



WIND TURBINE MASTS

The CU Phosco Lighting design team have a wealth of experience in the renewable wind turbine energy market. The product portfolio outlined below gives a basis from which we can further develop our design offerings to suit individual requirements, or manufacture current product designs dependent on the operating criteria of the turbine.

Design calculations and checks must be undertaken to ensure the integrity of the mast structure and the interaction between the mast and turbine. These are calculated in-house by our team based on the key turbine information provided to us. Results from these calculations will define which product options are available to purchase. Whatever your requirements our team of designers will advise you and support you through the product choices.

The vast majority of our wind turbine structures are manufactured from folded sheet steel and finished with hot dip galvanising. They are of a tapered design supplied in two or more sections with site laps for tiring the sections together. This makes the mast easy to transport and erect at many different locations.

STATIC MASTS

Height Range: 6m – 50m

ROOF MOUNTED STATIC MASTS

Height Range: 3 – 10m

Static mast systems offer a competitive solution for wind turbine mounting. Access to the turbine can be made via crane or the mast can be manufactured with exterior climbing rungs. Static masts are popular for turbines that have a heavy head loading and therefore cannot be approved for raise and lower mast systems. Site suitability for crane access must be considered. For roof mounted masts the building's structural integrity should also be measured.

HYDRAULIC BASE HINGED MASTS

Height Range: 6m – 18m

This system allows the raise and lower of the mast through use of a hydraulic ram. The hydraulic ram fits between the base pedestal and the lower section of the mast structure providing a controlled lift and lower option. An on site power supply or generator must be available for the ram operation. This system offers a quick, safe solution for turbine access and maintenance. Hydraulic masts should not be left in a lowered position for prolonged periods of time as this can affect the alignment of the mast and pedestal.



Clevely's Promenade, Lancashire (by kind permission of Quiet Revolution Ltd)

GIN POLE MASTS

Height Range: 6m – 20m

Gin pole masts offer a manual operation to raise and lower the turbine. The mast structure is static in design with the inclusion of lifting lugs at the base. Two tubular steel poles fix to an anchor plate on the foundation and the mast is raised and lowered by the use of wire lifting ropes which sit between the turbine mast and the tubular poles. Gin pole masts are ideal for use on sites where power is unavailable.

MAST FOUNDATIONS

Foundation sizes and design vary with each mast design. Depending on mast height and head loading these foundations can consist of M27, M30 or M39 studs, nuts and washers. Setting templates for stud assembly and alignment are included. Each design is calculated and manufactured in-house to be supplied with the mast structure. Ground conditions and site suitability are the responsibility of the purchaser; advice should be sourced from a certified Civil Engineer.