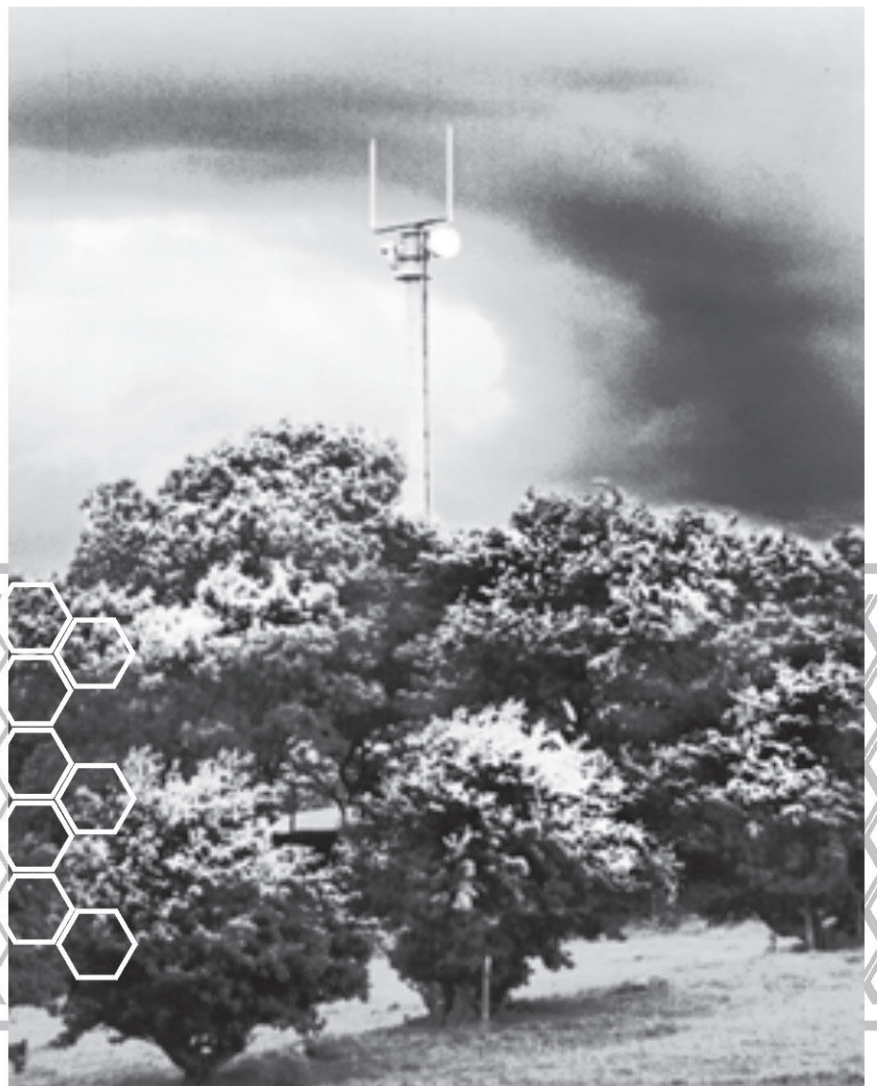


Harrogate District Telecommunications Strategy

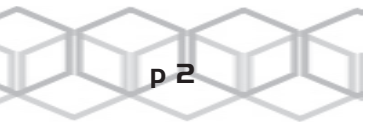


**Supplementary Planning Guidance
December 1999**

Harrogate
BOROUGH COUNCIL

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I. Introduction

- I.1 Consumer demand for telecommunications operators to extend and improve the quality of their network coverage in a district renowned for the quality of its natural and built environment poses challenges for all those involved in the planning process and is a matter of considerable public concern.
- I.2 It is necessary to balance the wider need for the development of modern telecommunications networks with other material interests, such as the protection of the landscape and amenity. A district-wide strategy for the provision of telecommunications masts can help to achieve this.
- I.3 For mobile telecommunications proposals to serve the A59 corridor west of Harrogate this guidance is complemented by, and consistent with, the A59 Corridor Mobile Telephone Transmitter Mast Strategy. Approved as planning guidance by the Council on 1 October 1998, this identifies sites for additional telecommunications installations.
- I.4 The Harrogate Borough Telecommunications Strategy supplements the provisions of Policy CF10 to the Harrogate District Local Plan, which requires that proposals for telecommunications development take into account the reasonable possibilities of site and mast sharing and utilising existing structures and, through siting, design and landscaping, minimise the impact on the receiving environment. It is intended to provide a detailed and consistent basis for considering individual proposals and for long-term planning by the Telecommunications Code Systems Operators but it will also be relevant to all proposals for the siting of non-domestic telecommunications apparatus. In addition, it will help inform individuals who may be affected by such development.

2. Aims of the Strategy

2.1 The aims of the strategy are:

- to provide a balanced approach to telecommunications development that will protect the environment of the District, but at the same time allow development which benefits the economic and social well-being of the District;
- to promote a better understanding amongst interested parties of the benefits and operational requirements of telecommunications and the often competing need to safeguard visual amenity and other interests and the difficulties inherent in reconciling these
- to establish guidelines for the location, siting, design and, where appropriate, landscape treatment of telecommunications installations;
- to facilitate continuing and improving co-operation between telecommunications operators (Code System Operators) and between the operators and the local planning authority in order to achieve an integrated approach to the extension of network coverage.

3. Policy Context

- 3.1 Government advice in PPG8 (Telecommunications) recognises modern telecommunications as “an essential and beneficial element in the life of the local community and in the national economy”. It also advises that planning applications for telecommunications development should not be refused on the basis of conventional policies which take insufficient account of the growth and characteristics of modern telecommunications. The current Development Plan comprises the *North Yorkshire County Structure Plan*, *North Yorkshire Minerals Local Plan*, *Harrogate & Knaresborough Local Plan*, *North Riding County Development Plan*, *West Riding County Development Plan*, *Ripon Town Map* and *River Ure and Ouse Recreation Subject Plan*. The Development Plan contains no specific policies relating to telecommunications and this must detract from the weight which it can properly be afforded in the determination of applications for telecommunications development, with increased emphasis to be placed on other material considerations.
- 3.2 The only Council policy specifically relating to proposals for telecommunications development is Policy CF10 of the Harrogate District Local Plan (Deposit Draft incorporating Pre-Inquiry and Additional Changes). The Harrogate District Local Plan was originally approved for the purposes of development control in February 1996. A change to Policy CF10 was similarly approved in July 1997. The policy, incorporating this change is set out below and, together with its supporting justification, at Appendix I.

PROPOSALS FOR TELECOMMUNICATIONS DEVELOPMENT WILL BE PERMITTED PROVIDED ALL THE FOLLOWING CRITERIA ARE MET:

- A) *THERE IS NO REASONABLE POSSIBILITY OF SHARING EXISTING OR IMPENDING PROVISION OF TELECOMMUNICATIONS FACILITIES.*
 - B) *IN THE CASE OF TELECOMMUNICATIONS MASTS, THERE IS NO REASONABLE POSSIBILITY OF ERECTING ANTENNAE ON AN EXISTING BUILDING OR OTHER STRUCTURE.*
 - C) *THE SITING, DESIGN AND LANDSCAPING MEASURES MINIMISE THE POTENTIAL IMPACT ON THE VISUAL AMENITY AND NATURE CONSERVATION VALUE OF THE IMMEDIATE SURROUNDINGS AND WIDER LANDSCAPE, WHERE THIS DOES NOT SIGNIFICANTLY ERODE THE INTERESTS OF OPERATIONAL EFFICIENCY.*
- 3.3 In preparing this and other policies of the Harrogate District Local Plan full account has been taken of National Planning Policy Guidance in PPG8 (Telecommunications), published in December 1992, and in other PPGs. Paragraph 5 of PPG8 Guidance sets out the Government's policy on planning for telecommunications development, i.e.
- to facilitate the growth of new and existing systems, whilst also having full regard to environmental objectives, including well-established national policies for the protection of the countryside and urban areas.**
- 3.4 Other PPGs which may be of relevance to individual telecommunications proposals include: PPG1 (General Policy and Principles), PPG2 (Green Belts), PPG7 (The Countryside - Environmental Quality and Economic and Social Development), PPG9 (Nature Conservation), PPG15 (Planning and the Historic Environment) & PPG16 (Archaeology and Planning).

4. Benefits of Telecommunications

- 4.1 Telecommunications encompass all forms of communication by electrical or optical wire and cable and radio signals (whether terrestrial or from satellite), both public and private.
- 4.2 Reliable, convenient, immediate and cost-effective access to communication is invaluable to economic and social activity. By enabling provision of numerous services (radio, television, telephone, fax, pager, e-mail, internet, security systems etc.) telecommunications offer considerable benefits. In particular, they:
- can benefit the economy by providing a framework for efficiency and competitiveness of business activity and affording both direct and indirect employment opportunities;
 - can enhance quality of life by facilitating greater choice and convenience in employment, education, entertainment, shopping and financial services, particularly in more remote areas;
 - can enable fast response to emergencies, saving inconvenience and, in some cases, lives and providing a degree of reassurance to vulnerable individuals.
- 4.3 In recognition of the benefits of telecommunications and growing demand for further improvements to the availability, quality and range of services, the Government seeks “to ensure that, in the future, people will have more choice as to who provides their telecommunications service and a wider range of services from which to choose” (PPG8, para. 3). Competition in the telecommunications industry has been introduced to help facilitate the growth of existing and new facilities and to offer lower costs to users.
- 4.4 PPG8 further stipulates (at para.6) that “authorities should not question the need for the service which a proposed development is to provide, nor seek to prevent competition between different operators”.

5. Operational Constraints

THE TECHNOLOGY

- 5.1 Land-based mobile cellular radio telecommunications systems operate using allocated frequencies on part of the UHF radio spectrum (around 900MHz for Vodafone and Cellnet, 1800MHz for One-2-One and Orange and 410MHz for Dolphin). Other radio-based telecommunications systems exist in the form of private networks operated by the utilities and emergency services. Cellular systems employ radio base stations to provide coverage to geographical areas or 'cells'. The size of a cell is determined, not only by the range of radio signals (lower at 1800MHz than at 900MHz) but also by the demand for the service in that area, given that there is a limit to the number of simultaneous telephone calls which can be undertaken in each cell (i.e. 'capacity'). This is dictated by the number of available radio channels, avoiding use of the same channel in adjoining cells (to prevent co-channel interference between calls from different telephones using the same frequencies). Consequently, although cells can be up to 5km in radius in areas of low population, they are, as a matter of necessity, considerably smaller in densely populated (urban) areas. In response to growing demand from users of the network in an area, capacity can be increased by 'cell splitting', the subdivision of the area into smaller cells of lower power and reuse of radio channels within non-adjoining cells (again to prevent interference between calls). In addition to these larger cells, in very densely populated areas, operators install "micro cells". This is another layer of cells that work in parallel with the larger cells to improve the capacity of the network to handle many simultaneous telephone calls in a small area. Microcells may be used to provide coverage around an exhibition centre or in a city centre. The equipment associated with micro-cellular technology, due to its modest size, can often be easily installed on or in existing buildings and street furniture.
- 5.2 At radio base stations (RBS) are located one or more antennas, together with control equipment. The antenna communicates with mobile telephones through transmission and receipt of radio signals. A degree of signal overlap of surrounding cells is required to allow for the uninterrupted transfer of calls to adjacent base stations as the telephone user moves between cells. Microwave dish antennas are often used to link the base stations via line of sight to each other and to a Mobile Telephone Exchange (MTX), enabling fixed-link access to national and international telephone networks.
- 5.3 Although radio waves are able to pass through certain materials, local topography (terrain, buildings etc.) can nevertheless obstruct radio signals (shadowing) or greatly diminish their strength (attenuation). Therefore, in practice, areas of signal coverage (theoretically circular) are irregular in size and shape, being affected by both topography and the positioning of the directional antennas. Furthermore, microwave links require clear line of sight, although where this cannot be achieved it is theoretically possible to use a fixed link (i.e. wire or fibre optic cable). Consequently, it is usually necessary for antennas to be mounted 15m or more above ground level, so as to avoid signals being affected by trees, buildings and other obstacles. In any given location a taller mast will serve to cover a wider area. This will either involve the use of existing structures or the erection of a purpose-built mast. Some of the different types of mast available are illustrated at Appendix 2.
- 5.4 The first cellular telecommunications networks were launched in 1985 by Vodafone and Cellnet, with both companies allocated frequencies in the 900 MHz band of the radio spectrum, using analogue technology. Subsequently, developments have taken place in digital technology (most notably the Global System for Mobile Communications, or GSM). These offer a number of advantages over analogue technology, namely: compatibility across different countries; greater call capacity; enhanced call quality (no fading); and improved

protection against eavesdropping and fraud. Due to the nature of digital technology and the lower power of lightweight modern handsets (with small batteries and antennas), these benefits are at the expense of a reduction in the range of the radio signal and hence cell size. This necessitates a greater number of cells serviced by a greater number of base stations to maintain a similar level of geographical coverage. Following the introduction of increased competition in mobile telecommunications, four companies - Vodafone, Cellnet, Orange and One-2-One - are now developing digital networks under licences issued by the Department of Trade and Industry under the Telecommunications Act 1984 and are known as 'Code System Operators'. It is a licence requirement for Code System Operators to provide service coverage in areas where the vast majority of the population live and to ensure that all reasonable demands for the service are satisfied. These may be joined shortly by further companies, following the issue of new licences by the DTI.

- 5.5 Satellite-based communications systems are under development which offer the possibility for remote or sparsely populated areas to be covered without the need for land-based stations. However, due to their limited capacity, such systems will merely complement, rather than obviate the need for, land-based systems.

SITE IDENTIFICATION

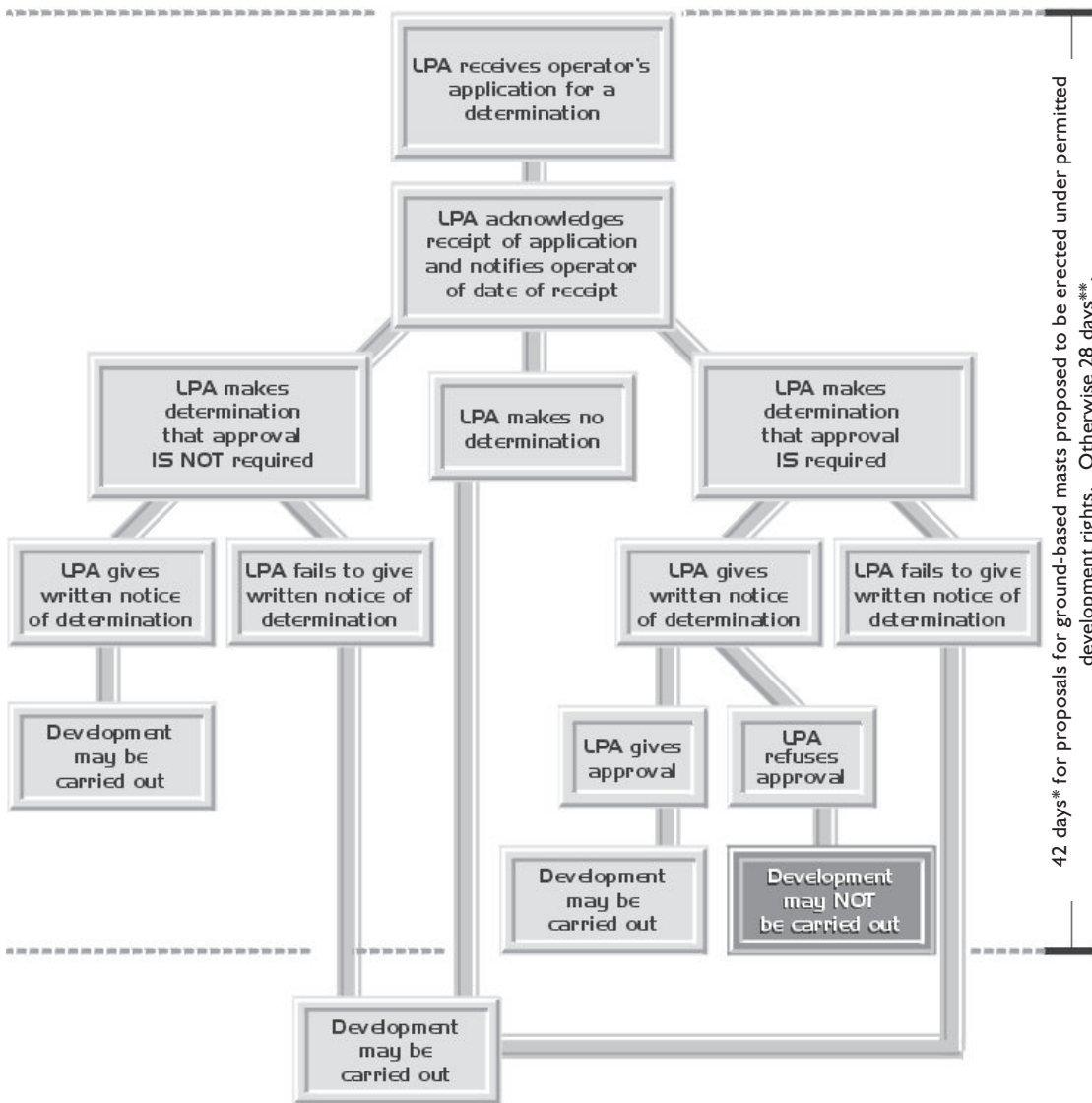
- 5.6 The development of telecommunications is for the most part demand led. Both to fulfil the licence requirements and having regard to commercial considerations, existing operators have first concentrated on the more populated areas. Additional base stations will be required by existing operators - in seeking to improve the range and quality of geographical coverage, including in-building coverage, and to increase capacity in areas of high demand - and by new operators in rolling out their respective networks.
- 5.7 When and where a need is identified for a new base station, the operator defines a search centre, representing the optimum solution, and undertakes a search for suitable sites in the vicinity. In identifying suitable sites, the selection process is constrained by a number of factors:
- **Technical suitability** - Acceptable signal coverage or capacity to the target area and (generally) direct line of sight for microwave link to other installations in the network must be achievable. Access for purposes of construction and on-going maintenance and an appropriate power supply must also be available or capable of being provided.
 - **Site availability** - The operator must be able to secure a purchase or rental agreement with the site owner.
 - **Commercial viability** - Having regard to site acquisition/rental and development costs and ongoing rental costs;
 - **Timescale** - Must be available for commissioning within an acceptable (generally short) timescale in order to meet projected demand;
- 5.8 In addition, there are significant **Environmental constraints**, which (in the context of Harrogate District) are highlighted in Section 7.
- 5.9 In investigating the possibility of utilising existing structures, including the sharing of existing masts, operators will seek to ensure that a number of considerations are satisfactorily addressed. These include:
- whether the existing structure is structurally capable of supporting additional equipment - otherwise a replacement mast will be required, which may not be a commercially attractive proposition;

- whether the existing structure has adequate capacity, i.e. space for installation of antennas at or above the height required to achieve signal coverage, allowing for physical separation between the antennas of different operators necessary to avoid interference - otherwise a mast extension or replacement will be required;
 - whether the sharer's equipment cabin can be accommodated;
 - most importantly, whether agreement can be reached with the owner for use of the requisite structure and land.
 - whether a mast share including redevelopment and height increase would be the least intrusive option or whether the erection of a further structure would be a more suitable option.
- 5.10 Advances in technology are allowing telecommunications operators to develop and use less visually intrusive apparatus: for example slimmer masts and poles, without the need for headframes, supporting smaller and fewer antennas and with more modest control equipment housing. Nevertheless, the design of base stations is constrained by operational requirements which will often bring the development into conflict with environmental and other interests.

6. Planning controls over telecommunications development.

- 6.1 Although full planning permission is required for certain forms of telecommunication development, Telecommunications Code System Operators have been given extensive permitted development rights for the installation of telecommunications apparatus under Part 24 of Schedule 2 to the Town and Country Planning (General Permitted Development) Order 1995 [GPDO], as amended by the 'Town and County Planning (General Permitted Development) (Amendment) Order 1999'. This is subject to a number of provisions relating to the form, size, height and location of the proposed development.
- 6.2 However, where planning permission for development is not required (for example, the installation of a mast of up to 15m in height), the operator will often still be required to notify the Local Planning Authority of its intention to carry out the development. Following receipt of notification the local planning authority must determine within a period of 28 or 42 days (depending on the nature of the proposal) whether prior approval of the siting and appearance of the development will be required. Guidance on the operation of the prior approval procedure is given in DETR Circular 4/99. Where approval is granted, this cannot be subject to conditions other than those set out in the GPDO. The flow chart (right) shows the operation of prior approval procedures.
- 6.3 In March 1996, the Department of the Environment Transport and the Regions published a Code of Best Practice for Telecommunications development. The Code provides useful background information on the technical, legislative and planning framework for development by Telecommunications Code System Operators. It advises on the procedures which both Code System Operators and local planning authorities should follow in dealing with proposals for the erection of masts under the prior notification procedures. Operators are advised to provide pre-rollout information, including details of existing and proposed equipment in the area and the associated cell structure. They are also advised on the information which should accompany an application for prior approval determination. Local planning authorities are advised to recognise the service obligations of operators, enter into pre-rollout discussions, include clear policies in development plans and keep registers of masts and other structures to which apparatus could be attached. Advice is provided on administrative arrangements for dealing effectively with prior approval applications. The Code provides detailed advice on proposals in designated areas, locations of environmental sensitivity and residential areas.
- 6.4 The Code has been circulated to local authorities and telecommunications operators and has been adopted as a basis for best practice in decision-making. Copies are available from DETR Free Literature, PO Box No.236, Wetherby, LS23 7NB; Tel: 0870 1226 236).

Stages of PRIOR APPROVAL PROCEDURE



* Developer posts 21 day statutory site notice; HBC posts non-statutory site notice to expire at the same time, also notifies parish council and arranges non-statutory press notice, allowing period of 21 days for representations in each case. (same as arrangements for full planning applications.)

** HBC posts 7 day non-statutory site notice.

7. Environmental and other constraints

- 7.1 The benefits of telecommunications development need to be assessed against any harm resulting from the installation of telecommunications apparatus. Given the nature of the infrastructure, impacts on the character, appearance and other aspects of the receiving area represent important considerations. Across the District, there is a wide variation in the degree to which proposals will have a harmful impact and, in this respect, the following areas or sites are likely to be most sensitive (to varying degrees). These are shown on the Harrogate District Local Plan Proposals Map and/or listed in the Appendices to that Plan.

Chapter	Policy	Description
COUNTRYSIDE	C1	Nidderdale AONB* (600sq.km)
	C3	River and Stream Corridors
	C4	Parks or Gardens of Special Historic Interest
	C9	Special Landscape Areas*
	C10	Green Wedges
NATURE CONSERVATION	NC2	(20) Sites of Special Scientific Interest
	NC3	(3) Local Nature Reserves
GREEN BELT	NC3	Sites of Importance for Nature Conservation
	GB3	West Yorkshire and York Green Belts*
HERITAGE & DESIGN	HD1	(approx. 2900) Listed Buildings
	HD3	(52) Conservation Areas
	HD4	(121) Scheduled Ancient Monuments
	HD6	(3) Historic Battlefield Sites
	HD7	World Heritage Site
RECREATION	HD12	Amenity Open Space
	R1/R3	Recreation Open Space

(* see Appendix 3)

- 7.2 In addition, there are numerous interests which are not specifically identified, but nevertheless could be detrimentally affected by telecommunications proposals. These include: woodland and forestry (Policy C5); important hedgerows (Policy C5a); the setting and view of heritage and landscape features (C6); the landscape setting of settlements (C7); land separating the built-up areas of settlements (C8); species protected by law (NC6); buildings of local interest and merit (HD2); market places (HD14); approaches to main settlements (HD16); views of historic buildings or structures (HD17); Rights of Way (R11); general amenity and environmental quality (Policy A1); residential amenity (A1 & H14); adequacy of parking provision (T9) and other interests not covered by explicit policies.

7.3 The emphasis afforded to the protection of these interests is evident from an analysis of the reasons for refusal of some 17 planning applications in Harrogate District between mid-1996 and early 1999:

- harmful to general visual amenity of area	10
- detrimental to residential amenity	8
- harmful to amenity of users of footpath/right-of-way	2
- visual intrusion within Nidderdale AONB	2
- adverse effect on setting/appearance of listed building	2
- detrimental to nature conservation interest	2
- harmful to character & appearance of conservation area	1
- harmful to purposes & visual amenity of Green Belt	1
- adverse effect on approach to a main settlement	1
- detrimental to landscape setting of The Stray (Harrogate)	1
- loss of vehicle parking	1
- no convincing evidence of overriding need	5
- no convincing evidence that less intrusive solutions do not exist	4
- more suitable alternative sites exist	3

7.4 The policies most frequently quoted in the refusal reasons are CF10 (Telecommunications development) and A1 (Impact on the environment and amenity) of the Harrogate District Local Plan, on 13 and 11 occasions, respectively. However, given their individual circumstances, proposals have also been found to conflict with:

- North Yorkshire County Structure Plan Policies E2 (development in open countryside), E4 (buildings and areas of special townscape/architectural/historic interest) & E9 (development in Green Belt areas);
- Harrogate & Knaresborough Local Plan Policies R8 (rights of way), CC8 (sites of nature conservation interest), TC1 (listed buildings), TC2 (development in conservation areas) & TC6 (design of new development and redevelopment);
- Harrogate District Local Plan Policies C15 (Conservation of rural areas not included in the Green Belt), NC3 (Local Wildlife Sites), NC6 (Species protected by law), GB3 (Engineering, other operations and change in use of land in the Green Belt), HD1 (Statutory list of buildings of special architectural or historic interest), HD3 (Control of development in conservation areas), HD16 (Approaches to main settlements), HD23 (Satellite dishes and antennas), R11 (Rights of Way) & H14 (Housing amenity).

TELECOMMUNICATIONS AND HEALTH

7.5 Although public perception of risk to health resulting from a proposed development can be a material consideration to be taken into account in determining planning applications, unless supported by some evidence of likely harm, it is unlikely to be a conclusive factor.

7.6 As with all electrical apparatus, telecommunications apparatus emits electromagnetic fields (EMFs), a form of non-ionising radiation. The Government recognises that there is some public concern about the possible health effects of exposure to EMFs, and is to issue a Circular on the subject. The Government's statutory advisers on radiological protection matters, the National Radiological Protection Board provide expert advice on the health implications of EMFs and, drawing on the most up-to-date research worldwide, publish guidelines on limiting exposure to EMFs to well below levels shown to have some effect on

health. The Health and Safety Executive oversees compliance with these guidelines. Public exposure to EMFs emitted by mobile telecommunications installations, given their low power, will normally fall well-within current guideline levels. PPG8 advises that radiation safety is a matter for the Health and Safety Executive, which receives details of radio sites. The Government issued a draft of the above-mentioned Circular in December 1998, which dissuades local authorities from adopting policies which seek to restrict telecommunications development on the basis of possible health effects.

- 7.7 For the latest advice and material about this issue, contact: Information Services, National Radiological Protection Board, Chilton, Didcot, Oxon. OX11 0RQ.
Tel: 01235 831600 E-mail: information@nrpb.org.uk Website: <http://www.nrpb.org.uk>
- 7.8 Alternatively, press releases and fact sheets issued by the World Health Organisation can be obtained from the Internet on the WHO home page: <http://www.who.ch>

SIGNAL INTERFERENCE

- 7.9 It is a requirement of telecommunications operators' licences that the operation of telecommunications apparatus does not cause radio interference to third parties. The Radiocommunications Agency, an executive agency of the Department of Trade and Industry, deals with complaints and enquiries and can require the problem to be rectified if an independent assessment finds the operator's equipment to be causing interference.
- 7.10 PPG8 indicates that significant and irremediable radio interference with other electrical equipment of any kind can be a material planning consideration. Appendix 4 to PPG8 provides more detailed advice on the control of radio interference.

8. Appeal Analysis

- 8.1 In preparing this guidance, careful consideration has been given to a selection of more than 80 appeals relating to telecommunications development determined following publication of PPG8 in December 1992. These include, as an overwhelming majority, all relevant appeal decision letters contained on the Compass Database, which is understood to represent a comprehensive record of all public inquiries and informal hearings on the subject, together with a substantial body of written representation appeals, determined over the period from the end of 1992 to the end of 1998.
- 8.2 The appeals relate to proposals for the installation of telecommunications apparatus in a wide variety of contexts. The Inspectors (Reporters in Scotland) have assessed whether the environmental harm (if any) likely to accrue from the development would be outweighed by the need for the development as proposed. The appeals have been summarised in terms of the issues raised in an attempt to identify the weight given in the Inspector's conclusions to particular material considerations (for instance: impact on AONB or the need for the development). Such an approach has its limitations as the precise circumstances of proposals clearly vary. Nevertheless, the appeal decisions provide a useful indication of:
- factors which should be taken into account in assessing the degree of harm which would be caused by a proposal for telecommunications development in a variety of contexts;
 - the weight to be afforded to any harm to be caused to the environment of specific areas such as AONBs, Green Belts, Conservation Areas, Special Landscape Areas and to residential amenity and visual amenity generally;
 - the weight to be given to the need for the development on that particular site, having regard to...
 - the emphasis placed on the investigation of alternative siting solutions.

APPEAL OVERVIEW

- 8.3 An analysis of the above mentioned appeals by types of issues raised is available as a separate background document. However a broad overview of often finely-balanced appeal decisions reveals:
- due weight is given to the **environmental harm** which may arise from the proposal, increasing with the importance to be afforded to individual designations and other issues, and when in combination:
 - very considerable weight has been given to the need to preserve the natural beauty of AONBs; appeal proposals have been universally rejected other than where they would cause no more than only slight harm to the natural beauty of AONBs (this justified by operation need).
 - LOCAL LANDSCAPE DESIGNATIONS are also afforded significant weight, but relatively less than AONBs (of national importance);
 - the strictest protection is afforded to areas of BUILT HERITAGE, with proposals dismissed where there would be more than slight harm to the setting, character and appearance of a conservation area or Listed Building.

- GREEN BELT designation is afforded more limited weight (presumably as Green Belts are not designated for their landscape importance); although installations are normally held to be inappropriate development in Green Belts, proposals have been allowed on the basis that operational need and lack of alternative solutions outside of the Green Belt constitute very special circumstances.
 - issues of NATURE CONSERVATION have rarely been raised at appeal and in each instance no significant harm was identified; this presumably reflects care taken to avoid areas of nature conservation interest in the site selection process.
 - considerable weight has been given to harm to RESIDENTIAL AMENITY, however it is evident from the decisions that, for refusal to be justified on these grounds, the telecommunications installation must not merely damage the outlook from houses but rather must represent a dominant, overbearing, unneighbourly, alien feature, leading to a significant adverse effect on the living conditions of residents.
 - harm to VISUAL AMENITY generally is given considerable weight, particularly where installations would be prominent on the skyline in public views, however much depends on the extent and nature of available views.
 - the HEALTH AND SAFETY implications of telecommunications development have been universally given very little weight in the limited number of cases in which concerns were raised, given that these were not supported by any evidence of harm or that NRPB guidelines would be breached.
- significant regard is had to **mitigating factors**:
- the design of a proposed installation is seen as a significant factor in determining its acceptability, with a preference for slender masts without large headframes.
 - the degree to which an installation is screened from view by existing features is seen as extremely important: an installation proposed to be located within existing plantation woodland of longstanding, so that only the topmost part is visible, is considerably more likely to achieve success at appeal than one proposed in a more isolated location, where the entire structure is visible as a stark and alien feature in the area. Screening of the equipment compound through existing or new features (planting) is also seen as important.
 - there are instances where inspectors have considered that the visual harm of an installation will be subjugated to an acceptable level by the proximity of existing tall structures (such as pylons and buildings) and other features of the area (such as industrial/commercial uses, within which an installation would be seen as more in keeping). However, it is clear that such factors will not always justify permitting further harmful development and, in some instances, particularly in sensitive locations, the introduction of further incongruous and intrusive vertical elements has been considered to unacceptably exacerbate the existing situation.
 - where installations have been permitted, planning conditions imposed variously seek to: secure appropriate landscaping and colour treatment; restrict the installation of further equipment; and secure removal of the installation when no longer required for telecommunications purposes or, less commonly, limit the duration of the permission to address particular circumstances.

- considerable weight is given to the **need** for the proposed installation in the area in terms of the benefits of improved telecommunications, which has been considered sufficient in many instances to override environmental harm. The weight to be attached to the need varies according to the extent of the benefits which will be gained from the installation (e.g. whether it is a key component in the network or merely desirable to improve coverage to a small area). In very few instances have inspectors determined the degree of harm required to outweigh the need for the installation, given the complicating issue of whether alternative solutions exist to obviate from the need for an installation on the appeal site.
 - A wide variation in the extent to which **alternative sites** are to be considered, seemingly proportionate to the environmental sensitivity of the appeal site:
 - in allowing appeal proposals, usually on the basis that the operational need outweighs somewhat limited harm to the receiving environment, inspectors have generally focused on the alternative sites explored both by the appellant and by the local planning authority and have considered these to be more environmentally intrusive, technically unacceptable, unavailable and/or involving a need for additional installations (to which there was an objection in principle). Individual inspectors have considered it unreasonable to expect operators to exhaust every possible option or combination of options and that it is not the role of the development control system to find the optimum site but merely one that is acceptable.
 - conversely, where environmental harm is considered to be of sufficient magnitude to justify refusal, inspectors have noted either that less harmful alternative solutions are available or a thorough search of all alternative options had not been undertaken (suitable alternatives may exist) or, exceptionally, the proposal was unacceptable notwithstanding a thorough search for alternatives. In these instances, inspectors have considered that alternative sites should be used even where these would be less suitable in operational terms, are argued to be unavailable (references made to compulsory powers to install apparatus), or would involve the use of two or more existing or new sites.
- 8.4 The appeal decision letters have been influential in formulating the guidelines set out in the following section.



9. GUIDELINES FOR TELECOMMUNICATIONS DEVELOPMENT



- 9.1 It is evident from meeting with existing telecommunications operators and the anticipated emergence of new providers of telecommunications services that it is not practicable for this strategy to attempt to focus on specific areas where further installations will be required. Although operators are able to provide details of current requirements for new sites, further requirements will invariably arise, certainly in the medium and long terms, in response to demand for improvements in coverage, quality and capacity of their network service provision. Rather, it is better to focus upon general principles which can be applied across the District.
- 9.2 The following guidelines are intended to establish means by which the needs of the telecommunications industry can best be reconciled with the protection of the environment and other interests. They acknowledge that the location of telecommunications base stations can be heavily constrained by operational requirements and that, in some instances, the need to safeguard environmental quality will outweigh the benefits of permitting proposed telecommunications development.

LOCATION

General Approach

- 9.3 In general terms, proposals for telecommunications apparatus are to be determined on the basis of whether the need for the installation on any given site outweighs the harm which would be caused to the landscape and visual amenity (see Appendix 4) and to other interests of acknowledged importance. The more thorough the demonstration that no more suitable sites are available, the fuller the weight which can be given to the need for an installation on the proposed site. Thus, the degree of investigation of alternative siting should be proportional to the potential environmental impact. For instance:
- where **little or no harm** would arise then the extent to which alternative sites should be investigated may be minimal. For example, where a new mast is proposed that would have no significant adverse impact, it may be sufficient to demonstrate that there are no existing structures available (particularly those already carrying telecommunications apparatus) which would have equal or less impact.
 - where **significant harm** would arise then a reasonable investigation should be undertaken of both existing structures and alternative sites which would result in less harm yet still meet operational requirements (albeit to a lesser degree).
 - where **severe harm** would arise a thorough investigation should be undertaken of alternative sites, assessing potential impacts and setting out their advantages and disadvantages in a comparative framework (including environmental, economic and operational aspects).
- 9.4 Assessment of the proposal should take account of existing apparatus and other visually intrusive elements in the landscape context to identify and mitigate cumulative effects (see Appendix 5). For example, adding a new mast midway between two well spaced existing masts may create an impact that is greater than the sum of each individual impact.

- 9.5 Where it is clearly demonstrated that less harmful solutions are not available, the benefits of the proposal will be assessed against the environmental impact. The benefits arising from permitting the installation may not necessarily outweigh the resultant harm in which case planning permission will not be granted.
- 9.6 Applicants will be expected to demonstrate that they have considered all reasonably available siting options which reasonably meet the defined technical need, adopting that which will result in least overall environmental harm. These will include: **sharing an existing structure already carrying telecommunications equipment; use of other structures; erection of a new structure (mast) in a location where environmental harm is minimised.** The preference for any particular option over alternative siting solutions should be fully justified.

Mast sharing and use of existing structures

- 9.7 To minimise the proliferation of telecommunications installations and associated cumulative effects, operators are expected to carefully consider options for the utilisation of sites of existing installations: both purpose-built telecommunications masts and other structures already supporting telecommunications apparatus where this would not significantly impede operational considerations. Where an existing mast offers insufficient spare capacity at the requisite height, operators will generally be expected to investigate extending or replacing the mast in order to accommodate mast sharing, where this represents the best option in environmental terms.
- 9.8 Where there are no opportunities for mast sharing or use of existing structures already supporting telecommunications apparatus, or where significant environmental harm would arise, then the possibility of the use of other existing structures should be explored where these are suitable and available. These include: chimneys, water towers, agricultural buildings, floodlighting towers, electricity pylons and other tall structures.

Site sharing

- 9.9 Sometimes several smaller masts may have less adverse impact than one taller mast. Deciding whether to erect several smaller masts or one large mast will be influenced mainly by the local landscape context including the prominence of a mast in its landscape setting, the degree of isolation from other structures and development, and cumulative effects of the proposed options when considered with other existing equipment. In an open exposed landscape where no natural screening is available, the difference of a few metres in height of mast may be negligible whereas a group of masts may appear more intrusive. On the other hand, in a wooded landscape, increasing the height of an existing mast so it appears well above a wooded skyline may be more intrusive than constructing additional masts all about canopy height. Similarly, a few masts of similar scale clustered around a group of farm buildings may be less intrusive than one extremely large structure (*Fig. 1*).



Fig. 1 Lower masts clustered around group of farm buildings.

- 9.10 Where a new mast is required, particularly in sensitive locations, the operator will be expected to establish the attitude of the landowner to the principle of further installations on or adjacent to the site. Confirmation of any agreement between all those with an interest in the land in question which affords reasonable scope for mast or site sharing in

future (i.e. availability of access and sufficient land to accommodate the sharer's equipment) will represent a material consideration in favour of a proposal. This may take the form of a 'unilateral undertaking' under Section 106 to the Town and Country Planning Act 1990.

Where a landowner is clearly not amenable to the prospect of further installations, operators will be expected to establish whether there are any alternative sites nearby where mast/site sharing is acceptable to the landowner and which reasonably meets technical and environmental requirements. It is acknowledged that, where not secured by formal agreement, the attitude of the landowner may subsequently change to prohibit site or mast sharing. Nevertheless the pursuit of sites where the landowner accepts mast or site sharing should contribute to minimising proliferation of telecommunications structures.

- 9.11 **Opportunities for mast and site sharing should not normally be constrained by commercial considerations.** Where negotiations on site/mast sharing are protracted, the advice of an independent consultant may be required, or the matter referred to the Director General of Telecommunications for resolution before the necessity for an alternative solution is accepted.

Designated areas or sites

- 9.12 Special consideration is to be given to the environmental impact of development on areas or sites specifically protected for their importance in terms of landscape, nature conservation, heritage and design etc (listed at paragraph 7.1) The levels of protection afforded to these interests will reflect their international, national or local importance. The more extensive of these areas - the Nidderdale AONB, Special Landscape Areas and Green Belt - are shown in Appendix 3. The location of installations in or near designated areas should be avoided unless the proposed siting would clearly not result in material harm to those interests or it can be reasonably demonstrated that no appropriate alternative solutions are available outside of these areas. In assessing whether alternative solutions are appropriate, careful regard is to be had to the environmental harm which would result and any operational costs which would be incurred. Cumulative impacts should be identified and addressed (see Appendix 5).

Other interests of acknowledged importance

- 9.13 Locations should be chosen to minimise the prominence of installations in public views. Particularly visually sensitive sites should be avoided, technical limitations permitting, for example where the development would be prominent in views from roads and rights of way (particularly approaches to main settlements) and of important skylines (particularly where detracting from views of historic buildings, structures or landscape features). Development should also not have an adverse impact on protected species or semi-natural habitats important for nature conservation.

Screening, backdrop & assimilation

- 9.14 Although a skyline location is often required for operational reasons, where possible, mastheads below the skyline or associated with skyline features of long-standing are preferred (Fig.2). The siting of installations should take maximum advantage of the potential screening and backdrop effects offered by existing buildings, structures, vegetation and topography. Whilst it is accepted that the topmost part of the installation will rarely be completely hidden, the screening of the equipment cabin and much of the mast can greatly mitigate the visual impact of an installation.
- 9.15 The presence of existing man-made features, particularly vertical structures such as pylons, lighting columns and other structures associated with, for example, agricultural, industrial or transport-related activities - can help assimilate a new mast into an area even where

these provide little or no screening; the mast will be seen in the context of existing vertical elements. However, such siting is generally more harmful to visual amenity than the use of existing structures (see below) or screening. Association with existing visually intrusive elements will not necessarily justify further intrusion. A proliferation of intrusive elements can be extremely injurious to visual amenity, creating a cumulative effect that is greater than the sum of the individual effects (see Appendix 5).



Fig. 2a Poor location for mast: skyline, on only open ridge



Fig. 2b Better location for mast: skyline, but most of mast concealed within woodland managed under shelterwood system for permanent standing woodland



Fig. 2c Even better location for mast: below skyline using backdrop of mature woodland and located next to existing barn.

Urban context

- 9.16 In urban locations, telecommunications installations should be carefully sited to avoid overbearing, overshadowing or other adverse effects on residential properties or areas of open space of recreation or amenity value. They should not cause undue harm to Conservation Areas, Listed Buildings and other conservation interests. They are often most suitably located on the roofs of existing tall buildings of modern design (Fig. 3) or within less visually sensitive employment (industrial/business) areas, where the mast can be perceived as more in keeping with the scale, nature and materials of existing development.

- 9.17 Where installations are proposed in the vicinity of residential properties, the impact on residential amenity will depend on a number of factors in addition to its proximity, for instance: the height and appearance of the installation, the orientation of dwellings in relation to the installation, changes in ground level, existing or proposed screening and the nature of intervening land uses and the wider context. Consequently, it is not practicable to attempt to prescribe, in the interests of residential amenity, a minimum separation distance between installations and residential properties. Proposals can only be assessed on a case-by-case basis having regard to the above (and other) factors.

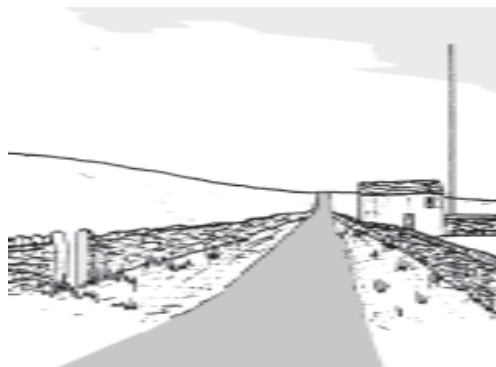


Fig.3 Antennas mounted with other equipment on modern building

Rural context

- 9.18 Although urban locations are generally to be preferred, clearly there will be instances where countryside locations are unavoidable for technical reasons. In such locations, installations should be related primarily to existing buildings and vertical features, e.g. farm buildings (Fig.4), quarry buildings, military installations and established woodland or tree groups to integrate the development into the landscape context. However, mature conifer plantations may not be relied upon to provide such screening or context, since most will be subject to forestry operations such as clear felling. Selective felling in exposed positions can be unsuccessful due to windblow, and new planting takes longer to become effective in exposed upland situations. Proposals should not result in the loss of semi-natural ancient woodland or unacceptable harm to its ecological interest.

View



Plan

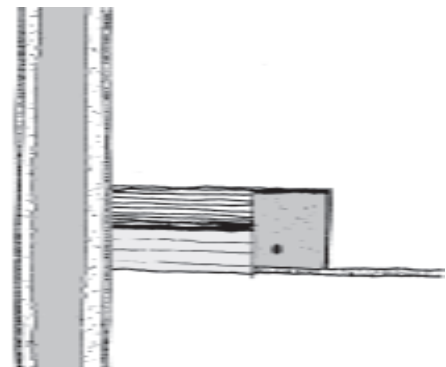


Fig.4 Pole located next to existing man-made features: road, traditional building. Equipment housed in building, pole surrounded by dry stone wall to match existing walls

Health

- 9.19 Levels of public exposure to electromagnetic fields (EMFs) produced by telecommunications installations will, for normal exposure, be well within guidelines issued by the National Radiological Protection Board and is a matter for the Health and Safety Executive. In the absence of substantiating evidence, fears over risk to health will not in themselves be sufficient justification to withhold consent for a telecommunications installation. Nevertheless, given public fears over the possible health risks of exposure to EMFs, telecommunications operators will be encouraged to exercise 'prudent siting', in accordance with the principle of 'prudent avoidance'. Prudent avoidance means taking simple, easily achievable, low cost measures to minimise exposure, even in the absence of a demonstrable risk. Consequently, operators will be encouraged, in pre-application discussions, to consider siting new telecommunications installations in such a manner so as to help minimise prolonged public exposure to EMFs.

DESIGN

- 9.20 The type of installation used should be the least visually intrusive technical solution. In particular, masts should be no taller than the minimum height necessary to satisfy operational requirements. Where mast-sharing requires extension or replacement of the original mast, the overall height of the final mast should not be unduly increased by the preference of the existing operator to be on top.
- 9.21 In terms of mast design: simple, elegant structures, such as poles with narrow tops are to be preferred to lattice masts (see Appendix 2) unless it can be shown that a lattice mast is required (e.g. for reasons of structural stability and/or to accommodate mast sharing). Bulky headframes should be avoided.
- 9.22 The most appropriate colouring of installations to mitigate their visual impact will clearly be determined by their context. Where masts and antennas are to be seen principally against the skyline then they should be painted grey or left untreated if of galvanised steel or similar construction, which will weather in a short period of time to be non-reflective. Where subject to external views equipment cabinets or cabins should be painted to blend in with surrounding features, such as buildings and vegetation: hence recessive browns, greens and greys are likely to be most appropriate.
- 9.23 In locations where mast sharing is the preferred option in planning terms and where demand for such is likely to arise, then it may be prudent for additional capacity to be built-in from the start, either through the erection of a taller mast or, preferably, by erecting a mast structurally capable of being easily extended. Similarly, mast foundations should be capable of supporting an extended or larger replacement mast.
- 9.24 Imaginative approaches to the integration of telecommunications apparatus will be encouraged where this would reduce visual harm, particularly in areas of visual sensitivity. This may include innovative modern design, or mock features such as: obelisks, mock-industrial chimneys, rock faces or farm buildings purpose-built out of radio/microwave transparent material. However, attempts to disguise telecommunications installations can often be counter-productive and such proposals should be handled with care. Much will depend on the context: in more open landscapes the effect could be more intrusive than that of a mast.
- 9.25 Microcell installations, in serving a limited geographical area of high demand such as town centre streets, require less powerful and far more modest apparatus which can often be unobtrusively assimilated into an area. These can take the form of mounting small antennas on existing structures such as lamp posts, CCTV poles or the faces of buildings, with equipment located either in/at the base of the structure or on/within buildings (Fig.5). Such

apparatus should be mounted and coloured on buildings or structures in such a manner as to minimise any visual intrusion in the street scene. Except where, for instance, proposals would cause significant harm to the character or appearance of a listed building, they should not raise any significant planning objections.

Equipment housing & associated works

- 9.26 Equipment cabinets should be housed in existing buildings wherever possible. Where buildings are not available, cabins may be accommodated in compounds screened by existing features or material in keeping with the local context. This is of particular importance in sensitive rural areas. Examples of appropriate compound design are set out below, including: in a redundant stone barn or encircled by dry stone walls (upland areas Fig.4, above); set into the ground with surrounding embankments merging into adjacent landform and seeded to match existing vegetation (open moorland or heathland - Fig.6); encircled by hedges and tree belts (lowland farmland Fig.7).

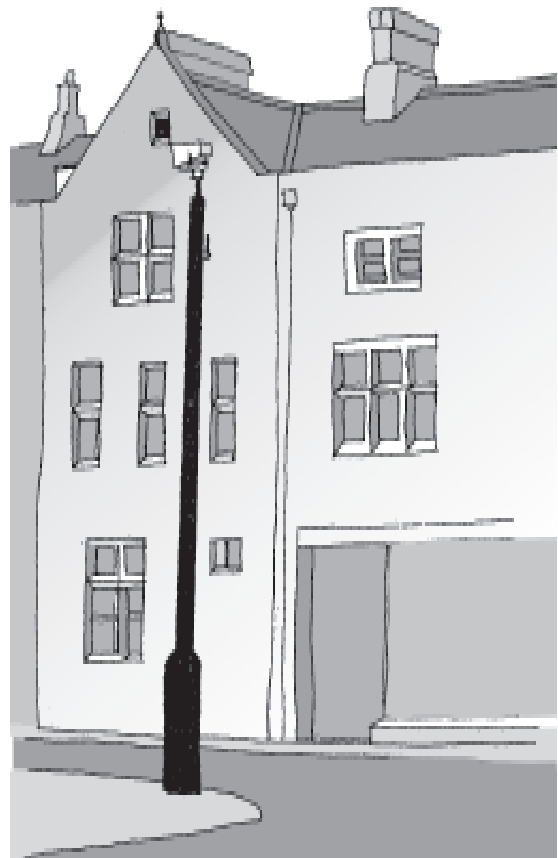
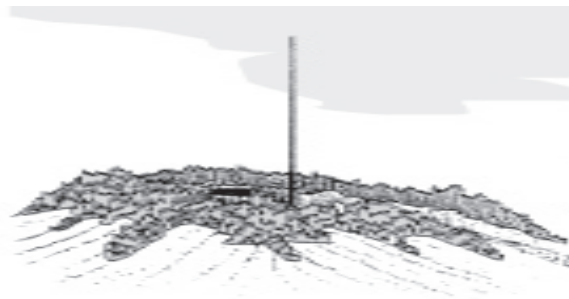


Fig.5 Microcell antennas mounted on CCTV pole and on building wall.

View

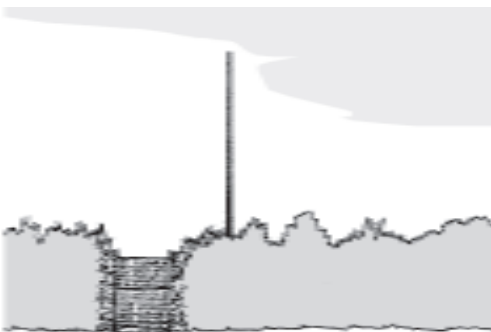


Plan



Fig.6. Mounding to conceal cabin, fence and access track and seeding of local grass and shrubs on open ground, e.g. moorland, heathland.

View



Plan

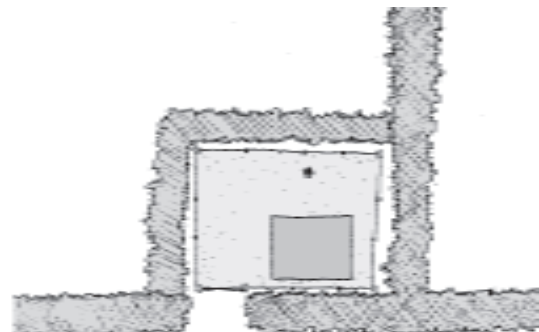


Fig.7 New compound in corner of hedged field to take advantage of screening by 2 existing hedges. New hedge planted around 2 remaining sides, species to match existing hedges.

- 9.27 To minimise visual intrusion the electricity supply for the installation will normally be expected to be placed underground. Self sufficient energy generation e.g. solar, wind power will be supported where this does not in itself cause environmental impact.
- 9.28 The site should ideally be served by an existing access. Where a new access is required this should minimise environmental impact, be temporary and reversible. Access impacts will be taken into account in assessing the acceptability of the proposal. In rural areas this will generally involve a track of the minimum length and standards necessary to meet operational and local highway authority requirements. Where a new permanent or temporary access necessitates the removal of an existing hedgerow, it may be necessary to serve a Hedgerow Removal Notice on the local planning authority, for it to determine whether the works may proceed.

Planning conditions

- 9.29 Where planning permission is required, planning conditions will normally be imposed to secure such building, earthworks (groundshaping), walling, fencing, planting and/or treatment as appropriate to the site context in order to mitigate the visual intrusion of a proposed installation. It may also be necessary to impose conditions to control noise nuisance generated by equipment cooling systems.
- 9.30 In order to prevent undue environmental harm, it will normally be a condition of any planning permission that, in the event of an installation becoming redundant, installations and all associated works are to be permanently removed and the site reinstated to its former condition, or otherwise as agreed by the local planning authority. This is notwithstanding that it is a condition of the operator's licence that apparatus is to be removed if no longer in use or likely to be used and that it may be in the operator's commercial interests to do so.

PROCEDURAL MATTERS

Local planning authority records

- 9.31 The Local Planning Authority has established a **Telecommunications Sites Register**. Frequently updated, this identifies existing telecommunications installations or sites where permission has been granted and contains details of:
- a written description of the site location, the precise Ordnance Survey Grid Reference and a general indication on suitable scale maps;
 - details of the type of installation (e.g. lattice tower, pole mast, rooftop) and its height above ground level;
 - details of ownership and telecommunications operators known to utilise the installation;
 - relevant planning application numbers and dates.

Pre -application discussions

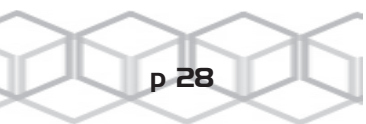
- 9.32 In the continued rollout and improvement of their networks, where requirements are established for additional installations, Code System Operators will be encouraged to provide details of their existing networks and discuss proposals with the Local Planning Authority at an early stage in the site selection process. The Local Planning Authority will be able to provide details of existing installations from the Telecommunications Sites Register and advise on relevant planning constraints and the extent to which alternatives to the operator's optimum or initially preferred site may require investigation. Such an approach can help avoid abortive effort on the part of developers of telecommunications installations.

Information supporting planning applications

- 9.33 Proposals requiring planning permission or prior notification should be accompanied with adequate information for the Local Planning Authority to assess whether the need for an installation on a particular site and of the form proposed outweighs the visual and other harm which would result. Consequently, applicants should identify both the nature of the requirement (i.e to meet a specific deficiency in the geographical extent or capacity of existing coverage) and the extent to which alternative sites have been investigated and the justification for their rejection. To illustrate how the anticipated coverage to be provided by the proposed installation satisfies a deficiency in the network and, where alternative sites are rejected on technical grounds, technical evidence will be required. This will include the results of radio propagation trials (in respect of both the application site and other sites investigated).
- 9.34 In cases where the location is especially sensitive, and the degree of harm to visual amenity of a proposed installation difficult to accurately assess, it may help to inform consideration of the proposal by the planning authority for the applicant to erect a mock-up for the purposes of a site visit. This may take the form of a test mast or telescopic wand. Even tethering a balloon at a height equivalent to the top of the installation may be useful in providing some indication as to the height and visibility of the proposal. Clearly any mock-up should be treated with caution as it is unlikely to accurately replicate the final appearance of the proposed mast, with antennas attached.

Independent advice

- 9.35 Where a proposal would result in considerable harm to interests of visual amenity (or other interests) which cannot be mitigated through revisions and imposition of conditions, the Local Planning Authority may seek independent advice in relation to the technical aspects of the proposal from a consultant specialising in telecommunications matters, particularly in assessing the technical constraints on alternative, less harmful solutions.



Policy CF10 Telecommunications Development

PROPOSALS FOR TELECOMMUNICATIONS DEVELOPMENT WILL BE PERMITTED PROVIDED ALL THE FOLLOWING CRITERIA ARE MET:

- A) THERE IS NO REASONABLE POSSIBILITY OF SHARING EXISTING OR IMPENDING PROVISION OF TELECOMMUNICATIONS FACILITIES.
- B) IN THE CASE OF TELECOMMUNICATIONS MASTS, THERE IS

NO REASONABLE POSSIBILITY OF ERECTING ANTENNAE ON AN EXISTING BUILDING OR OTHER STRUCTURE.
- C) THE SITING, DESIGN AND LANDSCAPING MEASURES MINIMISE THE POTENTIAL IMPACT ON THE VISUAL AMENITY AND NATURE CONSERVATION VALUE OF THE IMMEDIATE SURROUNDINGS AND WIDER LANDSCAPE, WHERE THIS DOES NOT SIGNIFICANTLY ERODE THE INTERESTS OF OPERATIONAL EFFICIENCY.

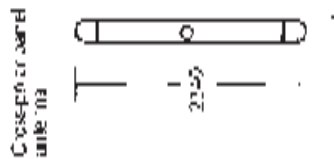
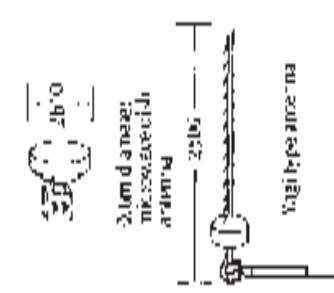
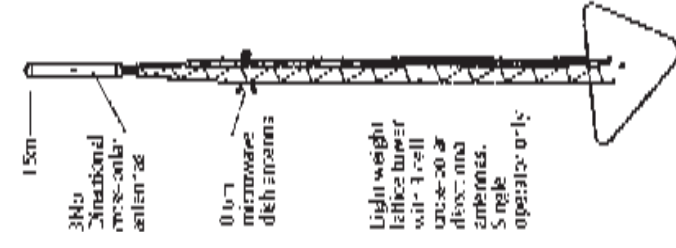
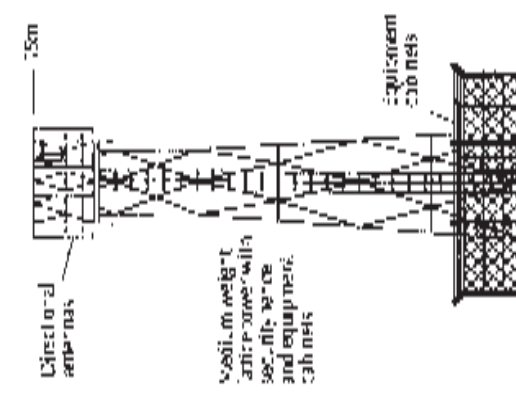
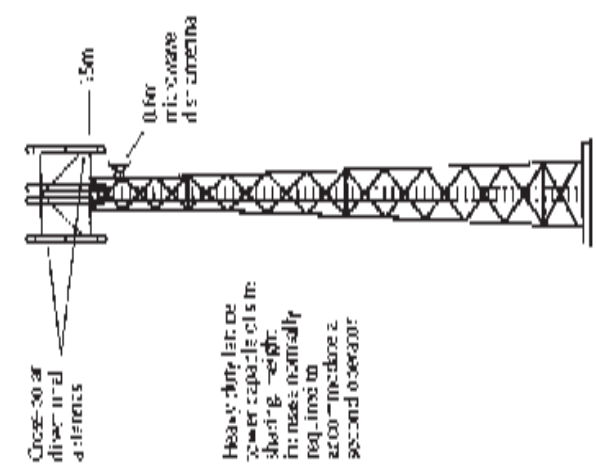
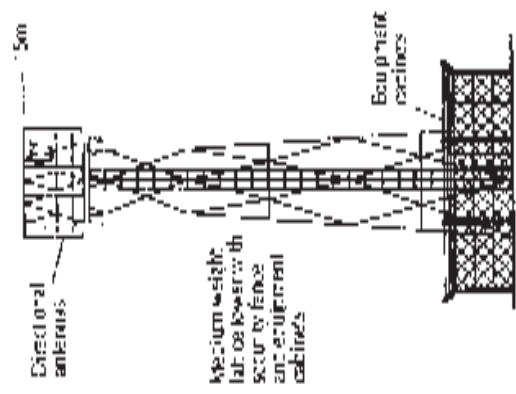
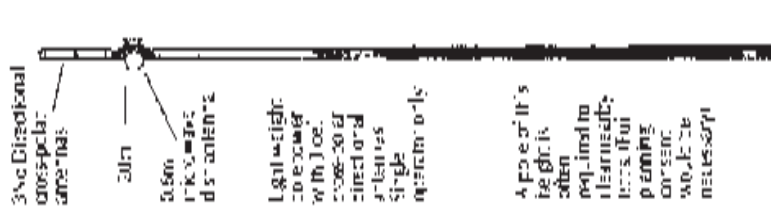
Justification

- 14.35 Changes in the telecommunications industry, new technology and developments and growing demands mean that there will be a need for additional telecommunications apparatus, such as radio masts and towers, antennae, radio equipment housing, call boxes and cabling. PPG8 advises that local plans should contain criteria based policies for the location of such development, which are sufficiently flexible to allow for the efficient development of the network and the demands imposed by the technology.*
- 14.36 In sensitive areas such as Conservation Areas, the council will wish to see the effect of new telecommunications minimised and will encourage the removal of obtrusive wires, cables and telegraph poles where opportunities arise (see Policy HD3).*
- 14.37 Following the Telecommunications Act 1984 licences granted to code system operators and other authorised operators have become more widespread. The operators use various systems which have different antennae types, siting needs and other characteristics. Not all telecommunications apparatus requires planning permission and in some cases only prior notification to the Council needs to be given to ensure that the siting and appearance are acceptable to the Council. Where planning permission is required, the Council will need to be satisfied that the number of masts and sites is kept to a minimum.*
- 14.38 Larger scale telecommunications development often requires masts and antennae of a particular operating height, typically 20 metres, or situations on prominent high ground to clear obstructions such as trees and buildings to work effectively. The impact can sometimes be reduced by operators sharing masts or erecting antennae on existing buildings. Applicants will be expected to provide clear evidence that opportunities for mast sharing have been explored and that a proposal does not harm a sensitive location.*
- 14.39 If a new mast is necessary it may be possible to include additional structural capacity to cater for future requirements including those of other operators and to minimise the visual impact through careful choice of materials and careful landscaping. Opportunities to use the existing screening of buildings, trees and high structures should be taken where possible.*

- 14.40 It is therefore important that operators discuss their requirements with the Council at an early stage. In exceptional circumstances, where there is a real threat to a particular locality from proposals for certain forms of telecommunications development benefiting from permitted development rights, the Council will consider withdrawing specific rights under an Article 4 Direction. This is most likely to apply in respect of sensitive areas, such as conservation areas or affecting the setting of a listed building.
- 14.41 It is recognised that development of the 'Information Superhighway' and other information technologies could potentially have wide implications for patterns of land use within the District - particularly in relation to employment (teleworking) and shopping (teleshopping), and also housing and transportation. Presently, many technologies are at relatively early stages in development and have yet to attract significant patronage. Consequently, although it may be possible to speculate as to the changes in the use of land likely to be brought about through the future take-up of these technologies (especially teleworking and teleshopping), it is difficult to predict with any degree of certainty the nature and extent of these changes. However, when and where land use implications arise - or can be easily foreseen - from further technological developments, these will be monitored and taken into account in subsequent reviews of the Plan.

APPENDIX 2

Types of mast and antenna

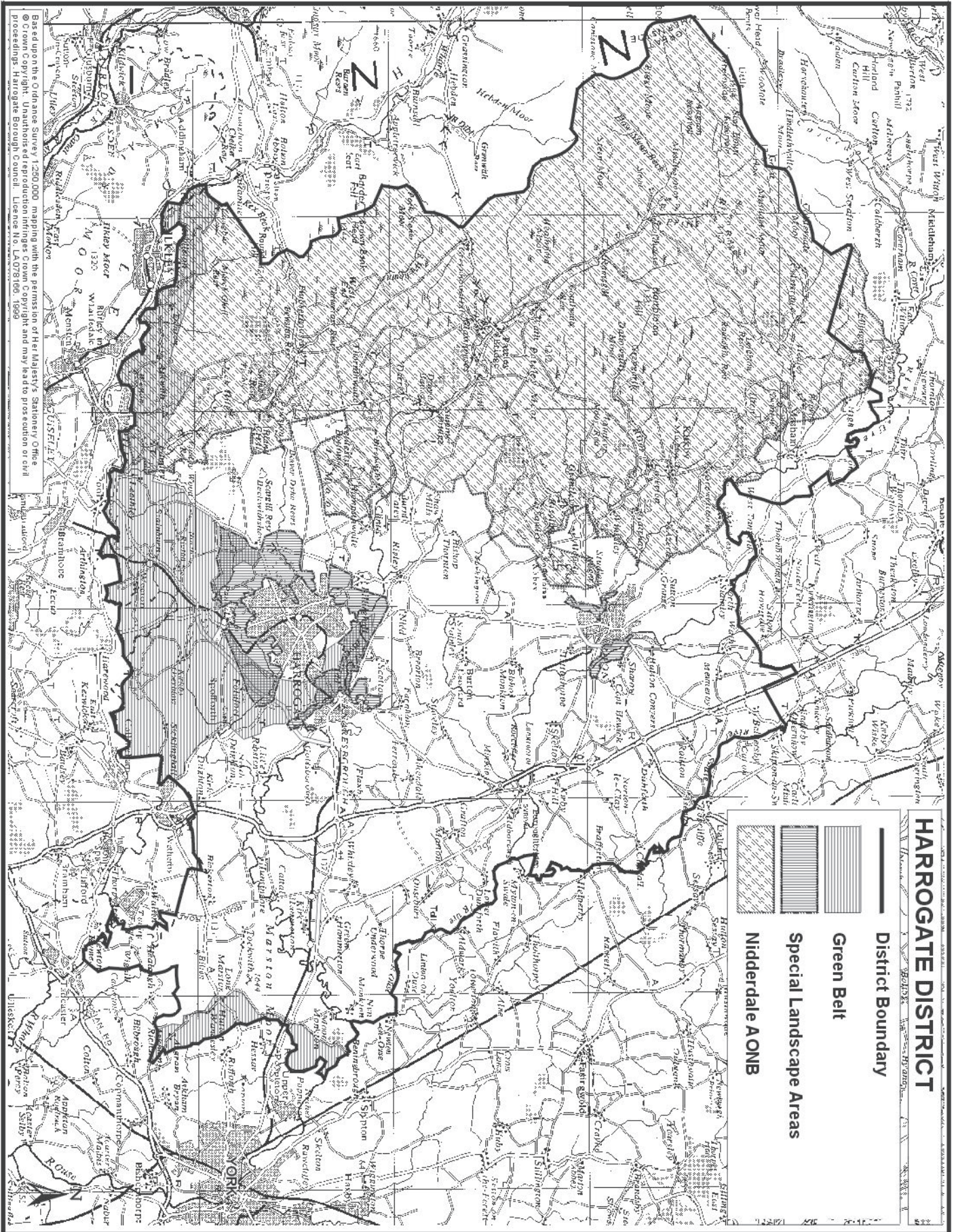


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(Source: DETR Telecommunications Prior Approval Procedures)

APPENDIX 3

Selected environmental constraints in Harrogate District



Landscape assessment encompasses appraisal of physical, aesthetic and intangible attributes including sense of place, rarity or representativeness, and unspoilt appearance. These aspects, together with scale and character of surrounding landscapes, patterns and scale of landform, land cover and built development, need to be taken into account when assessing landscape impact.

Landscape impacts

Advice on assessing **landscape impacts** notes that:

Landscape impacts are changes in the **fabric, character and quality** of the landscape as a result of development. Hence landscape impact assessment is concerned with:

- direct impacts upon specific **landscape elements**;
- more subtle effects on the overall pattern of elements that gives rise to **landscape character and regional and local distinctiveness**;
- impacts upon acknowledged **special interests** or values such as **designated landscapes, conservation sites and cultural associations**.

[Landscape Institute and Institute for Environmental Assessment (1995) Guidelines for Landscape and Visual Impact Assessment]

Visual impacts

Visual impacts are a subset of landscape impacts. They relate solely to changes in available views of the landscape, and the effects of those changes on people.

Visual impact assessment is concerned with:

- the **direct impacts** of the development upon views of the landscape through intrusion or obstruction;
- the **reactions of viewers** who may be affected;
- the overall impact on **visual amenity**.

[Landscape Institute and Institute for Environmental Assessment (1995) Guidelines for Landscape and Visual Impact Assessment]

The categories of visual impact are as follows:

- substantial adverse impact**: high sensitivity (important components/distinctive character susceptible to small changes) or high magnitude (notable change over a wide area, or very intensive change over a more limited area)
- moderate adverse impact**: medium sensitivity combined with medium magnitude (moderately valued characteristics reasonably tolerant of changes; moderate changes in localised area), or high magnitude or sensitivity combined with low magnitude or sensitivity
- slight adverse impact**: low sensitivity or low magnitude (relatively unimportant landscape potentially tolerant of substantial change; virtually imperceptible change)

Whilst an individual mast and compound may in itself be acceptable, its impact in association with other telecommunications equipment in the locality or different equipment but of similar character may give rise to an adverse cumulative effect.

For example, one mast with cabin and security fencing tucked into the side of a wood above a route may cause slight landscape and visual harm, but be broadly acceptable as an occasional element within the modern countryside.

However, a series of such installations strung out along the route would increase the adverse effect of the equipment. The presence of a network becomes more apparent; the repetition of an intrusive form increases its dominance; where there are differences in apparatus design from one installation to the next the cumulative effect tends to be chaotic and incoherent; there is less space free from intrusion.

The extent of separation required to reduce cumulative effects depends upon the landscape itself, and the characteristics of the view. A wide open landscape may display several apparatus in one panoramic view. A complex landscape of high hedges and woodlands or hills and winding valleys may separate one installation from another, but the perception of a series of apparatus will build up in the mind of the observer. The speed of progress through the landscape will affect cumulative perception: apparatus visible from a high speed road will appear more frequently for an observer driving at speed than for a walker on a nearby footpath.

Proliferation of masts across the wider landscape is therefore likely to cause significant and adverse cumulative impacts. It is therefore all the more important to achieve meaningful co-operation between operators to reduce such impacts by **sensitive siting**, looking not only at site characteristics but also local context; **mast and compound design**; and opportunities for **mast and site sharing**.

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