

Design, Access, Heritage and Supporting Statement for Application for Planning Permission

At

BT Communication Tower 60 Cleveland Street London W1T 4JZ



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1.0 Introduction

This design, access, heritage and planning supporting statement has been prepared by Harlequin Group on behalf of World Class Wireless (WCW). The statement has been prepared in support of the application to install 4 No. microwave transmission dishes at the BT Communication Tower, 60 Cleveland Street, London. This application is made under the Development Management Procedure Order (2010) and the Planning (Listed Building and Conservation Areas) Act 1990. The statement sets out the most relevant considerations in respect of the proposed development, providing context for the proposal, technical justification and planning constraints, policy guidance and discounting alternatives.

2.0 Proposals

This section sets the scheme to the proposal site, rational planning history and principle of acceptable development at the site and describes the proposed development.

2.1 The Site

The site is located within the London Borough of Camden, in a high density commercial landscape. The site is bordered on all sides by office buildings, some of which have also been granted listed status. The proposal site does not sit within a conservation area or any other area of planning constraint.

The BT Communication Tower is a landmark structure in the centre of London, designed by architects of the Ministry for Public Building and Works Department. The tower was originally commissioned by the General Post Office with the intention of being a centre of national and international telephone communication by ultrahigh frequency microwave transmission. The building was completed in 1964 and declared open in 1965. The tower has an overall height of 189 metres, constructed around a cylindrical tapered reinforced concrete centre to ensure maximum angle for transmission, whilst reducing wind resistance and consequent movement as far as practicable to maintain transmission signals. Attached to the reinforced concrete centre is a steel lattice cantilevered frame forming the main visible structure, this is finished in anti-sun glass. At the top of the structure there is a wider gallery section, previously hosting a revolving restaurant, above this there is a large advertising platform. The tower was granted Grade II listed status in 2003, for its significance to Britain's strides in the telecommunications sector during the 1960s.

Today the building is still very much in use, and houses a major central telecommunications hub for the UK. The telecommunications equipment installed on the building has been upgraded over the years to reflect the advances in technology, with the majority of the microwave transmission links now replaced with subterranean fibre optic links.

The application site is on the roof of the advertising section of the tower located at 166m above ground level. The area is an established telecommunications site, containing approximately 20



microwave transmission dishes of various sizes. The existing dishes are fixed to the tower by galvanised frame mounts from existing fixing points.

2.2 Proposal Background

This application is being submitted as part of a larger project to create several point to point microwave transmission links. The dishes proposed as part of this planning application would provide microwave transmission links to four other telecommunication sites. The bearings at which the dishes are to be installed would reflect the direction of the microwave transmission links.

2.3 Site Planning History

The BT Communication Tower has been subject to a high number of planning applications, the majority of which have been for additions and alterations to windows, advertising material and air conditioning units. Some of the more relevant and notable telecommunications applications have been summarised in the table below. The applications below demonstrate that the principle of telecommunications development at this site is firmly established.

Application Number	Proposal Description	Decision
2012/0048/P	Installation of 5 no Microwave Transmission Antennas to link with Telefónica Site at Bath Road, Slough, Equinix Site at 2 Buckingham Avenue, Slough and existing Arqiva mast in Basildon.	Granted
2011/3687/P	Installation of 4 dipole antennas mounted on a new climbable support pole positioned above the existing lattice stub tower and associated equipment to include 3 new GPS antennas at the top of the tower and 2 new dishes above the BT advertising platform.	Granted
2011/1079/P	Removal of aerial/satellite equipment in connection with the erection of a temporary scaffolding and loading platform for a period of 6 months to Telephone Exchange building.	Granted
PS9705137	Installation of seven satellite dishes on 4th floor roof of the West Block roof, as shown by drawing number 6KN E 0R1 002 01 and Two A4 sized photo montages.	Granted (with conditions)
PSX0105042	Satellite dish installation, as shown on drawing numbers; 6KN E OR1 005 01 & 02 & 03 & 6KN E OR1 002 01; Steelwork layout; L00122/01&02	Granted (with conditions)



2.4 Proposed Development

The telecommunications apparatus proposed to be installed as part of this application consists of 4 No. microwave transmission dishes, all to be installed on the tower at a height of 166m, on the advertising section roof. The proposed development consists of 2 No. 0.9m DIA dishes, proposed to be installed at bearings of approximately 267 and 109 degrees, 1 No. 1.8m DIA dish proposed to be installed at a bearing of approximately 73 degrees, and 1 No. 0.3m DIA dish proposed to be installed at a bearing of approximately 104 degrees. The dishes would be standard round microwave transmission dishes finished white in colour.

The dishes would be fixed to the tower in the same method which the existing dishes are fixed; by a combination of galvanised steel frame mounts attached to existing fixing points on the tower. Details of the specific location of the dishes and fixings used can be seen in drawing No. 4004327 SHT 2 OF 4 dated 06/11/12.

Associated electronic equipment and cabling would run through the existing cable trays on the tower, running internally to the "sharers" equipment room, where the electronic operating equipment would be stored.



Plate 1; Example of fixing and cable run on top of the advertising section of the BT Tower. (R4 Telecom, 2012)

The height, location and bearing of the proposed dishes have been determined by the need to ensure a clear line of sight path between the connecting microwave transmission links. Lower locations on



the bare central section of the tower have been deemed technically unviable as obstructions would not allow clear line of site between the linking sites.

2.5 Local Engagement

The proposed development is a point to point pencil beam private communication transmission link. This system works point to point only relying on clear line of sight between the links. Considering this the proposed development is safe by design. The equipment proposed is compliant with the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and a certificate of compliance is attached as part of this application. Considering the nature of the proposals on an existing telecommunications site, and that all equipment is point to point communication which are non-radiating, no further consultation has been deemed necessary.

3.0 Planning Policy Appraisal

This section sets out the most relevant national and local planning policy concerning the proposed development. This section then goes on to analyse planning policy in relation to the proposals within the context of the site.

3.1 National Planning Policies

The Government published the National Planning Policy Framework (NPPF) in March 2012. The document sets out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. Paragraph 14 notes that this principle should be seen as "a golden thread running through both plan-making and decision making."

From a telecommunication perspective core principle 5 of the NPPF, entitled 'Supporting High Quality Communications Infrastructure' superseded PPG8: Telecommunications. The framework states that the development of high quality communications networks is fundamental to securing both economic and social wealth. Core Principle 5 also states that, when preparing local plans, authorities should support the expansion and upgrade of communications networks. Whilst the Government accept that the communications network is essential, it also recognises that the network should be kept to the minimum number of sites required to provide the high quality service required. Use of existing buildings and high structures should be favoured over the development of new sites.

From a heritage perspective the NPPF supersedes PPS5: Planning for the Historic Environment. Chapter 12 of the NPPF relates to the conservation and enhancement of the historic environment.

The key paragraphs of relevance to the determination of this application for planning permission with listed building consent are as follows:



- 1. Paragraph 128, which requires applicants to describe the significance of the heritage asset affected:
- 2. Paragraph 131, which sets out three factors that Local Planning Authorities (LPAs) should take into account when determining applications. These factors relate to:
 - sustaining and enhancing the significance of heritage assets;
 - the positive contribution the conservation of heritage assets can make to sustainable communities; and
 - the desirability of developments making a positive contribution to local character and distinctiveness.
- 3. Paragraph 132, which requires that when considering the impact of a proposed development on the significance of a heritage asset, great weight should be given to the heritage asset's conservation;
- 4. Paragraphs 133 and 134, which requires applicants to consider whether a proposed development leads to substantial harm or total loss of a designated asset. Depending on the outcome of this assessment, the paragraphs provide guidance as to whether this harm can be justified or not; and
- 5. Paragraph 137, which whilst not directly relevant to the application proposals, supports proposals that better reveal the significance of the asset.

3.2 Local Planning Policies

The London Plan adopted in July 2011, provides the spatial development strategy for Greater London. Policy 7.8 describes that in determining planning decisions local authorities should consider whether proposed development identifies, values, restores, re-uses and incorporates heritage assets. Development affecting heritage assets should conserve their significance, whilst being sympathetic to their form, scale, materials and architectural detail.

Policy 7.11 of the London Plan details the strategic need to protect views which make a significant positive contribution to the image and character of London. The BT Communication Tower lies within the strategic view between Parliament Hill and the City. Policy 7.12 sets out procedures and guidance for implementing the London View Management Framework. This states that new development should not harm, and where possible should make a positive contribution, to the strategic views and their landmark elements. Policy 7.12 also sets out criteria for considering planning applications which may impact upon protected vistas.

The London Borough of Camden (LBC) set out their overarching vision for the Borough within their Core Strategy adopted 8th November 2010. This forms the central part of Local Development Framework for the borough. The most relevant of the Core Strategy's policies to this proposal is CS14: High Quality Places and Conservation of Heritage. Part b) of this overarching policy sets out that LBC wish to preserve and enhance their listed buildings and heritage assets, such as the iconic BT Tower.



LBC's Development Policies were adopted as part of the Local Development Framework on the 8th November 2010. These provide the detail for how the LBC will assess applications for proposed development and achieve the vision set out with the Core Strategy. The most relevant planning policies in relation to the proposals are DP24: Securing high quality design and DP25: Conserving Camden's Heritage.

DP24 sets out the all development including alterations to existing buildings should be of the highest standard and consider the context of the building, quality of materials use, appropriate location of building services.

DP25 details how LBC will conserve local heritage, including conservation areas and listed buildings. The key statements within this policy are that LBC will "not permit development outside conservation areas which causes harm to the character and appearance of the conservation area" and, in respect of the preservation of listed buildings, the "Council will only grant consent for…alterations…to a listed building where it considers this would not cause harm to the special interest of the building".

3.3 Policy Analysis

This section analyses the proposals in context of the most relevant planning policies highlighted in section 3.2.

3.3.1 Heritage Assessment

The following sections explore the historical significance of the grade II listed BT Tower and examine the impact of the proposed development on the proposed additional dishes on the tower. In order to establish whether the proposed development meets the defined planning policy framework it will be necessary to consider the following issues:

- 1. What is the significance of the tower?
- 2. How is it best to sustain and enhance the significance of the tower? How is best to reveal the significance of the tower?
- 3. Will the proposed development result in substantial harm to the tower? If yes is there sufficient justification for this harm? If the answer is no any resulting harm should be balanced against the benefits of the proposal.

3.3.1.1 Significance of the BT Communications Tower

Paragraph 128 of the NPPF sets out that the significance of the heritage assets should be assessed by potential applicants, with regard to the potential of the applications impact upon the asset. The BT Communication Tower represents an iconic symbol within the London skyline. The building was the tallest building in London between 1964 and 1980, being designed and built for the purpose ultra-high



frequency microwave transmissions. Built to cater for the exploding demand for both public and private communication from the 1960s onwards, the tower is a symbol of Britain's progress during this era.

The building's design was based around the philosophy of form following function, with design ensuring the building had rigid strength reducing any flexing under wind load as far as practicable. This was to ensure the pencil beam microwave transmission links were not broken during poor weather conditions. This utilitarian function follows throughout the steel cantilever lattice, through to the anti-sun glass used on the external shell.

The building itself provides, through its slim structure a significantly positive contribution to the local skyline. Although the microwave transmission dishes previously located the central part of the structure have now been removed, the building itself still hosts microwave transmission equipment. This equipment is now sited on the roof of the BT advertising section above the gallery, due to the requirement to provide line of sight links.

From this brief summary and from the listing statement, it is clear that the significance of the BT Communications Tower is primarily associated with its historical interest being a symbol of the "white heat of technology" era of telecommunications in Britain.

3.3.1.2 Heritages Asset Planning Considerations

As mentioned in section 3.1 – paragraph 131 of the NPPF sets out three issues that local planning authorities should take into account when determining applications relating to heritage assets. These issues relate to;

- 1. Sustaining and enhancing the significance of heritage assets,
- 2. Positive contribution that the conservation of heritage assets can make to sustainable communities.
- 3. The desirability of developments making a positive contribution to the local character and distinctiveness.

Linked to the requirement to enhance the significance of heritage assets, paragraph 137 supports proposals that better reveal the significance of a heritage asset.

The significance of the heritage asset in the instance of the BT Communications Tower is that it is a landmark structure with historical importance in relation to British telecommunications history. The historical significance is linked directly with the evolution of ultra-high frequency microwave transmission.

To 'sustain/'keep in existence'/ 'maintain' the significance of the tower it will therefore be necessary to:

1. Protect the physical structure, limiting the potential for damage both in the short and long term. By protecting the structure, the significance of its architectural value will be sustained.



The proposals would assist to facilitate this by providing income for the owner, ensuring the up-keep and future maintenance of the asset.

- Keep a functional relationship between the structure and microwave telecommunications in order to sustain its historical and functional significance. The proposals would enable the future of the site to be secured with the on-going use of the tower for its original purpose as a microwave transmission facility.
- 3. Ensure that the tower remains visible on the London skyline. The proposals would not have any significant impact upon the setting of the structure within the London skyline and as such would not harm the setting or the character of the building. The dishes all would not be any larger than the largest of the existing dishes, as such would not have a negative impact upon the structure.

The NPPF requires LPAs to consider how the conservation of a heritage asset can make a positive contribution towards sustainable communities, including their economic viability.

It is considered that the proposals can contribute towards creating and maintaining sustainable communities through the protection of the BT Tower. As discussed previously the tower has much historical and cultural value, which would be sustained and potentially enhanced by the proposed development. In this context, it is clear that the positive financial contribution and functional tie of the development can contribute towards enhancing the social sustainability of both Camden and the wider London area.

The proposed addition of microwave transmission dishes on the tower would help to sustain the positive contribution that the tower makes, in historic, technological and architectural terms, to the character and distinctiveness of Camden and wider London area.

In summary, in our view, the installation of additional dishes on the tower would sustain and enhance the asset more than if the development were not permitted. The proposed development would generate income for the upkeep and on-going maintenance of the structure. This would protect the tower in respect of its importance in the protected views across London and assist in maintaining the city skyline. The tower itself is a symbol of technological advancement and British engineering ingenuity. The proposals would assist in retaining a functioning relationship between the structure and its historical significance for microwave telecommunications. In maintaining this relationship and facilitating the on-going protection of this asset, the proposals would help to ensure the benefits of London's cultural heritage are maintained assisting the creation of sustainable communities.

The planning application and listed building consent proposals are therefore considered to be in accordance with Paragraphs 131 and 137 of the NPPF and also in accordance with Development Plan policies (Camden Core Strategy Policies CS14, Development Plan Policies DP24 and DP25, and London Plan Policy 7.8).



3.3.2 Operational Need (Technical Justification)

NPPF Core Principle 5 (2012), as discussed above, sets out the most relevant legislation in relation to telecommunications development. The NPPF in paragraph 46 states that authorities should not question the need for the telecommunications network for which the proposed development is to support.

Paragraph 43 of the NPPF states that the applicant should "keep the number of radio and telecommunications masts to a minimum consistent with the efficient operation of the network", and explore existing telecommunications sites and structures prior to developing new sites. The proposal is to install 4 No. microwave transmission dishes, as part of a wider project to create a microwave transmission link to facilitate private communication. These work on a point to point pencil beam in a forward direction only between the links. The height and size of the dishes have been determined by the technical need to maintain line of sight and the distance between the receiving and transmitting microwave dishes. The height and size of the dishes in this location facilitate the minimum number of links being required to deliver efficient operation of the microwave transmission link.

Paragraph 45 sets out that authorities should ensure proposals comply with International Commission on Non-Ionising Radiation Protection (ICNIRP) guidelines and applicants should consult where necessary. The proposed development being a point to pint pencil microwave beam is considered safe by design in terms of compliance with the ICNIRP guidelines, as radiation would not be emitted apart from in a forward direction between the microwave links. Considering that no radiation is emitted beyond the pencil beam itself there would not be any impact beyond this, as such no further consultation was deemed necessary. On this basis the proposals are considered to fully comply with paragraph 45.

Considering the above, the planning application and listed building consent proposals would fully comply with telecommunications planning policy objectives set out in Core Principle 5 of the NPPF.

3.3.3 Visual Impact

The proposed development consists of the installation of 4 No. dishes to be fixed onto the BT Communication Tower at a height of 166m above ground level. The tower is an established iconic building purpose built for housing telecommunications apparatus and is recognised for its significance in its Grade II listing (2003). The tower also falls within the Strategic View from Parliament Hill to the Palace of Westminster protected through the London Plan under policies 7.11 and 7.12 (2011).

The proposal would site additional telecommunications equipment in an area of the tower with approximately 20 existing transmission dishes. The proposed dishes are of standard design which would match the existing telecommunications equipment, therefore respecting the type and nature of the listed structure. The proposed height and location of the dishes, set back from the main gantry edge, would be visible in long views of the BT Tower from the east and west, but not visible in short views due to obstructions. In these long views, the impact of the dishes is considered to be minimal given they are observed in context with the existing communications dishes.



Whilst it would be favourable to site the equipment in the lower sector of the tower designed to host large telecommunications dishes, this is not technically possible. Line of sight needs to be achieved in order for the microwave transmission dishes to operate. Line of sight and radio trials have been undertaken at site to ensure an acceptable radio signal for efficient communication is attainable. The result of these tests highlighted that 166m would facilitate the desired links. Furthermore, the principle of telecommunications dishes located at this level on the tower has already been established.

In respect of the impact of the listed structure the addition of extra dishes to the tower would, in my professional view, restore the functional link between the tower and its historical significance as a symbol of technological advancement. The proposals therefore would enhance the significance of the heritage asset.



Plate 2: Protected view from Parliament Hill to the Palace of Westminster. (London Plan, 2011)

In terms of the impact upon strategic views the proposed development would not protrude beyond the BT Tower building line, as such there would not be any significant impact upon the strategic views. Given the size and positioning of the dishes, and length of the strategic view, it is considered that no discernible impact would be perceived. In terms of the visual impact of the dishes on the landmark BT Tower, the proposals would, in my view, add context to the landmark by restoring its functional and historical significance as a symbol of telecommunications technology. Considering this the proposed development would accord with the principles set out within London Plan Policies 7.11 and 7.12 (2011).

In conclusion the 4 No. dishes mounted at 166m are not considered to have a significant visual impact upon either the local area or the character of the listed building. In my professional view, the dishes would be in keeping with the special character of the building, enhancing its telecommunications presence, therefore according with the principles of Development Plan policies (NPPF Core Principle 5 (2003), Core Strategy Policy CS14 (2010), Development Policies DP24 and DP25 (2010) and London Plan Policies 7.11 and 7.12 (2011))



3.3.4 Alternative Options

The proposed development would make use of an existing telecommunications site at the height required to create a microwave link communications system across London. Considering the proposed development would be a site share, and that in selecting an existing site with height of 166m the number of linking in the microwave transmission chain is kept to a minimum, the proposed development is considered to fully accord with the most relevant telecommunications planning policy set out with NPPF Core Principle 5 (2012). On this basis, the proposal site is deemed to be the optimum site for the development and considering the proposals accord with policy no alternatives have been assessed.

4.0 Access

The proposal would be located at 166m AGL on the roof of the gallery section of the BT Tower. There is no public access to the proposals site for safety reasons. Vehicular access to the site is gained from the north-west, on Cleveland Mews. Once installed and aligned the equipment can operate with minimal maintenance, which only would be required if the transmission link were to fail.

5.0 Health and Safety

Telecommunications planning guidance states that it is not for local planning authorities to seek to replicate, through the planning system, controls under the health and safety regime as it is a matter for the Health and Safety Executive.

The Government guidelines state that provided a proposed base station meets the ICNIRP guidelines for public exposure, then it should not be necessary for the local planning authority to consider the impacts of health concerns.

In this case the equipment is safe by design given that the microwave transmission link works on point to point pencil beam in forward direction only. No radiation is given off away from the pencil beam. Considering this it is confirmed that the proposed equipment and installation complies with ICNIRP guidelines and a certificate of compliance has been submitted in support of this application.

6.0 Conclusions

The proposed developments purpose is to make use of the existing telecommunications facility. Whilst the proposals are on an iconic listed building within London, the historical significance and bespoke design of this building is for the sole purpose of telecommunications use. In 2011 the large central microwave antennas were removed from the tower as they became obsolete and a health and safety risk.

The proposals seek to install modern telecommunications microwave dishes at 166m, above the gallery area of the building, sited amongst approximately 20 other users' communications equipment.



The proposals would be of standard microwave transmission dish design similar to the existing dishes. The proposals, whilst not being sited in the previously used lower section of the tower for technical reasons, would facilitate the further re-use the heritage asset. The size of the dishes proposed and the location above the gallery section would not protrude beyond the building line, as such are not considered to have an adverse impact upon the listed structure. The proposals, to the contrary, would have a positive impact upon the structure by assisting to reform the functional link between the structure and its historical significance. Furthermore the proposed development would provide rental income which would be used for the on-going upkeep and maintenance of the structure. Considering this the proposals would help to protect the listed asset. Considering this the proposals would accord with policy tests set out within the Development Plan.

In terms of visual impact, the proposal would site the new equipment in an area already being used for hosting telecommunications equipment. The proposal is not considered to have a significant impact above and beyond that being caused by the existing equipment. The proposed dishes would not be overly prominent in many immediate views of the tower given the height and obstructions to views by existing streetscape. Only long views would be impacted, but in this context the equipment would be viewed with existing telecommunications equipment, as such it is not considered these views would be detrimentally impacted. Strategic protected vistas also are not considered to be impacted by the proposals given the development would not project from the building line and as such would not impinge on the vistas. Likewise the impact upon the London skyline would not be impacted for the same reasons.

Alternative options to this site have not been explored as the site is considered to fully conform with both technical requirements and planning policy. The alternative would be to create a new telecommunications site at the same height in the near vicinity, this would not be acceptable in principle.

On this basis, given all key policy considerations have been fully assessed, the proposed installation of 4 No. dishes including ancillary cabling and equipment's on the existing telecommunications site above the advertising level of the BT Communications Tower is considered to fully conform with the Development Plan.



Appendix 1 Listing Statement

TQ2981NW CLEVELAND MEWS 798-1/98/10169 (Southwest side) 26-MAR-03 BT Communication Tower

Grade II

Radio tower, proposed 1954, built 1961-5 to the design of the Ministry of Public Buildings and Works Architect's Department; Eric Bedford Chief Architect, G R Yeats, senior architect in charge; S G Silhan, senior engineer MPBW, structural engineer; J J Taylor, senior engineer MPBW, services engineer; Kenneth Holloway, Post Office engineer.

Sleek reinforced concrete cylinder, board mark finished to lower 130 feet and 582 feet high, with 40ft mast on top. Reinforced concrete floors. Deep raft foundations. Central chimney like shaft of reinforced concrete, the upper section 22ft in diameter and with walls one foot thick, tapering outwards to 35ft external diameter at base with 2ft thick walls. The lower seventeen floors of equipment rooms, ventilation plant and offices clad in triple curtain wall comprised externally of stainless steel glazed with Antisun glass. 103 feet of hospitality floors at top of tower, on six levels, originally with observation floors, restaurant and kitchen, and with three further storeys housing plant room above. The aerials and dishes had to be mounted between 365 and 475 feet to achieve adequate ground and obstacle clearance, and were mounted on circular galleries to give the maximum flexibility for adjustment and for subsequent new equipment. The circular shape dictated by the aerials has been retained in the remainder of the tower, to maintain consistency of form and to provide minimum wind resistance. Because of the building's taper the lower five floors are substantially smaller. Ground floor entrance on Maple Street leads to tower foyer, with exhibition space on concave link floor above. Lift lobbies lead to 65ft diameter restaurant floor which originally revolved once every 25 minutes, with former cocktail lounge and weather station above. The building, originally with public access to galleries and restaurant, now serves only BT's guests. The interiors have been entirely refurbished. The telecommunications and servicing equipment is not included in the listing.

The BT Tower was built as a centre of national and international telephone communication by ultra high frequency (UHF) microwave transmission. The site was chosen at the rear of the Museum Telephone Exchange, because this exchange was already the focal point of the telecommunications system and the vision cables network for London, with cable connection to Broadcasting House (q.v, City of Westminster). However, as telephone use soared in the 1950s, and was correctly predicted to increase still more quickly in the 1960s, it became increasingly difficult to provide



adequate cable links in central London. Radio telephones using low frequencies had long been used, but the use of high frequencies was in its infancy, and this commitment to the use of high frequencies on a potentially massive scale placed the tower at the forefront of international design. 'It will represent a considerable advance on any existing international centre' (Institution of Civil Engineers, 1965, p.33). The sensitive equipment meant that the tower had to be exceptionally stable to maintain the accuracy of the narrow beam transmitters. By means of tests in the National Physical Laboratory wind tunnel, it was stiffened so as to deflect only eleven inches in a hundred mile an hour gale. The cylindrical shape reduced wind resistance.

The height was raised to over 580 feet as building commenced, in order that the tower should be taller than the office buildings then being erected in London. Its waves were relayed across Britain via a series of masts, the nearest being at Harrow. The design was carefully considered for its elegance. 'The massing is a very welcome addition to the urban landscape' (Architects' Journal, 22 June 1966, p.1543). The design to include restaurant facilities was made only in mid-1961, and is part of a movement across North America and central Europe in favour of landmark restaurants connected with radio masts. However, the comparable, slightly earlier towers at Dortmund, Stuttgart and Vienna were only television transmitters, and the Space Needle at the Seattle World's Fair (opened 1962) was principally a place of entertainment. The restaurant and observatory floors give stability to the structure, and raised the Post Office's image when first built. The observation floors were closed to the public in 1971, and the restaurant in 1980.

Office building along Cleveland Street and Maple Street forms a visula plint to the tower with a supporting link on the fourth floor, but it has its own entrance on the corner of Cleveland Street and is not itself of special interest and not included in the listing.

The Telecom Tower was originally known as the Museum Radio Tower, and subsequently the Post Office Tower and Telecom Tower.

Sources Official Architecture and Planning, September-October 1961, pp.412-13 The Builder, 7 August 1964, pp.265-8 L R Creasy, H C Adams and N Lampitt, Museum Radio Tower, paper no. 6822, London, Institution of Civil Engineers, London, 1965, Architectural Review, August 1965, p.123. Architect and Building News, 25 May 1966, pp.939-44 Architects' Journal, 22 June 1966, pp.1537-49 'The Post Office Tower', in The Journal of the London Society, no.377, December 1966, pp.107-116

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