



The  
Gherkin

# 30 St Mary Axe, London “The Gherkin”

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Green Design and the City  
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# Agenda

- ❑ Background
- ❑ Design
- ❑ Sustainability
- ❑ Issues
- ❑ Conclusion

# 30 St Mary Axe

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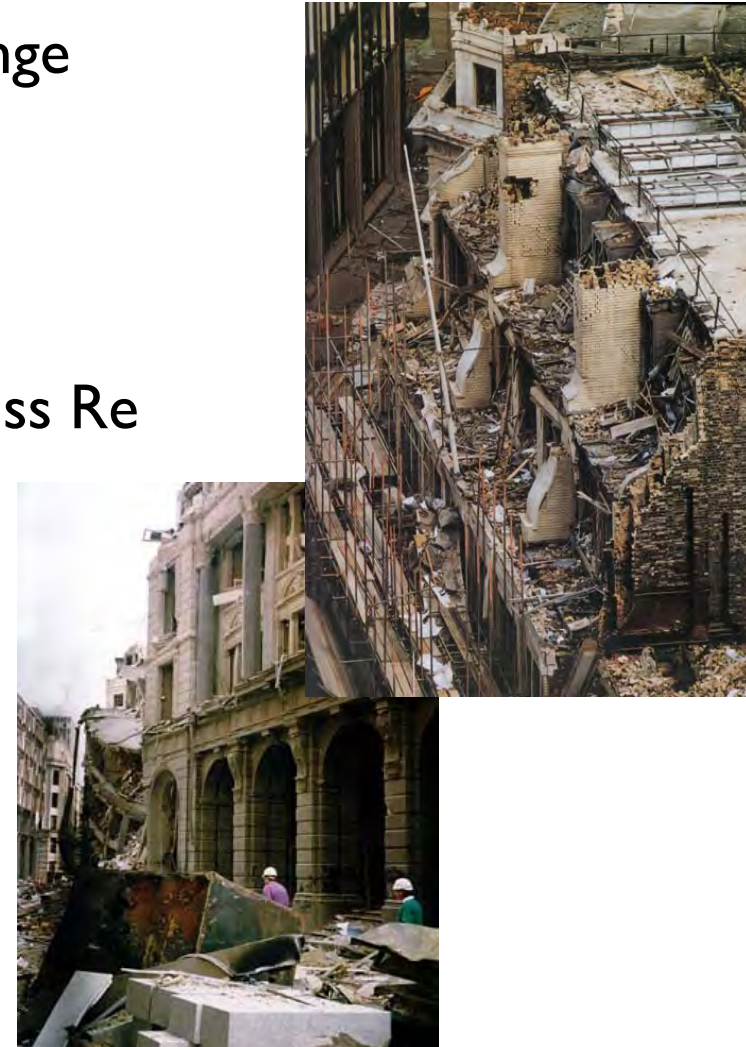
- ▶ Formerly location of the Baltic Exchange
- ▶ Second tallest building in the City of London and sixth tallest in London
- ▶ First tall green building in London
- ▶ Commissioned by former owners Swiss Re
- ▶ Won the Stirling Prize from the Royal Institute of British Architects

Architect: Foster and Partners

Structural Engineer: Arup

Main Contractor: Skanska Construction UK

M&E Engineer: Hilson Moran Partnership





# A Unique Form

- ▶ Constructed on a diagrid structure
- ▶ Made of 5,500 glass panels
- ▶ Only piece of curved glass is the lens
- ▶ Radial floor design with each floor is rotated 5°
- ▶ Set of six atriums two to six stories high

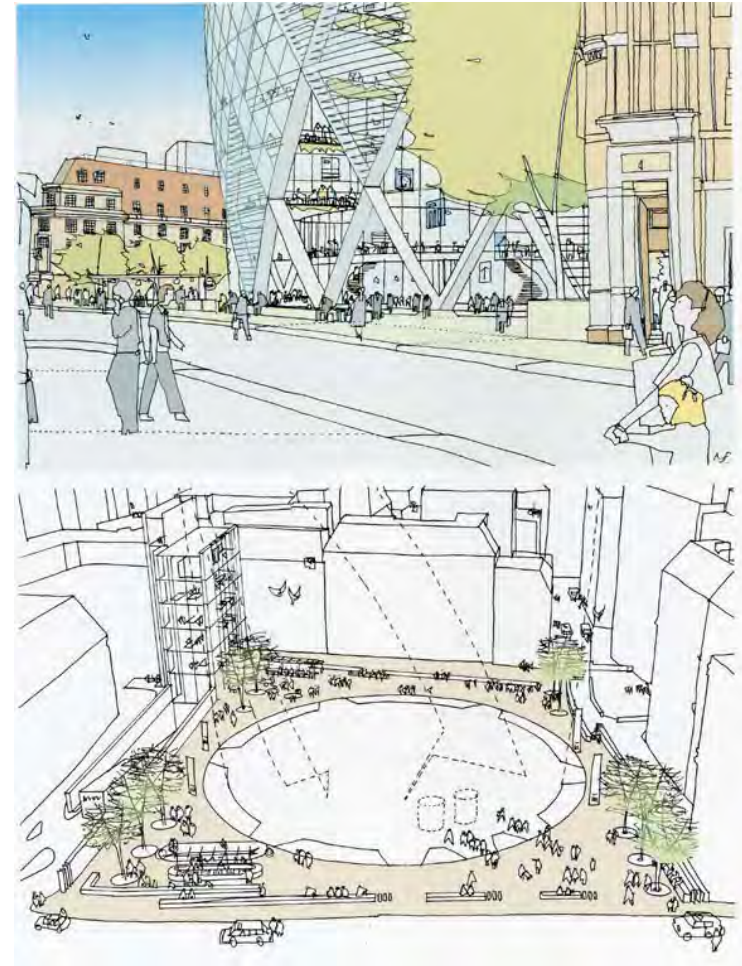






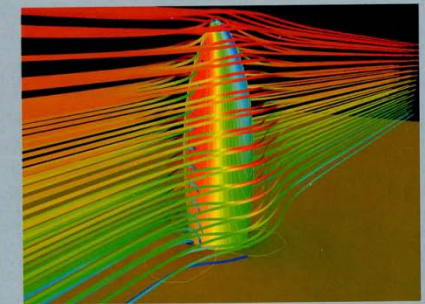
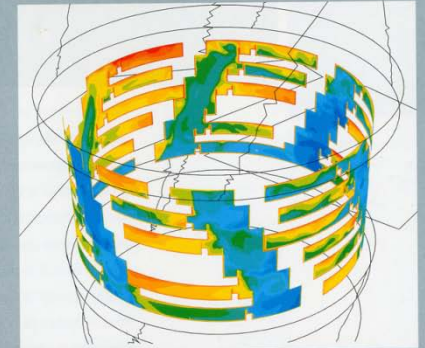
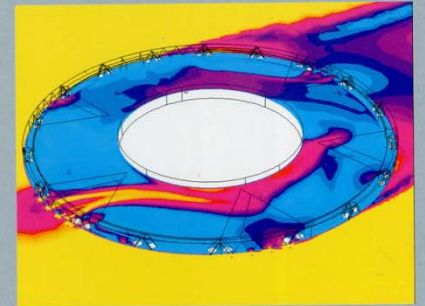
# A City Design

- ▶ Tapers outward from the base and then narrows
- ▶ Smaller footprint allows for a public plaza
- ▶ Aerodynamic shape creates less downdraft
- ▶ Building shape allows for natural light



# Ventilation and Light

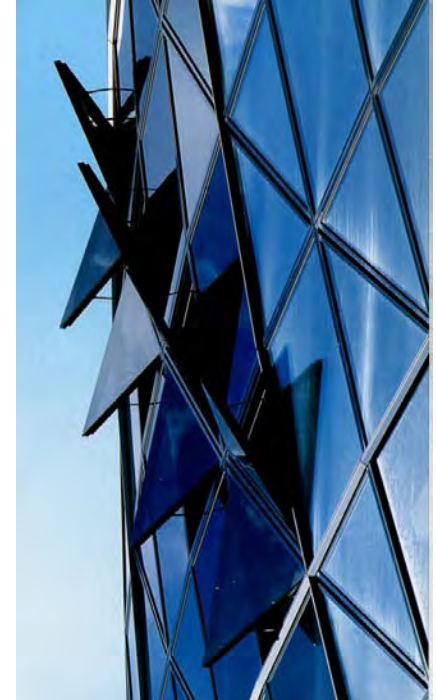
- ▶ Differing air pressures and double skin façade allow for natural ventilation
- ▶ Solar blinds to reclaim or reject heat
- ▶ Windows and blinds are computer controlled
- ▶ Light level and motion sensor lights



# Energy Use

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- ▶ Temperature can be controlled in several separate zones on each floor
- ▶ Windows open when external temperature is between 20°C and 26°C and wind speed is less than 10 mph
- ▶ Building can potentially turn off mechanical temperature system 40% of the year
- ▶ Main energy source is gas
- ▶ Building was supposed to consume 50% less energy



#### LOCAL STATIONS

Liverpool Street  
Bank  
Cannon Street  
Monument  
Fenchurch Street

#### BUSES

12 local buses service the  
30 St Mary Axe area

[Download the map \(pdf\)](#)

For further information:  
[www.journeyplanner.org](http://www.journeyplanner.org)



## Transportation

Next to several forms of public transportation

5 parking spaces for handicap use

No other car parking for employees or visitors

52 motorcycle parking spaces

118 bicycle parking spaces

# The Curse of Reality

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## Floor Plan

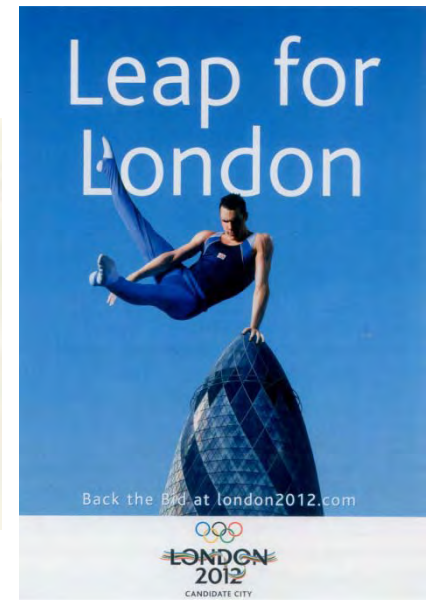
- ▶ Only 63% of the gross floor space is useful
- ▶ Lack of confidentiality due to the open design and atriums
- ▶ Companies have built partitions

## Natural Ventilation

- ▶ Issues selling natural ventilation to tenants
- ▶ Swiss Re is the only tenant to use natural ventilation
- ▶ Lowered upper temperature control to 24°C from 26°C

## Questionable Economic and Architectural Success

# Part of London's Culture





Questions?

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