

St Andrew United Methodist Church

Sustainable Design Principles

January 28, 2009



S L A T E R P A U L L
A R C H I T E C T S

	Sustainable Principle:	Explanation:	Currently part of scope	Could easily be part of scope
	SITE ISSUES:			
1.	Reduced pollution during construction	Follow erosion and sedimentary control principles during construction	X	
2.	Open space	The design has much more than the 25-percent minimum open space required by county. The design has 47-percent open space planted with living materials. This includes hundreds of trees and shrubs that will provide cool shade, valuable oxygen, and enjoyable views.	X	
3.	Storm water facilities	The design minimizes down stream flooding with storm water detention facilities.	X	
4.	Water quality facilities	The design uses bioswales that filter contaminants out of rainwater runoff.	X	
5.	Recycled asphalt parking	A portion of the new parking lot uses recycled asphalt materials. This material reduces the rain runoff. The recycled asphalt will reduce the amount of asphalt paving needed in the future.	X	
6.	High reflectance roofing	Unseen parts of the roof will be high reflectance white color. This will reduce the amount of air conditioning needed.	X	
7.	Dark sky lighting	Site lighting minimizes light pollution by utilizing "dark sky" principles.	X	
8.	Recycling bin	The trash enclosure will expand to allow a recycle bin.	X	

9.	Water efficient landscaping	No new high-water bluegrass is planned. All landscaping are low water plants. Although some irrigation is needed to establish the plants. The amount of irrigation will be reduced over time and should be near zero in a few years. A section of current bluegrass is being replaced with low-water native grasses.	X	
10.	Add bike racks	Could add bike racks to allow for alternate form of transportation. The church already has showers to allow employees to shower.		X
11.	Designate preferred parking for low-emitting or fuel efficient vehicles	Could add signage to parking lot for designated parking spaces.		X
BUILDING ISSUES:				
12.	Low water plumbing fixtures	All existing and new plumbing fixtures are low-water use.	X	
13.	Building commissioning	At the conclusion of construction, testing and adjusting of mechanical and electrical equipment will occur to minimize energy usage.	X	
14.	Energy efficient building envelope	The building envelop will be designed with high insulated materials and high thermal mass materials. Both kinds of materials are part of a strategy that will reduce energy use over a standard church by about 25 to 30-percent. This includes windows that use energy efficient glass and frames.	X	
15.	Energy efficient mechanical system	The building will be designed to meet the high standards set by ASHRAE/IESNA Standard 90.1 and will probably be about 25 to 30-percent more energy efficient than a standard church building. Some of the systems used are high-efficiency boiler heating, evaporative cooling, economizers, heat recovery, CO2 sensors, displacement ventilation, nighttime ventilation pre-cooling, computer controlled thermostats to limit HVAC to only occupied rooms.	X	

16.	Energy efficient electrical system	Most upper level rooms have windows and skylights to minimize use of artificial lighting during daytime use. Most light fixtures are highly energy efficient. Computer controlled mechanical shades will reduce heat gain from late afternoon summer sun. Many rooms have motion sensors to turn off lights when not in use. Many rooms have dimmable lighting systems to reduce energy use.	X	
17.	Zero CFC-based refrigerants	The air condition system will not use CFCs.	X	
18.	Reuse of existing structure	There is minimal remodeling of the existing building. Reusing 99-percent of the existing building without remodeling saves energy and materials.	X	
19.	Recycle construction waste	The contractor will divert much of the construction waste from landfill disposal.	X	
20.	Recycle content	Probably about 10 to 20-percent of the new construction material will be made from recycled material.	X	
21.	Regional material	Probably about 10 to 20-percent of the new construction materials will be extracted, harvested, recovered, and manufactured within 500-miles of Denver. This saves on construction cost and reduces pollution.	X	
22.	During construction, control indoor air quality	During construction, special precautions will be taken so construction dirt and chemicals will be removed before occupancy.	X	
23.	Use low-VOC emitting materials	In paints, coating, adhesives, sealants, carpeting, and composite materials use low-VOC emitting materials.	X	
24.	Special building entrances	The building entrances are designed to intercept dirt and particulates from entering the building.	X	
25.	Scent free room	A fully enclosed room and special filtering mechanical system have been designed for a scent-free room for highly sensitive people. It is located near a special entrance/exit.	X	
26.	Lighting controls	The lighting controls have been designed to allow maximum flexibility and individual room controls. This increases comfort and minimizes energy use.	X	
27.	Displacement ventilation	In the sanctuary, a special mechanical system has been designed to maximize comfort and minimize energy use.	X	

28.	Energy modeling and building controls	During design, an interactive energy model will be used to provide cost effective insight into the effectiveness of these and other energy saving ideas. The energy model then provides base information to program the building control system. Building control system is a computerized system that coordinates the use of the mechanical and electrical systems to minimize energy use and maximize comfort.	X	
29.	LEED accredited professional	Many design team members have demonstrated an understanding of green principles by becoming LEED accredited.	X	
30.	Recycle collection	Design could easily include indoor recycle collection areas.		X
31.	Certified wood	More than 50-percent of the wood products used could easily be certified as coming from forests that are managed in an environmentally sensitive manner.		X
32.	Designate smoking location	The design could easily provide a smoking location that is easy to use and safely away from other building occupants.		X
33.	Flush out building	After construction ends, flushing out the building could occur.		X
34.	Design high chemical rooms	High chemical rooms could be designed with special exhaust systems to prevent the spread of these chemicals into the rest of the building.		X
35.	Education	The church could have special energy efficiency presentations to the congregation to demonstrate these design principles and encourage “green” building use.		X