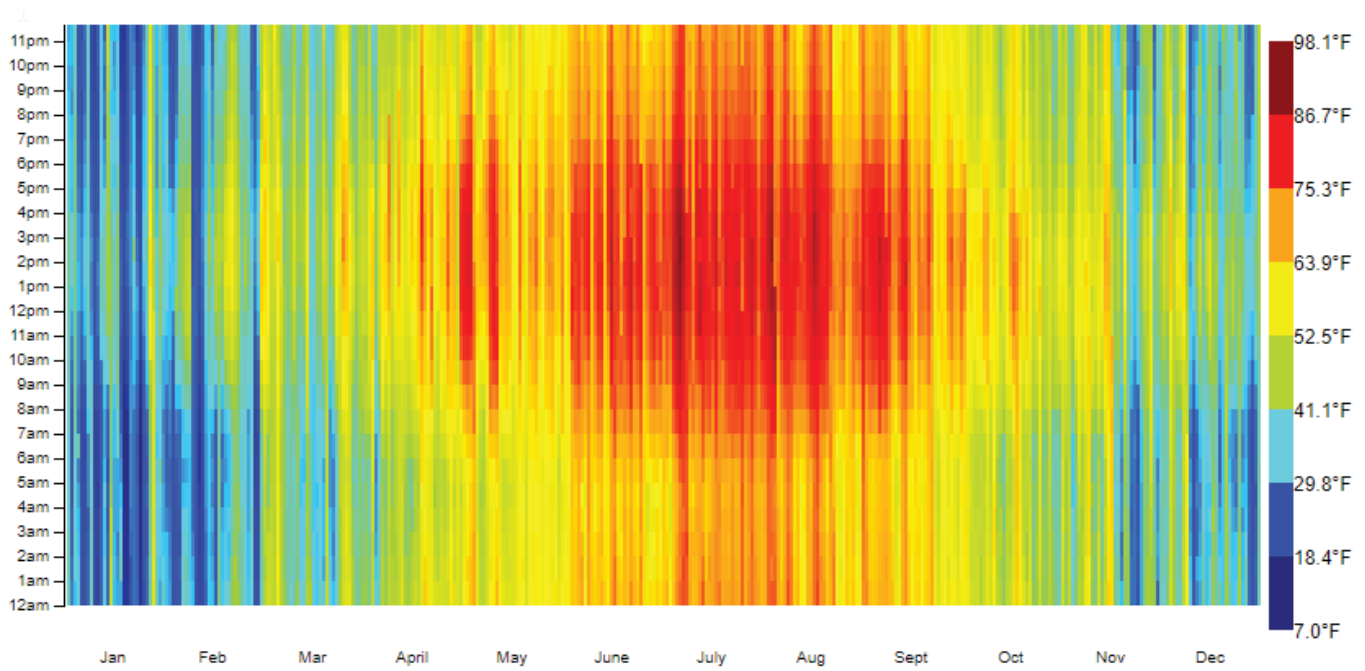


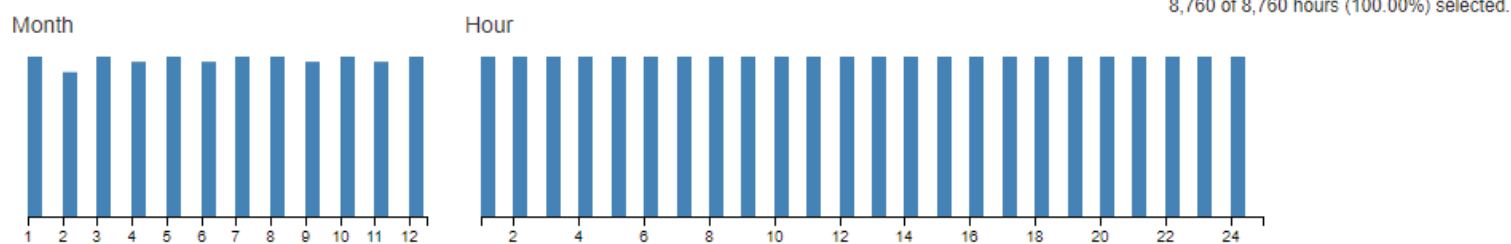
Temperature Chart for Philadelphia, Annual Analysis



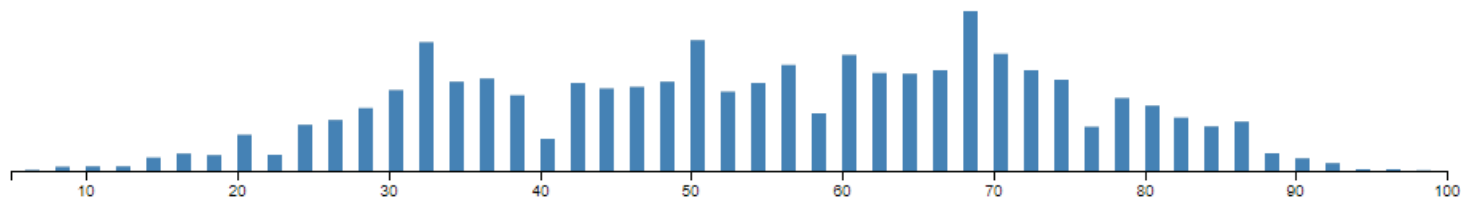
Weather Report Data for Philadelphia, July 22, 1979

Date/Time	Dry Bulb Temperature [C]	Wet Bulb Temperature [C]	Atmospheric Pressure [kPa]	Relative Humidity %	Dew Point Temperature [C]	Global Solar [Wh/m2]	Normal Solar [Wh/m2]	Diffuse Solar [Wh/m2]	Wind Speed [m/s]
1976/07/22 @ 00:00:00	22.2	18.57	101.7	71	16.72	0	0	0	3.1
1976/07/22 @ 01:00:00	21.1	18.21	101.7	76	16.73	0	0	0	3.6
1976/07/22 @ 02:00:00	20.6	18.12	101.8	79	16.86	0	0	0	2.6
1976/07/22 @ 03:00:00	21.1	17.83	101.8	73	16.1	0	0	0	3.6
1976/07/22 @ 04:00:00	20.6	17.75	101.8	76	16.25	1	0	1	3.6
1976/07/22 @ 05:00:00	21.1	17.83	101.9	73	16.1	35.99	38	32	3.6
1976/07/22 @ 06:00:00	22.8	18.84	101.9	69	16.84	162.6	221	98	4.1
1976/07/22 @ 07:00:00	25.6	20	101.9	60	17.29	341.54	395	154	4.6
1976/07/22 @ 08:00:00	26.7	20.63	102	58	17.78	537.01	550	185	4.1
1976/07/22 @ 09:00:00	27.8	21.75	102	59	19.07	728.22	644	228	2.6
1976/07/22 @ 10:00:00	28.9	21.65	102	53	18.38	797.38	640	237	3.6
1976/07/22 @ 11:00:00	30.6	22.52	102	50	19.01	872.45	678	242	3.6
1976/07/22 @ 12:00:00	30	21.64	102	48	17.82	752.23	464	318	2.1
1976/07/22 @ 13:00:00	30	21.64	102	48	17.82	804.69	536	326	2.6
1976/07/22 @ 14:00:00	29.4	21.71	102	51	18.23	429.25	55	385	3.1
1976/07/22 @ 15:00:00	30.6	22.52	102	50	19.01	429.41	184	305	3.6
1976/07/22 @ 16:00:00	30.6	22.13	101.9	48	18.36	295.99	209	188	2.6
1976/07/22 @ 17:00:00	30	22.02	101.9	50	18.47	158.84	136	113	2.6
1976/07/22 @ 18:00:00	27.2	23.57	101.9	74	22.17	53.19	28	49	5.2
1976/07/22 @ 19:00:00	25.6	23.23	102	82	22.3	4	0	4	2.6
1976/07/22 @ 20:00:00	24.4	22.49	102.1	85	21.72	0	0	0	2.6
1976/07/22 @ 21:00:00	23.9	22.27	102.1	87	21.61	0	0	0	2.6
1976/07/22 @ 22:00:00	23.3	21.69	102.1	87	21.03	0	0	0	2.1
1976/07/22 @ 23:00:00	22.8	21.59	102.1	90	21.08	0	0	0	2.1

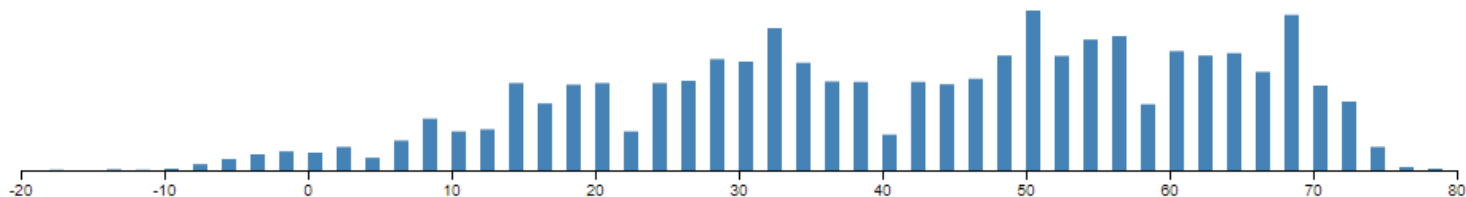
Drybulb Temp, Dewpoint, Relative Humidity



Drybulb Temperature



Dewpoint Temperature



Relative Humidity

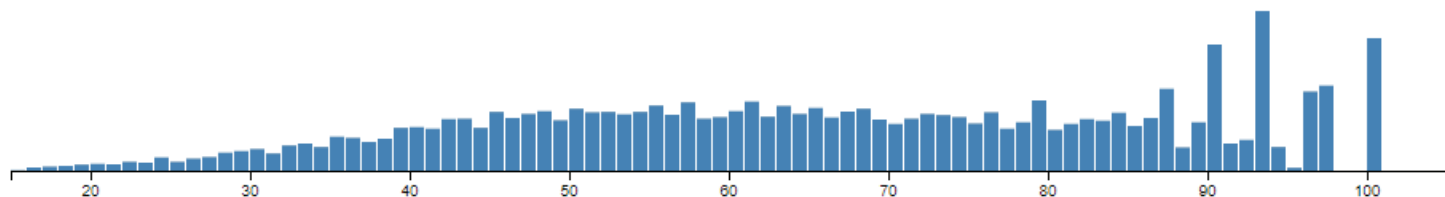
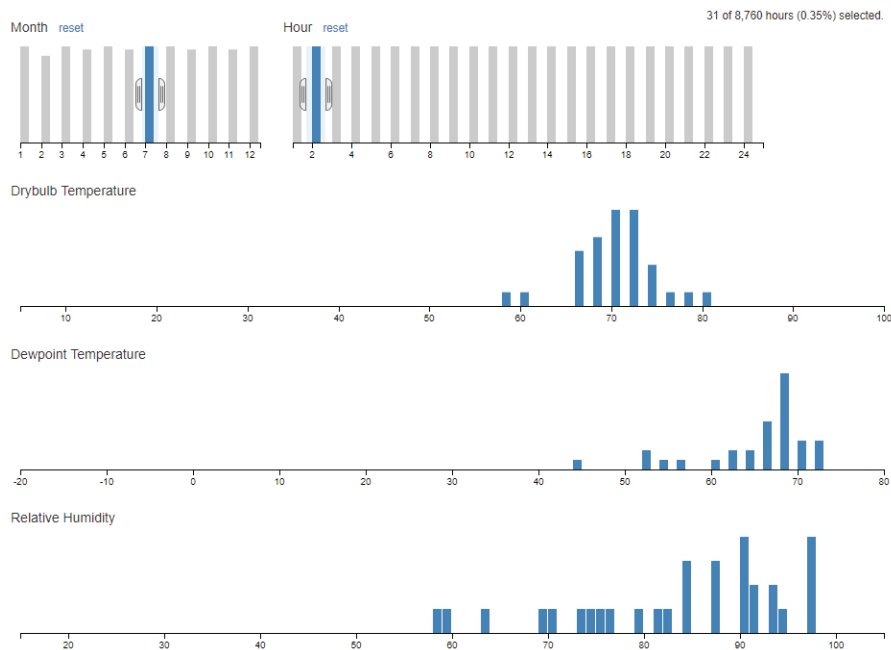
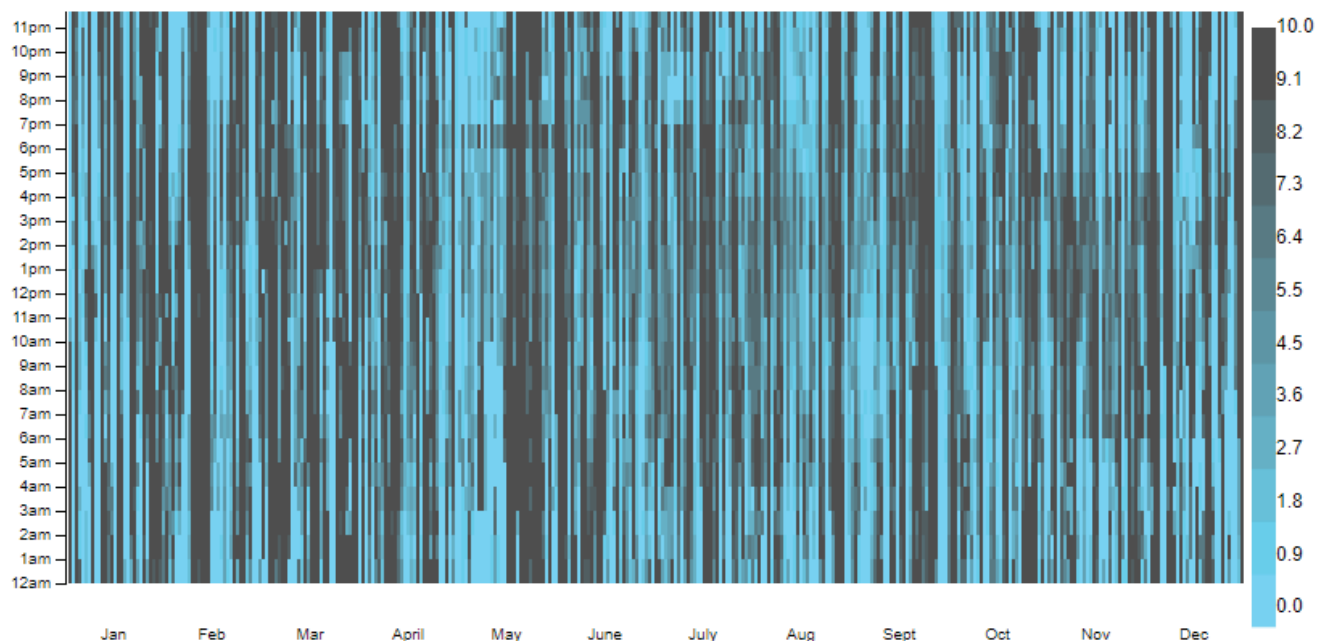


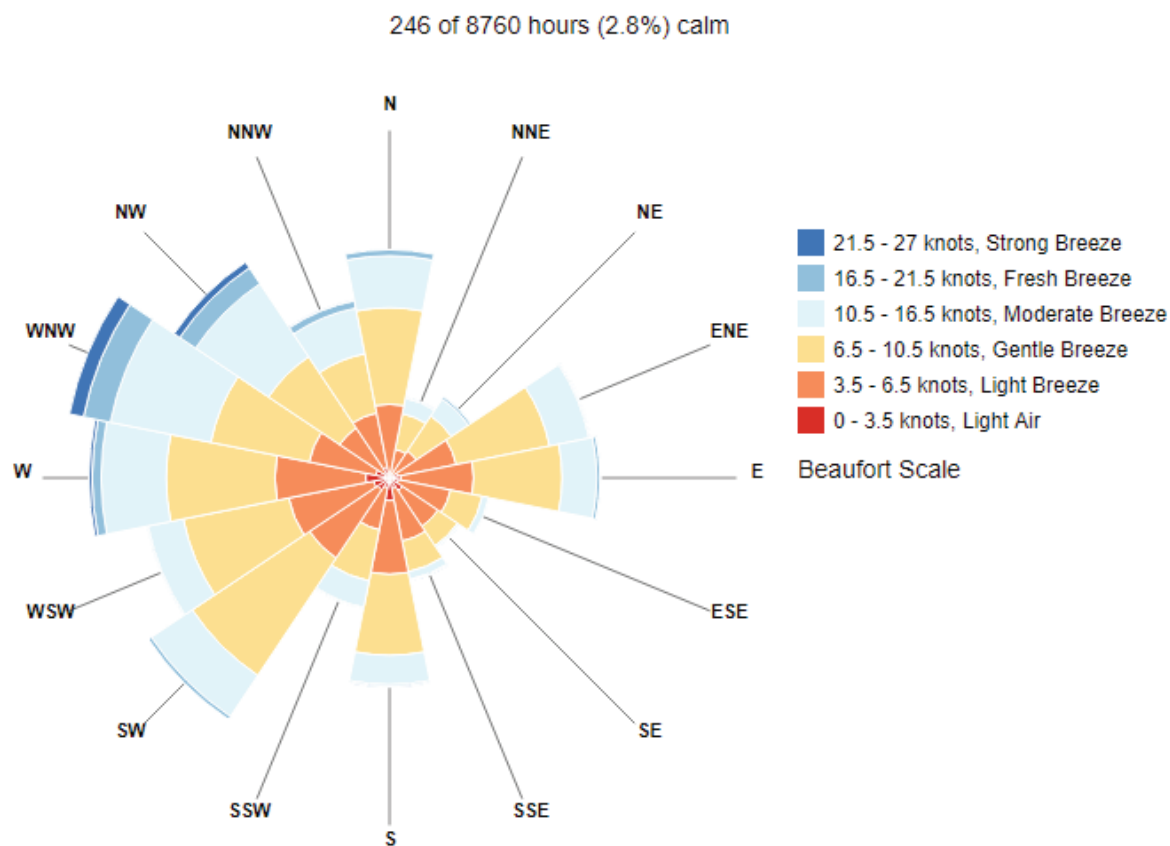
Chart Adjusted for July, 2 AM



Cloud Cover Floodplot - Chart displaying cloud cover level from 0.0 (No Coverage) to 10.0 (Full Coverage)



Wind Rose - Analysis of Wind Level/Compass Direction



Three Passive Design Strategies

- ONE** As mentioned in class, the primary passive design influence should come from radiation data. This means that the solar studies can inform massing definition, shading or louver design, percentage of facade glazed, all with the intent of creating the least dramatic temperature range which has to be mitigated for interior comfort.
- TWO** Additionally, energy costs can be reduced by designs which are responsive to solar data. With solar heat comes light, and designs which use natural daylighting strategies effectively are usually beneficial both to the cost of building operation, as well as the comfort of the inhabitants.
- THREE** Another significant influencer on passive design interpreted from weather data is wind speed and originating direction. As mentioned in class, not all wind is good for design, and so a careful designer can analyze the wind data in correlation with other factors (solar heat gain, temperature, humidity) to enhance internal comfort and building performance.
- Wind direction can influence the locations of air intake and exhaust, as well as external comfort (avoiding the creation of wind tunnels and other unpleasant environments)