

TRUE ZERO ENERGY DESIGN

SELF-GENERATED ELECTRICITY
 SELF-SUFFICIENT HABITAT
 CLIMATE DURABLE CONSTRUCTION

LAGI 2020 FLY RANCH COMPETITION DESIGN

PANEL ONE



OVERVIEW DESCRIPTION:

OUR PLANET IS DYING. THE REACH FOR TRUE MINIMUM IMPACT IS HIDDEN BEHIND A VEIL OF EUPHEMISM AND DECEIT. 45% OF THE WORLD'S POLLUTION COMES FROM ARCHITECTURE. WE HAVE NOT DONE ANYTHING TO STEM THE TIDE OF DESTRUCTION FROM OUR BUILT ENVIRONMENT INCLUDING ADDRESSING NATURAL DISASTERS AND THE GLOBAL DISEASE OF OBESITY AND SEDENTARY LIVING. THOUSANDS OF ENVIRONMENTAL SCIENTISTS AROUND THE WORLD HAVE JOINTLY ACKNOWLEDGED THAT THE EARTH IS DYING AND WE CANNOT SIT IDLE WHILE THE BEHEMOTH MACHINERY OF RESOURCE EXPLOITATION AND ENVIRONMENTAL DESTRUCTION CONTINUES TO DECIMATE A WORLD ODOUSLY MOTIVATED BY ECONOMIC GAIN AND CONTINUATION OF THE STATUS QUO.

WE MUST FIND A WAY TO CONSTRUCT THAT DOES NOT POLLUTE, AND MAINTAIN FUNCTIONING BUILDINGS, THAT DO NOT POLLUTE. IT IS ALSO CRUCIAL THAT THE DESIGN BEING DEVELOPED ON THE FLY RANCH CAN BE

USEFULLY ADAPTED TO ANY TERRAIN, CLIMATE, AND ENVIRONMENTAL CONDITION AND THE MATERIALS ARE AVAILABLE LOCALLY AND HAVE THE LEAST EMBEDDED ENERGY IN THEIR FABRICATION, USE THE SIMPLEST MEANS OF CONSTRUCTION, ARE VERY LIGHT AND VERY STRONG, AND CONTAINS THE MAXIMUM AMOUNT OF FLOOR SPACE WITH THE MINIMUM AMOUNT OF STRUCTURAL AND ENCLOSING MATERIALS. THE DESIGN MUST BE AERODYNAMIC, TO WITHSTAND HIGH WINDS, AND MUST BE WATERPROOF, FIREPROOF, AND NOT MOLD AND MILDEW, AND ITS ELECTRICITY MUST BE HUMAN GENERATED

USING THE HOT SPRINGS OF FLY RANCH AND OTHER GEOTHERMAL FEATURES OF THE AREA IS APPROACHABLE BUT, IT IS THE DIRECTIVE OF THIS DESIGN PROJECT, TO BE SELF-SUFFICIENT ON TO ITSELF SO THAT IT CAN BEST ADAPT TO ANY CIRCUMSTANCES GIVEN ITS LOCATION.

TECHNOLOGY USED FOR THE DESIGN:

NOTE: ALTHOUGH THERE IS PLENTY OF WIND AT FLY RANCH, AND THE USE OF WINDMILLS IS ADVISABLE, THIS DESIGN DOES NOT UTILIZE WINDMILLS BECAUSE THE STORAGE OF ELECTRICITY REQUIRES BATTERIES

AND PRESENT-DAY BATTERIES ARE EXTREMELY TOXIC, THUS, TO PROTECT THE LIVING EARTH, LARGE BATTERIES ARE NOT UTILIZED HERE.

SILICON-BASED SOLAR PANELS ARE ALSO NOT IMPLEMENTED HERE BECAUSE OF THE INORDINANT AMOUNTS OF HYDROCHLORIC ACID PRODUCED BY THE MAKING OF SOLAR PANELS. THIS IS AN EXTREMELY TOXIC MANUFACTURING PROCEDURE WITH HIGH AMOUNTS OF TOXICITY PRODUCED AS ACIDIC GAS AND LIQUID.

THE DESIGN IS FUNDAMENTALLY A GEODESIC SPHERE, SURROUNDED BY A STRUCTURALLY REINFORCING RIGID DECK AT ITS EQUATOR, AND RIGIDLY STANDING ON 10 LOWER, ANCHORED, FOOTINGS, MADE OF WOOD AND CONCRETE DECK BLOCKS. ON THE GROUND AND SURROUNDING THIS CENTRALIZED SPHERE IS A RING OF SOILCRETE (NATIVE SOIL AND CONCRETE MIX) WITH EMBEDDED STEEL BRACKETS THAT ACT AS HINGES TO BRACE OPEN/CLOSING ALUMINUM WALL PANELS WITH 2 LAYERS OF TENSILE, TRANSPARENT, UV TREATED SAIL CLOTH LAYERS TO FORM A TRANSPARENT AND HOLLOW WALL CAVITY FOR INSULATION AND PRIVACY PURPOSES.

AT THE TOP OF THIS SPHERE IS A 1000-FOOT-LONG COIL OF BLACK RUBBER THROUGH WHICH WATER FROM AN ON-SITE WATER WELL, IS HEATED BY THE SUN AND CREATES WARM WATER TO SHOWER WITH AND TO USE FOR COOKING. AN INCLINED WALKWAY, AT THE MAIN ENTRANCE, ALLOWS AN OUTDOOR SOLAR OVEN TO ROLL DOWN THE RAMP FOR MAXIMUM SOLAR EXPOSURE FOR COOKING, AND THEN ROLLED BACK INTO THE BUILDING FOR SERVING.

LIST OF CONSTRUCTION MATERIALS:

- 1) LUMBER YARD WOOD, 2 X 4", 4 X 4", AND 6 X 6" POSTS
- 2) SOILCRETE (NATIVE SOIL AND CONCRETE MIXED)
- 3) ALUMINUM TUBING
- 4) WATER-PROOF, TRANSPARENT, NYLON SAIL-CLOTH, 50 FEET BY 20 FEET, 20 PIECES
- 5) GALVANIZED METAL BRACKETS, BOLTS, NUTS, AND WASHERS (TO ASSEMBLE THE GEODESIC SPHERE)
- 6) FABRICATED GALVANIZED METAL BRACKETS
- 7) GIGACRETE FINISHED SHEATHING MATERIAL
- 8) RECYCLED COTTON BLUE-JEAN MATERIAL

- 9) 3/4" THICK PLYWOOD 4' BY 8' SHEETS
- 10) CONTEGO PAINT RATED AT 2 HOURS FIRE RESISTANCE
- 11) 3/4" HOLE GALVANIZED METAL GROMMETS
- 12) CROSS-WEAVE COTTON/NYLON ROPE
- 13) 500 X 11/4" GALVANIZED METAL WOOD SCREWS
- 14) DRAINS AND PLUMBING TUBING
- 15) METAL WOOD STOVE AND SMOKE FLUE
- 16) MOSQUITO SCREENING- 1000 FEET BY 4 FOOT ROLL
- 17) GALVANIZED METAL, HEAVY DUTY, DOOR HINGES, ESCUTCHEONS, AND LOCK MECHANISMS
- 18) NATIVE, HEAD-SIZED, STONES
- 19) AGT BRAND, LUMINESCENT, RIVER ROCK—1000 PIECES
- 20) 1/2" THICK, STAINLESS STEEL ROPE OF 1000 FOOT LENGTH, AND 20 METAL CLIPS AND THIMBLES
- 21) CONCRETE DECK BLOCKS FOR FOOTINGS
- 22) "LIFESTRAW" PASSIVE WATER CLEANING AND DRINKING TECHNOLOGY DISPENSER. ALL CAPTURED WATER IS DRINKABLE WITH THIS SYSTEM

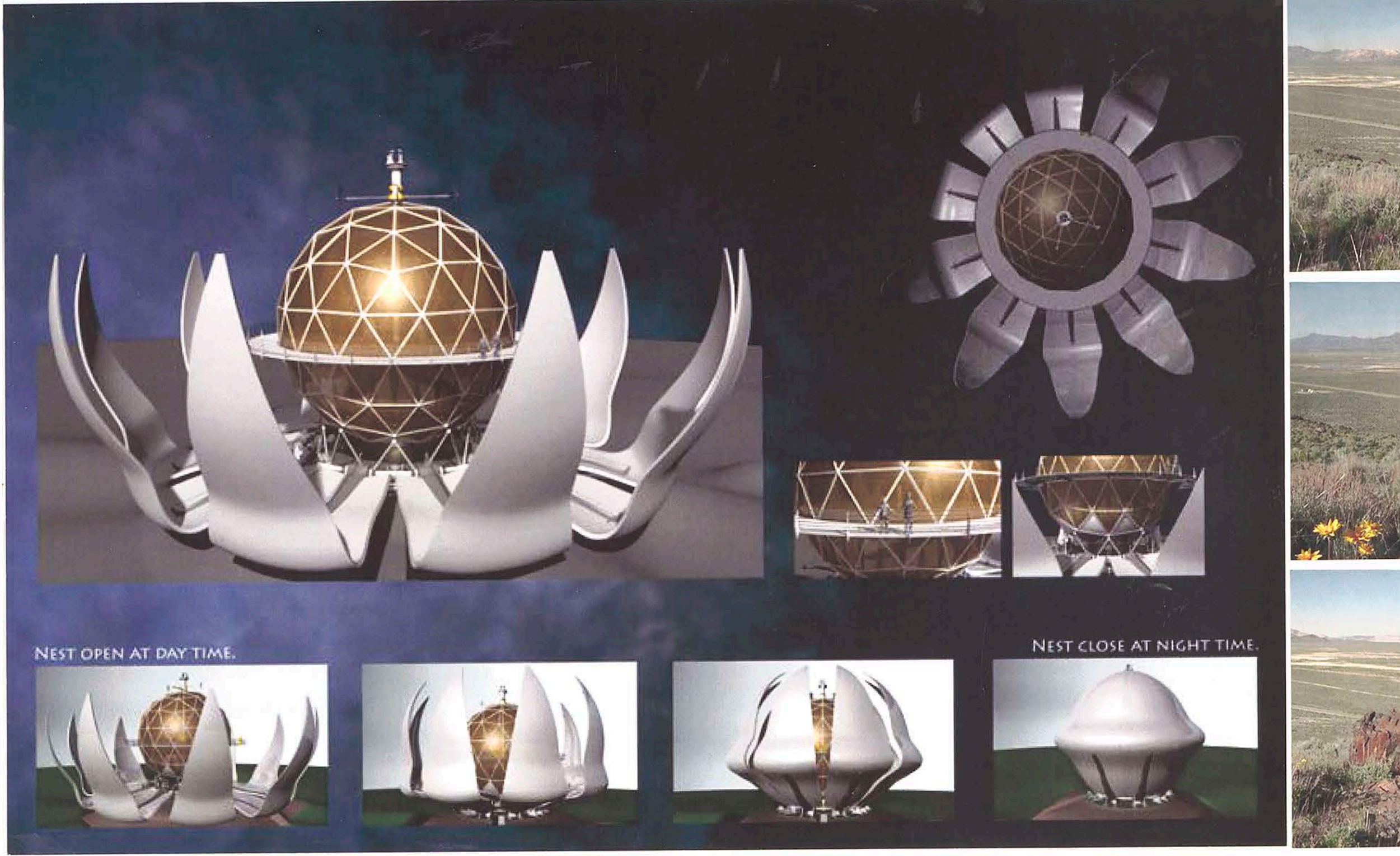
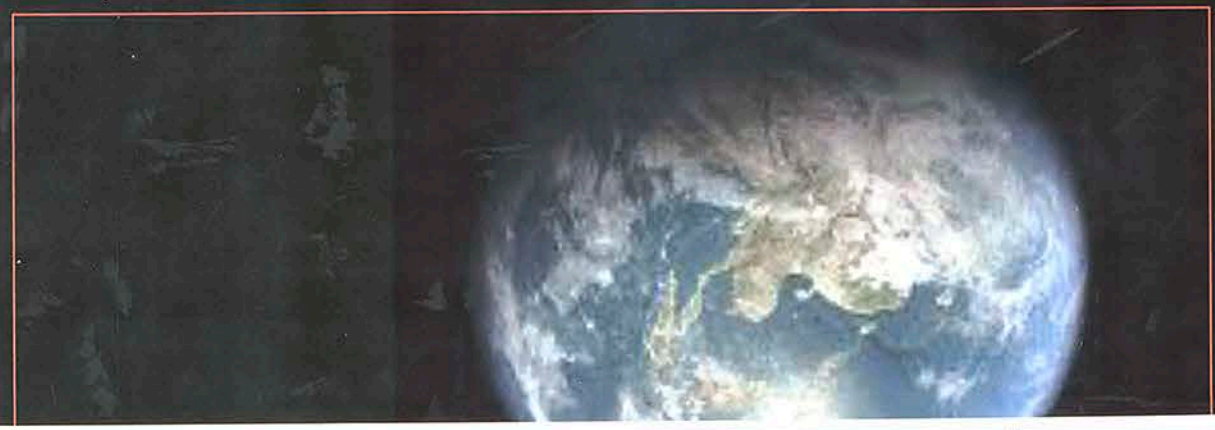
23) MODIFIED SIMPSON GALVANIZED CONSTRUCTION BRACKETS

- 24) SAWDUST TOILETS: USING SAWDUST AS HIGHLY ABSORBANT AND COMPOSTABLE ORGANIC MATERIAL, SAWDUST TOILETS ARE HYGENIC AND SIMPLE. NO PLUMBING. NO WATER, ENERGY, MACHINERY NEEDED.
- 25) GRAVITY ELECTRIC GENERATOR AND LIGHT SYSTEM: USING GRAVITY AS THE MOTION GENERATOR, THESE LIGHT FIXTURES SUPPLY CONTINUOUS LIGHTING IN EMERGENCY SITUATIONS.
- 26) STATIONARY BICYCLE-POWERED LAP-TOPS, BLENDERS, WASHING MACHINES (WINTER MONTHS), AND RECHARGEABLE LIGHT FIXTURES.
- 27) NINE, AUTO-LOCKING, HANK-CRANK WINCHES ARE USED TO OPEN AND CLOSE THE NINE, ALUMINUM-FRAME, WALL STRUCTURES. THESE WINCHES ARE ANCHORED ON THE EQUATOR TERRACE OF THE STRUCTURE.

LIST OF ACTIVITIES WITHIN THE CONSTRUCTED DESIGN

- 1) INHABITANTS OF THIS BUILDING MUST COORDINATE THEIR WAKING HOURS WITH THE

TECHNOLOGIES THAT DO NOT HARM THE EARTH



NEST OPEN AT DAY TIME.

NEST CLOSE AT NIGHT TIME.

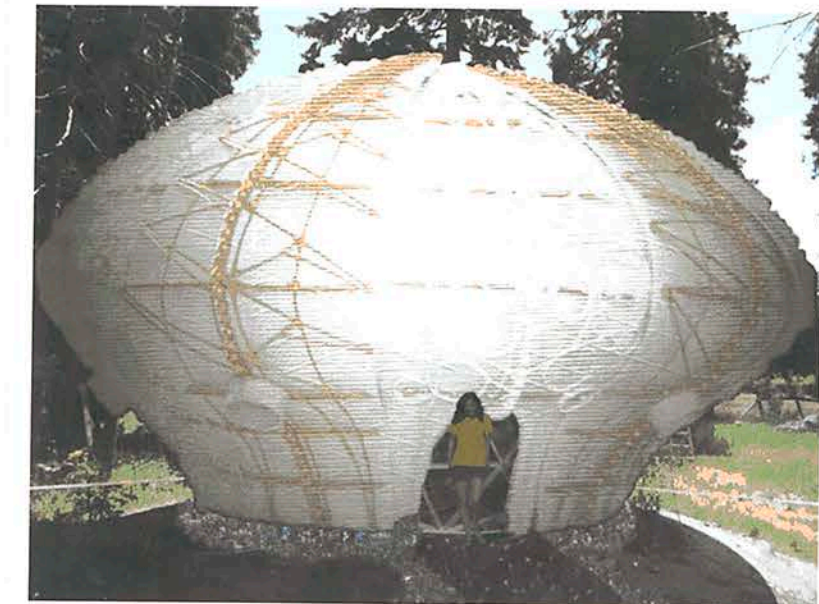
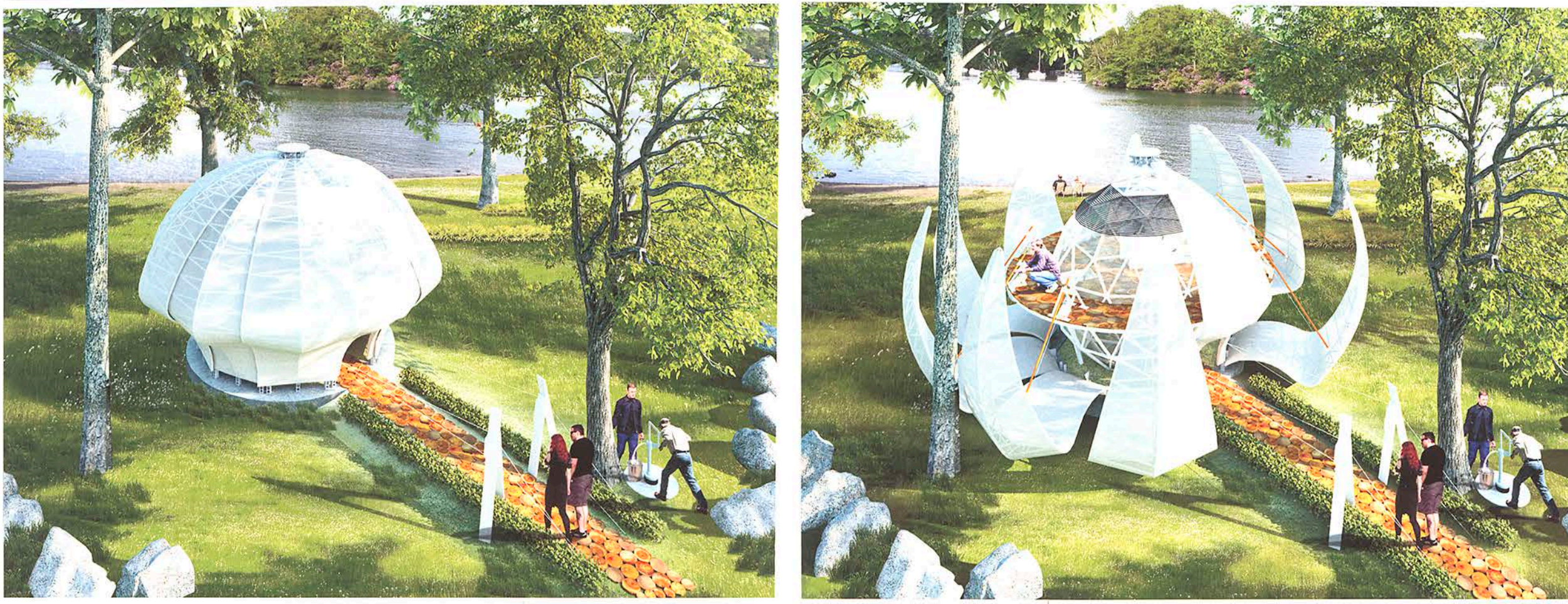


Figure 1: ZED (Zero Electricity Dwelling) in closed position for maximum warmth and protection from extreme climatic conditions of a snowy winter in Mount Shasta, California. The translucent membrane walls are 12 inches thick of air space (31.5 cms) with 10 wall sections, 9 of which, that open and close. Structural members are made from galvanized pipe which is common to most places of the world. Digital photo rendering by Yeyo Xral.

Figure 4: The entrance ramp to the building is 19 meters long at a 1:12 slope to accommodate physically challenged individuals and to be used as a solar exposure ramp for rolling the triple-solar-oven apparatus down the ramp into the sunlight. Luminescent pebble stones are placed between the circular tree slab ramp flooring—night lighting without electricity. Digital photo rendering by Yeyo Xral.

Figure 5: Bird's Eye View showing the opening and closing sequence of the habitat: Architecture as living organism. The building opens and closes depending upon the amount of warmth and breeze one may need. The spherical geodesic design is very stable, aerodynamic and resistant to high winds and earthquakes. It is the closest, structurally, that we can come to a disaster-proof design. Digital Photo Rendering by Yeyo Xral.

