



EP-USP

PEF2602
Estruturas na Arquitetura I I - Sistemas Reticulados

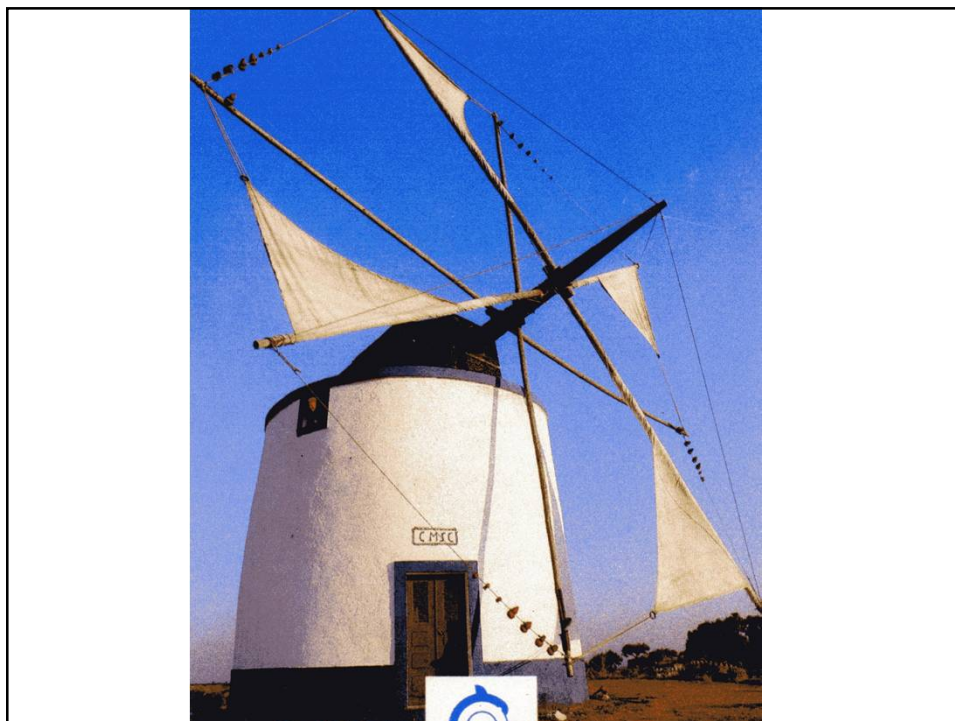


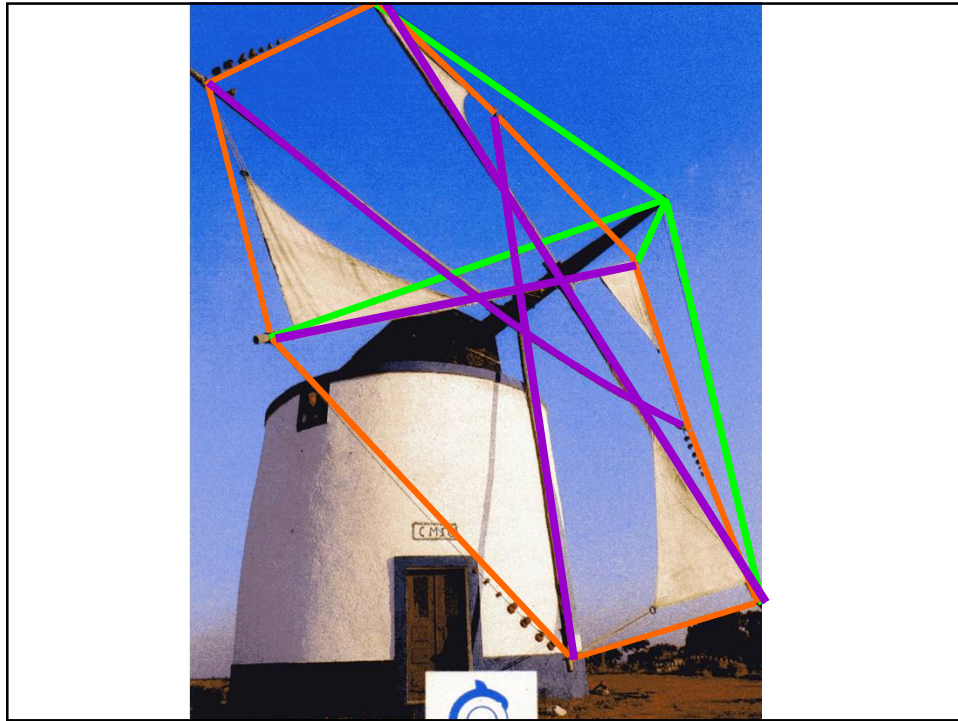
FAU-USP

Estruturas Estaiadas

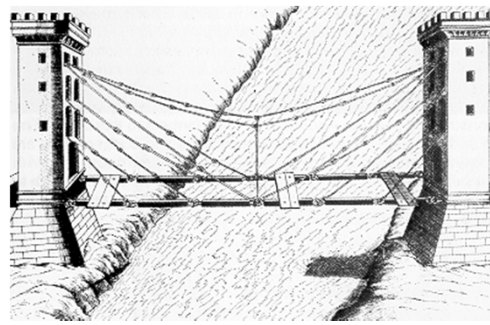
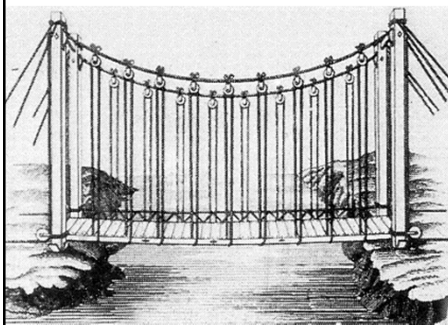
10/10/2016

Ruy Marcelo de Oliveira Pauletti
Leila Meneghetti Valverde

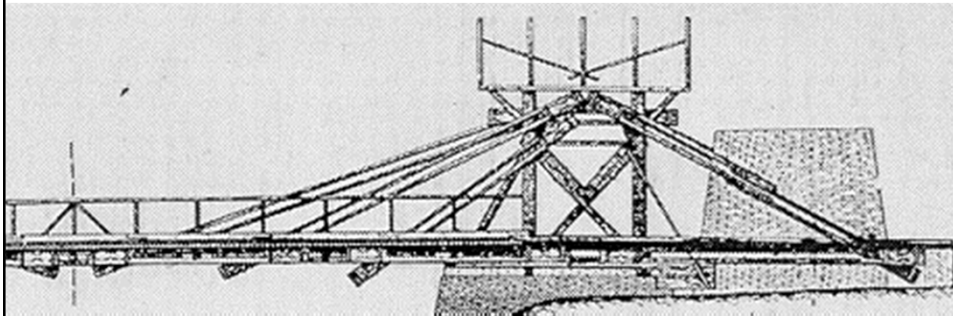




***Esquemas de Fausto Verranzio para pontes
suspensas e estaiadas (1617)***



Esquema de Immanuel Loscher, para uma ponte estaiada de madeira (1784)



*Albert Bridge, sobre o Tâmbisa
(1873, vão livre 122m)*

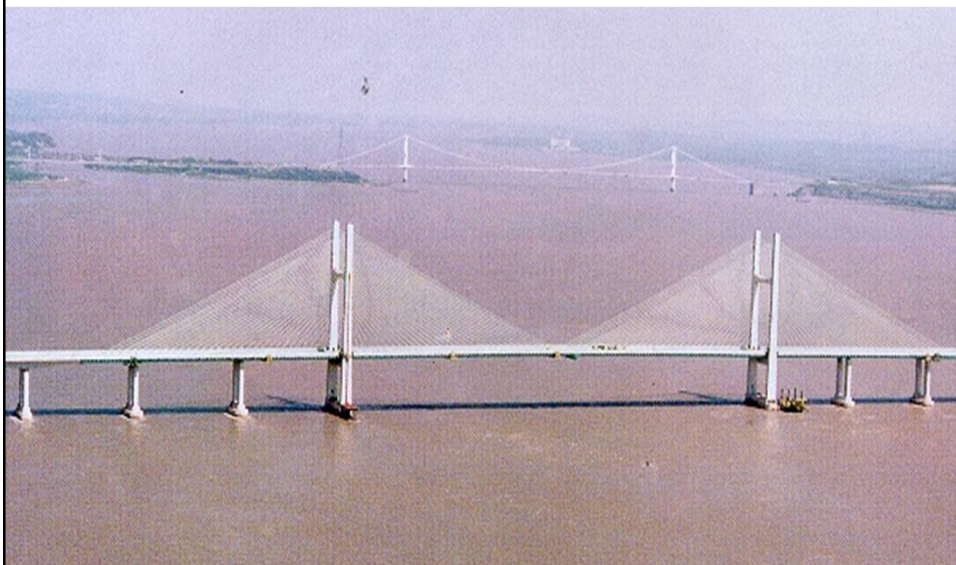


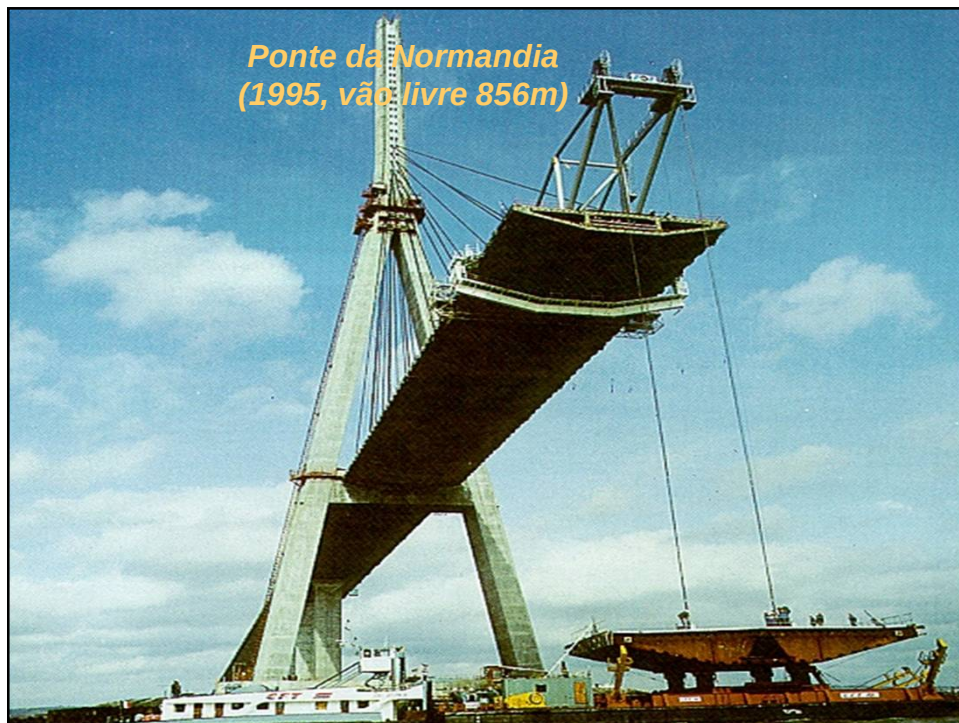
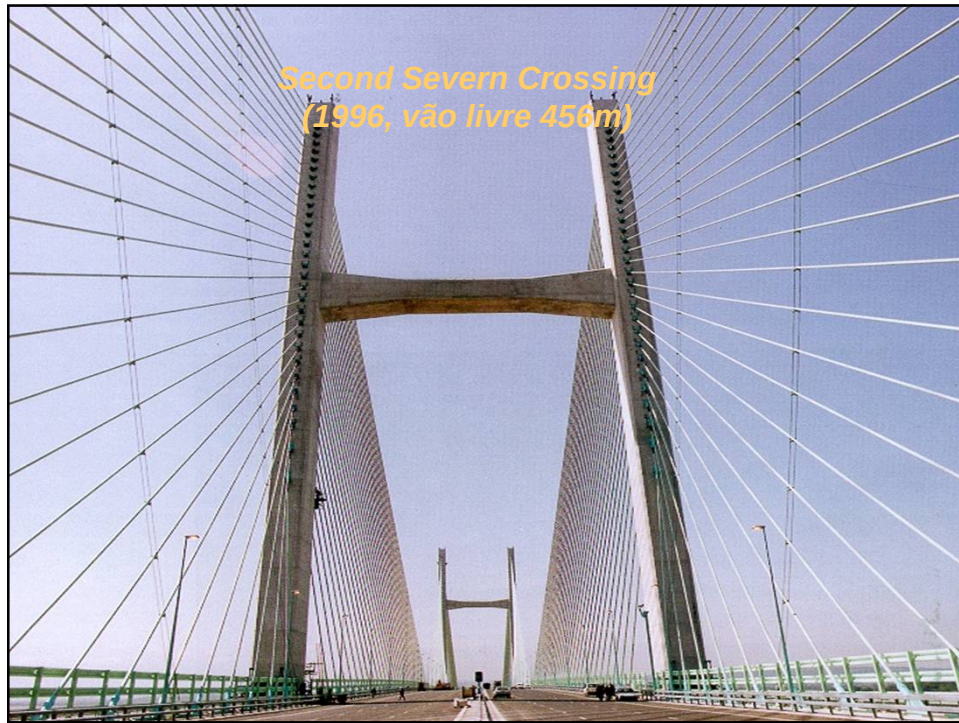


***Ponte do Brooklyn
(Nova Iorque, 1883, vão livre 486m)***



***Second Severn Crossing
(1996, vão livre 456m)***



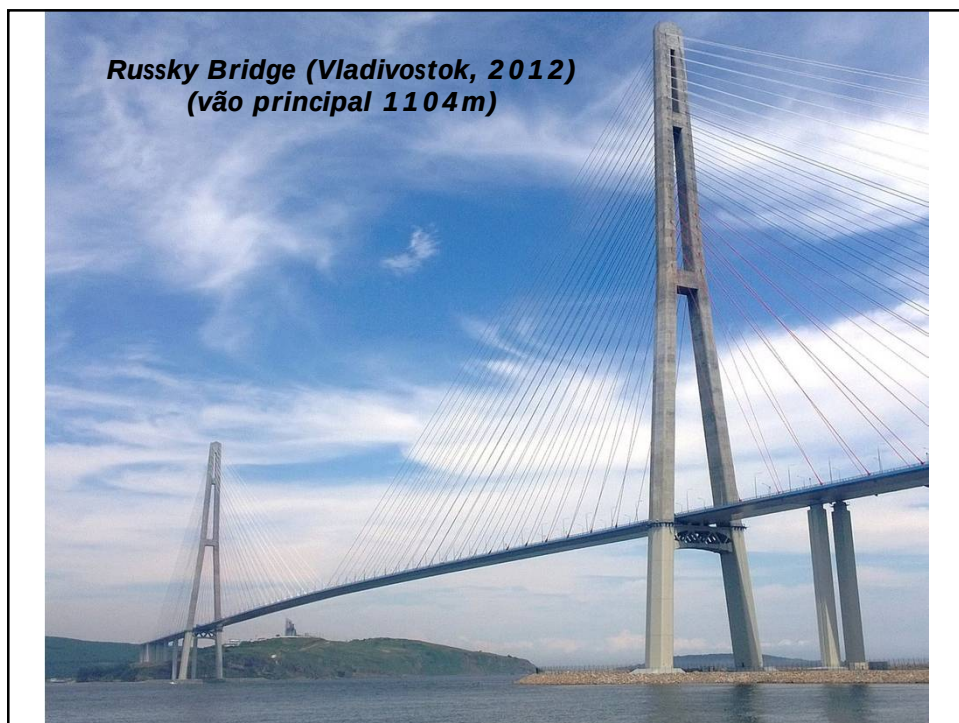
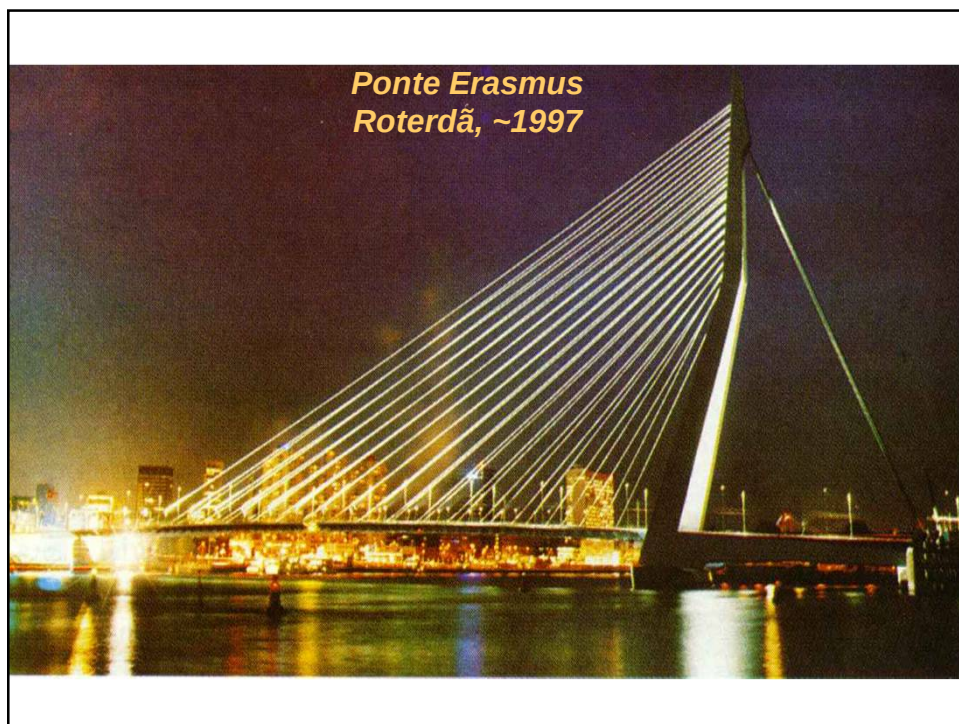


***Puente del Alamillo, Sevilla
(Santiago Calatrava, 1992)***



***Erasmus Bridge, Rotterdam
(Ben van Berkel, 1996)***





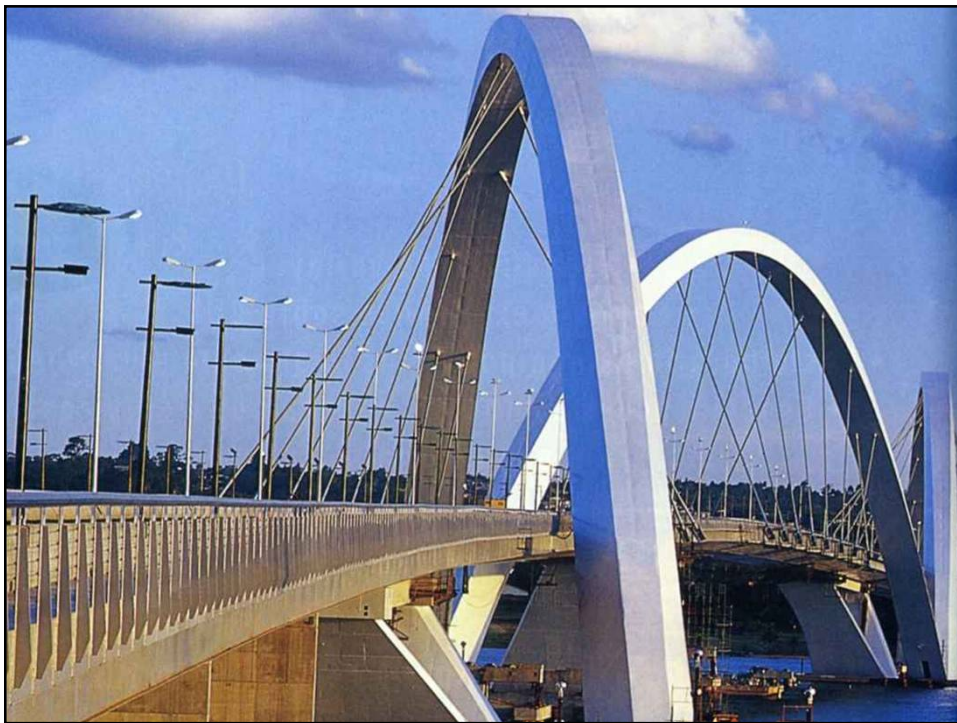


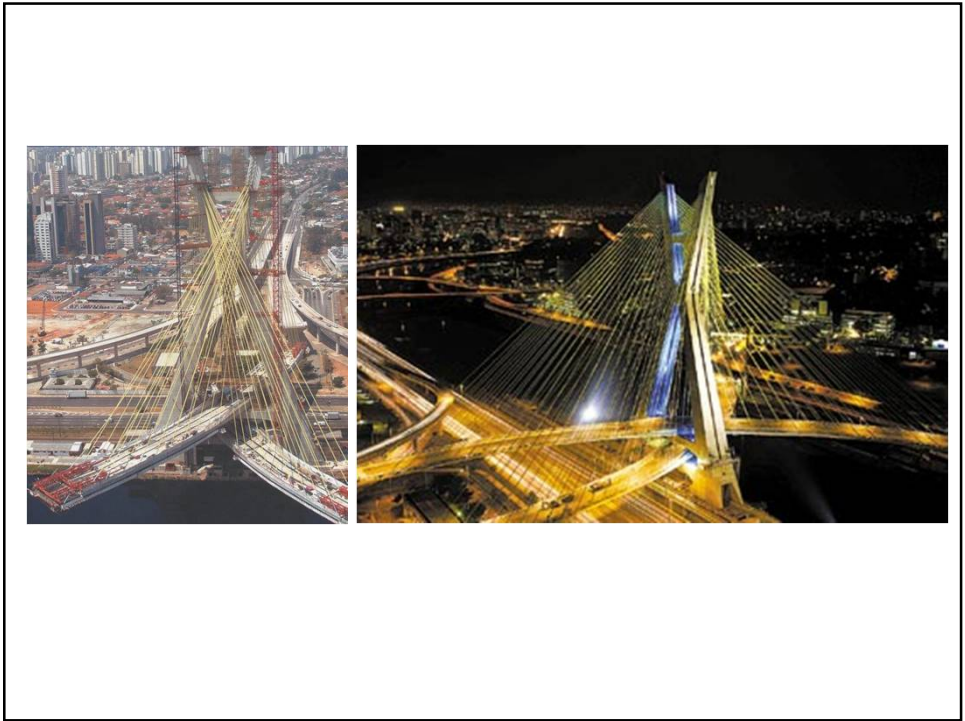


***Ponte Posadas-Encarnación (1995)
(Extensão 2690m, vão principal 330m)***



***Ponte sobre o Rio Pinheiros (1999) (Extensão
233m, vão central de 122m)***

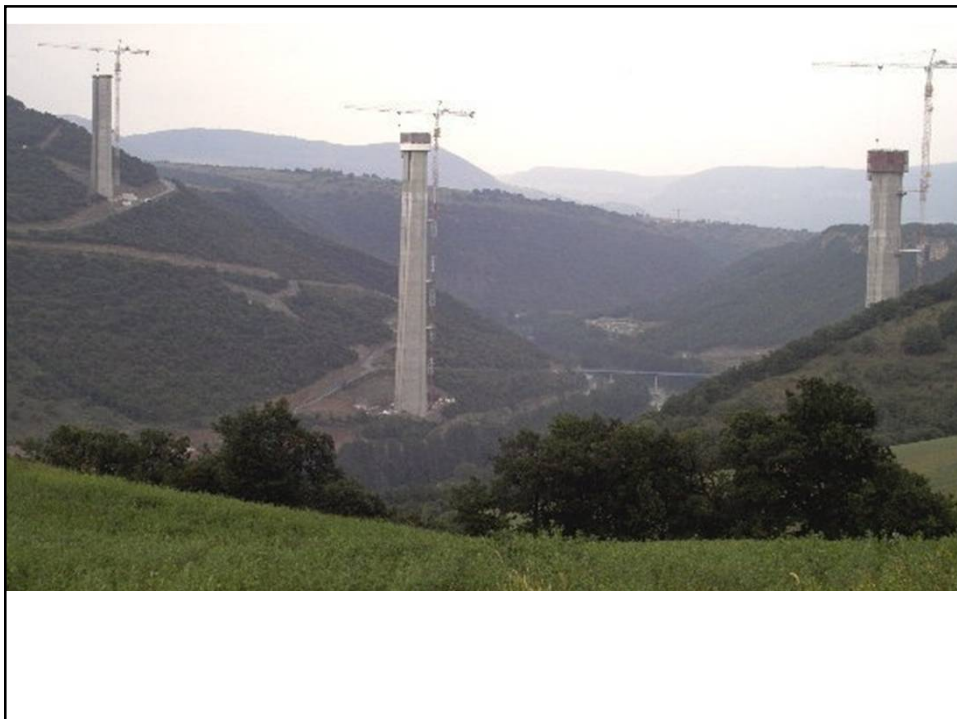
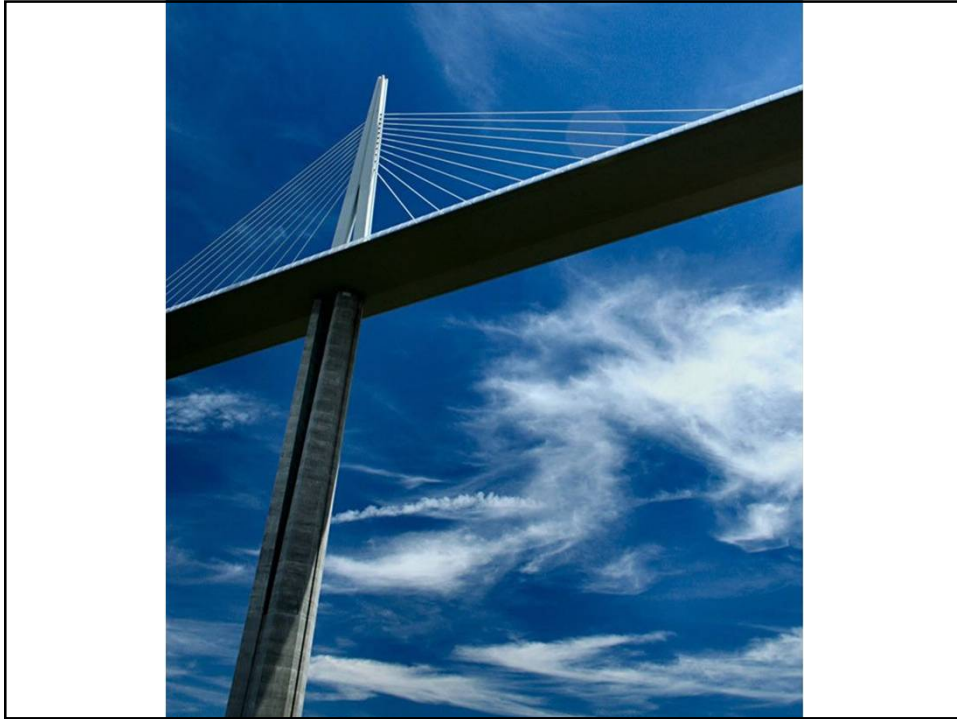






Viaduto de Millau
(Norman Foster , Michel Virlogeux, 2004)







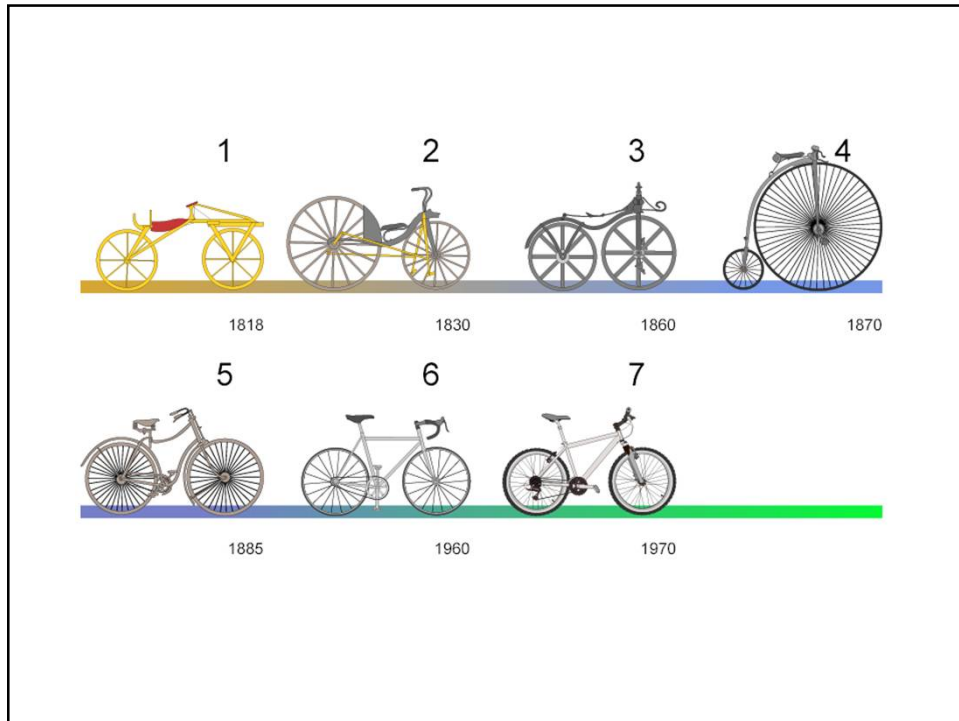


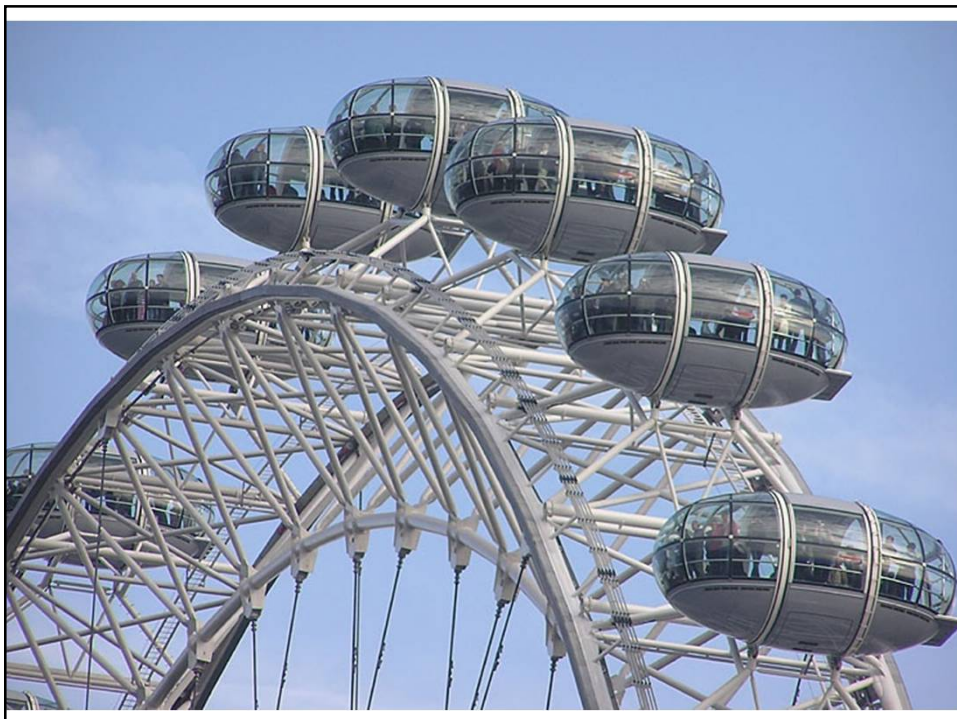


Roda raiada, ~2000 AC
Museu Nacional do Irã

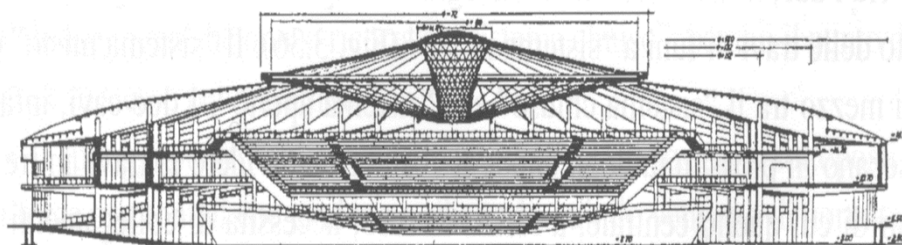


Bicycle Wheel, Marcel Duchamp, 1913

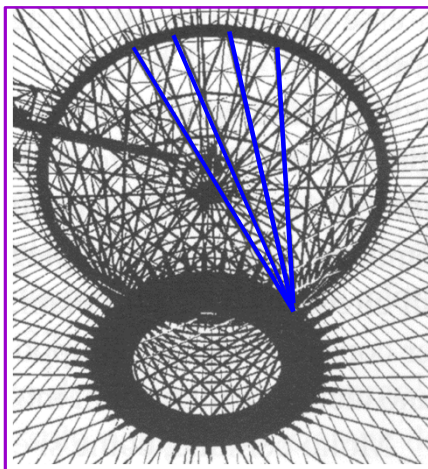
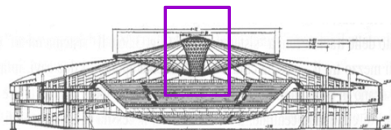




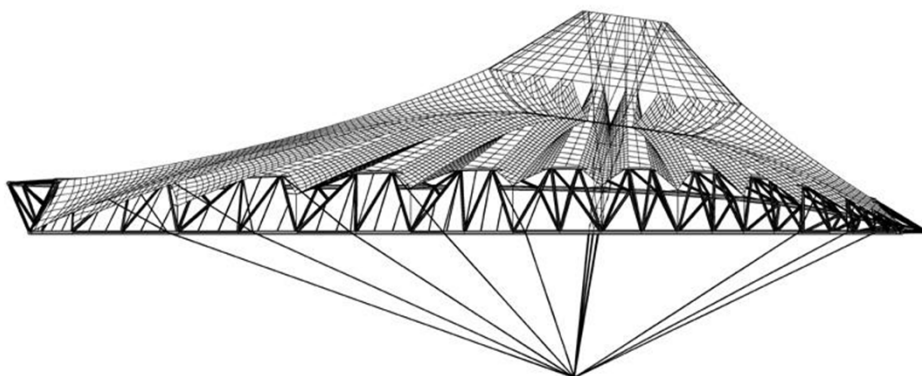
***Palácio dos Esportes de Gênova, Itália (1963).
Detalhe da parte central da cobertura e Elevação.***



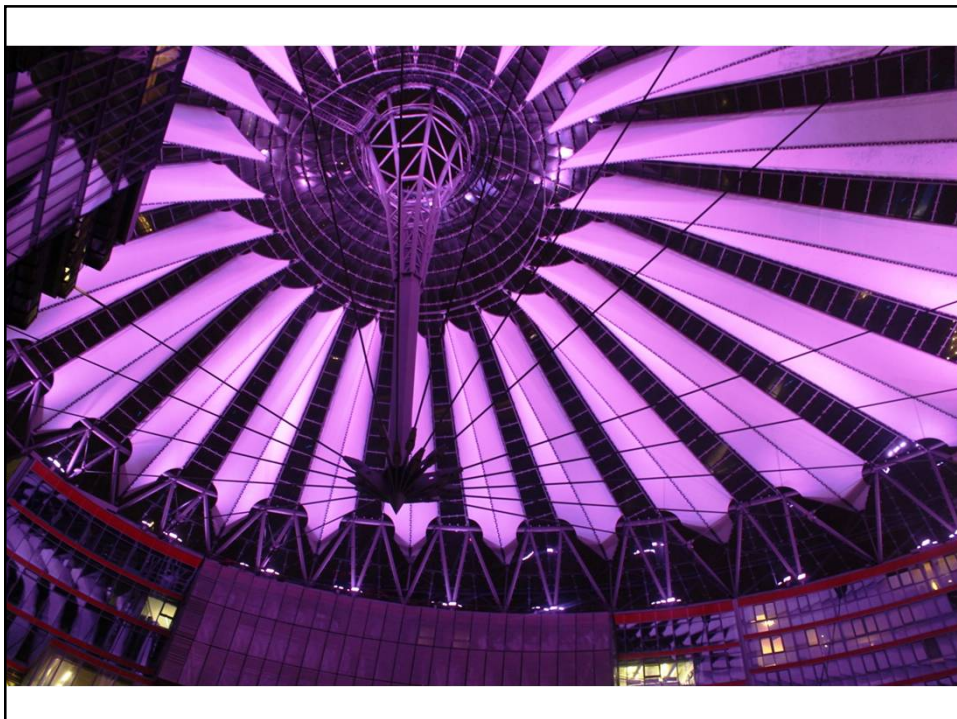
***Palácio dos Esportes de Gênova, Itália (1963).
Detalhe da parte central da cobertura e Elevação.***

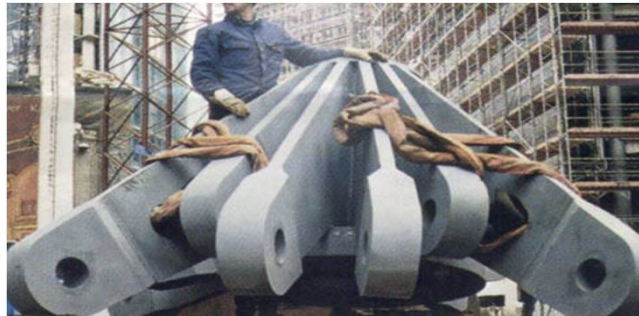


Sony Center Potsdamer Platz - Berlim



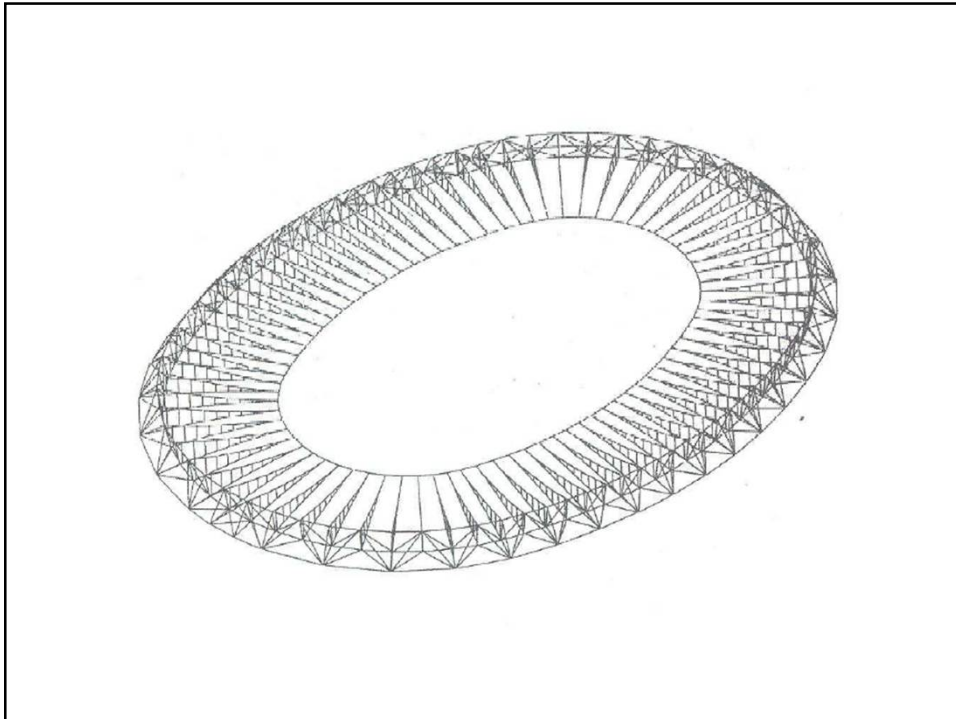
- Mastro cônico, inclinado de 8 graus; abertura superior com 10 m de diâmetro;
- a viga de borda é uma treliça formada por três tubos com altura variando entre 4,5 a 7,0 m



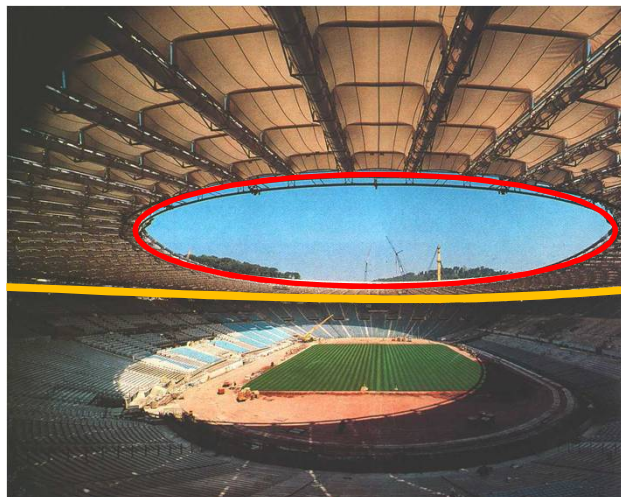


Estádio Olímpico de Roma (coberto em 1990) Vistas aérea.

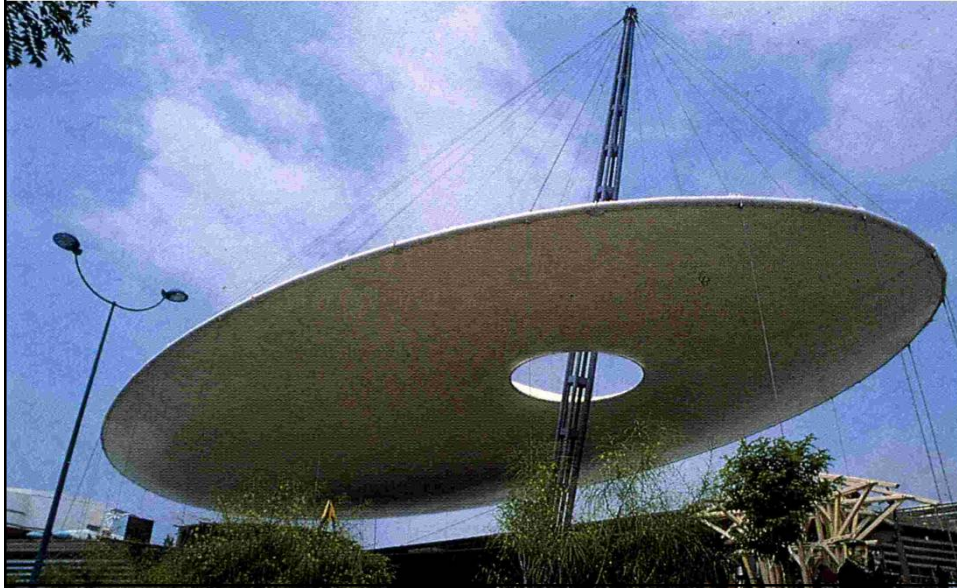




Estádio Olímpico de Roma (coberto em 1990) Vista interna.

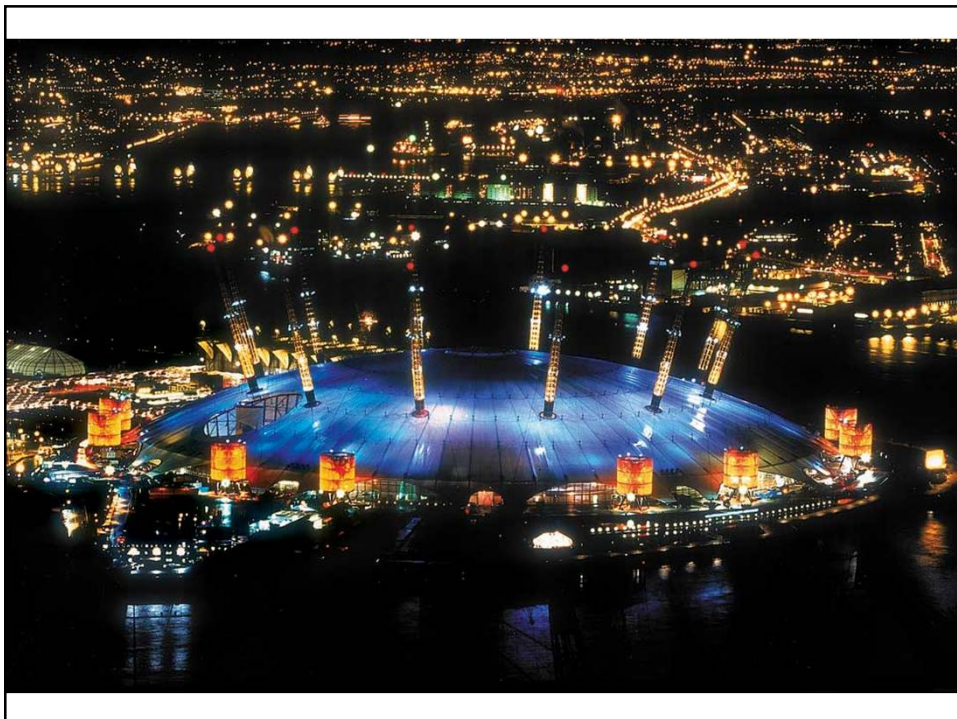


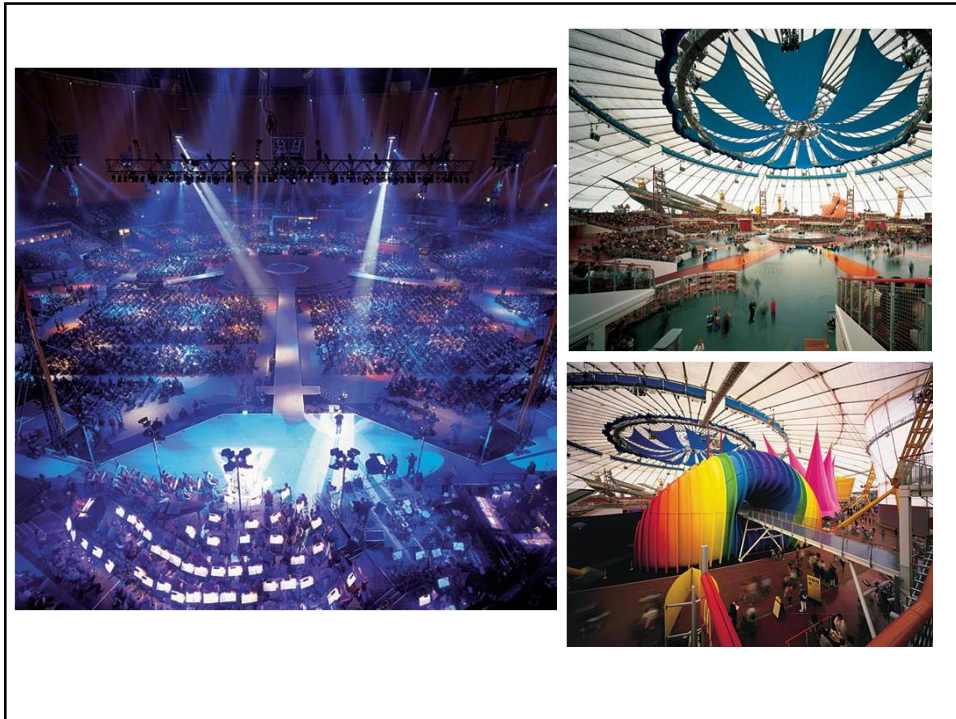
***Lente pneumática de cobertura
Do Pavilhão Alemão na EXPO92***



Domo do Milênio: sistema de cabos.



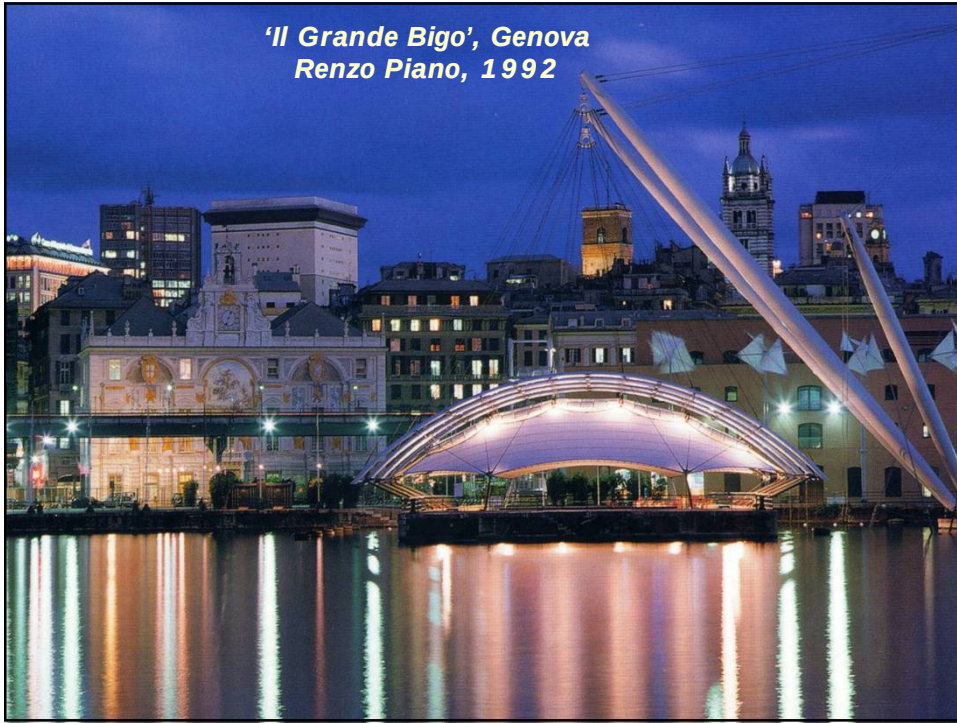




***'Il Grande Bigo', Genova
Renzo Piano, 1992***



***'Il Grande Bigo', Genova
Renzo Piano, 1992***



***Stade de France, Paris, 1998
Michel Macary, Aymeric Zublena, Michel Regembal, Claude Constantini***





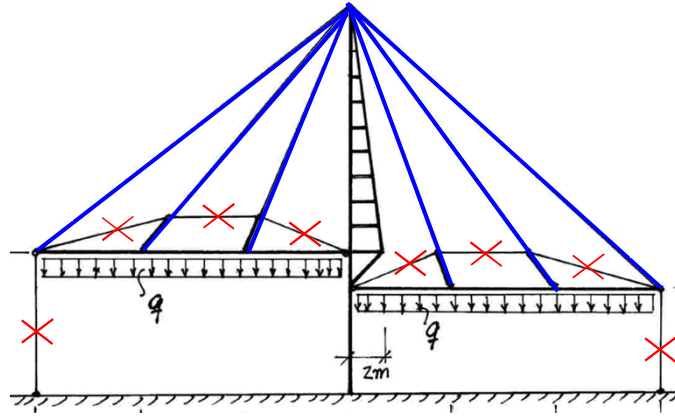
Estação de Saint Denis, Paris



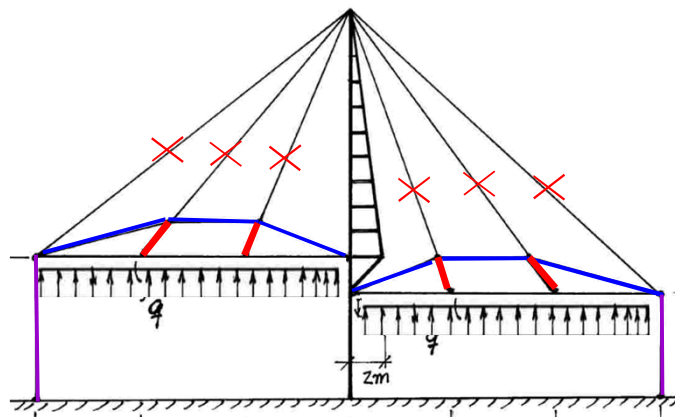
Estação de Saint Denis, Paris



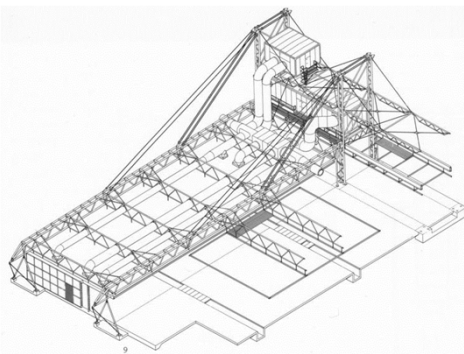
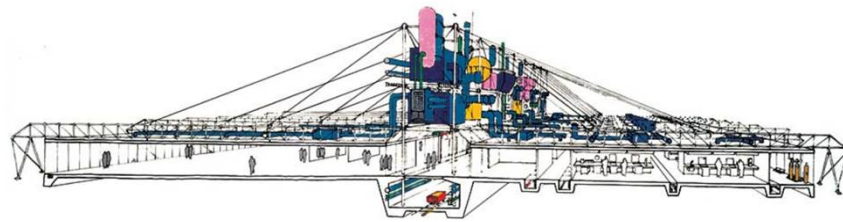
Estação de Saint Denis
Funcionamento para cargas descendentes

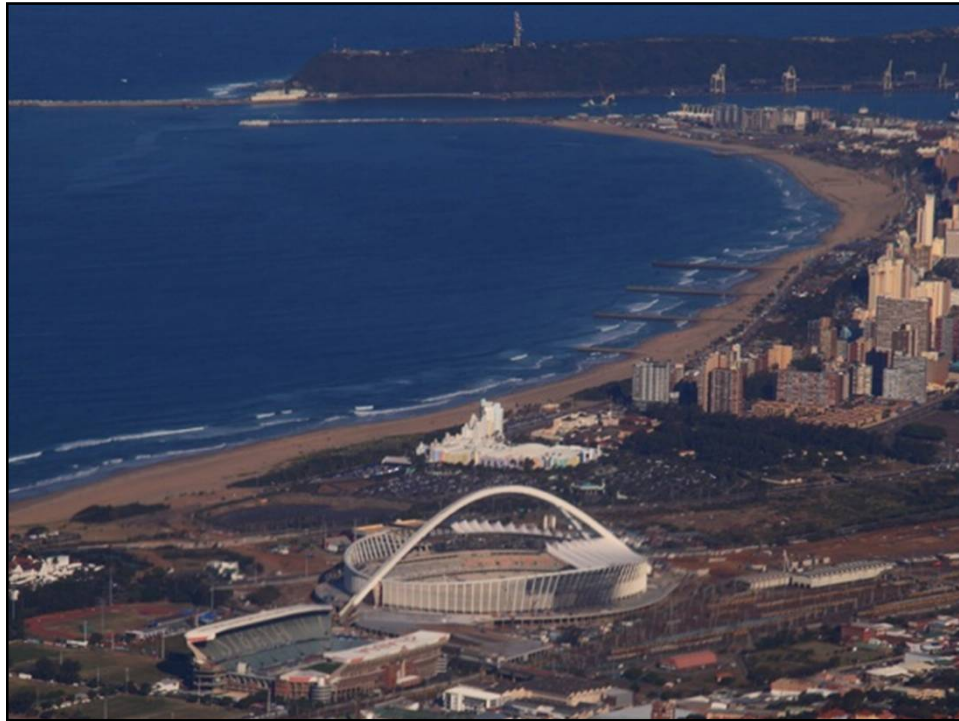


Estação de Saint Denis
Funcionamento para cargas ascendentes



Inmos Factory
Arq. Richard Rogers, 1980/1982



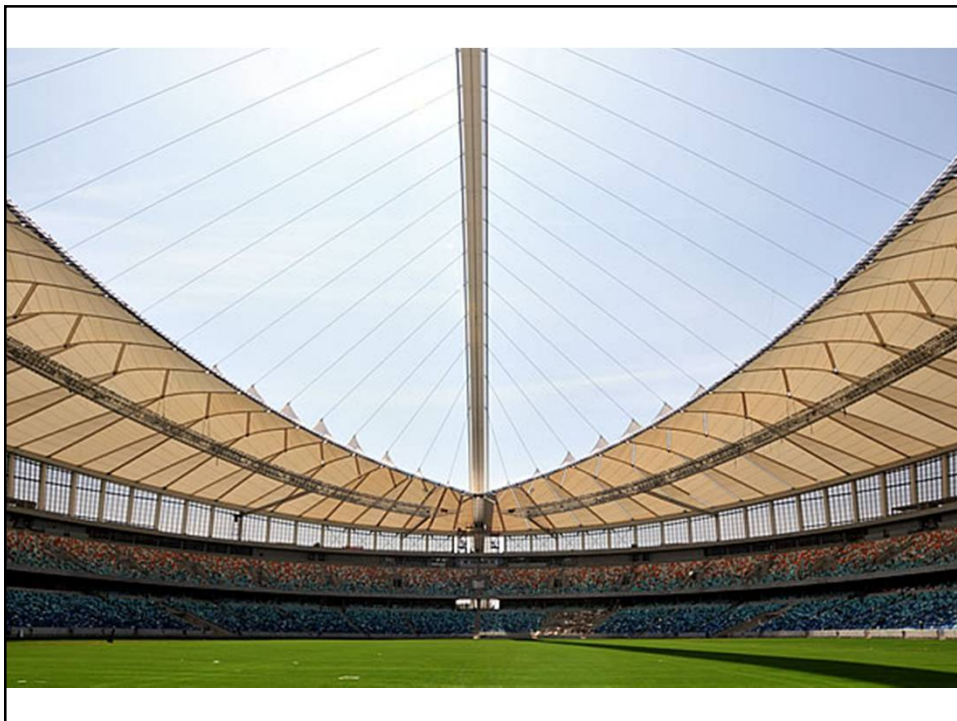


2010 WORLD CUP, África do Sul
Estadio Moses Mabhida, Durban









Estádio Olímpico de Londres, 2012



Estádio Olímpico de Londres, 2012



Figure 1. Final concept submitted for planning approval, showing the sporting arena on the constrained island site with spectator facilities located in pods outside the main structure



Figure 9. The stadium was completed on schedule and within budget in March 2011 – note prototype ‘wrap’ panels in foreground, west stand pavilion to lower right and initial external pods



Figure 2. Typical stadium section showing permanent seating in lower concrete bowl, upper steel-framed temporary seating tier and external spectator facilities on podium

