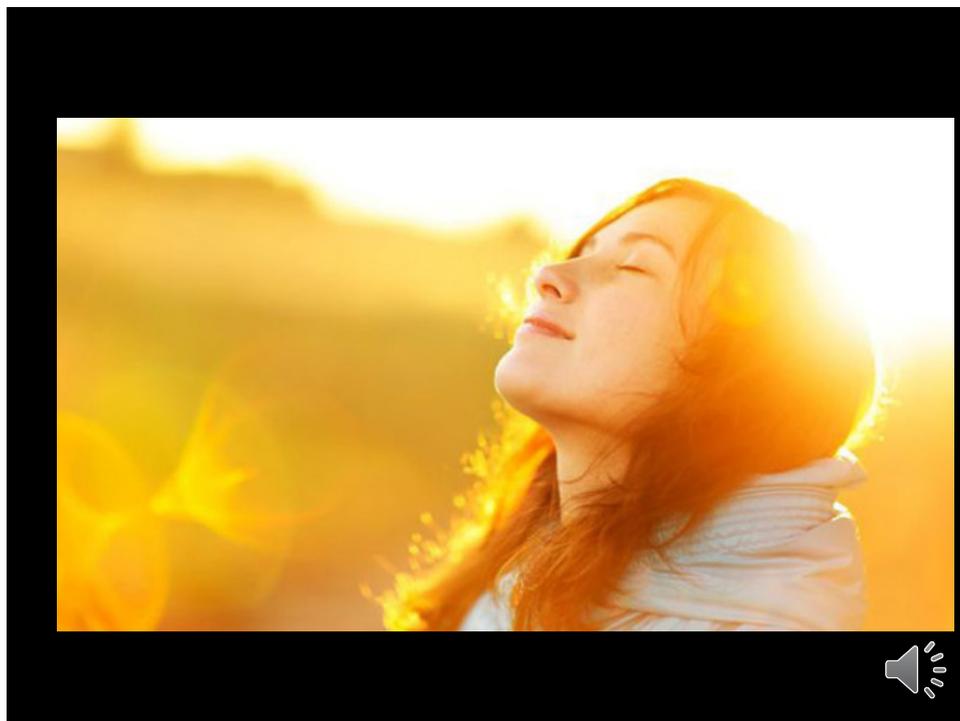


# PROTEÇÕES SOLARES “BRISES”



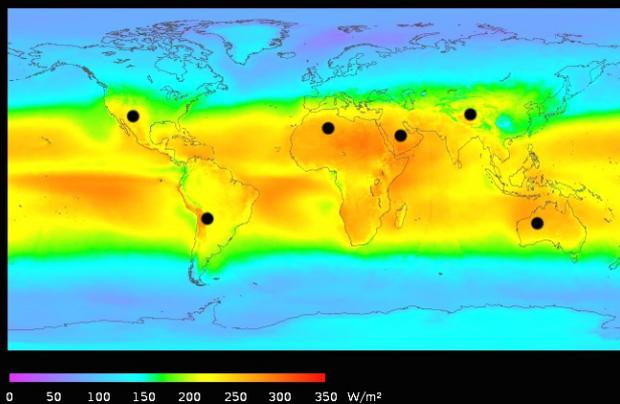
Alessandra R. P. Shimomura, Ranny L. X. N. Michalski, Roberta C. K. Mülfarth



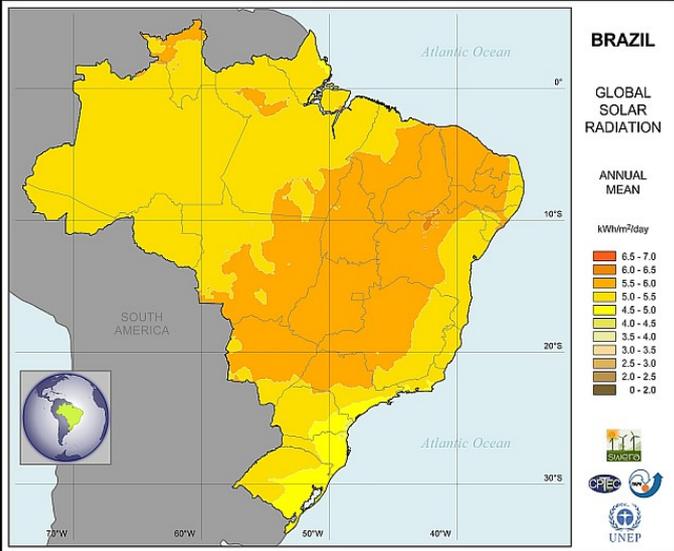


Em 2013 o planeta teve um consumo de energia de **10.579 Mtep**

Com centrais elétricas solares instaladas em cada um dos pontos indicados no mapa a seguir, poderiam ser produzidos **13.567 Mtep ao ano.**

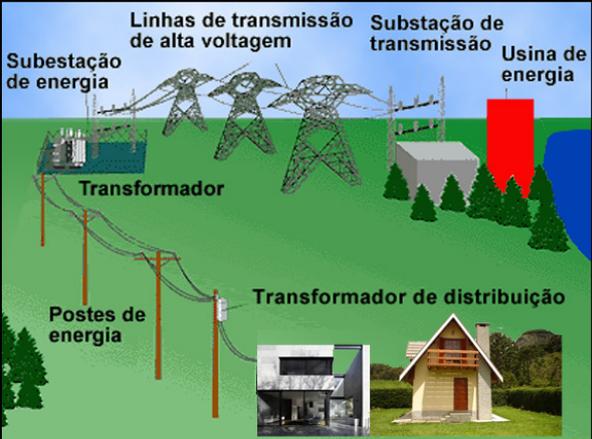
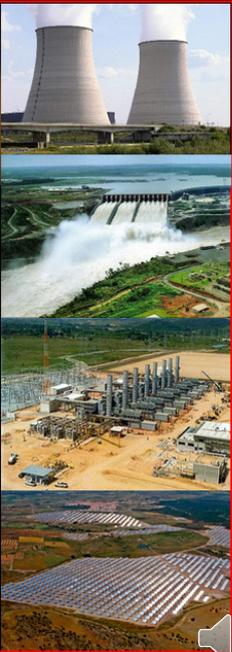


# Energia Solar



QUALQUER QUE SEJA A FONTE PRIMÁRIA DE ENERGIA

**NADA MUDA**



1

Cidade consomem

40%

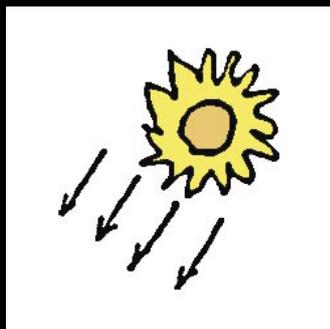
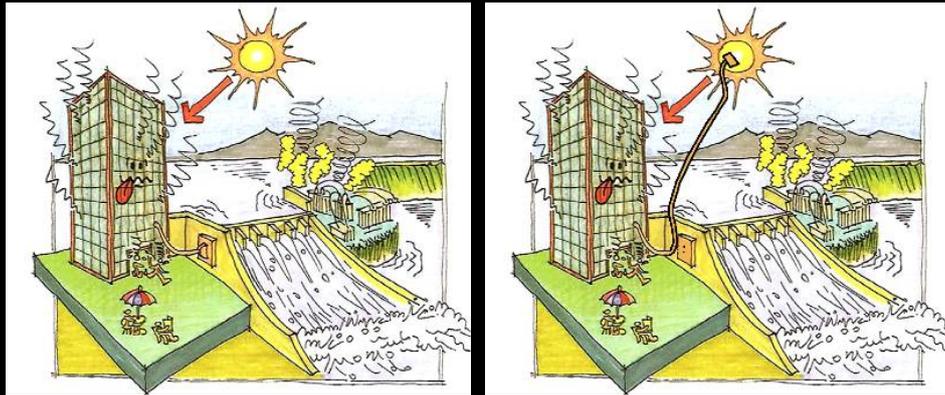
De toda a energia elétrica produzida



O que esperar para o futuro ?...

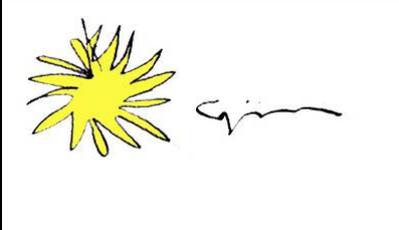


**A simples substituição de fonte de energia não é necessariamente a melhor solução**

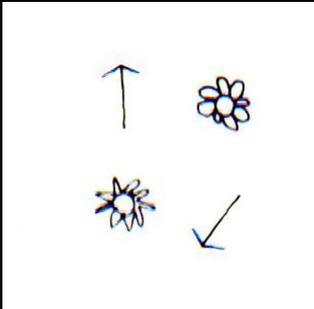


Eduardo Affonso Reidy



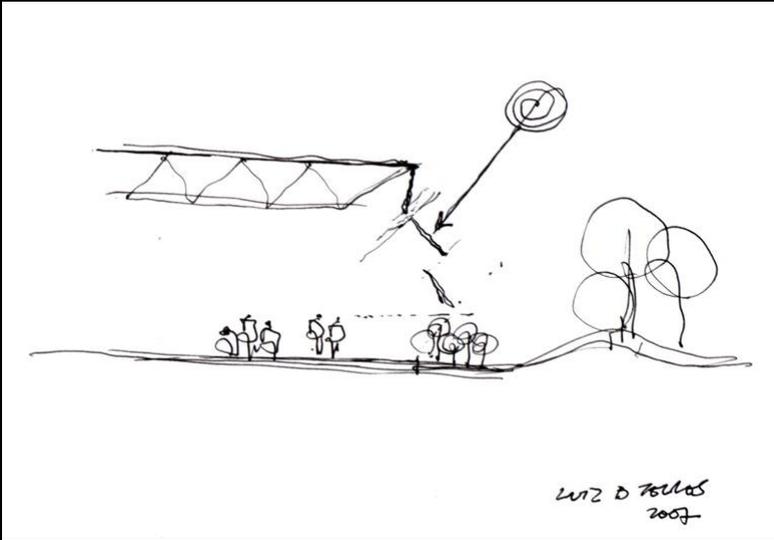


Guilherme Motta



Zanetini

Candi Hirano



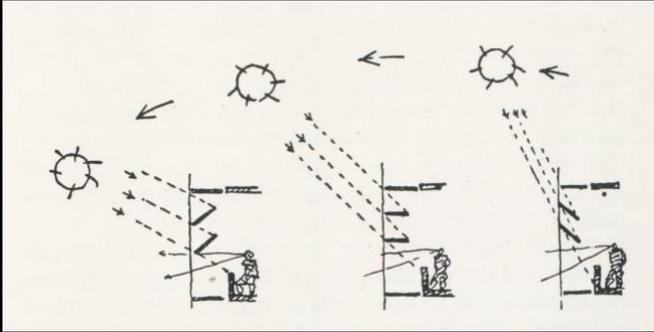
Arquitetura e direito ao sol





A hand-drawn architectural sketch of a building with a curved, ribbed roof. The drawing is on a piece of paper with handwritten text in Portuguese: "A Ana Carolina Com um beijo do 'Lelé' 08/03/2006". There is a small sun icon in the top left corner of the sketch. To the right of the sketch is a separate, larger drawing of a yellow sun with rays.

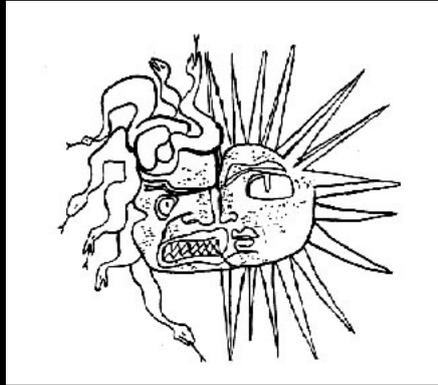
João Filgueiras Lima  
Lelé



A hand-drawn diagram illustrating the path of sun rays. Three sun icons are shown at different positions, with dashed lines representing rays hitting a building facade. The diagram shows how the angle of the sun affects the shadow cast on the building.

Oscar Niemeyer





Le Corbusier





MEC – Lúcio Costa – Rio de Janeiro  
(Edifício Palácio Capanema)

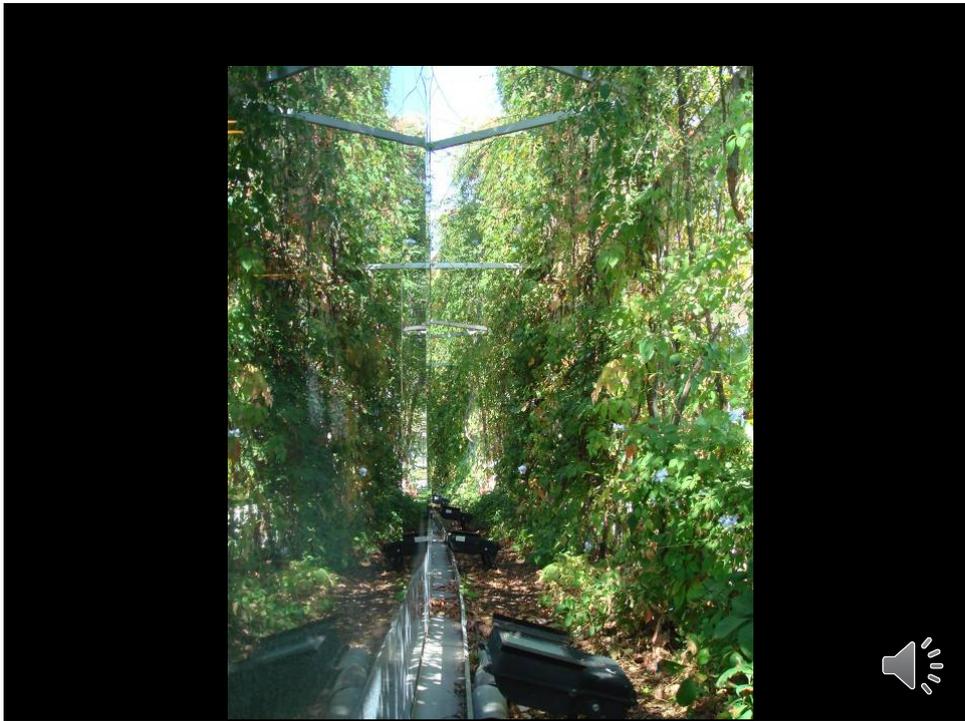


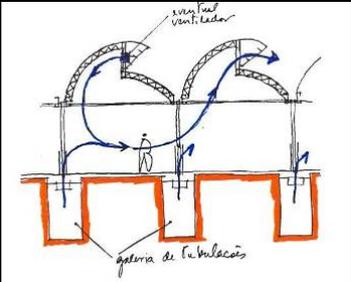
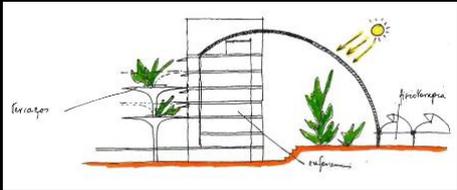
Banco Sulamericano, Rino Levi, Av. Paulista  
(São Paulo).



EDIFÍCIO CONSÓRCIO EM  
SANTIAGO, CHILE –  
ARQ. ENRIQUE BROW







Hospital Sarah, Fortaleza. Lelé

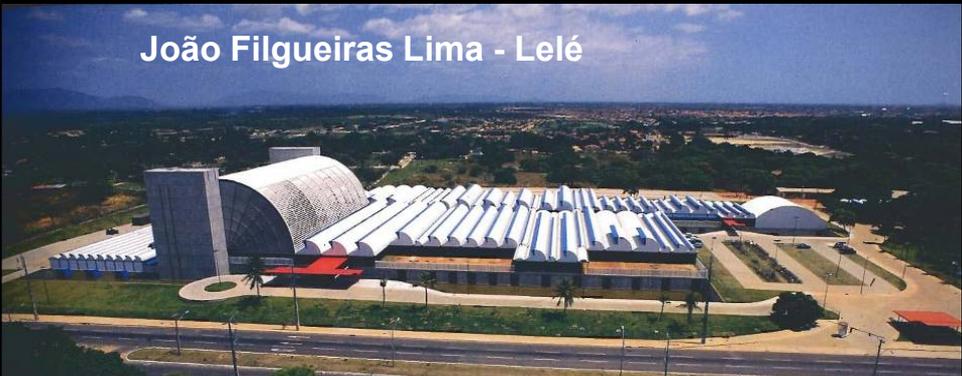


Jardim de ambientação. Internal garden.

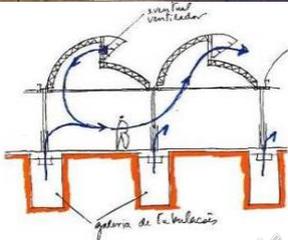


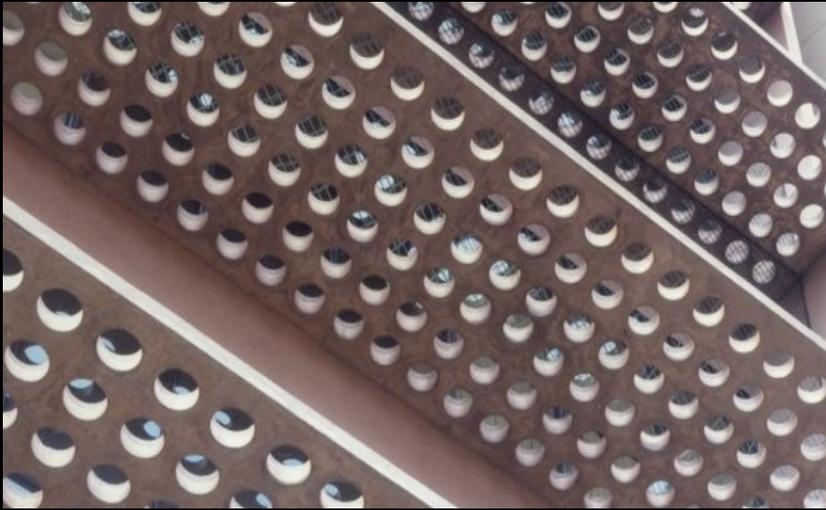
Espelho d'água com tomadas de ar das galerias. Mirror glass with air intakes of the passages.

### João Filgueiras Lima - Lelé



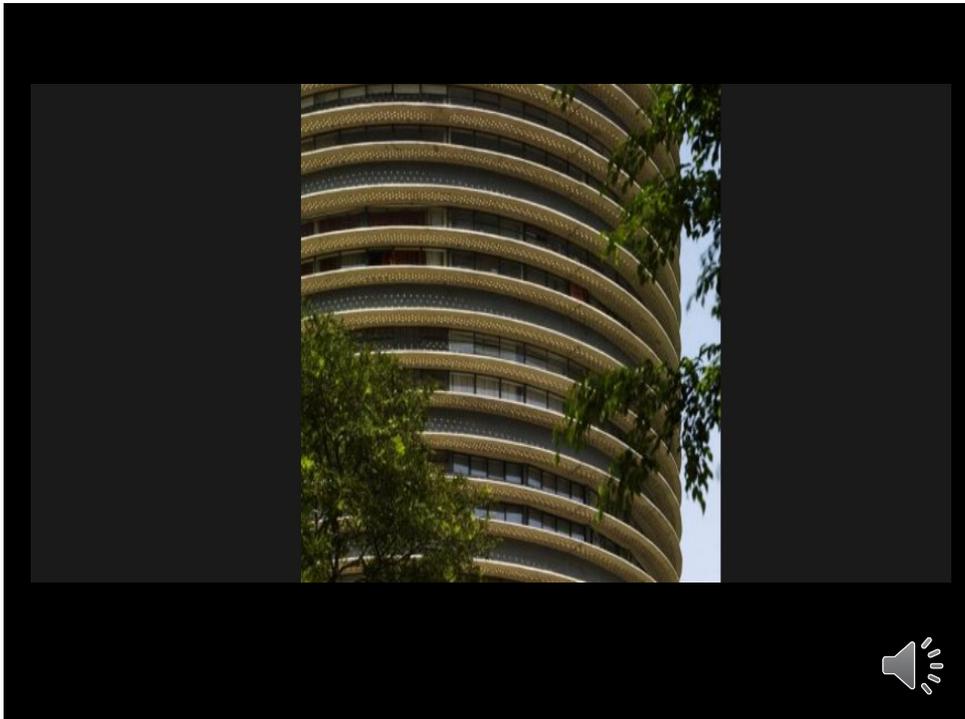
Hospital Sarah, Fortaleza. Arq. Lelé





Edifício Montreal, São Paulo – Oscar Niemeyer

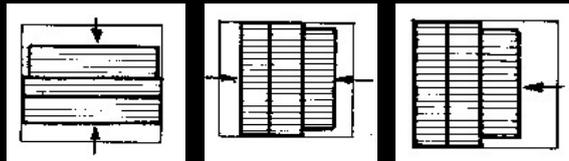




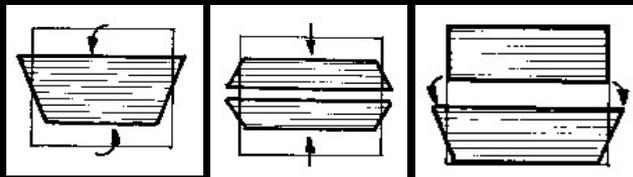
## DETALHAMENTO

*De correr:*

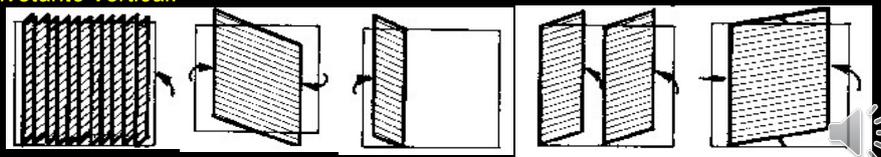
**Enorme importância da Tipologia das Janelas**



*Pivotante horizontal:*



*Pivotante Vertical:*





Residência – Ângelo Bucci

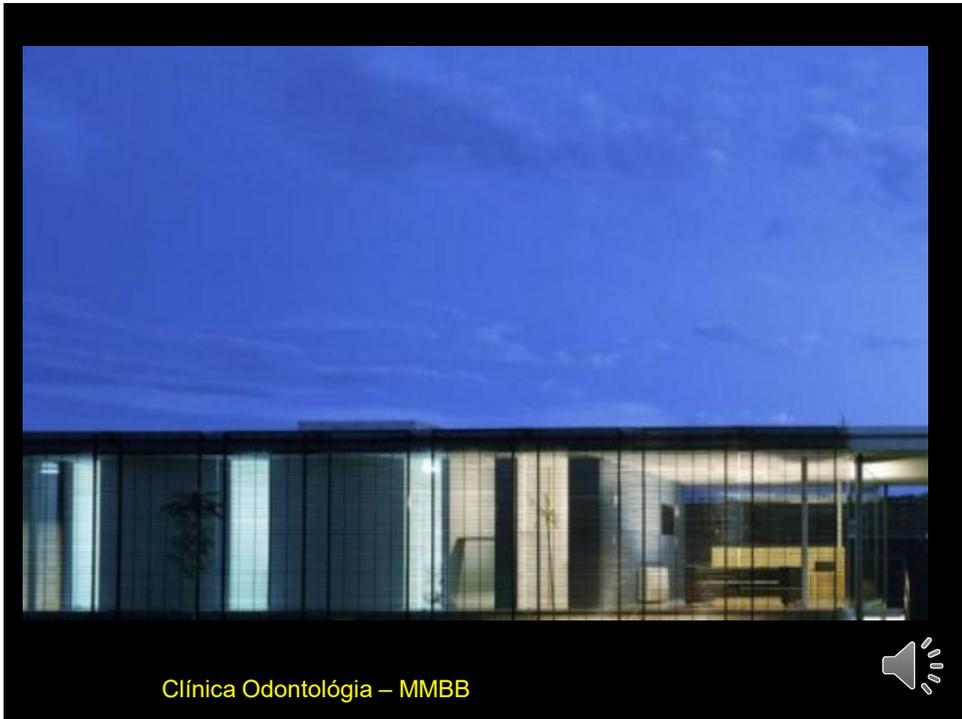


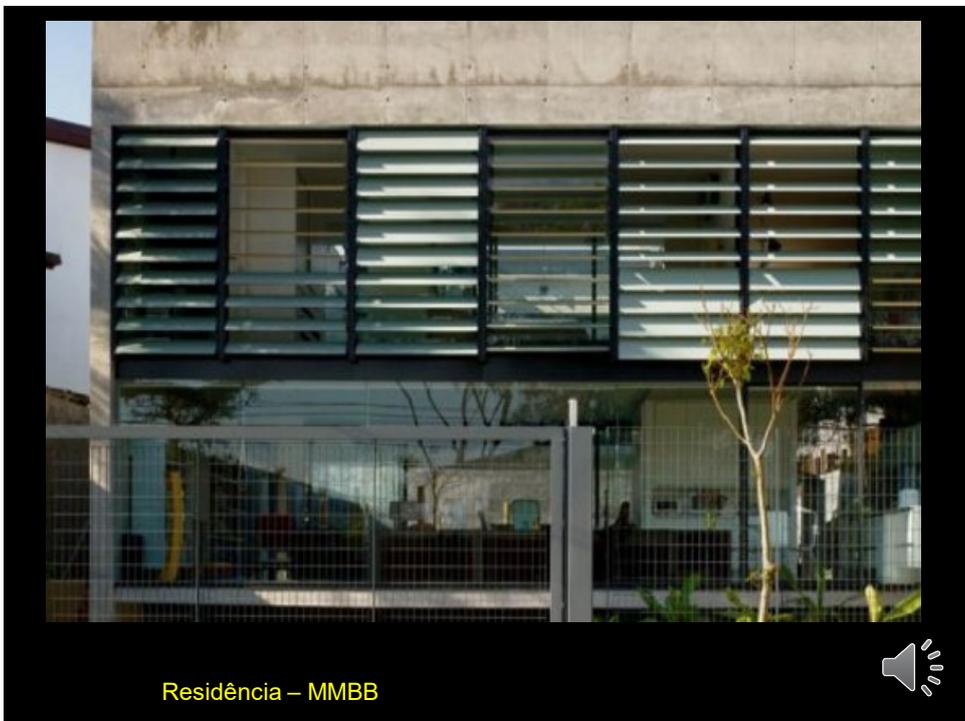
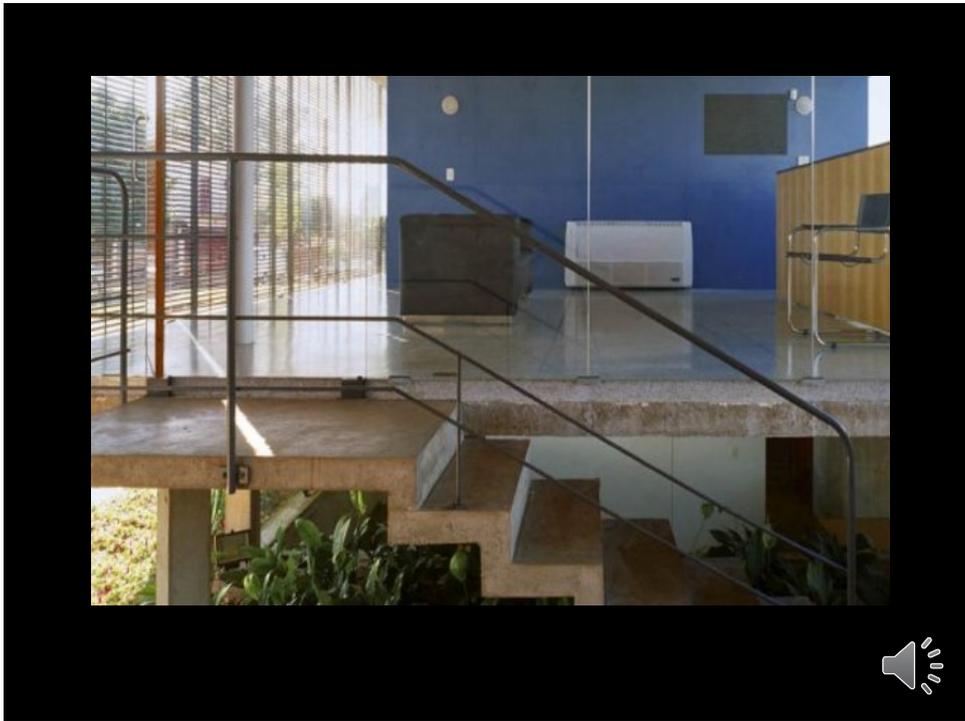




Hospital Cidade Tiradentes, em São Paulo.  
Borelli Merigo Arquitetura e Urbanismo e Walter Makhoh

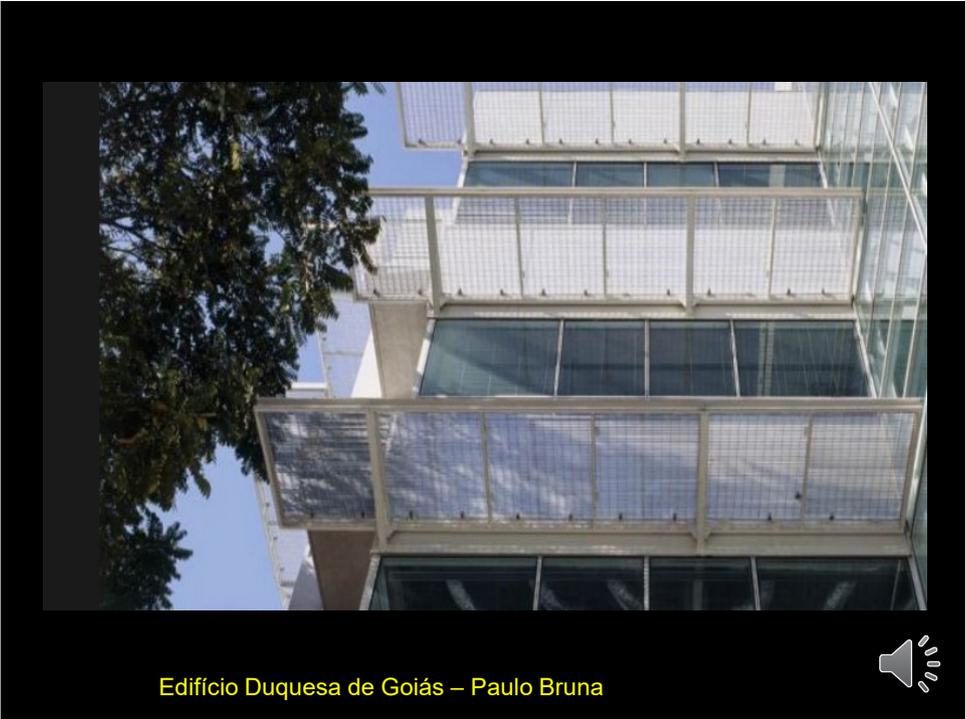


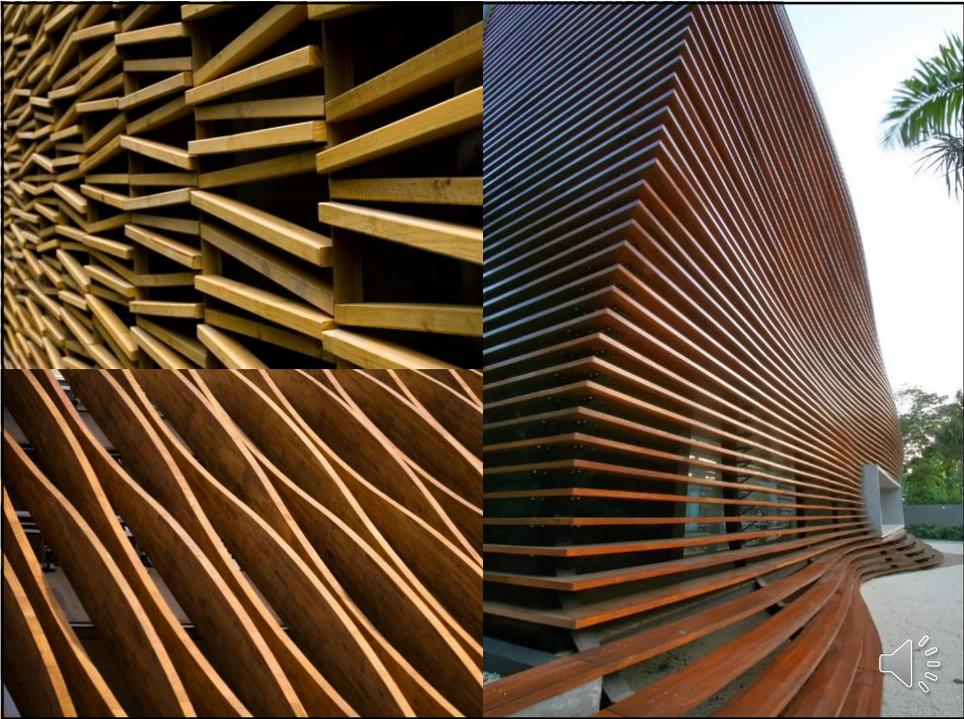


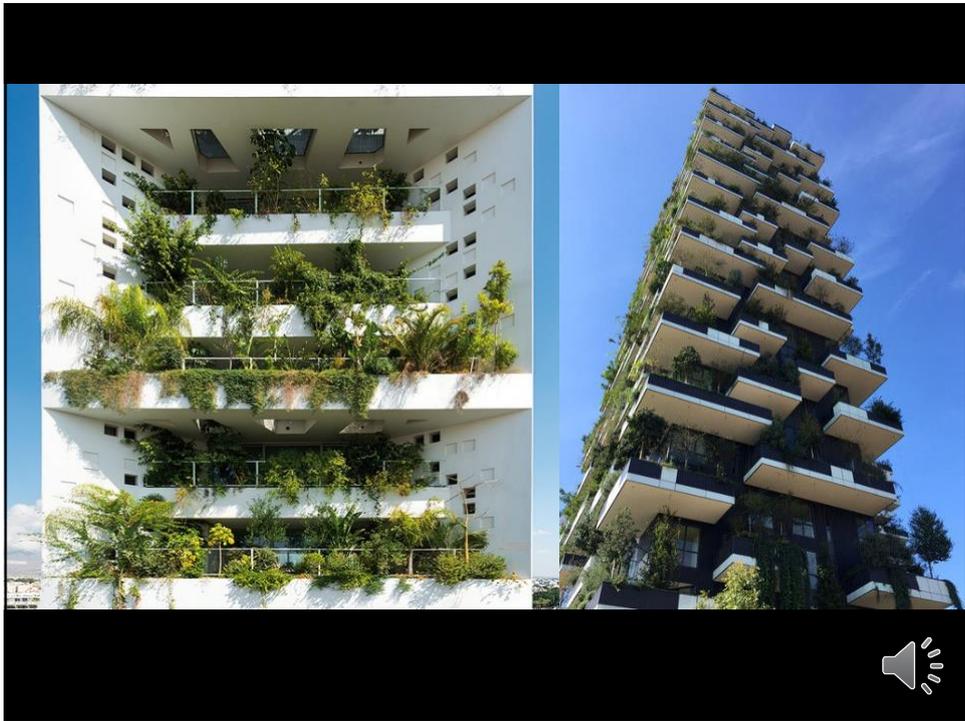


Residência – MMBB



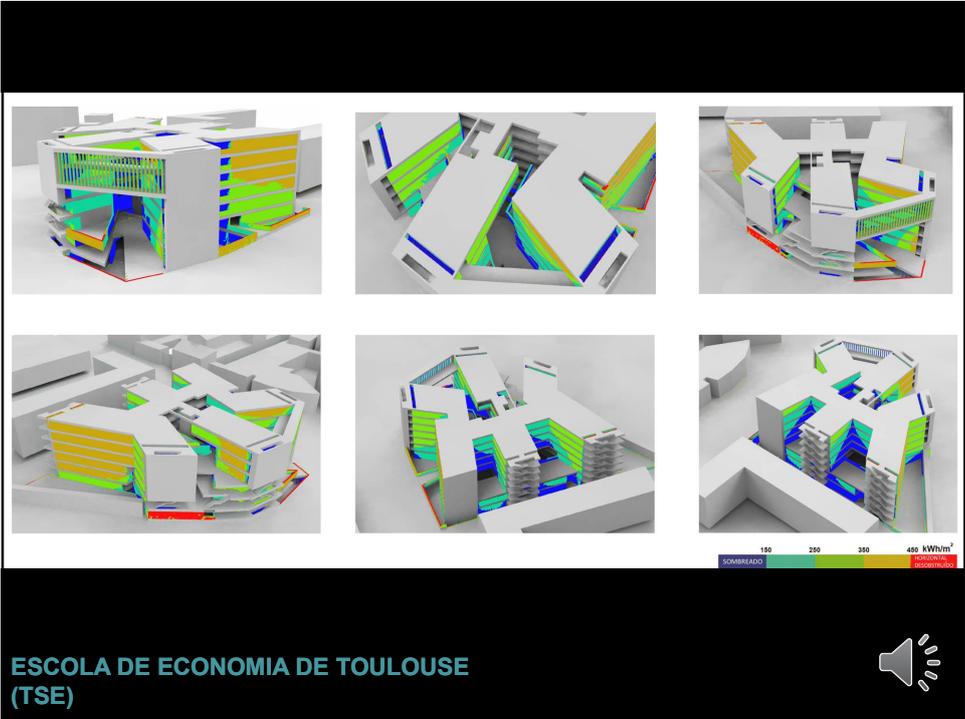
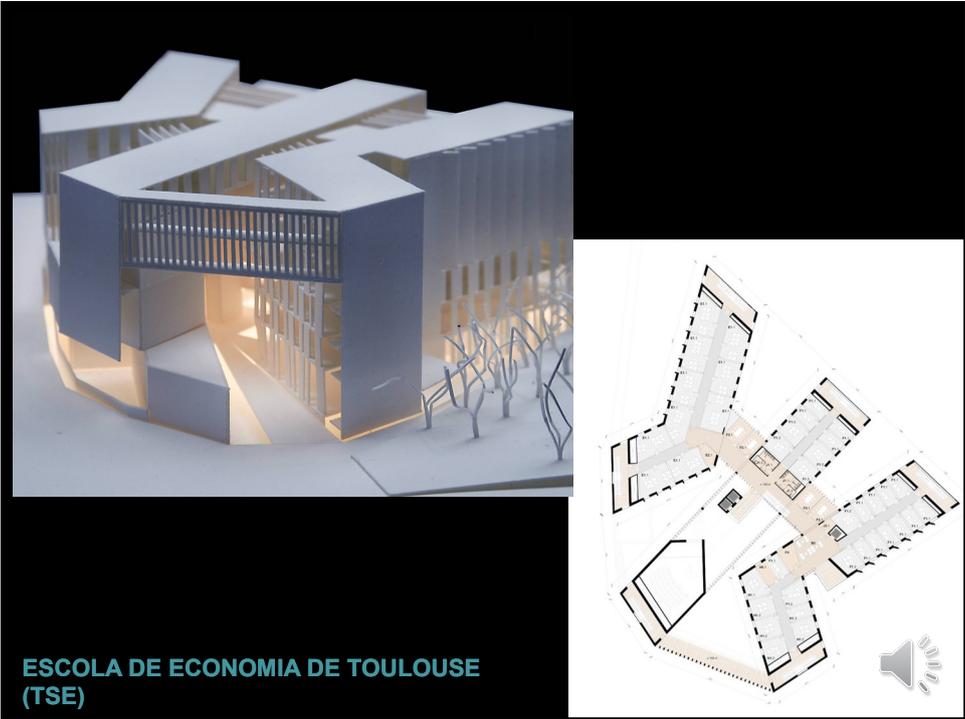


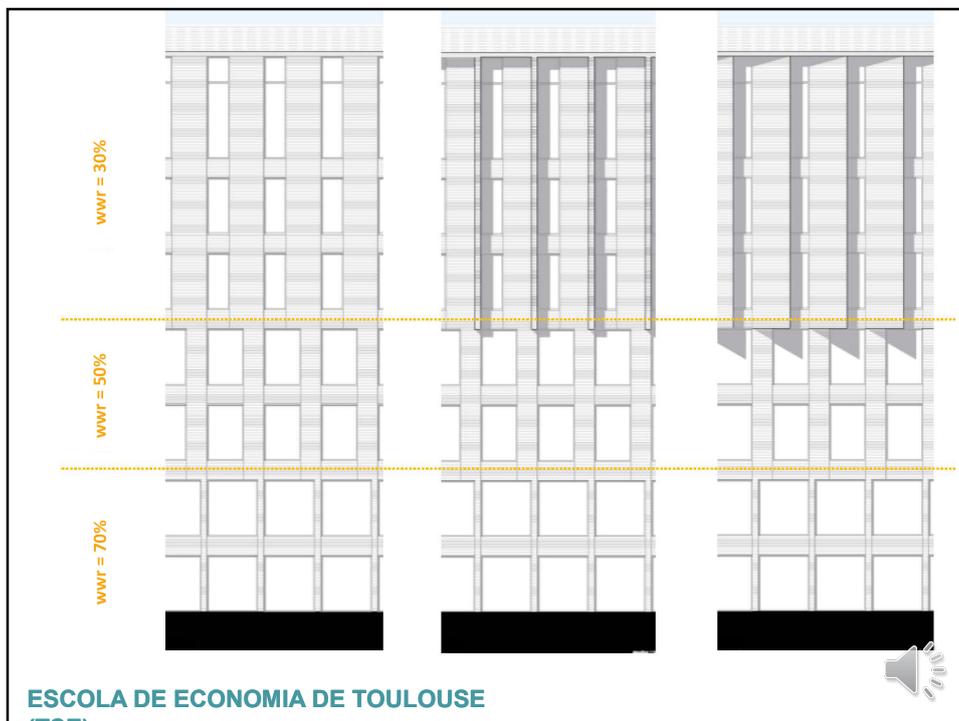


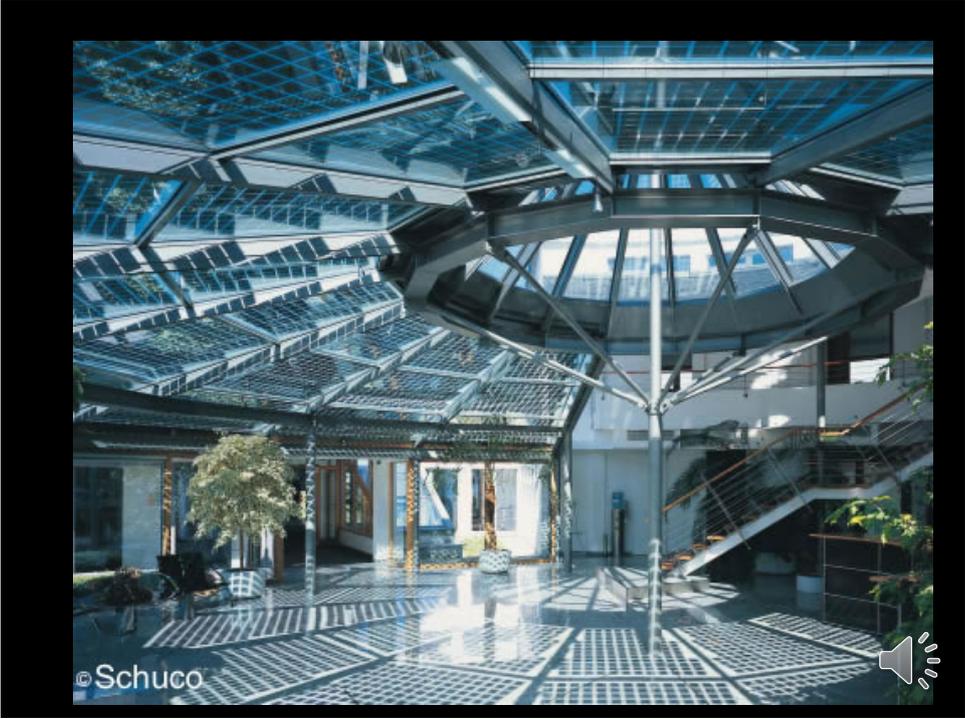


Deuxième Lycée Polyvalent  
Régional,  
Edifício Escolar, Fréjus, França.  
Arquitetura: Foster and Partners.









## INSPIRAÇÃO

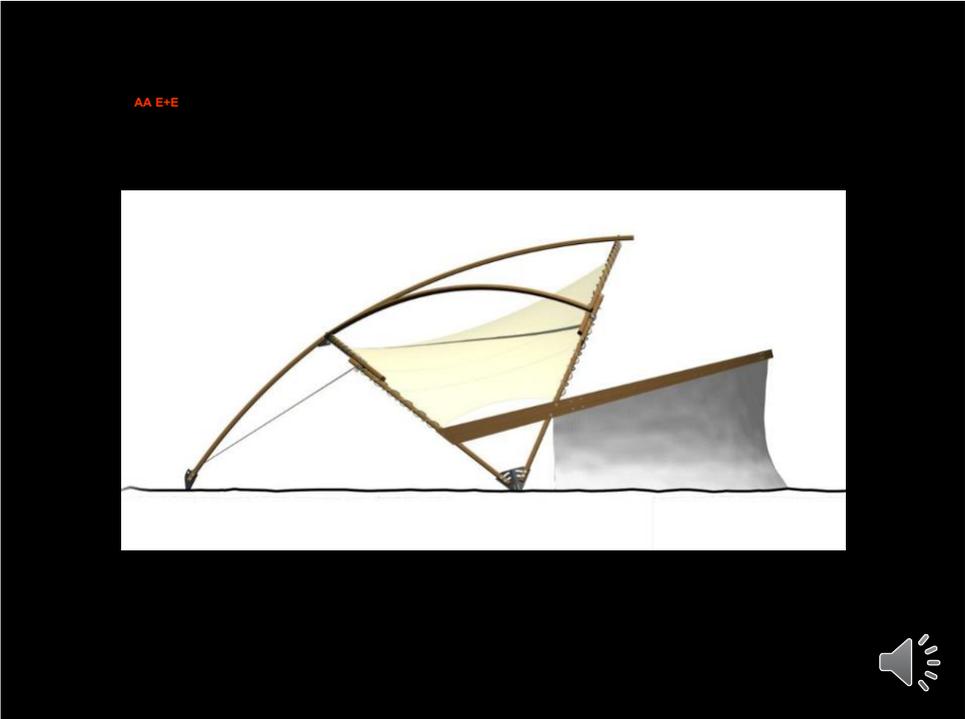
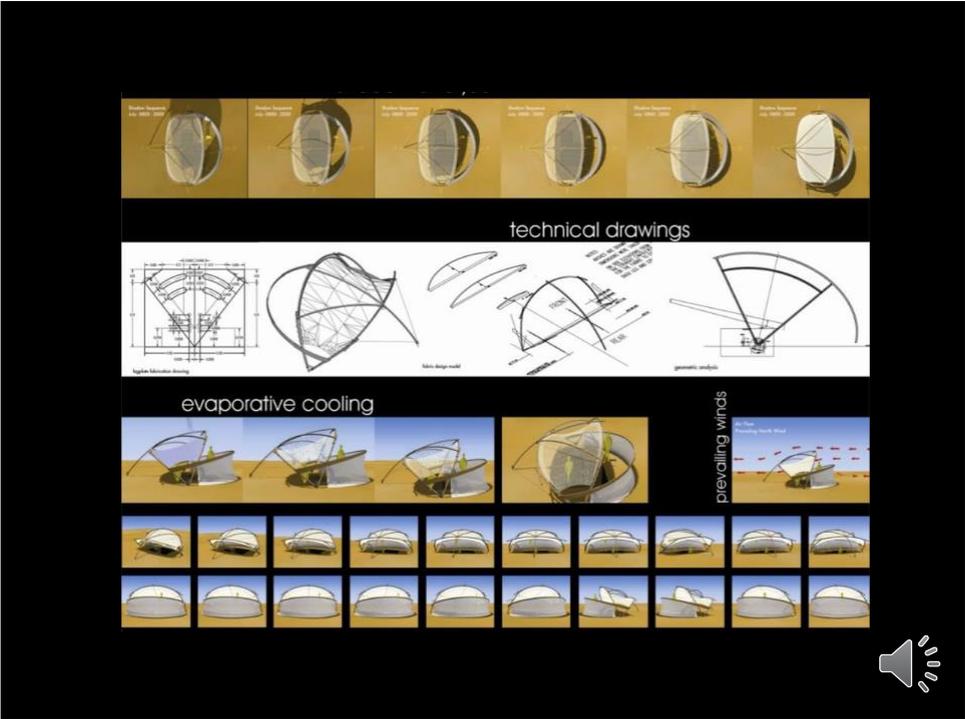
Trabalhos do programa de pós-graduação SED-AA  
Sustainable Environmental Design, AA Graduate  
School, Londres



Aprender haciendo

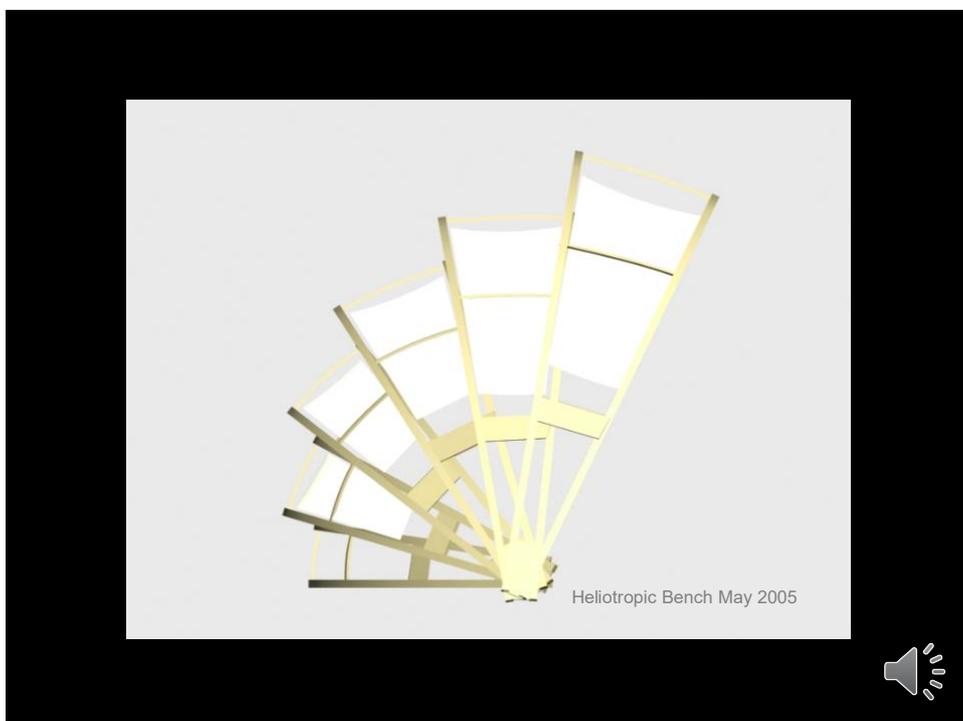
Sala de aula exterior / Pankese Village School, Ghana (5°N), February 2003

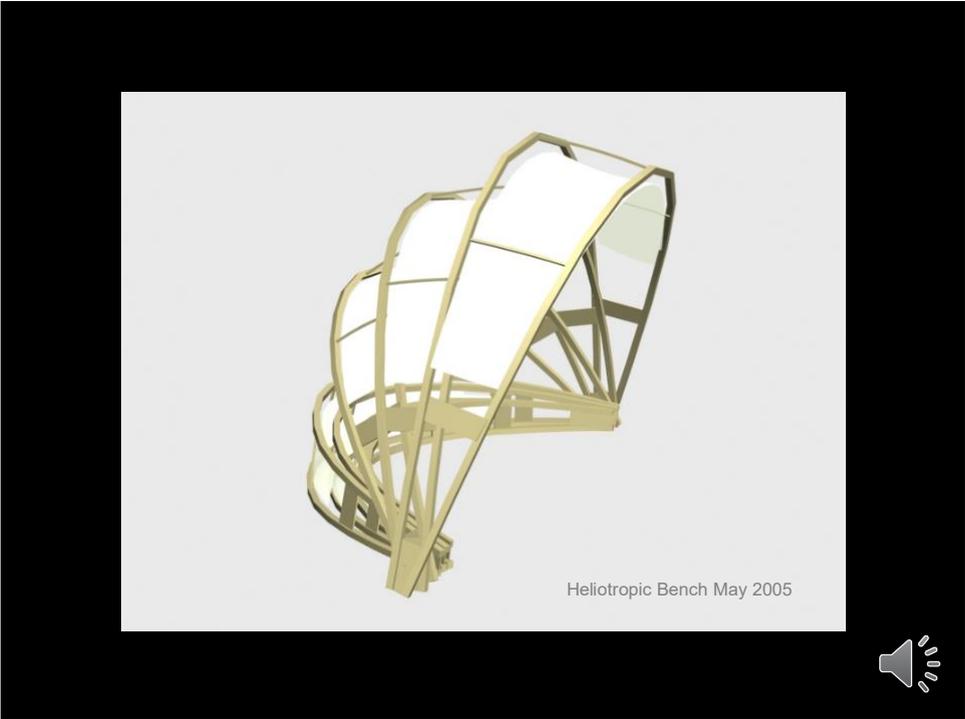














Oia, Santorini, 20 May 2005



Brincando com o sol

