



28th October 2003

BT's Response to the Consultation by the Planning Service on Development Control Advice Note 14, Siting and Design of Radio Telecommunications Equipment.

BT would welcome any comments on its position as laid out in this document.

**Comments should be addressed to Joanna Tansley, PP5A, Westminster TE, 1A
Broadway, London. SW1H 0AY. Alternatively, by e-mail, to
joanna.tansley@bt.com.**

Development Control Advice Note 14 Consultation

Submitted by British Telecommunications

BT welcomes the publication of Development Control Advice Note 14 and the opportunity provided for the consultation about the contents. Achieving an appropriate balance between delivering the social and economic benefits of world-class telecommunications technology in Northern Ireland is important to BT. BT considers that minimising environmental impact is however vital to progressive infrastructure development, particularly regarding the provision of accessible and affordable broadband services.

BT therefore supports the aims underpinning this document and the mobile operators 'Ten Commitments. It already develops in such a manner as to minimise environmental impact, especially when developing its wireless based systems. In addition to its cable infrastructure, BT is creating a modern and diverse network of wireless-based systems, from broadband access in rural areas, to support networks for cellular infrastructure in dense urban areas. As such BT is keen to comment on all aspects of this document in relation to its network.

BT would specifically wish to comment that restrictions upon dimensions are a limitation to innovative antenna design. Size restrictions may be one of the principle causes of antenna design that is obtrusive. BT would wish to see this consultation document to prefer antenna volume to a greater extent rather than its size. A larger volume antenna may often be less obtrusive than its smaller, bulkier, counterpart when design becomes more important than restrictions placed upon it by dimensions. For example, a tall vertical rod antenna of 6mm is less obtrusive than an antenna that is shorter but has a 50mm diameter.

The following areas of the document are noted for comment

Definitions

BT considers that whilst definitions are provided to help those reading this document they may also be misleading, especially if they misalign with existing legislation, or with widely held expectations.

Code System Operator 'Telecommunications Code' is now the 'Electronic Communications Code'

De minimis discusses material *impact* rather than *effect*. The reference to building or structure is probably too localised in the context of this document. This

reference could be better referred to the wider location where the development takes place, for example, if an antenna mounted at the rear of a building could have a minimal building impact. However, to nearby rear neighbours the visual impact may maintain significant environmental impact if this were prominent to their everyday view from a window. De minimis should aim for a harmonious blend with its supporting structure. Of note, just because an antenna is small it does not mean it is also emitting a power inside ICNIRP limits. Perceptions of such an antenna may not be as minimal environmental impact, but would have no material effect on the appearance of a building, especially if viewed from a public space such as a road.

Microcell implies a localised service area. However some antenna may be directional, As such they may be quite large when compared to some microcell antenna, also the may be quite high power in a very specific direction.

Mast and Stub Mast raise differing expectations within legislation. We feel that both description continue to be masts and not antenna supports, which is the implication of a stub mast. Should a differentiation be required, the term Ground Based Mast and Roof Based Mast would be better. This situation can be distinguished because a roof-based mast may be above 6 metres and serve precisely the same purpose as a ground based mast, which may be less than 6 metres. Our principle concern is that planning authorities or the public, may consider that accepted antenna support structures, such as poles and pallet mounts, as masts in some circumstances. We would seek a clear differentiation from high impact roof based masts and low-impact antenna mounts, which would typically support just one or two antenna.

Emergency. An entire section, Section 6, is devoted to Emergencies. However, there is no definition of an emergency. The accepted definition is 'Emergency Development' found in Section 1 of the Electronic Communications Code.

Telecommunications Systems

Paragraph 2.5. High capacity demand is not the only reason to use a large dish antenna. Dish size may also be a function of frequency and link gain. The overall environmental impact may be minimised by extending the distance that a link may travel. Often the best way to extend distance is to raise the gain of the antenna, enlarging the dish creates gain increase. Increasing the size of the dish improves the direction of the antenna by focusing the radio waves toward a straight line, so avoiding wasted power. More energy ends up at the receiving dish.

Paragraph 2.6 Fixed Radio Access. There are several methods employed to deliver broadband services to a customer's premises. Currently there are two potential technologies under consideration - point to multi-point and mesh radio. Because mesh radio systems are cylindrical in appearance, they require measurement by volume, rather than by dimensions. Conversely the 'Small Antenna' defined within the permitted development orders of the other UK regions are restricted. Initially most flat plane antenna are consequentially directional and so to provide a wider coverage distribution point or node, used to supply capacity to many customers, more antenna are necessary. A design taller than 50cm but omni-directional or tri-sectored may provide similar coverage to many Small Antennas; Scotland permits eight Small Antennas on buildings that are not dwellinghouses. Unless there is consideration of fixed radio access antennas within the Small Antenna definition, as a type for a fixed radio access system, then many planning applications may be necessary. There may be a significant and consequential delay before establishment of a reasonable coverage pattern to fixed premises. BT considers that the number of antenna should not be a limiting factor but that the planning authority considers the design is as unobtrusive as possible, but not necessarily de minimis.

Typically, point to multi-point systems do not always require a new mast, but initially seek to use building roofs. In very remote locations, it is still preferable to use an existing structure such as a church or a building taller than the other buildings in the area rather than resort to using a mast. If directional antenna were used the intended area for coverage could be illuminated from the outside in, again using existing buildings. The antenna does not always need to be at the centre for coverage, but with a small number of properties to cover the centre, an illumination approach often may be the least expensive to implement.

BT is currently conducting trials for Fixed Radio access in Northern Ireland.

2.18 BT currently uses point to point microwave systems to provide network services to exchanges and business customers located in remote areas. It is often a forgotten consideration that a point to point microwave system requires both ends to be at the correct height with the correct dish size to provide reliable communications. The lowering of height at one location will require the raising of height at the other end of the link in order that line of sight is maintained, a see-saw effect. A similar situation exists for dish sizes. If a planning authority requires one dish to be smaller then, at the other end of the link, the antenna will need to be larger to make up the path loss difference due to loss of antenna gain.

2.19 For very rural areas BT uses two other means of delivery for its broadband services to domestic and other customers, both use a satellite dish up to 1.2m diameter. One system uses a two-way microwave link. Another variant of this is

to use a microwave dish to receive fast data and a telephone to send slower data. BT expects that only the most remote areas would use either of these systems, but being remote there would be a public perception by some of an intrusion upon the most rural landscape. In reality, this is likely to be the only means of delivering broadband services to such very remote locations.

Siting and Design General Principles

3.2 Minimising Contrast. Whilst it may often be possible to use coloured antenna, the concept of 'painting' an antenna raises false expectations in the mind of the public and planning authorities. Often it is not possible to paint the radome that are used to cover the exit point of dish antenna used for microwave point to point systems. Often other microwave antennas are very sensitive to paint types and, occasionally, colours. Darker colours are more susceptible to absorbing heat and thus creating a greater fault liability and system noise within the electronics incorporated into the antenna. Where antenna require greater maintenance they are typically more obtrusive than smaller antenna, because of the need for regular access.

3.7 It would also be helpful to explain that domestic television antenna are regarded as de minimis because they are such a common feature of the skyline. The function of acceptability and commonality can make developments fall into the concept of de minimis, where such larger developments would not normally qualify.

3.10 In addition to disguising masts and antenna to look like street furniture, it is possible to use existing street furniture. BT minimises environmental impact by creating innovative solutions using its own, existing and replacement local authority street furniture. For example, payphones house micro-cells for 2G and 3G systems and Local Area Networks base units. It is not possible to distinguish this payphone from any other of the same type. BT also utilises lampposts and similar structures for providing cellular micro-cell infrastructure that is available to all current 3G and 2G operators. In practice a very small antenna shared by all operators is used as a tiny attachment to existing structures, with a tiny extended base station inside the base of the lamppost or within a small pillar nearby. This policy of reuse of existing street structures minimises urban clutter, provides innovative solutions to existing problems and minimises the need to develop, especially within town centres. We would strongly recommend a favourable approach to reuse of existing street furniture as an option within this paragraph. Your photograph above Paragraph 3.4 exemplifies this approach where the pictured micro-cell mast could disappear, leaving the profile of the existing lamppost and at the photographer's location, with no visible change to the skyline or the lamppost.

3.12 BT recognises the potential of public art. BT would wish to see greater support by Government of some form of formal recognition of such work, especially if the Northern Ireland constituents, as a whole, could decide which of such works justified an award. This information would be valuable to the industry as a whole as it would give a steer as to the thinking of the public when judging the aesthetics of functional technology structures.

3.15 With respect to important skylines and some views, often there is little public knowledge about the designation of an important view or skyline. It would be helpful to understand its location, direction of view and extent from any place. It would be helpful for designation of such a vista on local authority maps so that early technical planning decisions are possible, before planning authority consultation. This information is preferable to a total bar on development when developing apparatus on an existing structure. Consideration may be given, where possible, to placement on parts of the building that may not affect such a protected vista.

3.16 This paragraph raises expectations that it is always possible to survive on less coverage or with in-fill. Unfortunately for point to point microwave systems line of sight is critical to successful operation of the radio link. In some wireless situations, it is also difficult to reuse some frequencies because of interference and so in-fill may not be possible.

3.20 Since the Communications Act 2003, Code, operators are no longer required to have a licence. However, BT believes that site sharing, on reasonable terms, is beneficial to the environment in general. Operators should be encouraged to share, and government authorities should make their infrastructure available to share on reasonable terms.

3.22 These will be referred to Ofcom in future.

3.26 There is a particular problem planting trees near microwave systems. Trees grow and leaves interfere with the microwave path causing fading and loss when leaves are wet. BT is unable to recommend planting trees directly in front of a microwave link path.

When mounting microwave links it is often not possible to mount on the side of a hill because the link may be required to overshoot the hill. Occasionally a relay station is required to be located at the top of a hill to relay signals from one side of a hill to the other. In these situations, the height of the antenna will be minimised, but there will be some break in the skyline. These relay stations

occasionally, are unavoidable. Your statement may mislead some into thinking that a hillside location is always possible.

3.35 Due to the amount of equipment imported from America the term 'redundant' has acquired a second, commonly understood, meaning. The term 'redundant' may mean *spare or secondary*, typically for use when primary equipment fails. To remove all confusion in this paragraph BT recommends title replacement with 'Equipment that is no longer required' and adjustments made throughout the text.

Contents of a Planning Application

5.4 Unless a person is the site owner, it is not possible to identify ownership of antenna. It is unclear how to identify antenna. On some sites, this may be a substantial operation as there may be many antennas on a mast. It may be better to show the antenna at the proposed height, by photograph and an overall photograph of the mast at the face where the proposed siting of the antenna is.

5.7 In some situations, it may not be possible to reveal why a development is required, due to confidentiality. It is preferable that the bullet point stating "*why the particular development is required*" includes the words '*where practicable*' afterwards.

Emergency Development

6.0 It would be useful to clarify the meaning of Emergency. A definition exists within the Electronic Communications Code (previously the Telecommunications Code).

Annex E

This annex relates to the Mobile Operators Association Traffic Light Rating Model for Public Consultation. Consequentially the title is incorrect because it appears to apply to all operators for all forms of telecommunications development.

BT would be pleased to contribute to subsequent discussions and documentation associated with this Development Control Advice Note. Bt would wish to contribute in the interests of ensuring good practice in the on-going development of radio telecommunications equipment in Northern Ireland, whilst at the same time minimising visual and environmental impact.

Consultation Response Document

TO :
Jenny Bell,

**The Planning Service,
Clarence Court,
10-18 Adelaide Street
Belfast.
BT2 8GB**