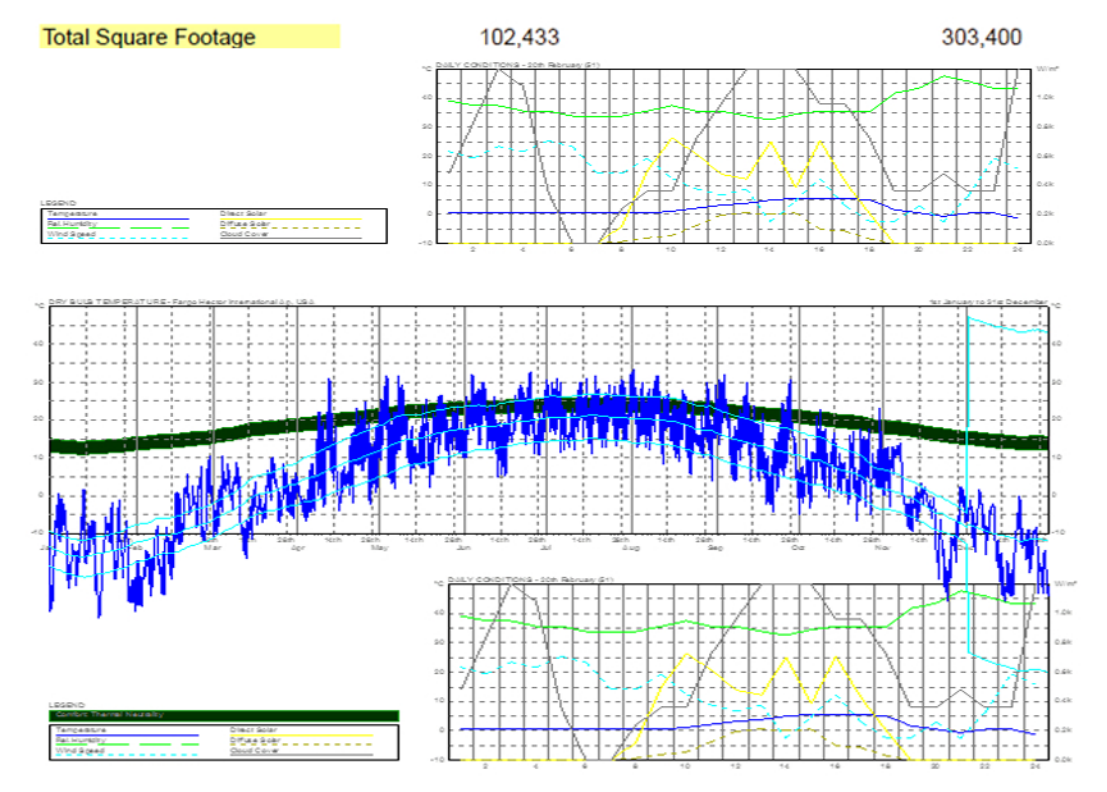


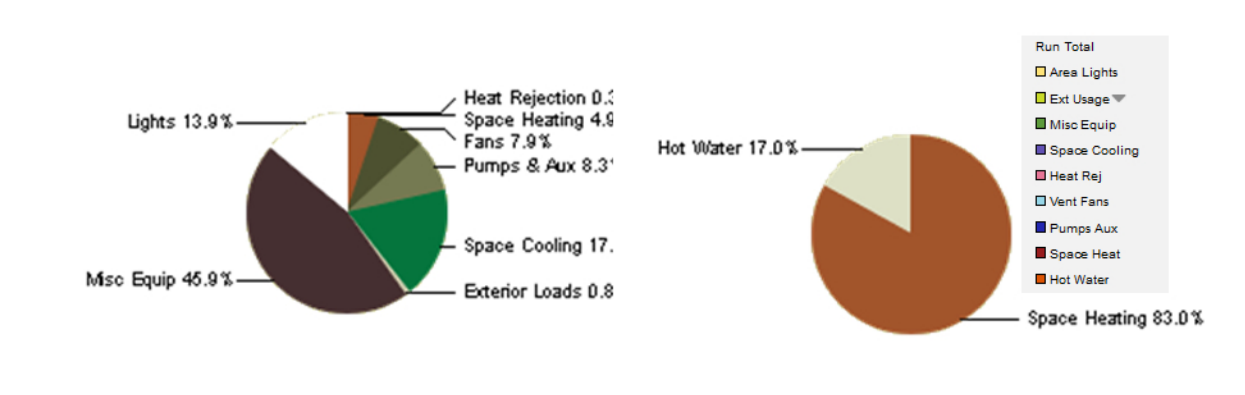
Square Building

Building Type:	Univ. Library
Location/Climate:	Fargo, ND
Total Floor Area (sf):	300,000
Elect. Rates:	\$0.07/kWh
Fuel Rate:	\$0.98/Btu
Approx. Live Load (Occucont):	50.96/Therm
Ave. Lighting Pwr. Density:	2.627
HVAC System:	1.31 W/ft2 Underfloor

	Current Space	Future Expansion
Total Collection Space	44,972	3 140,000
User Seating Space	23,125	2 40,000
Staff Work Area	6,000	2 12,000
Meeting Area	1,000	2 2,000
Special Use	1,336	3 3,000
General spaces	26,000	2 40,000
Classroom Spaces		12,000 2 24,000
Lounge Spaces		5,000 1 5,000
Lounge wireless		12,000 1 10,000
Center for Writers		4,000 1 4,000
Food Service		400 1 400
24/7 study		6,000 1 6,000
Faculty Study Rooms		3,000 1 3,000
Graduate Study rooms		4,000 1 4,000
Faculty collaborative space		2,000 1 2,000
visiting scholars area		2,000 1 2,000



Base Run	Design Alternative
Estimated Energy & Cost Summary	Estimated Energy & Cost Summary
Annual Energy Cost: \$103,400	Annual Energy Cost: \$103,400
Utility Cost: \$4,100,000	Utility Cost: \$4,100,000
Annual CO2 Emissions: 1,000 tons	Annual CO2 Emissions: 1,000 tons
Electric: 1,000 tons	Electric: 1,000 tons
Gas: 1,000 tons	Gas: 1,000 tons
Large HVAC Equipment: 207.3 Btu/h Year	Large HVAC Equipment: 207.3 Btu/h Year
Annual Energy: 1,000,000 kWh	Annual Energy: 1,000,000 kWh
Energy Use Intensity (EUI): 41 kWh/ft2 Year	Energy Use Intensity (EUI): 41 kWh/ft2 Year
Electric: 3,473,702 kWh	Electric: 3,473,702 kWh
Fuel: 98,778 Therms	Fuel: 98,778 Therms
Annual Peak Demand: 1,479,240W	Annual Peak Demand: 1,479,240W
Lifecycle Energy: 1,000,000 kWh	Lifecycle Energy: 1,000,000 kWh
Electric: 62,582,210 kWh	Electric: 62,582,210 kWh
Fuel: 2,345,347 Therms	Fuel: 2,345,347 Therms



Building Design	Base Case	Design Alternative
Annual Energy Cost	\$103,400	\$103,400
Utility Cost	\$4,100,000	\$4,100,000
Annual CO2 Emissions	1,000 tons	1,000 tons
Electric	1,000 tons	1,000 tons
Gas	1,000 tons	1,000 tons
Large HVAC Equipment	207.3 Btu/h Year	207.3 Btu/h Year
Annual Energy	1,000,000 kWh	1,000,000 kWh
Energy Use Intensity (EUI)	41 kWh/ft2 Year	41 kWh/ft2 Year
Electric	3,473,702 kWh	3,473,702 kWh
Fuel	98,778 Therms	98,778 Therms
Annual Peak Demand	1,479,240W	1,479,240W
Lifecycle Energy	1,000,000 kWh	1,000,000 kWh
Electric	62,582,210 kWh	62,582,210 kWh
Fuel	2,345,347 Therms	2,345,347 Therms

a holistic approach

man's relationship with nature started as a mutual relationship which slowly developed into man vs. nature. This altering ideology has developed humans to be superior to nature. Rather than living in harmony with nature, man is now challenging nature.

sustainable design has been criticized for acknowledging only building performance and overlooking the aesthetic response.

is sustainable design ugly?

