

announcements 4/10/08

course website:

<http://courses.washington.edu/arch3431/index.shtml>

Course materials (readings, assignments, lectures, references and website links) are now posted and will be updated after every lecture.

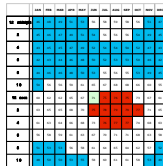
A2: Climate Analysis and References

The second assignment, along with several useful references, is now available on the course website.

Climate Analysis

II. Analysis and Graphic Articulation

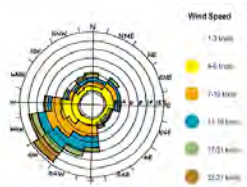
1. Temperature:
2-hour temperature map



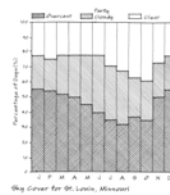
2. Temperature + Rel. Humidity:
Psychrometric Chart



3. Wind Direction & Velocity
Wind rose



4. Sun & Shade
Sky Cover Chart



Temperature and Relative Humidity: Psychrometrics

Temperature

- Dry Bulb
- Wet Bulb

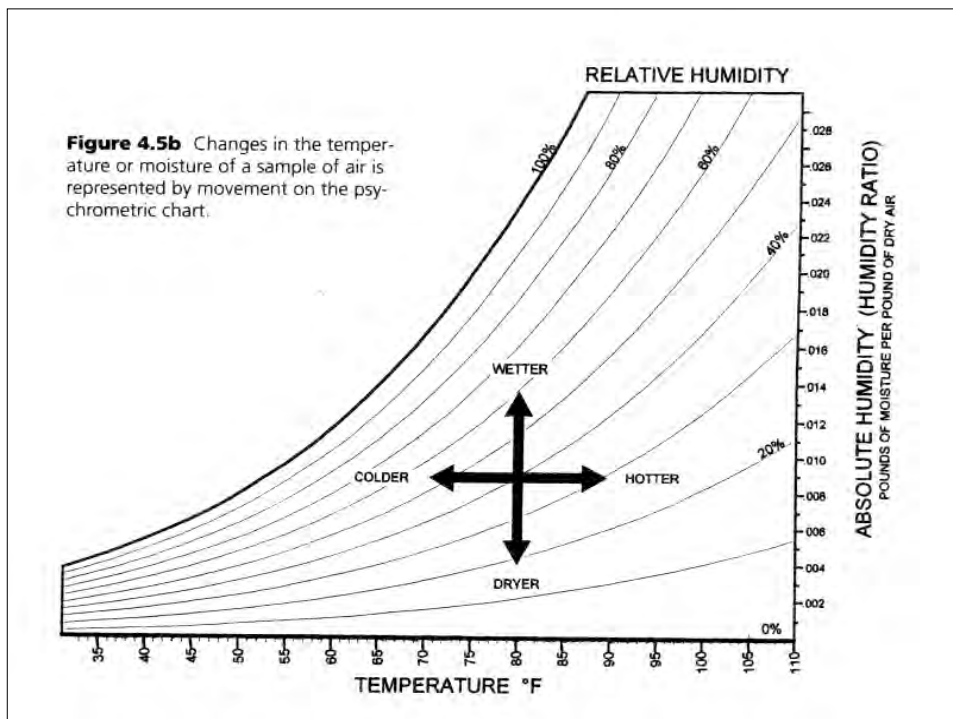
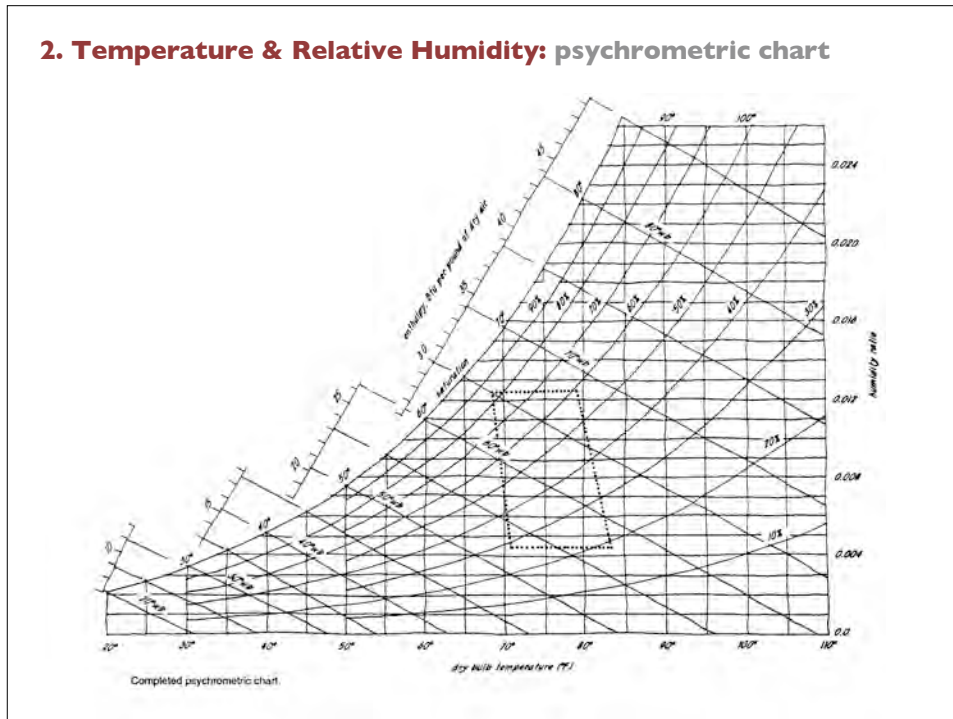
Relative Humidity

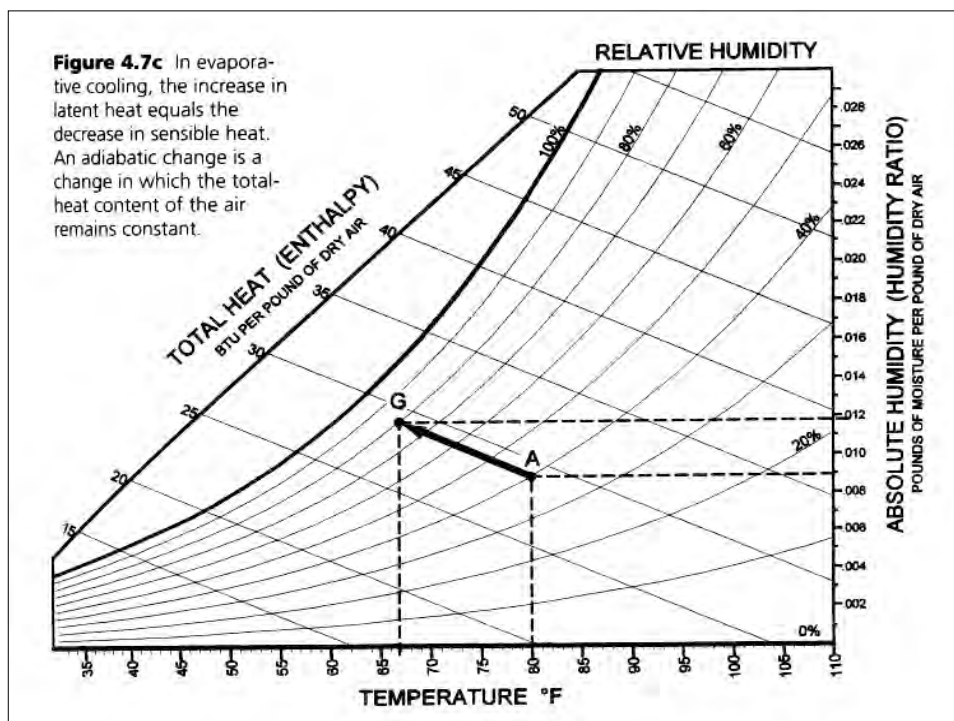
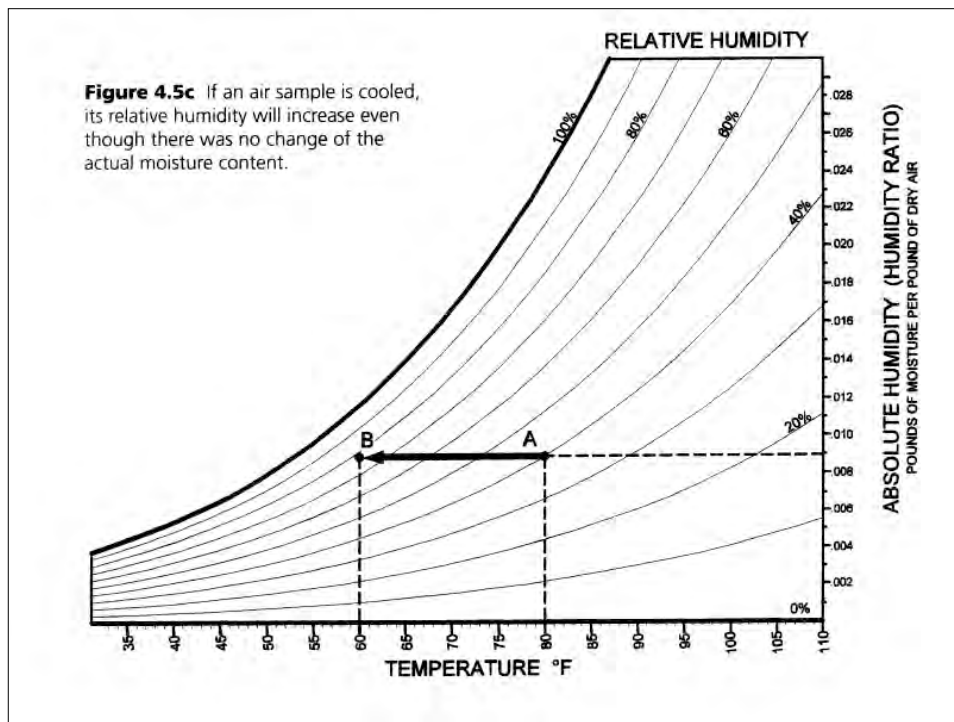
- Dry to Saturated Air

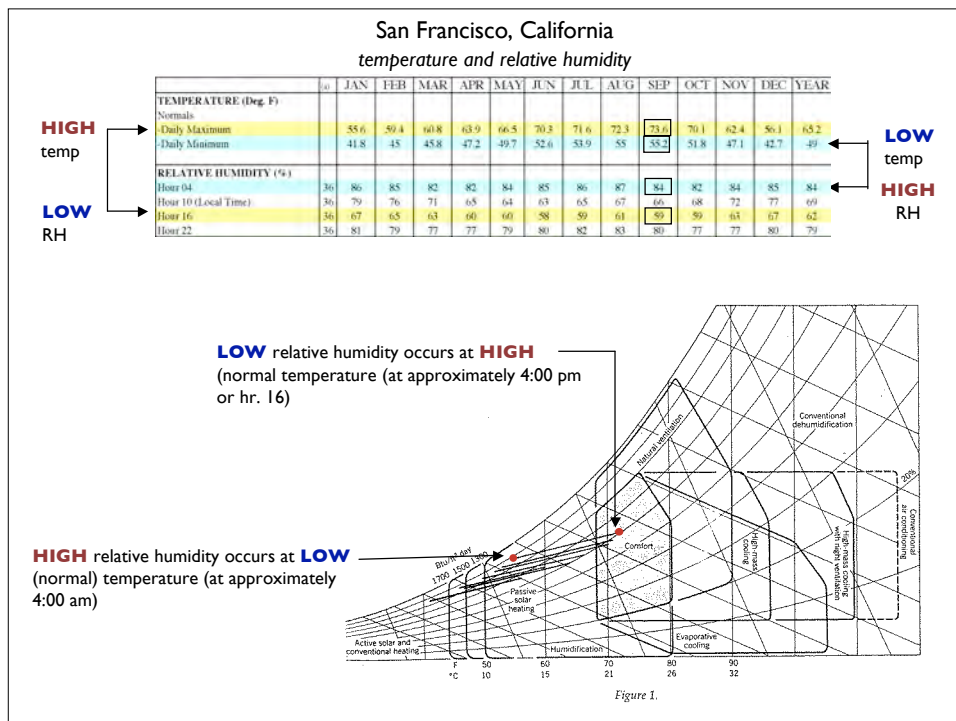
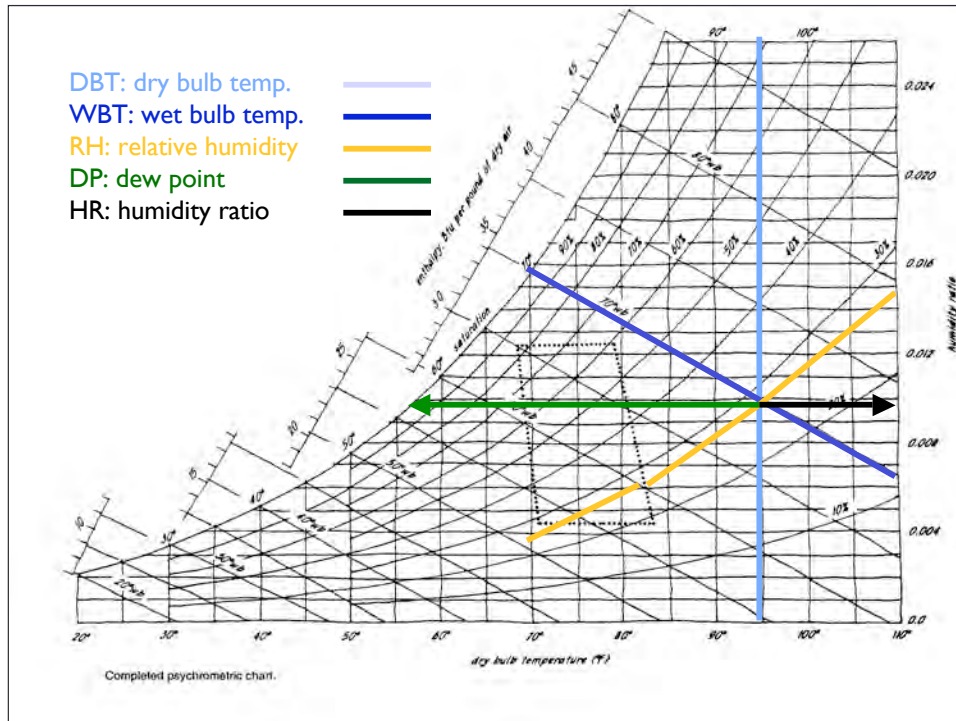
Absolute Humidity

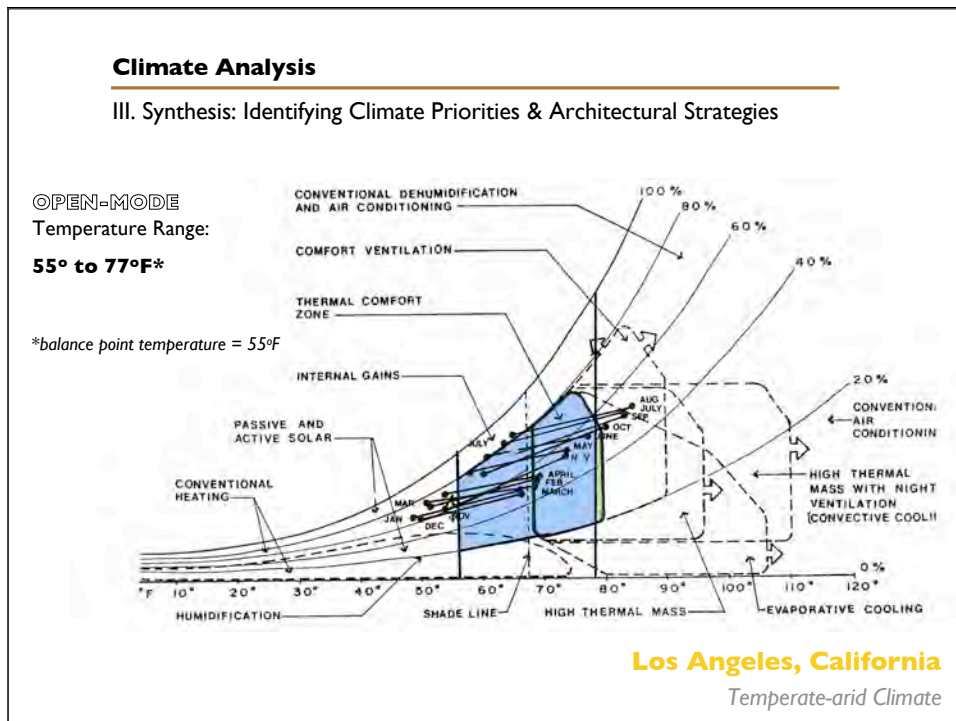
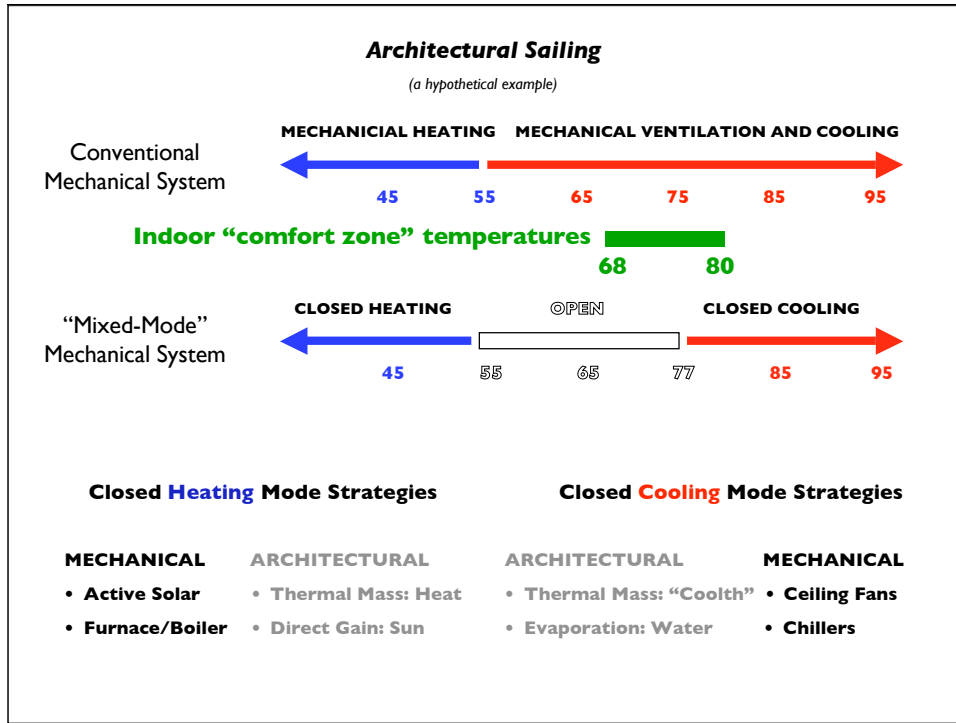
- pounds of moisture per pounds of air

2. Temperature & Relative Humidity: psychrometric chart







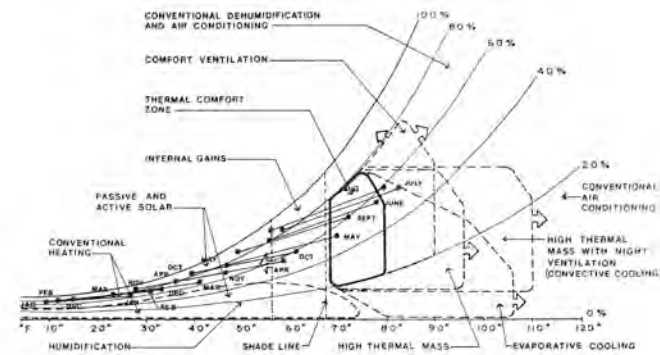


Climate Design Priorities

- Keep the heat in and cold temperatures out in the winter.
- Protect from the cold winter winds.
- Let the winter sun in.

Madison, Wisconsin

Cool Climate

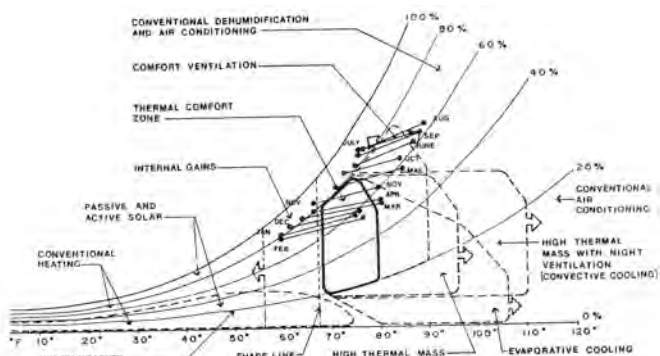


Climate Design Priorities

- Open the building to the outdoors since temperatures are comfortable much of the year.
- Protect from the summer sun.
- Allow natural ventilation to both cool and remove excess moisture most of the year.
- Avoid creating additional humidity.
- Keep the hot temperatures out during the summer.
- Keep the heat in and the cool temperatures out during the winter.

Miami, Florida

Hot-humid Climate

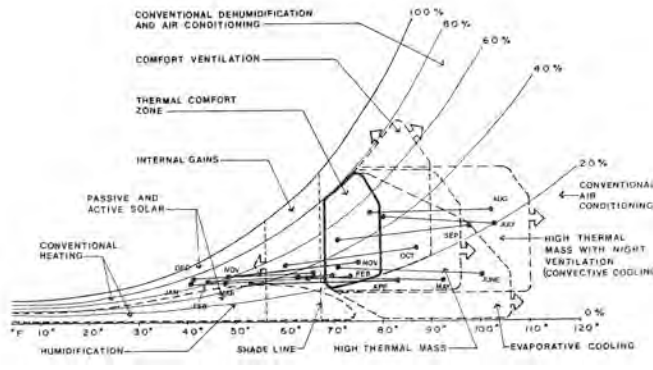


Climate Design Priorities

- Keep hot temperatures out during the summer.
- Protect from the summer sun.
- Use evaporative cooling in the summer.
- Use thermal mass to flatten day-to-night temperature swings during the summer.
- Keep the heat in and cold temperatures out in the winter.
- Let the winter sun in.

Phoenix, Arizona

Hot-arid Climate

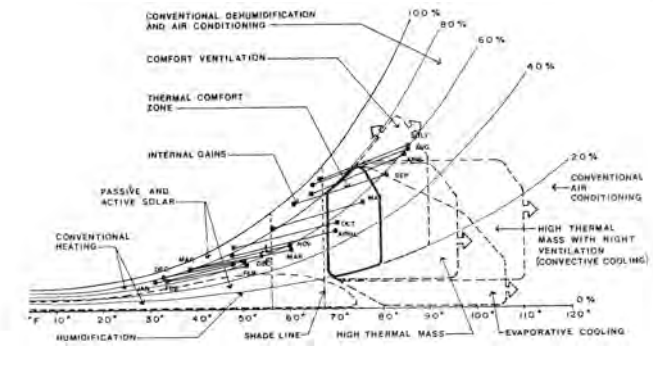


Climate Design Priorities

- Keep the heat in and cold temperatures out in the winter.
- Use natural ventilation for summer cooling
- Let the winter sun in.
- Protect from the summer sun.
- Protect from the cold winter winds.
- Avoid creating additional humidity during the summer.

Knoxville, Tennessee

Temperate Climate

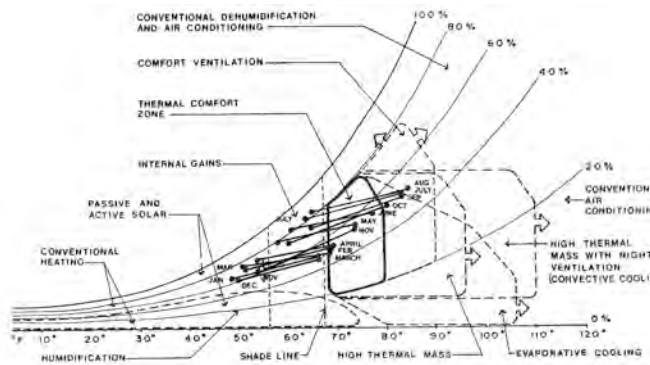


Climate Design Priorities

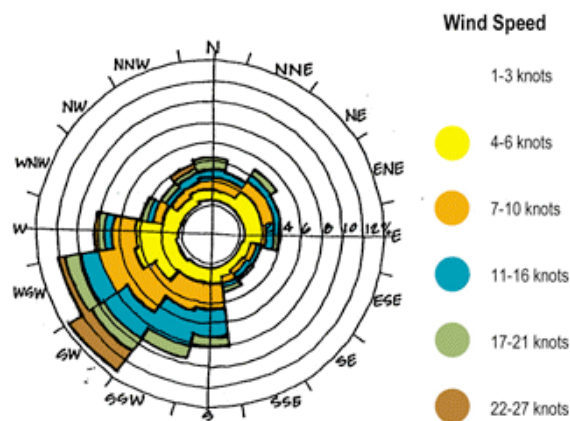
- Open the building to the outdoors since temperatures are comfortable most of the year.
- Protect from the summer sun.
- Let the winter sun in.
- Use natural ventilation for summer cooling.
- Use thermal mass to flatten day-to-night temperature swings in the summer.

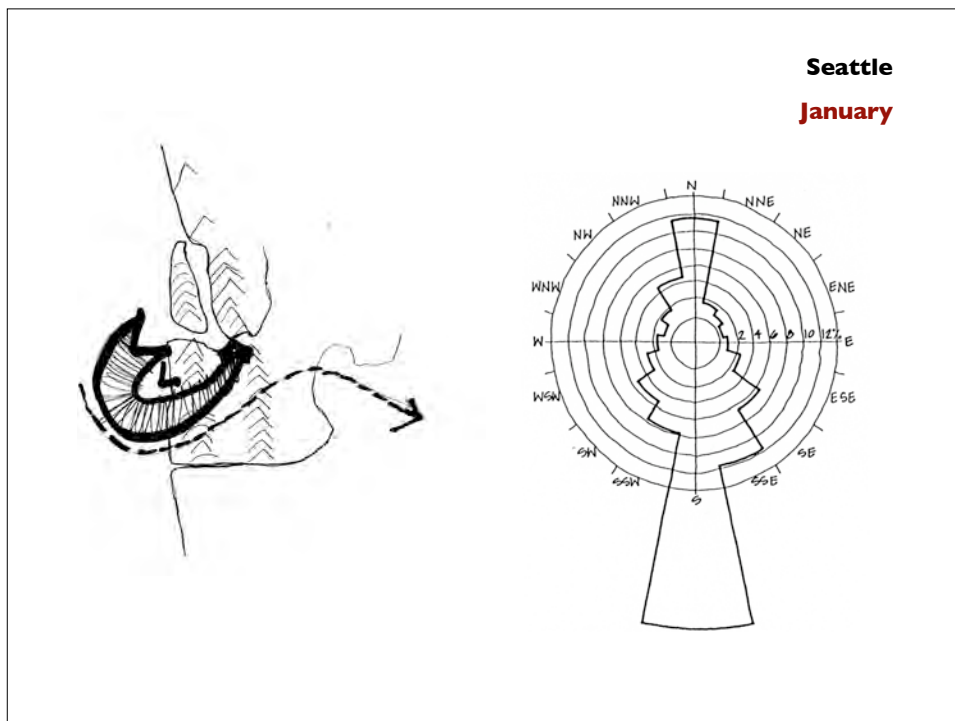
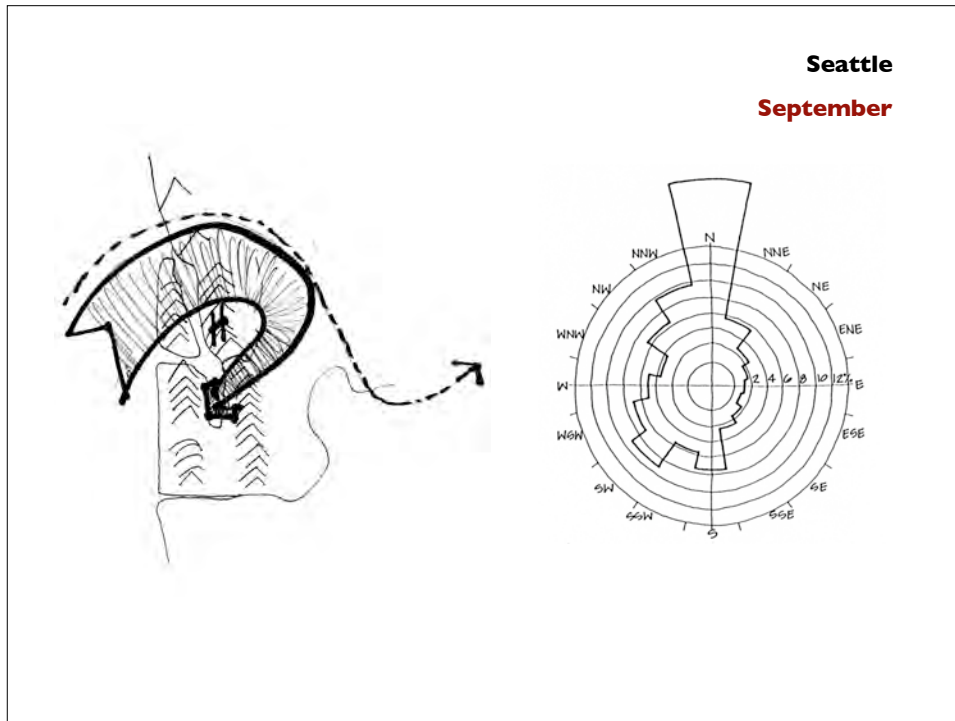
Los Angeles, California

Temperate-arid Climate

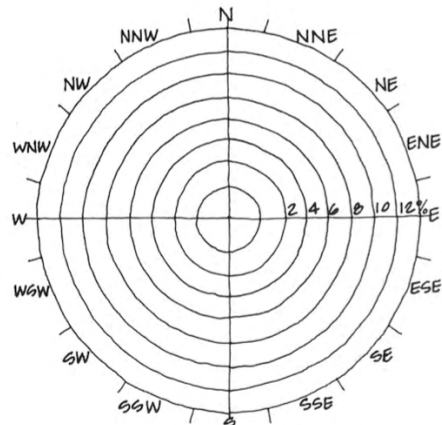


3. Wind Direction and Velocity: wind rose





3. Wind Direction and Velocity: wind rose



Wind Rose
Month: _____
City: _____

3. Wind Direction and Velocity: wind rose

16 PT. DIR.	SPEED (KNOTS)											TOTAL PERCENT	MEAN WIND SPEED
	1 - 3	4 - 6	7-10	11-16	17-21	22-27	28-33	34-40	41-47	48-55	>=56		
N	.8	2.8	3.3	1.2	.2	*	*	*	0	0	0	7.9	7.4
NNE	.4	1.2	1.0	.3	*	*	0	0	0	0	0	3.0	6.9
NE	.4	.9	.4	.1	*	*	0	0	0	0	0	1.8	5.9
ENE	.3	.5	.1	*	*	*	0	0	0	0	0	1.0	5.3
E	.4	.7	.3	.1	*	*	0	0	0	0	0	1.5	5.1
ESE	.5	1.4	1.7	.4	*	*	0	0	0	0	0	4.0	6.8
SE	.8	4.1	7.4	1.7	.1	*	*	0	0	0	0	14.6	7.7
SSE	.8	5.1	8.1	3.4	.9	.2	*	*	0	0	0	18.8	8.8
S	1.0	4.1	4.0	3.4	1.6	.5	.1	*	0	0	0	14.1	9.8
SSW	.5	1.3	.7	.5	.2	.1	*	*	*	0	0	3.4	8.1
SW	.5	1.1	.4	.1	*	*	*	0	0	0	0	2.2	6.2
WSW	.4	.9	.3	.1	*	*	*	0	0	0	0	1.8	6.0
W	.6	1.4	.8	.4	.1	*	*	*	0	0	0	3.2	6.3
WNW	.6	1.6	1.4	.7	.1	*	*	*	0	0	0	4.5	7.6
NW	.6	1.9	2.7	1.1	.2	*	*	*	0	0	0	6.7	8.3
NNW	.5	2.2	3.3	1.6	.2	.1	*	0	0	0	0	8.1	8.5
VAR	0	0	0	0	0	0	0	0	0	0	0	0	0
CLM	0	0	0	0	0	0	0	0	0	0	0	3.7	0
ALL	9.2	31.2	35.8	15.2	3.7	1.0	.2	*	*	0	0	100	7.8

3. Wind Direction and Velocity: wind rose

