DESIGN AND SUPPLY OF MASTS AND TOWERS

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**RAMBOLL IS RANKED AS THE NO. 1 DESIGN FIRM IN THE WORLD WITHIN ANALYSIS, DESIGN AND CONSTRUCTION OF MASTS AND TOWERS**

Masts, towers and poles are essential elements in telecommunication networks and constitute a major part of the total investments. By selecting their preferred structural solution from Ramboll’s designs, our clients are able to achieve significant savings on total site costs. As a special service to our clients, Ramboll also offers to arrange the supply of our cost efficient optimised towers and masts following our high standards.

**Ramboll is an expert in analysis and design of masts, towers and poles**

Today none of us can enjoy modern life even for a single day without being able to communicate with each other or receiving information from radio and TV. Nevertheless, very few of us recognize that these modern conveniences are literally supported by masts and towers properly designed, constructed and maintained for that particular purpose. This is what we do.

Ramboll is ranked as the no. 1 design firm globally by ENR. Established in Denmark in 1945, Ramboll is today a leading international consultancy with a staff of more than 12,500 dedicated experts. As part of our broad range of consultancy services, we have special expertise and experience in telecommunication masts and towers. Ramboll’s first assignments in 1945 involved masts and towers, and we have ever since been heavily engaged in the analysis, design, construction and inspection and maintenance of masts and towers worldwide. Today, we are ranked as the no. 1 design company globally within this field by ENR.

Around 25,000-30,000 masts, towers and poles all around the world have been designed by Ramboll. Extensive engagement in international standardisation along with R&D ensures world-class designs.

**Our designs are based on 70 years of experience**

Today, Ramboll’s design philosophy is well known in the global telecommunication industry. With a constant focus on reducing the total site costs for our clients, our masts and towers have been optimised with regard to minimising wind load, foundations, logistics and installation time, while maintaining high quality at all times.

The experience gained from inspections of masts and towers during operation makes up an important part of Ramboll’s design procedures, including the careful detailing of vital components and connections. One example is the guy tension systems which have been developed and improved over the years.

**We tailor make our solutions to suit your needs**

If a large number of structures is needed, typically more than 20 of the same type, there is a long list of cost saving arguments to choose a tailor-made design instead of buying standard solutions:

- Optimised design – means that our clients get a cheaper structure and do not pay for strength, stiffness or special geometry which is not required.
- New innovations and easy production methods ensure that our design always takes into account the latest development reducing production costs,
- Less expensive overall solution – not only are the structures less expensive, but installation, foundations and maintenance are also encompassed in our design resulting in lower site costs,
- Tailor-made design means no dependency on single producers, which makes it possible to always buy the same structure from the least expensive manufacturer.

If the requirement is only a few structures, we recommend buying one of our standard solutions that comes closest to fulfilling the requirements. As a part of our services, we naturally offer our full cooperation in selecting the exact structure type to suit our clients needs.

**Antennas and feeders**

The primary function of telecom masts and towers is to carry antennas and their feeders. Therefore, special attention is given to the mounting possibilities for antennas in the structure as well as for the feeders and cables. The cable ladder is typically designed as an integral part of the climbing ladder, and allowing fixing of cables and feeders on both sides gives possibility of mounting a large number of cables.

**Safe access**

The masts, towers and poles are equipped with fall arrest systems or back guards according to the requirements to ensure safe access in the structures. If requested, resting platforms and working platforms can be installed in order to prevent non-authorised access to the structures can be equipped with anti-climbing devices.

**Our masts, towers and poles are produced globally**

Our designs are produced by quality manufacturers in several countries, and we make sure that the structures are optimised especially for our clients projects and in high quality.

Several of our clients purchase the specific optimised structures directly from our partners or obtain the right to have their masts and towers produced at their preferred manufacturers.

**Ramboll is a truly multidisciplinary consultancy**

Being a multidisciplinary engineering consultancy, Ramboll can undertake all engineering services and special analyses that may be needed the field of within telecom infrastructures. For masts and towers, this may involve geotechnical evaluations and designs, electrical and power evaluations and solutions, inspection during manufacturing and installation, etc.

We can of naturally also undertake the project management of major network rollouts.

**More information**

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