
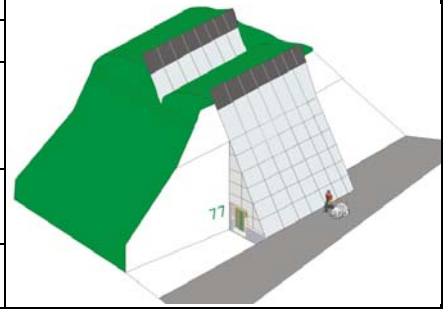
 <b>EARTH-SHELTERED ACTIVE HOME</b>	
Reference:	02
Name:	Earth-sheltered Active Home
Climates:	<a href="#">Continental Climates</a> <a href="#">Cold Climates</a>
Occupants:	
Living area:	2094.22 ft2 194.56 m2



**Description:**

Sun, air, water and earth provide life on our planet, and it is these four elements of Nature that form the bottom line of this project. The potentials of solar energy have never really been used adequately exploited by Humankind. Air quality, and particularly indoor air quality, has always been a building aspect largely neglected by designers. Earth remains one of the most abundant materials on the planet, whereas water, on the other hand, will become the rarest of the four elements in time. Therefore, solar radiation, indoor air quality, water collection, treatment and conservation, together with the fine insulating properties of earth, provide the principles on which this hybrid, but considerably active solar design is founded.

Earth-sheltered buildings are best protected against extreme temperature variations, storms, earthquakes, noise and sadly, even military air strikes. With this in mind, as well as the passive design principles of internal heat zoning and compact planning was this EcoHouse designed. We believe it a wonderful place in which to live; warm and quiet, with light flooding in from the south, the ventilation system providing clean and fresh air, while being sheltered by beautiful landscape. Being underground, sheltered by the earth, means that the house has a far more stable environment than above-ground buildings. Below ground, the temperature remains pretty constant, there are no wind chill factors to worry about, no lashing rain, no baking sun. It also means that the house is very quiet and peaceful.

Combining the shelter of the earth with high levels of insulation means that in temperate climates the house would need almost no extra heating whatsoever – all of the heat it needs is available from the sun alone. Being underground also means that the house disappears into the landscape, making it unobtrusive visually as well as ecologically.

The north side of this eco-house could be ideally embedded into the sloping ground of a mountainous region, but can also be built on level ground of valleys and plains, since excavated earth could easily be bermed to cover the building on three sides. The fully glazed south face is inclined at 60 degrees and encloses the greenhouse supplied with an internal fountain/pond, which rises over the ground floor and the first floor to meet the glazed north light reinforced concrete shells that have been designed for their excellent sun/wind-catching properties, while also roofing the house. The greenhouse makes use of the "greenhouse effect" principle to trap sunrays and build up hot air, that is further transferred to the living room and - using a system of open mezzanine spaces - further into bedrooms. The greenhouse also serves the purpose of a socialising space, and can be used for growing vegetables.

Photovoltaic cells along the ridge convert sunlight into electricity. To ensure an efficient use of solar energy, materials with a high thermal storage capacity were selected.

The utility room in the northern part of the house accommodates all HVAC and other equipment. A ventilation system creates a state of low pressure, drawing heated air from the greenhouse into the living areas. A supplementary heating system can also be provided, but with a time switch to turn it off so that the use of outside energy does not become the rule. In summer, the south face can be opened to two thirds of its area. Sunscreening is envisaged as an option, provided that your local latitude and climatic conditions so require. The ventilation system can also be reversed to circulate cooler air from the north side through the house.

Almost the entire roof area can be used for planting vegetables or making a roof garden, thereby providing an independent food source to the occupants.

Walls and foundations are made of recycled concrete blocks with recycled paper fillings. Recycled glass is used for floor insulation, as well. An insulating entry air lock has been provided, together with sliding doors with tempered, insulated glass. All windows are double-glazed, with the possibilities of the beadwall system inclusion.

Water-saving toilet seats and other water-saving sanitary equipment has been used throughout the project. All installations between the lower and upper floors run through a vertical service duct, which is also fully accessible for inspection and maintenance.

**Areas:**

Ground Floor Plan		ft2	m2	First Floor Plan		ft2	m2
Living & Dining		363.2084	33.74314999	Master Bedroom		121.7083	11.30707
Kitchen		69	6.410307	Bedroom		127.4583	11.84126
Utility		101.5694	9.436101968	Restroom		32.8125	3.04838
Entry		22	2.043866	Bathroom		51.5	4.784505
Storage		29.27778	2.719993595	Master Bathroom		20	1.85806
Restroom		30.83333	2.864508857	Fitness room/Library		83.375	7.745788
Laundry		50.625	4.703214375	Service Duct		10	0.92903
Hall		39.34028	3.654830033	Balcony		131.0833	12.17803
Greenhouse		313.8056	29.15348166				
Service Duct		10	0.92903				
<b>Total:</b>		<b>1029.66</b>	<b>95.65848347</b>	<b>Total:</b>		<b>577.9374</b>	<b>53.69212</b>
Second Floor Plan		ft2	m2				
Master Mezzanine		122.3958	11.37093701				
Bedroom		139.0147	12.91488267				
Bedroom		225.2083	20.92252669				
<b>Total:</b>		<b>486.6188</b>	<b>45.20834638</b>				

**FURNITURE AND EQUIPMENT**

GROUND FLOOR PLAN				FIRST FLOOR PLAN			
ID	ITEM	DESCRIPTION	QTY.	ID	ITEM	DESCRIPTION	QTY.
C1	CBS3636	kit. crrr base cab	1	C1	BDR2136x19	bath base cab	1
C2	BDR1836	kit. base cab	1	C2	UDR2484	util cab	4
C3	BDR2436	kit. base cab	1	C3	UDR2484	util cab	1
C4	UDR2484	util cab	2	C4	UDR2484	util cab	1

C5	UDR2484	util cab	1	C5	UDR2484	util cab	1
C6	24x12 in	shelf & rod	1	T1	1x4-16ft+	window apron	33
C7	WR2430	kit. wall cab	2	T2	1x2-16ft+	sill	33
C8	W3630	kit. wall cab	2	T3	1x4-16ft+	interior casing	374
C9	CW2430	kit. crnr wall cab	1	FX2	64W64D	Corner 64x64" Spa	1
C10	WR2430	kit. wall cab	1	FX3	36W36D	Corner 36x36" Shower	1
C11	W3630	kit. wall cab	1	FX4	18W18D	Round	1
C12	UDR2484	gar. util cab	3	FX6	30W30D	Handicap Toilet	1
C13	UDR2484	gar. util cab	1	FX7	32W19D	Oval Free Standing	1
C14	UDR2484	gar. util cab	1	FX8	17W26D	Bidet	1
C15	UD3084	gar. util cab	1	A1	23W6D	23" Column Radiator	1
FX2	33W33D	Corner Kit. Sink	1	FU1	24W12D	Clothes Hamper	1
FX3	30W30D	Handicap Toilet	1	FU2	24W12D	Clothes Hamper	1
FX4	32W19D	Oval Free Standing	1	FU3	48W24D	48x24 Contemporary	1
FX5	17W26D	Bidet	1	FU4	40W30D	Bicycle Exerciser	1
A1	25W26D	24" Elec. Range	1	FU5	60W43D	Weight Bench	1
A2	21W24D	Dishwasher	1	FU6	70W26D	Indoor Jogger	1
A3	30W29D	30"L Ref/ Freezer	1	FU7	26W26D	Swivel Chair	1
A4	23W6D	23" Column Radiator	1	FU8	24W20D	Roller Stand	1
A5	11W24D	Trash Compactor	1	FU9	64W84D	Queen Bed Contemp.	1
A6	23W6D	23" Column Radiator	1	FU13	60W33D	60x32 Contemporary	1
A7	23W6D	23" Column Radiator	1	FU14	60W20D	Credenza	1
A8	23W6D	23" Column Radiator	1	FU15	26W26D	Executive Chair	1
A9	23W6D	23" Column Radiator	1	FU16	24W20D	Roller Stand	1
A12	27W28D	Washer	1	FU17	60W20D	Credenza	1
A13	29W28D	Electric Dryer	1	FU18	78W16D	Dresser & 1 Mirror	1
FU1	72W28D	Wet Bar	1	FU19	18W18D	Dressing Table Chair	1
FU2	50W92D	36x78 Seat 6-8	1	FU20	36W36D	Yucca	1
FU3	19W19D	Bar Stool	1	FU21	19W19D	Showcase Cabinet	1
FU4	19W19D	Bar Stool	1	FU22	36W36D	Yucca	1
FU5	24W24D	Corner Cupboard	1	FU23	18W18D	Rubber Tree	1
FU6	26W18D	Ottoman	1	FU24	36W36D	Yucca	1
FU7	60W12D	5' Bookcase	1	FU25	38W44D	Fern	1
FU8	18W15D	Grandfather Clock	1	FU26	18W18D	Rubber Tree	1
FU9	31W35D	Contemporary Chair	1	<b>SECOND FLOOR PLAN</b>			
FU10	20W20D	20 Round End Table	1	<b>ID</b>	<b>ITEM</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
FU11	73W35D	6' Sofa	1	C1	UDR2184	kit. util cab	4
FU12	36W22D	27" TV On Cart	1	C2	UDR2184	kit. util cab	1
FU13	31W35D	Contemporary Chair	1	C3	UDR2184	kit. util cab	1
FU14	48W20D	20x48 Contemporary	1	C4	UDR2184	kit. util cab	1
FU15	53W2D	Aqua	1	C5	UDR2184	util cab	2
FU16	20W20D	20 Round End Table	1	C6	UDR2184	util cab	1
FU17	53W2D	Tree	1	C7	UDR2484	util cab	5
FU18	10W10D	Post Floor Lamp	1	C8	UDR2484	util cab	1
FU19	23W20D	Components Cabinet	1	C9	UDR2484	util cab	1
FU20	7W3D	Wall Phone	1	C10	UDR2484	util cab	1
FU21	14W8D	Stereo Speaker	1	C11	UDR2484	util cab	1
FU22	14W8D	Stereo Speaker	1	FU1	18W18D	Rubber Tree	1
FU23	60W13D	Curio Cabinet	1	FU2	80W84D	King Bed Contemp.	1
FU24	18W12D	Tower Shelf	1	FU5	48W17D	Ent. Center 15" TV	1
FU25	18W12D	Tower Shelf	1	FU6	60W33D	60x32 Contemporary	1
FU26	18W12D	Tower Shelf	1	FU7	26W26D	Executive Chair	1
FU27	18W12D	Tower Shelf	1	FU8	38W44D	Fern	1
FU28	20W20D	20 Round End Table	1	FU10	78W16D	Dresser & 1 Mirror	1
FU29	60W24D	Upright Piano	1	FU11	18W18D	Dressing Table Chair	1
FU30	36W14D	Piano Bench (60)	1	FU12	64W84D	Queen Bed Contemp.	1
FU31	24W12D	Clothes Hamper	1	FU13	29W17D	Ent. Center 18" TV	1
FU32	55W55D	Rock Pond	1	FU14	64W84D	Queen Bed Contemp.	1
FU33	60W64D	Picnic Table	1	FU15	78W16D	Dresser & 1 Mirror	1
FU34	25W21D	Outdoor Chair	1	FU16	18W18D	Dressing Table Chair	1
FU35	18W1D	Dart Board	1	FU17	60W33D	60x32 Contemporary	1
FU36	62W23D	Slatted Wood Bench	1	FU18	26W26D	Executive Chair	1
FU37	26W64D	Chaise Lounge	1	FU19	60W21D	Ent. Center Offset	1
FU38	25W21D	Outdoor Chair	1	FU20	36W36D	Yucca	1
FU39	20W20D	20 Round End Table	1				
FU40	20W20D	20 Round End Table	1				
FU41	20W20D	20 Round End Table	1				
LS1	1'11 Small Shrub	Coleuspp	1				
LS2	1'7 Small Shrub	Burnbsh	1				
LS3	1'4 Small Shrub	Japholly	1				
LS4	1'5 Small Shrub	Japholly	1				
LS5	2'1 Small Shrub	Burnbsh	2				
LS6	3'11 Small Flower	Calla	1				
LS7	2'5 Small Shrub	Coleuspp	1				
LS8	1'7 Small Shrub	Japholly	1				
LS9	2'7 Small Shrub	Ficusel	1				
LS10	2'5 Small Shrub	Aglaroeb	1				
LS11	5' Large Flower	Dracan	1				

Working Drawings Contents:

Type of Drawing:	Number of Sheets per Drawing:
Site Plan	1
Foundation Plan	1
Floor Plans	3
Roof Plan	1
Section	1

Exterior Elevations				1
Vertical Circulation Details				1
Joinery details				4
Rainwater treatment details				1
Structural calculations				10
Specifications of Eco-building materials and products				Complete set
Materials List				Complete set
Specifications of HVAC and IAQ (Indoor Air Quality)				Complete set
Roofing details				1
Wall details				1
Internal finishes details				1
Insulation details				1
Photovoltaics				1
Shading devices details				1
Electrical layouts and calculations				
<b>Price (USD): \$</b>				<b>587.00</b>
<b>Complete set of printed plans + CAD files on business-card CD (USD):\$</b>				<b>618.13</b>



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