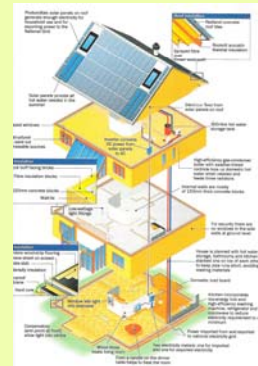


Dr. Sue Roaf's Oxford House



By Jeremy Smith & Kyndell Madsen

Dr. Sue Roaf's Oxford House



The Oxford Eco House was designed to have low CO2 emissions, use passive heating and cooling systems, and be more energy efficient. The house costs the same to build as a comparable house, but has a greatly increased life span.

Roaf vs. Malcolm

Project	Roaf's Oxford House		Malcolm House	
	100 points	100 points	100 points	100 points
provides an outdoor space				
provides water				
provides energy				
provides food				
provides shelter				
provides mobility				
provides security				
provides health				
provides comfort				
provides safety				
provides beauty				
provides sustainability				
provides local weather				
provides daylight				
provides passive heating				
provides passive cooling				
provides fresh air				
provides human comfort				
provides human circulation				
provides green energy				
provides green water				
provides green materials				
provides green site				
provides green neighborhood				
provides green region				
provides green planet				
provides green life				
negative score			-125	
positive score				+850
total score				+725

Final Score: +725

Roaf vs. Malcolm – Site

Pollutes/Cleans Air

(Score 0) Onsite burning of biomass (wood) and natural gas for heating. However, the abundance of on site vegetation combined with low use times minimizes this impact.

Pollutes/Cleans Water

(Score -50) No onsite recycling of grey water or black water. Impermeable parking space, although water does flow on site, not off from this area.

Waste/Store Rainwater

(Score +50) Onsite use of rainwater in greenhouse area and landscape. Large permeable surfaces for water run off from roof.

Consumes/Produces Food

(Score +25) Use of greenhouse to produce some foods, although not enough to meet entire needs of a family.

Roaf vs. Malcolm – Site

Destroys/Creates Soil

(Score +50) No onsite dumping of chemicals on soil. Large area for landscape promoted vs. footprint of building using top soil for growing plants of various kinds.

Dumps/Consumes Wastes

(Score +25) Onsite composting of lawn clippings. Recycle program for some wastes. Grey and black water dumped into city sewage system.

Destroy/Create Wildlife Habitat

(Score +50) Trees and native shrubbery plantings promoting native bird and insect populations. Unobtrusive building elements including low onsite noise generation.

Imports Energy

(Score +75) Solar energy is encouraged to hit the building. Darker colors of façade and green areas absorb light rather than reflecting it.

Roaf vs. Malcolm – Site

Fuel/Human Powered Transportation

(Score +75) Connection available for charging of electric vehicle. Side walks connected to city for walking and biking. Oxford promotes walking and biking by provide amenities and paths.

Intensify/Moderate Local Weather

(Score +25) PV array can build up more heat than a normal roof will. Site provides no more or and no less than all other buildings on street. Temperature of landscape areas modified by shade from plantings.



Roaf vs. Malcolm – Building

Excludes/Uses Natural Light
(Score +100) Building uses PV for electricity, solar for water heating, solar for space heating, and solar gain for natural ventilation.

Mechanical/Passive Heating
(Score +50) Building using solar gain and thermal mass to provide heating. This system is supplemented by biomass. The area does get cold enough to require this boost from time to time. Uses cloth guides to help heat find upper rooms.

Mechanical/Passive Cooling
(Score +50) Using of a sun room to pull warm air out of the lower floor in a stack effect. Using shading and operable vents and windows. Natural humidity control by controlled internal wall and room temperature.

Needs Repair/Maintains Self
(Score 0) Uses durable materials, but couples them with high tech components that can not be cheaply replace in cases of failure and have low recycle ability. Material choices is based on low embodied energy though.

Roaf vs. Malcolm – Building

Human Comfort/Discomfort
(Score +50) Maintains temperature and humidity day round. Provides warm areas and cool areas. Requires migration during seasons to gain access to different thermal zones.

Fuel/Human Powered Circulation
(Score +100) Building contains stairs, no elevators. Operable windows and doors, no automatic ones. Manual access to sun room and outdoor areas.

Pollutes/Creates Indoor Air
(Score +50) All materials and wall coverings carefully researched for maximum salubrity. Indoor plantings quite common for purifying air. Natural ventilation for air movement.

Virgin/Recycled Materials
(Score -50) Materials were hand selected because of environmental abilities, not recycled. Timber from low energy plant, but still new. Low rating due to new materials, despite the soundness of their decision for use.

Roaf vs. Malcolm – Building

Can/Can Not Be Recycled
(Score +25) Wood and bricks are very recyclable. PV arrays are not unless they have not reached end of life. Electrical system components only useful in other PV style system homes.

Apocalypse or Regeneration
(Score +25) Building is more sustainable than regenerative, but certain a far cry from apocalyptic. Consideration in home was given to energy control inside, not energy creation.

Bad/Good Neighbor
(Score 0) The home serves as a good example of green design, which encourages visitors. PVs have potential for reflecting light in an unwanted manner. Building does, however, appear to fit in with existing vernacular and does not stand out.

Roaf vs. Malcolm – Building

Ugly or Beautiful
(Score +75) Marvelous integration of new technologies into vernacular style. This home is peaceful and green and does not create an eye sore in the urban context. Sue Roaf designed this home to be lived in, not just looked upon. The choice of earthy tones lends to a simple appearance, some one hiding its true green nature from the casual glance. Landscaping adds a good deal to the home's beauty.



Roaf vs. LEED

Y	?	N	Requirement
Blue			Site Selection
Red			Urban Redevelopment
Red			Brownfield Redevelopment
Blue			Alternative Transportation, Public Transportation Access
Blue			Alternative Transportation, Bicycle Storage & Changing
Red			Alternative Transportation, Alternative Fuel Vehicles
Blue			Alternative Transportation, Parking Capacity
Blue			Reduce Site Disturbance, Protect or restore open space
Blue			Reduce Site Disturbance, Development Footprint
Blue			Stormwater Management, Rate & Quantity
Red			Stormwater Management, Treatment
Blue			Heat Island Effect, Low-Surf
Red			Heat Island Effect, Surf
Blue			Light Pollution Reduction
8	6		Total

Y	?	N	Requirement
Red			Water Efficient Landscaping, Reduce 50%
Red			Water Efficient Landscaping, No Potable Use or No Irrigation
Red			Innovative Wastewater Technologies
Red			Water Use Reduction, 20%
Red			Water Use Reduction, 30%
0	5		Total

Roaf vs. LEED

Y	?	N	Requirement
Blue			Optimize Energy Performance, (0-10)
Blue			Renewable Energy, 5%
Blue			Renewable Energy, 10%
Blue			Renewable Energy, 20%
Red			Additional Commissioning
Blue			Ozone Depletion
Blue			Measurement & Verification
Blue			Green Power
15	2		Total

Y	?	N	Requirement
Red			Building Reuse, Interim 75% Existing Shell
Red			Building Reuse, Interim 100% Existing Shell
Red			Building Reuse, Interim 100% Existing Shell, 50% Non-Shell
Blue			Construction Waste Management, Diverted 10%
Blue			Construction Waste Management, Diverted 75%
Blue			Resource Reuse, Specify 1%
Blue			Resource Reuse, Specify 10%
Blue			Resource Reuse, Specify 15%
Blue			Recycled Content, Specify 5%
Blue			Recycled Content, Specify 10%
Blue			Local / Regional Materials, 20% Manufactured Locally
Blue			Local / Regional Materials, 20% (to 1, 10% Manufactured Locally
Blue			Rapidly Renewable Resources
Blue			Certified Wood
4	0	9	Total

