



# Best Practice

## ● Siting and Design

- General principles for telecommunications development
- Mast and site sharing
- Installation on existing buildings and structures
- Camouflaging and disguising equipment
- Using small scale equipment
- Erecting new ground based masts
- Area guidance

# Best Practice

## Siting and Design

**120** Current planning guidance on the importance of securing good design in proposed developments is set out in Planning Policy Guidance note 1 (PPG1). Applicants should take account of the need for good design. Local authorities are encouraged to reject poor design. PPG8 also emphasises the importance of good design in relation to telecommunications development.

**121** To spread good practice, in 2000, DTLR with the Commission for Architecture and the Built Environment (CABE) published 'By Design'. This guide looks at the tools local authorities have to help deliver better design and how to use them effectively.

**122** "By Design" makes it clear that the fundamental urban design principles of a scheme should not be relegated for later consideration. They must be acceptable at the time any consent is granted. Key recommendations of "By Design" that are relevant to mobile phone mast development are:

- *Considerations of design and layout must be informed by the context, having regard not just to any immediate neighbouring buildings but the townscape and landscape of the wider locality. The local pattern of streets and spaces, building traditions, materials and ecology should all help to determine the character and identity of a development.*
- *The scale, massing and height of proposed development should be considered in relation to that of adjoining buildings; the topography; the general pattern of heights in the area; and views, vistas and landmarks.*

### General principles for telecommunications development

**123** The Government's general policy on telecommunications development is to facilitate the growth of efficient and effective telecommunication systems whilst keeping the environmental impact of such development to a minimum. The siting and design of telecommunications equipment, if undertaken with care and sensitivity, will be vital in achieving this policy aim. Good siting and design should not only be respected in environmentally sensitive areas but also be applied to all



Antennas on a building



Lamp post microcell



Ornate lamp post microcell

telecommunications development. In all circumstances, the sensitivity to context of the proposed development should be considered.

**124** Operators should seek the local authority's advice and consult with local people on individual design proposals at the pre-application stage.

**125** In particular, the following general design principles should be regarded as important considerations in respect of telecommunications development:

- *Proper assessment of the character of the area concerned. This can protect and enhance positive features which contribute to the sense of the place. It can also identify poor quality elements and seek out opportunities to achieve discernible improvements in these cases. A Landscape Character Assessment may be useful;*
- *Design should be holistic and three dimensional showing an appreciation of context;*
- *Analysis of the near and far views of the proposal and to what extent these will be experienced by the public and any residents;*
- *Proposals should respect views in relation to existing landmarks and distant vistas;*
- *Proposals should seek to preserve the skyline and any roofscapes visible from streets and spaces;*
- *Choice of sustainable materials in the construction of the development; and*
- *Choice of complementary designs, materials and colours to produce a harmonious development and to minimise contrast between equipment and its surroundings.*

**126** The options for the design used by an operator will be affected by site conditions, technical constraints, landscape features and capacity requirements. The main options would include:

- *Mast and/ or site sharing;*
- *Installation on existing buildings and structures;*
- *Camouflaging or disguising equipment;*
- *Using small scale equipment;*
- *Erecting new ground based masts.*

## Mast and site sharing

- 127** It has been a longstanding Government policy objective to encourage telecommunications operators, wherever practicable, to share masts and sites as a means of reducing overall mast numbers.
- 128** Commitment Three of the operators' Ten Commitments is to publish clear, transparent and accountable criteria and cross-industry agreement on site sharing, against which progress will be published regularly. On 31 March 2001 the operators entered into a new service level agreement, committing themselves to sharing sites wherever practicable. A national site share database has been established by the operators and a dedicated cross operator working group meets regularly to enhance criteria and procedures. The operators provide the Office of the Deputy Prime Minister with quarterly site share figures.



Two operators site sharing



- 129** There are a number of infrastructure providers who between them own or control several thousand installations or buildings available for sharing.
- 130** Whilst mast sharing should always be considered, it should be borne in mind that mast sharing may not be the optimum solution in all cases. Masts with several systems can, in certain cases, look quite ungainly and unsightly, which could lead to increased visual intrusion. Other constraints on mast sharing could include:

- **Coverage problems.** The existing mast may be poorly located or not have the sufficient height to give the required coverage;
- **Radio interference.** Antennas need a set amount of vertical separation. This could lead to the visual impact of the mast significantly increasing;
- **Structural loading.** The existing mast may not be able to safely hold extra equipment. The existing masts may need to be strengthened or replaced with a bigger structure with a consequent effect on visual amenity.

- 131** In cases where the overall mast size increases as a result of mast sharing, local authorities will need to determine whether this outcome is preferable to a completely new site or site sharing.
- 132** Often, a viable alternative to mast sharing is site sharing/ co-location. This is where more than one mast is placed in close proximity on a single site. However, a proliferation of masts near to one another could cause greater visual intrusion so it is vital that the masts are designed sensitively in order to reduce their cumulative visual impact. One way of doing this is to make the masts appear as a single group. Proper assessment of individual sites and consideration of the local landscape will be needed to identify any problems that may arise. Operators will want to explore ways of overcoming these issues before submitting applications to the local authority.

Opposite: Two operators site sharing  
Centre (main picture): Site and Mast sharing by many telecommunications operators.

## Installation on existing buildings and structures

- 133** The use of existing buildings and structures by the operators as sites for the installation of their telecommunications equipment is an established measure which has greatly helped to reduce the environmental impact of their networks. Examples of buildings which may be used include:

- Office blocks
- Churches
- Water towers
- Floodlighting towers
- Electricity pylons
- Chimneys
- Broadcast masts

- 134** Operators will need to bear in mind the height, scale and architectural style of the building or structure as this will have a significant influence on the design of the equipment used. Extra care will need to be taken when installing equipment on listed buildings or on structures and/or buildings located in areas of historic and architectural importance.

- 135** When placing equipment on buildings and/or structures operators should aim for development to:

- Be painted to correspond with the background or to reduce contrast;
- Keep in proportion to the building or structure;
- Respect architectural style;
- Have minimal impact above the roof line;
- Not be detrimental to views and general skyline;
- Avoid creating clutter;
- Use clean lines and maintain symmetry.

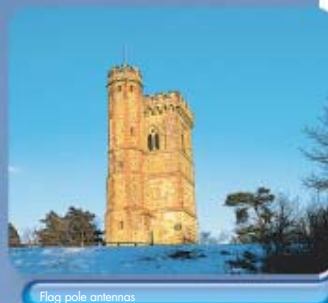
- 136** It is important that the siting of equipment on buildings and structures does not come across as being ill-considered. Careful planning and placing of equipment to achieve symmetry and balance can help to overcome this. As with site sharing, making the equipment appear as a single group will help result in a more visually acceptable scheme.

- 137** In using existing building and structures, operators should bear in mind structural limitations that may restrict their use as potential sites. For example, many older

Left:  
Antenna painted to reduce contrast



Antenna concealed in church weathervane



Flag pole antennas



Antenna installed inside folly



Antennas painted to reduce contrast

buildings were not designed to take on the extra weight of telecommunications equipment. It is vital that operators discuss with the local authority any matters that could restrict siting options as a result of this type of consideration.

- 138** In order to facilitate the use of buildings and structures to site telecommunications equipment, local authorities may wish to encourage the designers of new buildings and structures to include a provision to this effect within their plans and designs. This may include space especially below the roofline for the siting of antenna and the use of Glass Reinforced Plastic, GRP, (see section on camouflaging and disguising equipment) which will enable antenna to be placed behind the facade of a building. Effective provision in this way will enable telecommunications equipment to be seen as integral to the building itself rather than "bolted on" as an afterthought.

- 139** Opportunities should be considered where dual benefits could be gained from the refurbishment of disused or derelict buildings or structures to house telecommunications equipment.



Above: Line of site dish on a gasometer



Left: Antennas on the roof of an office

Left: (main picture) Antenna disguised as flagpoles on the Church tower. A microwave dish is mounted behind the existing parapet wall of the tower. Equipment cabins are sited within the Church and feeder cables are internal to the building

## Camouflaging and disguising equipment

**140** In the last few years, operators have made great strides in developing their techniques for camouflaging and disguising their equipment. This can be seen in the newer, more modern masts which are frequently able to blend into their surroundings far more effectively in contrast to some of the older, larger, and often unsightly, first-generation masts. The innovative use of colours and shapes by operators have been successful in disguising equipment and this practice should be encouraged to continue wherever appropriate. The use of street furniture may also be suitable to disguise small antennas.

**141** Larger antennas may also be effectively concealed by similar methods. These can include familiar features such as:

- flagpoles
- street lamp posts
- signs
- church towers

**142** In addition, the use of GRP, which can be moulded into any shape and coloured appropriately, can be very useful in harmonising features into the landscape. It can, for example, be used to simulate masonry and stone features such as chimneys and plinths. It can also be disguised as wood and various forms of metal.

**143** Which option to choose depends on the local conditions and factors as well as the sensitivity of the area. All of the options have the advantage of using existing features and as such avoid the need to create new and unnecessary forms of development. Local authorities are encouraged to explore with operators other possible structures within the locality on which antennas can be concealed in this way.

**144** Another option is to use masts disguised as trees. However, their effectiveness can be lost if poorly sited or designed so it is important that they:

- mix well with the existing local tree types;
- are placed with groups of other trees;
- are placed with newly planted trees.

**145** A more novel approach is to camouflage development by placing antennas in, or as part of, commissioned works of art. These can enhance the landscape or public areas particularly if based on a design chosen locally through the use of local artists or involvement of the local community or a combination of both in the design process.



Antennas concealed behind GRP shrouds that blend in with building details at Canary Wharf



Antenna placed behind louvres in church tower



Antenna in combination with local CCTV scheme



Antenna in combination with local CCTV scheme



Antenna concealed in street sign



Antenna concealed in GRP chimney pots close to York Minister



Antennas mounted on a tree