Texas Architects

...first...make shade
Two key words tell you where the sun is in the sky

a: solar altitude
e: solar azimuth
Where is the sun at 1pm June 21?

Altitude
75 degrees
Above the horizon

Azimuth
245 degrees
West of north
And at any given moment...

http://www.srrb.noaa.gov/highlights/sunrise/azel.html
More precisely...

First you need to know where you are,
College Station is located at: 30.61°N
96.32°W

Second, open up the solar calculator at
http://solardat.uoregon.edu/SunChartProgram.html

144 deg az 65 deg alt
So where will the sun be for Thursday’s class?
Summer sun is high; winter sun low. This allows shading devices to selectively admit the warming sun rays during the coldest months and to exclude the direct rays at the time of year when the additional heat is unwanted. The sun’s path is precise and predictable. The designer uses this as an opportunity to control the sun’s effect on his building. The most effective way to reduce unwanted solar transmission is to use external shading like trees, fins, overhangs or awnings, which stop solar transmission, leaving the glass in shade. Solar radiation is also transmitted by reflection from surfaces such as white building materials, glassy water and sand.

Internal devices like blinds, drapery and shades help reduce solar transmission through glass, but are less effective than external shading. Under the best conditions, internal devices can only reduce transmission by 65 percent. When direct sunlight falls on 1/4" plate glass, as much as 80 percent of the sun’s energy will be transmitted into the space. At night, the problem is reversed, and the drapery keeps the heat from escaping to the atmosphere while the overhang becomes ineffective. Again, **there is no single solution to use or stop solar radiation.** Each case must be handled as a specific application of sun control.
But what sun angles do I use? When should we shade?
Can’t I just insulate?
Insulation flavors... plain vanilla

- Expanded polystyrene ("beadboard or EPS") - available in
  - white
  - light grey

- Open cells - Holds water (which reduces "R" value)
- "R" value approx 3.5 per inch
- Lowest price range
Rainbow flavors

- Extruded polystyrene ("styrofoam") - available in:
  - blue (Dow)
  - Pink (Owens Corning)
  - Green (Amoco)
  - Yellow (Certainteed)

- Closed cells - Won't hold water
- "R" value approx 5 per inch
- Middle price range
Dirty yellow

- Polyisocyanurate ("polyiso") - available in yellow
  - Closed cells - Won't hold water
  - "R" value approx 10 per inch
  - highest price range
Blank walls...a sustainability concept?...design opportunity?

The key is variation and repetition
Enjoying no windows, Herzog & deMuron
Pressed Metal wrinkles
Walker Art Center Addition
The blank wall needs either the restraint of process marks or... exuberance!
And moments of the sublime...
Our responsibility...Transforming the ordinary into the sublime
And the lines we draw, say it all
Variation is critical
Variation through subtraction
And blank walls can be beautiful!
Art-house

Austin

Two details...

Lewis Tsurmaki Lewis Architects
2010 (coming to talk to you Nov. 2!)
ARCHITECTS: LewisTsurumakiLewis Architects – Paul Lewis, AIA, Marc Tsurumaki, AIA, David Lewis, principals; Jason Raminovitch, project manager
ENGINEERS: NJ Structures (structural); Kent Consulting Engineers (MEP); Garrett-Thorn (civil)
CONSULTANTS: Lumen Architecture (lighting); Blue House Design (media)
CLIENT: Arthouse at the Jones Center
SIZE: 10,830 square feet
COST: $4.8 million
COMPLETION DATE: October 2010

SOURCES
METAL PANELS: Rimex Metals Group
PRECAST CONCRETE: Advanced Cast Stone
GLASS: Oldcastle BuildingEnvelope
CUSTOM GLASS BLOCKS: LTL with NJ Glass Technologies and Dupont SentryGlas Plus
SKYLIGHTS: Skylite Sky-Lites, Solatube
STUCCO: Lahabra Wall
LOCKSETS, CLOSERS, EXIT DEVICES: Stanley
The rule of Congress St....everybody get in line...and look straight ahead!