

ENERGY EFFICIENCY GUIDELINES FOR NEW BUILDINGS	
General	Energy Conservation Guideline
Item No.	
1	Get the whole design team invested in the energy savings model during Schematic Design.
2	Set up energy targets and agree on what metrics will be used to evaluate the effort. Use the Energy Star Target Finder to help establish early goals. Use the Energy Star rating label on the drawings. Specify energy star rated equipment throughout (as a minimum).
3	Reduce energy demand and maximize efficiencies through the collaborative efforts of the design team.
4	Look at the International Energy Conservation Code and the ASHRAE 90.1 as a minimum energy efficiency standard. Strive to exceed the requirements of these codes. Submit a ComCheck analysis for UTHSCSA Facilities Mgmt Review.
5	Connect to central energy plant where possible.
Architectural	Energy Conservation Guideline
Item No.	
1	Site the building to respond to the climate. Minimize west facing windows where possible. Provide glass with low shading coefficients on the east, south and west. Where practical, provide exterior shading devices for windows. Consider low-e glazing if the energy savings payback period is less than 10 years.
2	Provide interior shades on all south and west facing windows.
3	Use good daylighting principals in the design. All daylighting should be accomplished by indirect, reflected light. Use light shelves and sloped ceilings to limit glare and help the light penetrate deeply into the space.
4	Use high reflectance paint colors on the walls to reduce the number of light fixtures in the spaces.
5	Use automated lighting control systems to dim and or shut off luminaires where the natural light levels are adequate.
6	Use roof systems that are highly reflective to reduce the heat gain. Where possible, slope the structure instead of using tapered insulation.
Mechanical	Energy Conservation Guideline
Item No.	
1	Provide heat recovery on all 100% outside air handlers (i.e., heat pipes or run around coil).
2	Provide economizer cycles on all air handling systems 10,000 CFM and above
3	All chillers are to are to have minimum efficiencies per ASHRAE 90.1.
4	All boilers shall be a minimum of 80% efficient (Btus input vs. Btu's output). All boilers 300 HP and above shall have economizers and be a minimum 82% efficient (Btus input vs. Btu's output).
5	All centrifugal pumps shall be selected at a minimum of 75% efficiency.
6	Exhaust fans shall be selected with static efficiencies of 60% or better.

7	Provide sub-metering to building for gas, water, electrical, chilled water, and steam.												
8	Provide standalone HVAC systems for areas that require 24/7 air conditioning.												
9	Group 24/7 HVAC systems together where possible.												
10	Reduce air changes in labs from the traditional 10 - 12 to only that which is needed for heat load or ventilation of fume hoods and BSC's.												
Electrical Energy Conservation Guideline													
Electrical Item No.													
1	Provide T8 lamps and < 10% THD for all fluorescent lighting.												
2	Provide occupancy sensors for all areas where they are commonly applied. Laboratories are excluded. Provide twist timers in crawl spaces, chases, and mechanical/electrical rooms.												
3	Provide a master lighting control system for the building.												
4	Provide high pressure sodium lighting for outdoors.												
5	Provide user selectable (switched, not dimmers) lighting levels.												
6	Provide energy efficient transformers that meet or exceed "TP-1."												
7	All motor driven equipment is to be provide with premium efficiency motors with power factors in accordance with the Consortium for Energy Efficiency (CEE).												
8	All motors 3/4 HP and above shall be 480V/3Ph.												
9	Limit all primary feeders to < 1% voltage drop and limit all branches to < 2% voltage drop.												
10	Use life cycle cost analysis in the selection of traction or hydraulic elevators.												
11	Specify state-of-the-art efficiencies, power factor, and THD for all VSD's and UPS's.												
	<table border="1"> <thead> <tr> <th></th> <th>VSD</th> <th>UPS</th> </tr> </thead> <tbody> <tr> <td>Eff.</td> <td>> 0.95</td> <td>> 0.86</td> </tr> <tr> <td>PF</td> <td>> 0.95</td> <td>> 0.98</td> </tr> <tr> <td>THD_i</td> <td>< 0.03</td> <td>< 0.03</td> </tr> </tbody> </table>		VSD	UPS	Eff.	> 0.95	> 0.86	PF	> 0.95	> 0.98	THD _i	< 0.03	< 0.03
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Plumbing Energy Conservation Guideline													
Plumbing Item No.													
1	Provide sensor operated flush valves.												
2	Provide sensor operated sink faucets.												
3	Provide insulated return loops on domestic hot water circulating systems. Consider point-of-use systems such as instantaneous or small electric water heaters where practical.												
4	Provide backflow preventers inside the buildings with low pressure drops.												
5	Connect all cooling towers and irrigations systems to SAWS recycled water where provided.												
6	Provide tempered water or just cold water to restrooms in lieu of hot water.												