ENVIRONMENTAL FACTORS

a. dry bulb temperature
b. wet bulb temperature (derive RH=\%)
c. mean radiant temperature
d. air speed

PERSONAL FACTORS

a. clothing
b. metabolism
Psychrometric Chart

Fig. 150 Applicability of building cooling strategies. *The Green Studio Handbook*
ASHRAE Thermal Comfort Chart (Standard 55-2004)
Solar Geometry
Applications

University of Oregon
January 18, 2007

Dear Dad, just a line to let you know I am well and busy.
PROFILE ANGLE

- Shadow angle
- Architect’s angle
- Conceptual

The angle cast by the leading edge of an exterior shading device at particular times of the day, in a plane normal to the building
UO BOOKSTORE  south-facing façade
NOON, October 14
PROFILE ANGLE?

GRAPHICALLY:
• Draw section of window and shading device
• Measure with protractor or adjustable triangle

OR

CALCULATE:
• \( \tan \Omega = \frac{\text{height (opposite)}}{\text{length (adjacent)}} \)
• solve for \( \Omega \)
Design Method 1: Analyze first

1. Start with the shading requirements, the place the profile angle overlay on top.
2. Find necessary profile angle.
3. Draw section of the window and elevations. Adjust design.
Design Method 2: Draw first

1. Sketch, draw elevations and sections.

2. Select point on window that you know needs 50% shading (for example).

3. Calculate profile angle, compare to shading requirements. Adjust design as needed.
BEFORE SOLAR KNOWLEDGE