



Pylon design competition, UK

- “Leaf” concept works in harmony with natural landscape
- Resists wind loads due to column and oval shape
- Easily maintained through shape and access ladders
- Protected against lightning and corrosion.

The competition challenged the industry to come up with proposals for a new generation of electricity pylons that addresses the needs of communities whilst preserving the beauty of the countryside.

The existing 84 year old design was developed by Sir Reginald Blomfield and was iconic both for its time and the UK's landscape. With more than 88,000 in the UK, the competition is focused on creating a lasting and sensitive legacy.

Drawing inspiration from the natural environment and using a degree of simplicity, the leaf concept works in harmony with the natural landscape. Structurally, the leaf resists applied wind loads due to the inherent

stiffness of the cylindrical shape. It also allows for the use of other materials such as aluminium or carbon fibre.

Maintenance is easy through access ladders which provide greater safety and security against elements than the current design. Wind loads are transferred down via the piled foundation and resist compression and tension forces, while being individual to local soil conditions.

Lightning protection is also assured through the use of 35 degree earth wires and the shape of the structure which gives good electrical separation. Horizontal units provide a streamlined profile and insulate to prevent flashover.

Client
RIBA

Department of Energy and
Climate Change
National Grid

The challenge

To design the new generation of electricity pylon

Completed
July 2011

 Utilities and
Infrastructure

Professional Services

Case study



The challenges

Environmentally sensitive

Design response

Our design uses the natural environment for inspiration; combined with an equal degree of transparency, the “leaf” concept works in harmony with the natural landscape.

Benefit

Combines functionality with an enduring design which mirrors the natural landscape and seeks to explore the relationship between our energy infrastructure and the environment within which it is located.

Durable

Structurally, the leaf resists applied wind loads due to the inherent stiffness of the cylindrical shape. The design also allows for the use of other materials such as aluminium or carbon fibre.

The design is structurally strong as well as aesthetically inspiring. The combination achieves the lifecycle of a pylon and allows for changing materials depending on geographic location.

Safe and secure

The 35 degree earth wires provide lightning protection and the shape of the structure gives good electrical separation and ease of maintenance. Horizontal units give a streamlined profile and insulate to prevent flashover.

Cylindrical shape provides resistance to wind loads and protection against lightning, whilst ladders enable safety and security against the elements.

Flexibility

The skeletal frame of the leaf is in proportion to support the symmetrical variations of the cable from single to eight. The carbon fibre clad in three colours for visual flexibility. Green for the countryside, sandy in a coastal environment and light grey in mountain terrain.

Colour variations in the landscape give visual blending with the environment and are sympathetic to the visual impact.

Maintenance

Access ladders are provided within the cylindrical structure making maintenance more accessible and protected against the elements.

Maintenance is easy and operatives are protected against the elements within the enclosed ladders and spaces. This provides greater safety and security against elements than the current design.

Get in touch
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