

30 St Mary Axe

Architect

Norman Foster
Ove Arup & Partners

Landscape Architect

Derek Lovejoy

Engineer

Hilson Moran

Structural Engineer

Arup

Electrical Engineer

Speirs and Major

Construction Company

Skanska

Designed in

1997

Built in

2001 - 2004

Height

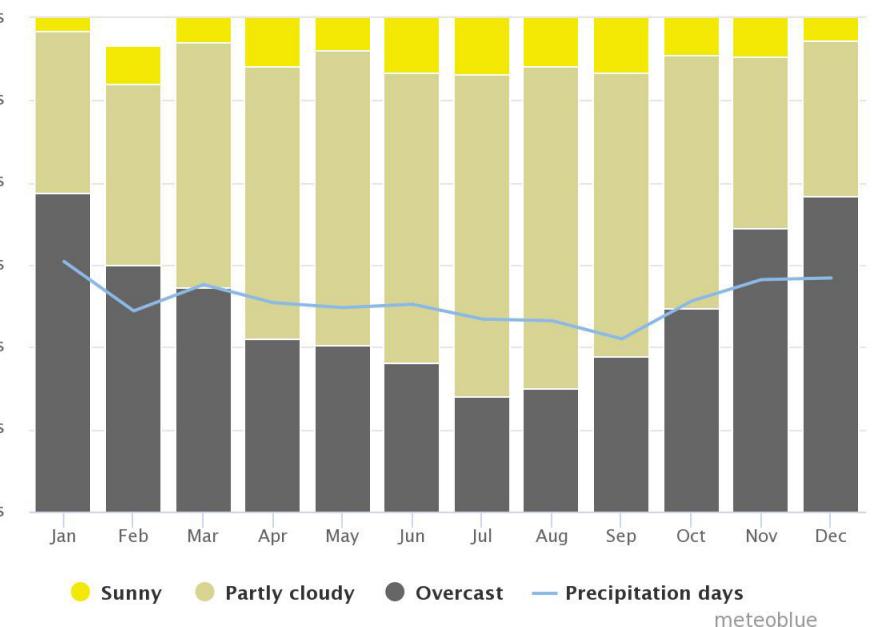
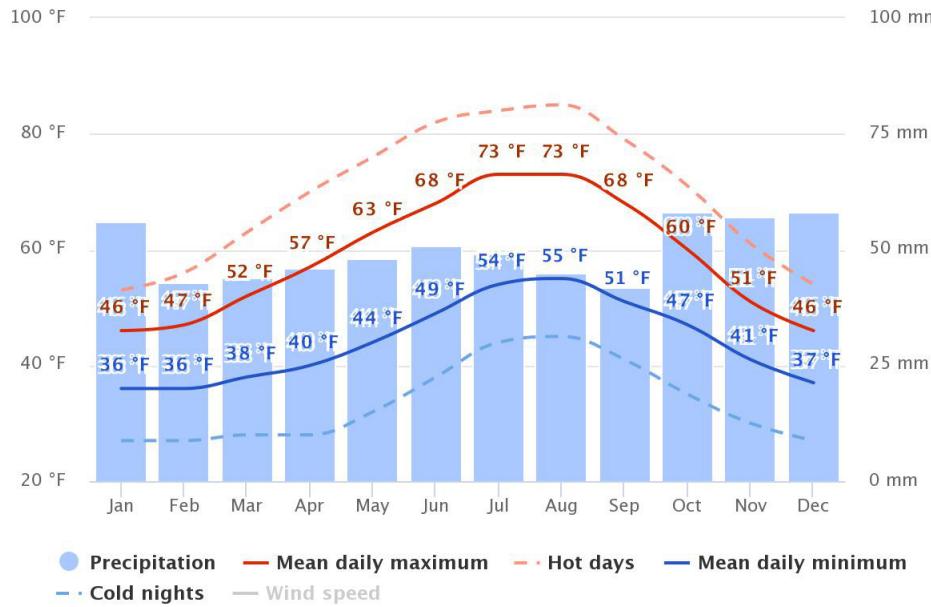
180 m

Top Floor Height

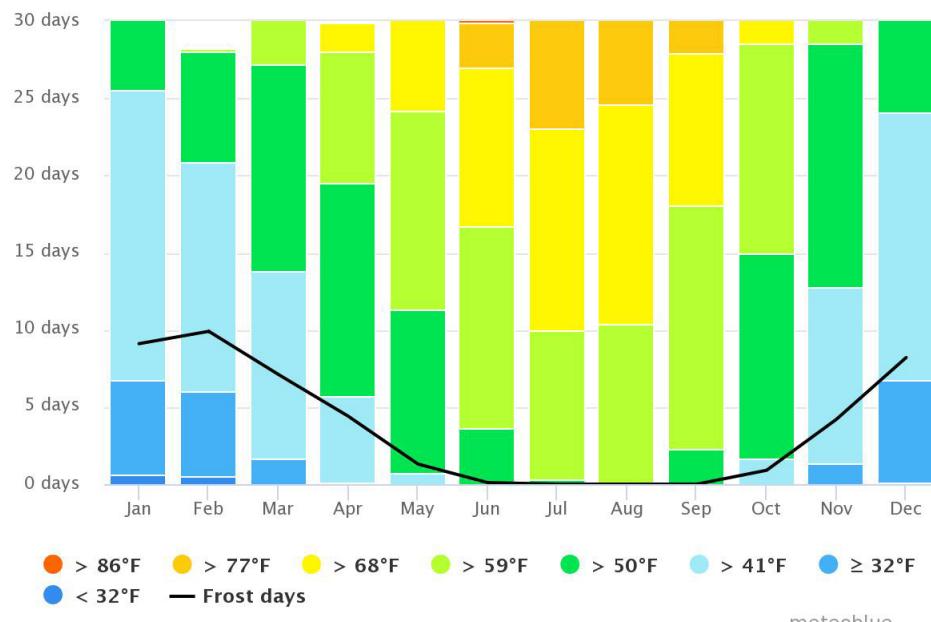
167,1 m

Location

London, England

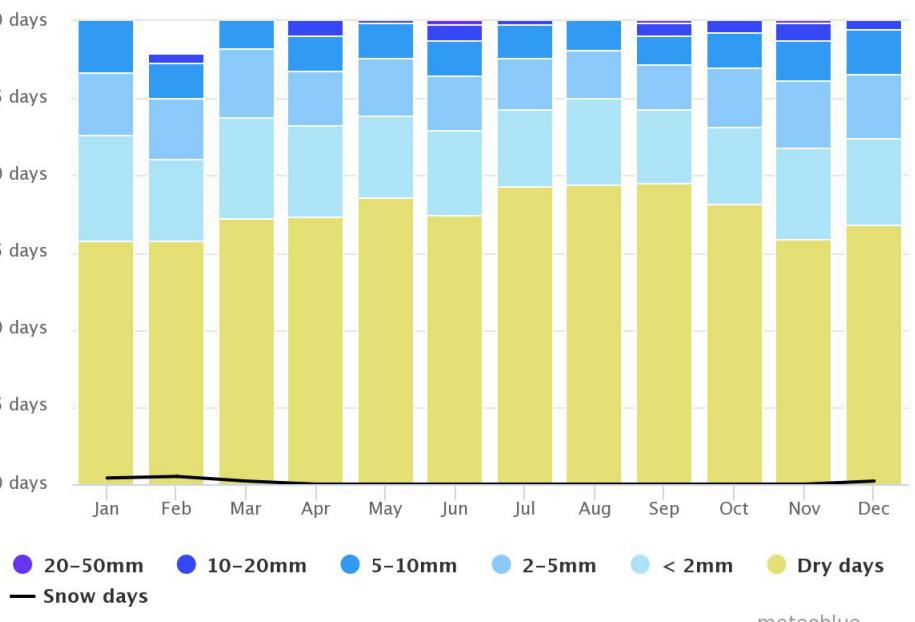


Average temperatures and precipitation

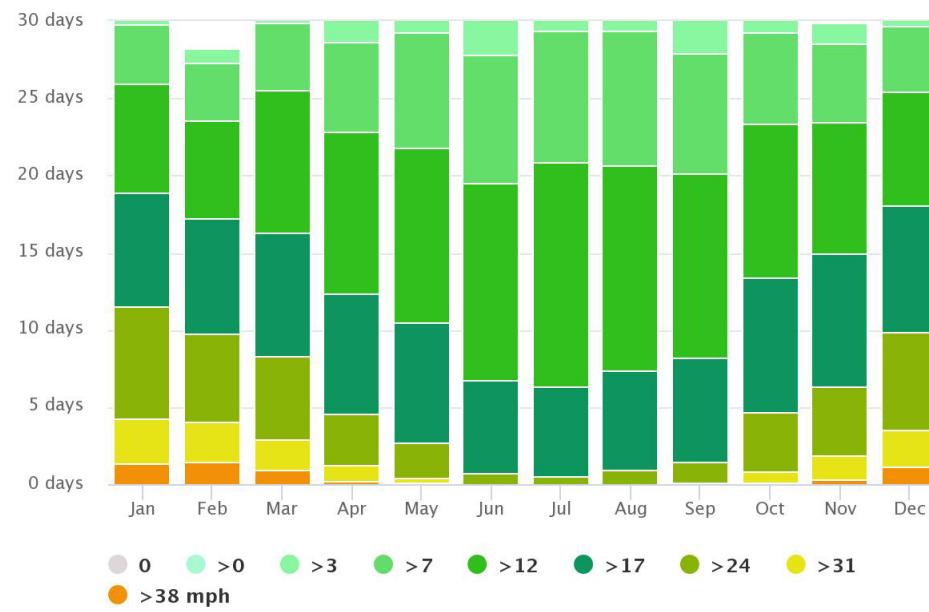


Maximum temperatures

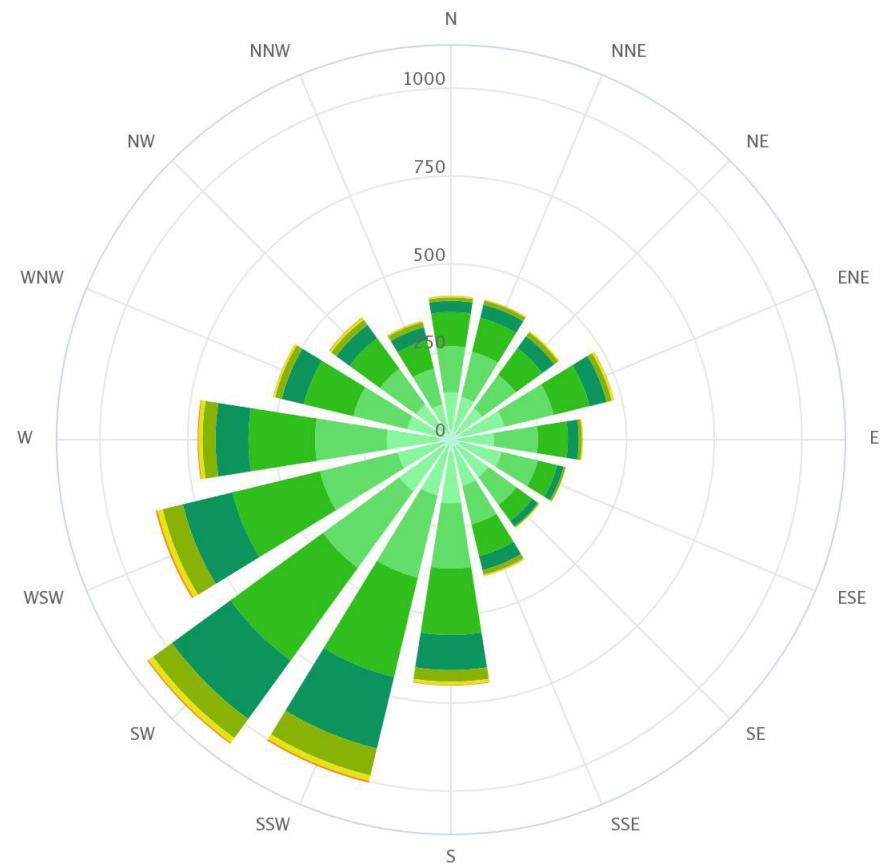
Cloudy, sunny, and precipitation days



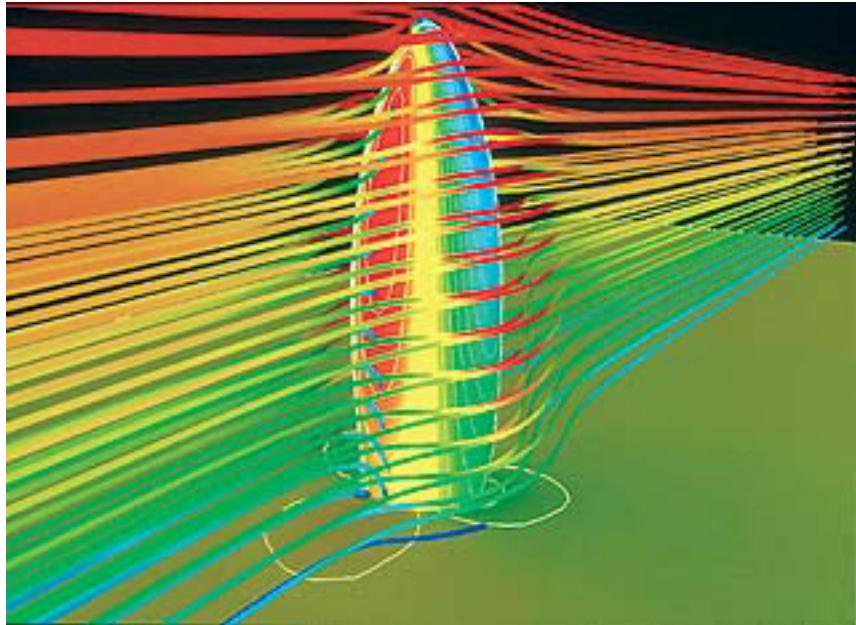
Precipitation amounts



Wind speed

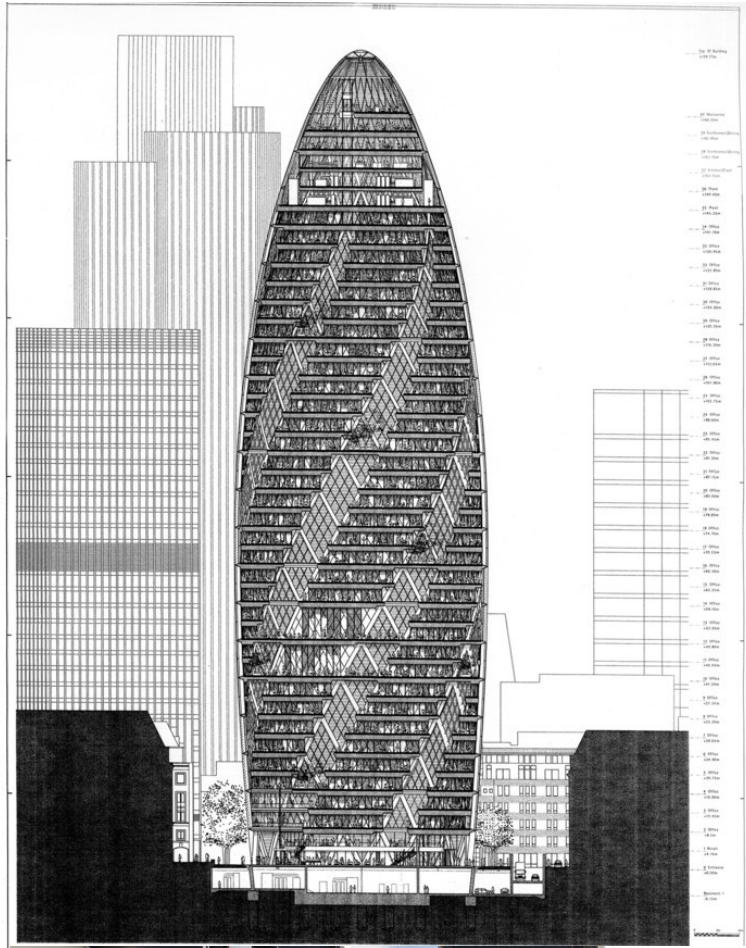


Wind rose



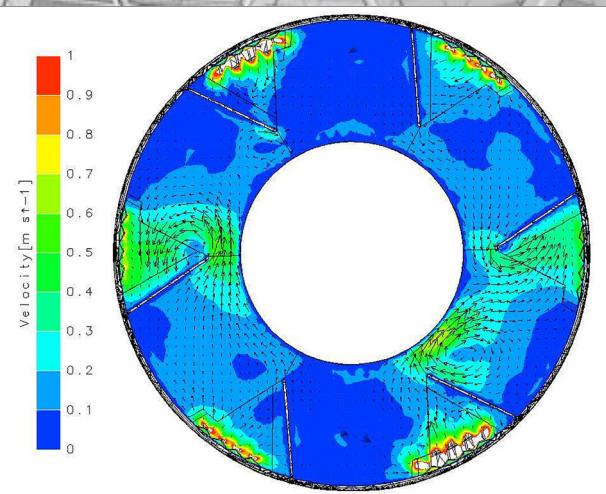
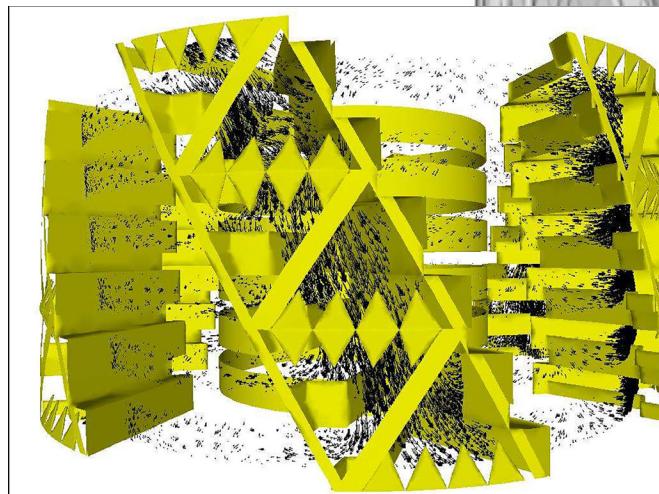
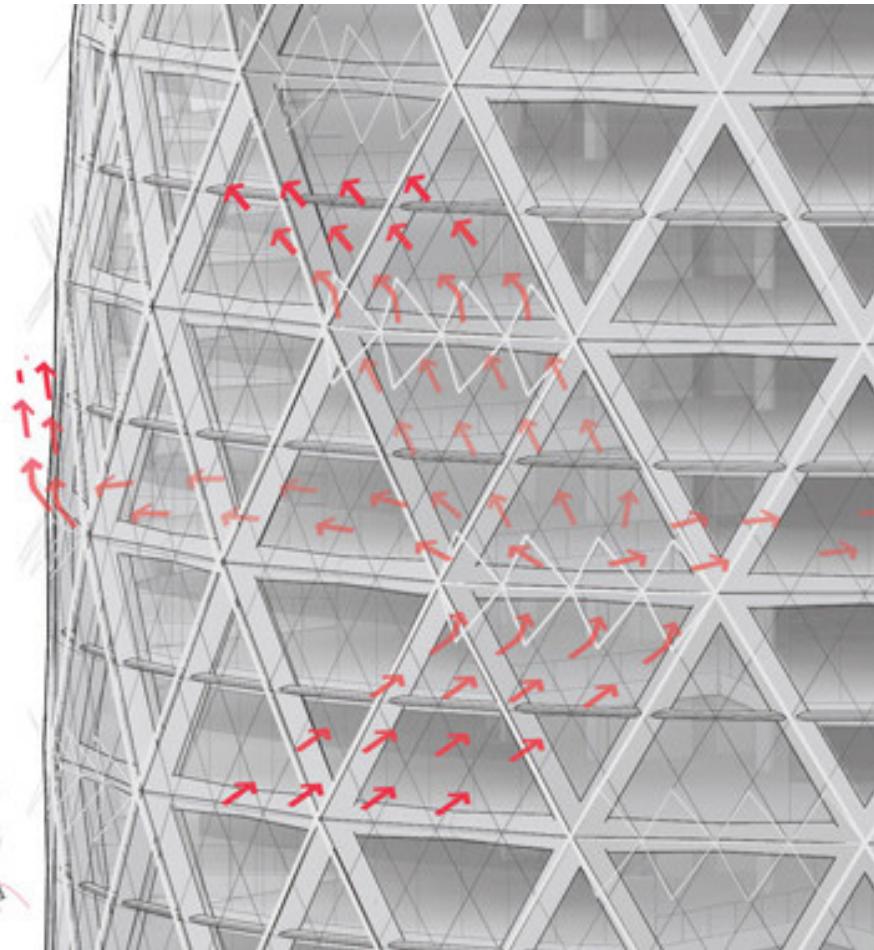
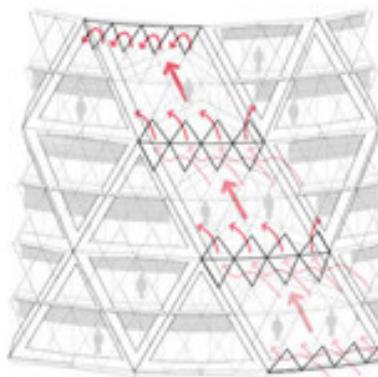
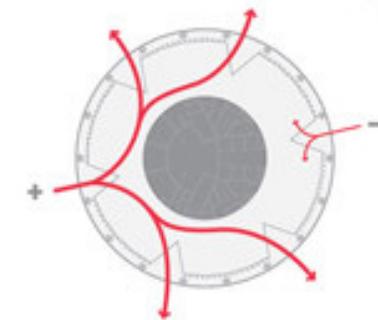
Xiaoyu Duan

Norman Foster conceived the aerodynamic shape as a possibility to allow the wind flow around the building, its facade, rather than being diverted down at ground level.



Xiaoyu Duan

With a height of 180 meters, this tower has a circular plant whose development grows in diameter upwards, and then fall again as they approached the top of the tip. Thanks to this form has been possible to increase the area available for the entry of natural light, and improve therefore the air circulation, thereby taking advantage of natural ventilation in interior spaces.



Xiaoyu Duan

On each floor, a series of interstices with 6 pipes made from natural ventilation system, functioning as a double glazing. The pipes are used for cooling in summer, removing hot air from the building, and for heating in winter.

Its profile reduces wind deflections compared with a rectilinear tower of similar size, helping to maintain a comfortable environment at ground level, and creates external pressure differentials that are exploited to drive a system of natural ventilation.



In order to reduce light pollution, change the materials on the facade without affecting the natural lighting as much as possible. For example, use some perforated panels to lower the impact of large area of glass wall.

Reference:

https://www.meteoblue.com/en/weather/forecast/modelclimate/london_united-kingdom_2643743

<https://www.fosterandpartners.com/projects/30-st-mary-axe/>

<https://en.wikiarquitectura.com/building/30-st-mary-axe-the-gherkin/>

<http://www.archdaily.com/447205/the-gherkin-how-london-s-famous-tower-leveraged-risk-and-became-an-icon-part-2>