The Swiss Re

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The Swiss Re

- Location: London, England
- Construction date: 2001 – 2003
- Architects: Foster & partners
- Height: 40 stories
- Capacity: 3,500 people
- Net office area: 500,000 sq. ft.
The aerodynamic shape directs the wind around the building improving pedestrian comfort at street level and reducing lateral loads on the structure.

- The tapering at the crown allows sunlight to reach down to the plaza level.
- Dark tinting to minimize heat gain.
- Circular floor plans increase in diameter up to the 17th floor and then decreases to the 38th.
Each floor is rotated five degrees causing the six light wells to spiral upward.

Efficient use of natural ventilation by pulling air upward and releasing it at the crown.

The light wells act as terraces and encourage movement between floors.
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cross section through levels 4-11

section through folded diamond cladding unit (scale approx 1:29)
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Multiframe Analysis Results

Non-uniform distributed load over 50 ft span

Max Mz' = 878.3 k-ft

Max Vy' = 113.1 kip

Max dy' = 0.738 in
Location: 24.86 ft from right end

5.44 k/ft

2.38 k/ft
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During construction the central core was constructed four stories in advance of the other floor levels allowing the structure to be built inside out.
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- The Diagrid, consists of diagonal columns and horizontal hoops to resist the lateral thrust.

- The external diagonal steel structure is by virtue of its triangulated geometry, inherently strong and light, permitting a flexible column-free interior space.

- The Diagrid consists of intersecting tubular steel sections that provide vertical support to the floor and an additional benefit of the column-free office space.
The external diagonal steel structure is by virtue of its triangulated geometry, inherently strong and light, permitting a flexible column-free interior space.

The Diagrid provides all the lateral structural stability, so the floor plates are free from any Diagonal bracings. The central core does not need to provide any lateral stability.