two poles of solar control

layered, thick, directionally specific facade

reflective glass, smooth skin curtain wall

announcements 5/6/08

Panel Discussion:
How have I used my architectural degree in a non-traditional career path

Wednesday May 7, 5:30, Architecture Hall 042

(Sponsored by the Professional Advisory Council; food will be served)

Assignment 4:
Shading Model Studies
Available on the Course Website (due in sections next week)

Sun Angle Calculators
http://www.sbsp.org/resources/sac/index.htm

Chandigarh High Court, Le Corbusier, Punjab, 1957

Mill Owners Association Building
West Facade

BRE Environmental Building, Feilden Clegg Design, Garston, UK, 1997

Inland Revenue Center, Michael Hopkins, England, Nottingham, UK, 1995

Magney House, Glenn Murcutt Bengt Point, NSW, 1982-1984

Consorcio-Vida Offices, Enrique Browne, Santiago, 1990-1993

Sun Path Diagram

Sun, Wind & Light
pp. 297 - 300

MEEB 10th Appendix D.3
pp. 1539-1542
1. Site Shading Masks

Plotting a picture of the sun’s path, and the landforms, buildings, trees and objects that block the sun.

Obstructions from the previous diagram as seen on a Sun path Diagram (polar, stereographic)

Method A: Horizon Survey

Find the Altitude and Azimuth of points along the horizon formed by trees, buildings and landforms and plot these on a Sun Path Diagram to make accurate predictions of solar access.

Method B: Fisheye Photography

Fisheye images can “see” the entire sky vault and document the horizon in a single image. Overlaid on a Sun Path Diagram, accurate predictions of solar access can be made.
Vertical site elements span from the horizon toward the zenith.

Horizontal site elements follow profile angle contours.

Take a fisheye photograph...
2. Window Shading Masks

Plotting a picture of a window shading device and the sun's path to predict sun and shade on a window.

Profile Angle

\[ J \cdot I \cdot H = \text{Altitude Angle} \]

\[ C \cdot B \cdot A = \text{Profile Angle} \]

**Addressing Seasonal Shading:**

- Movable Shading Devices
- Deciduous Plants

**Note:** If this is a section through a south-facing window, at noon:
Profile Angle = Alt. Angle = 90° - Lat. + Declination
Construction a Window Shading Mask:
Making a Shading Mask Protractor

1. Horizontal Projections

2. Vertical Projections
Sun Path Diagram Overlays

Combination Shading Mask Protractor

Shading Mask Protractor

Profile Angle and Angle of Incident Protractor

Birkenstock U.S.A.
Facade Shading and Envelope Renovation
Novato, California
Shading Calendar + Sunpath Diagram for FALL
realistic temperatures/periods

South-facing Window

Shading Calendar + Sunpath Diagram for FALL
realistic temperatures/periods

Shading Mask + Shading Angles
Profile angles to plot horizontal shading devices and radial lines to plot vertical shading devices

Shading Mask
Profile angles to plot horizontal shading devices and radial lines to plot vertical shading devices

0 to 50% shade
50% - 100% shade
100% shade

South-facing Window

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