

Cornerstone Community Information Sheet

Dish Antennas

Dish antennas or dish links are a familiar feature of our landscape across town and country. They allow us to watch satellite television, use the internet or wireless services and to make calls on the traditional fixed line telephone system.

The BT Tower, previously known as the Post Office Tower, in London is a good example of an array of large dish antennas.

The dish antennas used by mobile phone networks are relatively small (normally between 30 centimetres and 60 centimetres but up to 120 centimetres for dishes that transmit over longer distances). They are used to link individual radio base stations to each other and, through a series of links, into the wider mobile phone and fixed line networks.

Dish antennas are sometimes referred to as microwave dishes because their operations fall into the microwave portion of the electromagnetic spectrum (300 megahertz to 300 gigahertz) along with television transmitters, microwave ovens, radio base stations and the mobile phone handsets themselves.

How a dish antenna works:

In order to communicate with each other, dish antennas must have a clear line of sight, sometimes known as point-to-point communications. They must be in clear view of each other without any physical obstructions such as trees or buildings which would reduce or disrupt the low-powered signal. For this reason, dish antennas are always mounted high on rooftops or existing tall structures.

The antennas transmit and receive a weak radio signal in a narrow, conical beam around one or two degrees wide. The dish facilitates the picking up of the incoming signal, and focuses the outgoing signal rather as the reflector in a torch focuses a beam of light.

The panel-shaped antennas that communicate with our mobile phones operate in a different way. Generally, they also need to be located on masts, towers or rooftops to avoid physical obstruction but the signal transmitted by these antennas is much wider – a cone shaped beam of around 70 degrees width – and is tilted downward slightly to make sure radio signals can be picked up at ground level and inside buildings where people need to use their phones.

Dish antennas and health issues

The same international guidelines, established by the International Commission on Non-Ionizing Radiation Protection (ICNIRP), that apply to telecommunications in general apply to dish antennas. Because of the extremely low power levels and the focused nature of the beam, exposures from dish antennas will be very small fractions of the guidelines.

The consensus of scientific opinion across the world is that, below the ICNIRP guideline levels, there is no evidence of any adverse health effects due to exposure to radiofrequency signals.

Proximity to dish antennas

There is an area directly in front of an antenna where it is possible that levels might exceed the international guidelines, but with this type of equipment, this area is within the dish.

As dish antennas are mounted high up on rooftops or other structures, and because we are aiming for clear line of sight communications, dish antennas are not normally accessible by the public.

The mobile phone operators ensure that access points to base station sites are clearly signed to indicate the presence and nature of antennas and other radio equipment. Working procedures are in place to ensure that if anyone needs to access a rooftop, they are advised of the area of the roof to which access should be restricted. Should access be required to this particular area, for roof repairs for example, the mobile phone operator can be contacted on the telephone number displayed on the signage and, if necessary, arrangements can be made to disconnect the antennas for the duration of the work.


For further information please contact:

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