist monitoring equipment. This can then be divided by the ICNIRP guideline figure for maximum exposure, and presented as a quotient (e.g. 1 / 1,500 of ICNIRP guidelines). This should be as would be measured from the beam of greatest intensity (relating to the installation applied for).

¹⁰ The modulation method employed in GSM is GMSK (Gaussian Minimum Shift Keying) which is a form of Phase Modulation. The modulation method employed in UMTS is QPSK (Quad Phase Shift Keying) which is another form of Phase Modulation.

APPENDIX 7

Useful contacts & resources

Note that the City Council is not responsible for the content or accuracy of external websites referred to in this SPD.

Oxford City Council				
Planning Policy	01865 252847	planningpolicy@oxford.gov.uk	http://www.oxford.gov.uk/planningpolicy	Queries relating to the contents of this SPD, and other planning policy documents
Planning Control	01865 252860	planning@oxford.gov.uk	http://www.oxford.gov.uk/planning	Queries relating to specific site proposals and planning applications
ICT / Networking	01865 252284	rsroule@oxford.gov.uk	http://www.oxford.gov.uk	City Council contact on ICT and Networks
Oxfordshire County Council				
Street lighting division	0800 317802	streetlighting@oxfordshire.gov.uk	http://www.oxfordshire.gov.uk	County Council contact for light column swap-outs, or other proposals using street furniture which is the property of the Local Highway Authority
Development Control (Highways)	01865 815961	geoffrey.arnold@oxfordshire.gov.uk	http://www.oxfordshire.gov.uk	Technical advice on highways matters, such as traffic and pedestrian safety
ICT / Networking	01865 810832	mark.winstanley@oxfordshire.gov.uk	http://www.oxfordshire.gov.uk	County Council contact on ICT and Networks
Other organisations				
Mobile Operators' Association	020 7331 2015	info@ukmoa.org	http://www.mobilemastinfo.com/	Provides information and liaises on behalf of the five main mobile phone operators
3 (formerly Hutchinson 3G)	0845 604 3000	network@three.co.uk	http://www.three.co.uk/	Main contact details for 3
O2	01753 564 306	cellsnationalhelpdesk@o2.com	http://www.o2.com	Main contact details for O2
Orange	0870 376 8888	site.information@orange.co.uk	http://www.orange.co.uk/	Main contact details for Orange
T-mobile	0870 321 6047	networkinfo@t-mobile.co.uk	http://www.t-mobile.co.uk/	Main contact details for T-mobile
Vodafone	08454 450 450	emf.advisoryunit@vodafone.co.uk	www.vodafone.co.uk	Main contact details for Vodafone
Health Protection Agency	01235 831600	rp@hpa-rp.org.uk	http://www.hpa.org.uk/radiation/	The Radiation Protection Division of the Health Protection Agency (incorporating the former National Radiological Protection Board) provides research links and advice on this issue
Mast Sanity	08704 322 377	coord.south@mastsanity.org	http://www.mastsanity.org	National campaign group
Mast Action UK	n/a	n/a	http://www.mastaction.co.uk	Campaign group website