**LAND ART GENERATOR INITIATIVE: FLY RANCH**

**RINGS OF REGENERATION: OPENING SPACES FOR SUSTAINABLE CREATIVE PRACTICES AT FLY RANCH**

**NARRATIVE**

**The story of your artwork.** Key to achieving environmental sustainability and justice is moving from linear systems that require high inputs, offer low use time, and produce extraordinary waste to systems that are circular. Circularity enablesregenerativecapacities through looping the lifecycle of products in a cradle-to-cradle system of creation, use and upcycling. It requires a rethinking of the social and environmental exploitation embedded in current systems to re-align the interests of humanity and nature.

The concept of circularity is embedded not only metaphorically, but also literally within the overall design of this project, which proposes a series of concentric circles and is reflective of both Native American symbology and the strong Burning Man cultural identification with the urban plan of Black Rock City.

*Rings of Regeneration* proposes an urban design that identifies and redirects pathways for commonly overlooked or discarded materials to be transformed towards new productive purposes. Three rings corresponding to purposes of Collection, Processing, and Outputs are situated within sectors (transecting pie slices) that focus on a specific material, natural (e.g. earth) or upcycled (e.g. plastic, wood, metal).

Beginning with the Collection Ring, the material of each sector is cultivated and harvested in the case of Earth-based materials, or collected and sorted in the case of upcyclable materials. In the Processing Ring, shelters provide spaces for the materials to be processed into the user’s desired choice: art forms, functional objects, or components for shelter construction. These find a home in the Output Ring or elsewhere on the property as appropriate. The Output Ring also contains additional shelters for overnight and day use.

The design creates a platform for visitors to explore the practice of regeneration through creative activities. It speaks to Burning Man principles, as it enables visitors to cultivate self-expression and communal effort within a leave-no-trace system. The design is also multifunctional: the shelters and gathering areas it hosts could be used for meeting places, meditation areas, performances, healing spaces, community events, learning centers, dances, workshops, tribal gatherings, and many other possibilities.

The system integrates the landscape, community and culture of Northern Nevada by cultivating ethical collaborations with native people and by inviting non-native local residents to be involved in the activities and production of the project. In the end, the goal of this project is to construct a place that is a platform for innovation, experimentation, and artmaking grounded in the concept of radical inclusion: a place not just for burners, but also for the communities that call the area home.

Environmentally-speaking, we anticipate a net positive impact. Local communities and visitors can donate “waste” (e.g. old plastic bottles and other recyclable materials) for use in the project. The Earth Sector also will help to produce native seed stock for landscape regeneration in the area and facilitate learning around low-impact building techniques.

In this proposal, we focus on one sector as an example, the sector that prioritizes Paiute traditional ecological knowledge and practices and is based on the material, earth. We believe that the history of settler colonialism in the area calls on us to put the Paiute first in Fly Ranch’s development.

We envision this project to be placed in the 1997 site of Burning Man, which is in the Primary Site Boundary at the southern end of the property. This project draws heavily on Burning Man principles, culture, and urban design, making this the ideal location.

**Technology used.** Technology used is based on the material in each sector. In the Earth Sector, the Collection Ring celebrates a permaculture technology (a type of sustainable agriculture that mirrors ecosystems) with a focus on native species. Natural building technology (i.e. rammed earth, living roof), Paiute shelter technology (e.g. foundation depth, clock rotation, material selection), and a passive solar design provide shelters for the Process and Outputs Rings. In the Process Sector, traditional ecological technologies and new innovations in making such as laser cutters and 3d printers are hosted. If power is not available, we can also offer to include a small-scale solar system with each shelter. The technology used in the Earth Sector is designed to be inclusive of and with deep respect for local indigenous culture.

**Activities supported.** Our design is driven by the activities it enables. Each sector has three activities: Collection (providing collection points for organizing upcycled materials*,* or cultivating natural materials in the Earth Sector), Processing (providing spaces and tools for processing the materials of each sector), and Output (spaces for dwelling for overnight visitors, meeting spaces for day use, in addition to art for visitors to explore and plants for all to enjoy placed around the Fly Ranch property). In the Earth Sector, the Collection Ring supportsagricultural practiceswith a permaculture garden: edibles, traditional medicinal plants, and natural construction materials are cultivated with a focus on endemic and culturally-significant species (e.g. pinyon pine, ricegrass, mustard plant, mentzelia, desert thorn, chokecherry, buckberry, nutgrass, seablight, willow). In the Processing Ring,seeds are prepared for storage and dissemination and natural materials are made into functional and art objects for use in Shelters and elsewhere on the property. In the Output Ring, shelters allow for overnight dwelling and daytime meeting spaces.

**System inputs.** Each Sector requires the materials it represents (e.g. upcycled plastic, upcycled wood, natural materials). The amount of each material required on an annual basis depends on use; upcycled materials collection could be ongoing for example with the use of a donation point. Maintenance also depends on use; systems are designed to be self-sustaining and could be used or left unused. When visitors are present on the property, they could choose to engage with the material of choice to process and produce an output of their choosing. For the Earth Sector example, once up and running, the material inputs are self-sustaining. The permaculture garden will be composed of perennials with a natural irrigation system (swale technology), so maintenance is minimal. However, more intensive garden engagement will produce greater yields (seeds collected, planted, building materials and edible plants harvested, et cetera). If construction of outputs (e.g. dwellings, sculptures, functional objects) is desired, participants are needed to produce those material objects.

**System outputs.** The design proposes to make use of upcycled and earth materials to produce outputs in a closed-loop system. All systems are circular, designed to process waste or natural materials into usable outputs that over time can also be composted or repurposed. The specific outputs generated are driven by user choice and may include dwellings, art, and functional objects. For the Earth Sector example,seeds grown are stored and distributed across the property, natural materials grown are used in production of dwellings or small material objects.

**Materials and Dimensions.** Each sector is based on the use of a different material (e.g. earth, plastic, wood, metal). Each has a collection area, processing buildings and output area which contains several smaller shelters for day and overnight use (other outputs like art and plants are placed elsewhere on property). In the Earth Sector example, earth, seeds and water are used to form the permaculture gardens (size = 45m) of the Collection Ring. The Processing Ring contains a makerspace (18m) made of natural materials (rammed earth). The Output Ring contains shelters as needed (6m, sleeps 4).

**Order-of-magnitude conceptual cost estimate.** Costs are generally extremely low because of the use of earth and upcycled materials. We estimate that the shelter we display in our boards could be produced in the following dimensions for the following prices: 9’ x 27’ ($12-15,000), 18’ x 54’ ($25,000). The permaculture garden, including two 2’ x 10’ earth benches, could be prototyped for approximately $5,000.

**Prototype development.** We can prototype any one sector, we continue with the chosen example. We estimate that any one shelter as proposed on our boards would take [.8 hour](http://www.naturalbuildingblog.com/how-long-does-it-take-to-build-with-earthbags/) per square foot of exterior wall surface; for a 9’x27’ building,195 labor hours for walls alone, fully constructed we estimate a team of 4 volunteers working full time would take two weeks to finish. The strategy for prototype development will proceed as follows: 1) site assessment, planning, and construction documents, 2) excavation and foundation, 3) primary vertical walls of structure, 4) roof and exterior skin, 5) outdoor hardscape, and 6) finishes. For the permaculture garden, we estimate 320 labor hours, or 10 days with 4 volunteers. The permaculture garden process would proceed as follows: 1) planning and layout, 2) preparation of soil, 3) setting up irrigation, 4) planting seeds and starts, and 5) woodchipping and finishing touches.

In summary, the proposed project not only opens up spaces for a multitude of creative and collaborative practices at Fly Ranch, but sets out to ground these activities in the principles of sustainability and social justice.

**ENVIRONMENTAL IMPACT SUMMARY**

The proposed design would have a net-positive impact on the environment. It will help to both cull and re-use extant waste streams and to restore native environments.

In the sectors that make use of “waste” materials, the design and activities it contains contributes to reducing local waste.

In the Earth Sector, the structures should have a long use-value, and at decommission the natural building materials can be reabsorbed into the earth after removal of industrial components. Rammed earth has significant environmental advantages compared with conventional building techniques. It makes use of local materials, requiring less embodied energy (energy required to manufacture materials) and supporting sustainability. Little waste is generated in the process, and less energy is required for heating and cooling because of the thermal regulation provided by the earthen walls. Our earth shelter also makes use of passive solar design, which helps regulate temperature in both winter and summer. The only parts of our earth shelter design that may produce waste and have greater environmental impact in their production are any electrical components that are desired (wiring, solar panels, batteries, et cetera).

In the Earth Sector, the permaculture native seed garden will help to restore Fly Ranch and surrounding areas environmentally (and culturally). Permaculture systems have multifold environmental benefits. They promote biodiversity and offer wildlife habitats, support pollinator health through beneficial insect plant species, and promote soil health by using a no-till method and soil-building species. In addition, permaculture systems capture carbon, purify air and water, and provide runoff control.

In terms of the functional and art objects generated, we anticipate that there will be minimal environmental impact. All the objects created in the proposed system will make use of natural or upcycled materials, which reduces resource use. After the object's first life is at an end, natural objects can be composted, and upcycled objects can be upcycled again if possible. If the upcycled objects must go to a landfill, they still will represent a net-positive environmental impact by extending the life of the original materials used.

Overall, the environmental impact of this project is net-positive and will contribute to enhancing the environmental sustainability of Fly Ranch and its surrounding communities.