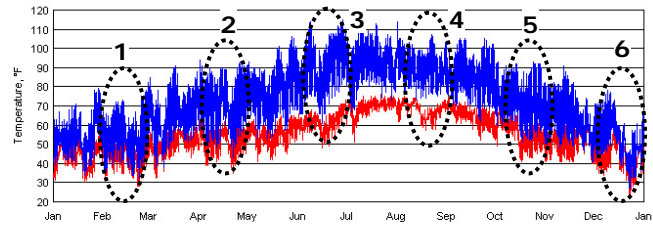


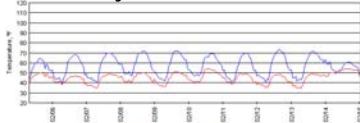
interdisciplinary science  
and technology building III  
e williams field rd, mesa, arizona



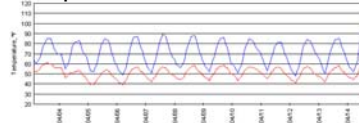
Typical Seasons



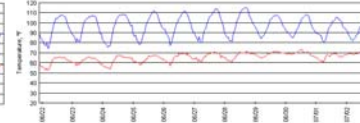
1. February 01 to 15



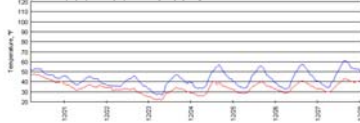
2. April 01 to 15



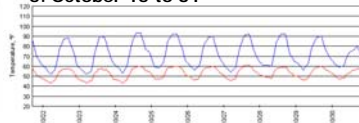
3. June 15 to 30



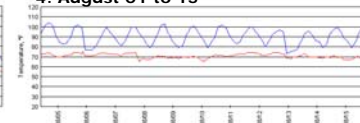
6. December 15 to 31



5. October 15 to 31



4. August 01 to 15



**A** — DB 54.4 F  
— WB 43.2 F

**B** — DB 71.2 F  
— WB 51.6 F

**C** — DB 90.3 F  
— WB 69.4 F

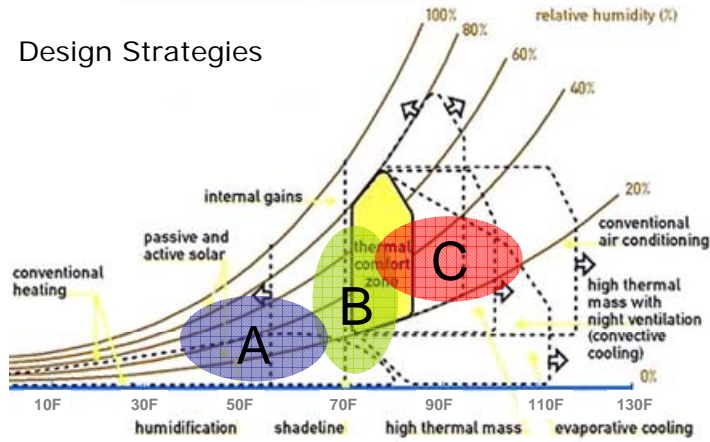
Shreshth Nagpal

**Annual Site Days with Typical Climate Characteristics.** Graphs generated using application Weather Maker v1.0. Weather File used TMY2 – Phoenix, AZ

interdisciplinary science  
and technology building III  
e williams field rd, mesa, arizona



### Design Strategies



	A	B	C
	February December	April October	June August
<b>Effective Design Strategy Recommended Percentages</b> (Climate Consultant 2.01)			
Comfort Conditions	3	26	16
Internal Gains	20	26	1
Passive Solar	21	6	
Active Solar	20	4	
Conventional Heating	51	12	
Sun Shading	6	32	42
Ventilation		6	18
High Mass	2	24	30
High Mass w Night Vent	1	46	15
Humidification	50	20	5
Air Conditioning			17

Shreshth Nagpal

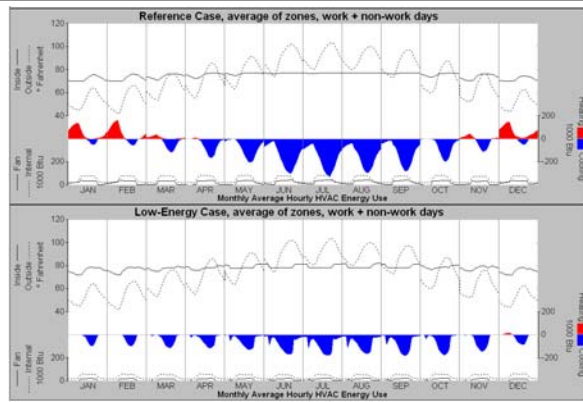
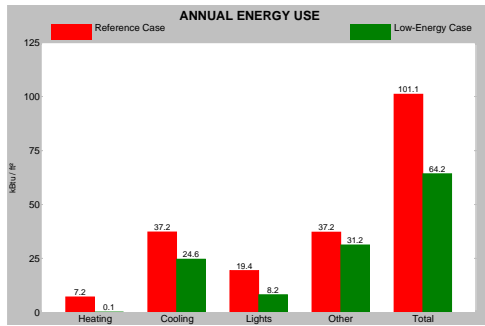
### Summary of Design Strategies as a function of ambient conditions.

Recommended Percentages calculated using application Climate Consultant v 2.01.  
Weather File used TMY2 – Phoenix, AZ

interdisciplinary science  
and technology building III  
e williams field rd, mesa, arizona



## Simulation Recommendations



Description:	Reference Case	Low-Energy Case
Floor Area, ft²	17121.5	17121.5
Surface Area, ft²	67467.0	67467.0
Volume, ft³	659930.0	659930.0
Surface Area Ratio	1.48	1.48
Total Conduction UA, Btu/h-F	7113.8	4749.0
Average U-value, Btu/hr-ft²-F	0.105	0.070
Roof Construction	steelstud 4, R=8.1	steelstud 6 poly, R=19.2
Floor type, insulation	flat, r-19, R=19.0	flat r-38, R=38.0
Window Construction	Slab on Grade, Reff=24.0,etc	Slab on Grade, Reff=107.9
Window Shading	4060 double, alum, U=0.70	4060 low-e al/b, U=0.31
Window Shading	None	40 deg latitude
Wall total gross area, ft²	33487	33487
Roof total gross area, ft²	16990	16990
Ground total gross area, ft²	16990	16990
Window total gross area, ft²	2160	9120
Windows (N/E/S/W:Roof)	40/0/50/0:0	78/7/266/5:24
Glazing name	double, U=0.49	double low-e, U=0.26

Shreshth Nagpal

**Summary of Simulation Recommendations.** Comparison Case created using application Energy 10 v1.0. Building modeled using preliminary data as understood from architectural drawings.