**BRIDGING BINARIES**

CONCEPT

This organic earth art installation metaphorically represents all our attempts to "bridge" the gap between the present human ways & a more sustainable future of living. It encourages us to look at things from a fresh pair of eyes and to try and strike a balance between the irreconcilable binaries, i.e., a life built totally around modern material culture & technology vs a deep rooted yearning for a simple life purely based in nature. It creates a backdrop for two very different thematically curated outdoor / semi-outdoor spatial zones. It acts as a physical and visual transitional element between these two distinct zones.

LOW-TECH MEETS HIGH-TECH

Soil is the most basic and humble construction material. There cannot be anything more sustainable than using what lies right under our feet. Earth will ideally be sourced from the very site and then converted to compressed, stabilized earth blocks. Using techniques long known to master builders (but more or less forgotten now), a set of catenary vaults will be created by our expert team. This is a very old technique explored by many vernacular architectural traditions across the world.

Linked closely to the low-tech will also be something fairly high tech. Attached to roughly half of the south facing surfaces of the doubly curving vaults will be a flexible film of advanced photovoltaic-cells. This is therefore a coming together of two very different kinds of material culture / languages.

DESIGN - AN EXTROVERTED PLAZA MEETS A HIDDEN OASIS

The South, South-East and South-West faces of the vaults having the photovoltaic skin will therefore have a shimmering, very technological, "futuristic" looking appearance. This side of the artwork will therefore provide a very obvious background to several outdoor activities happening in the “Technology-Today" zone. This zone will be physically open and accessible on all sides. People will be able to see it from a distance and approach & congregate around it from all sides. This zone will start inviting a lot of other technology driven smaller experiments / installations. These will all contribute to strengthen the theme around a post industrial, post petroleum future.

However, something totally different will be in store for the visitor on the other side of the vaults. The North, North-West and North-East facing sides of the vaults will not have the solar panels installed. They will retain their rugged, down to earth look & feel. This will create an obvious backdrop that can easily integrate with the “Nature-Future" zone. This "secret" zone will have a wall of greenery deliberately built all around it. The greenery could also further extend around the water body thus including it within this zone. All the vegetation grown here will be local and hardy, requiring very little or no maintenance. The landscape and plantation will make this zone less visible or accessible from the outside. It will only be revealed to a viewer once they have passed from the "Technology-Today" zone, through the vaults into this zone.

SPACE USAGE

A vertical (site organizing) axis is proposed along the entire length of the fly ranch from the North towards the South. This will become a formal path for the movement of pedestrians, bicycles and electric carts and help organize future projects. Our proposal is kept at approximately the geographical center of the Fly Ranch property. This space will therefore end up becoming the very heart of the community's social life. It will support all kinds of outdoor and semi-outdoor activities & ways of living (musical nights, theatre, workshops, parties, etc.). It will be the community's main gathering space. The vaults are designed to create pockets of outdoor and semi-outdoor places that will be thermally comfortable to inhabit during both colder days (towards the south) and warmer days (shaded areas towards the north).

Within the vaulted space, the more utilitarian / functional spaces (such as administration, utilities, etc) will be housed in smaller vaults towards the east. The more social, congregational, recreational spaces (such as exhibitions and workshops) will be placed in the larger vaults towards the west and closest to the water body. The water body is connected to the proposal using a propped up deck that allows for recreational activities. The deck will not be built into the ground. Cultivation of food around the site will be possible since an irrigation pipe passes along the central spine of the site.

PLAN OF ACTION

Once our proposal is approved, we will get down to design. This will take about a month. During this time, we will also be in touch with our team of structural engineers and master builders and fine tune the structure as well as prepare the strategy for material & construction. We will constantly seek guidance from the Lagi team. Further soil testing may be requested. We estimate that we will be able to create a prototype in approximately 3 months. We will be very keen if Volunteers from Lagi and the town of Gerlach can participate in the making of this project. In fact, this kind of activity is most enjoyable if it is conducted by the community, instead of paid labor / contractors. Under the supervision and training provided by our experts, a team of capable volunteers could be created. They will eventually help build this project and greatly help reduce the construction cost. The design and construction will be regularly verified by visits from structural engineers at each stage and therefore be completely safe for the purpose of habitation. Once this method of construction is introduced, learnt and adopted by the locals, many more less ambitious structures may then be built by the residents themselves. This will then no longer require our help.

ENVIRONMENTAL & LIFE CYCLE ASSESSMENT

Embodied energy is the energy needed in preparing and extracting a raw material, energy for its to-and-fro transportation and the external energy applied to the raw materials in producing or assembling it into a final product. The embodied energy of locally sourced soil can therefore be considered to be very close to zero. Depending on the quality of the soil however, there will be a need of adding admixtures (such as cement) to improve the binding properties of soil, strength, durability and longevity of the blocks. The easily constructible sizes and spans for the larger vaults will also get decided once the results of soil testing are received and discussions held with experts. The blocks can be machine molded or [2] hand molded on site itself.

Our chosen location is the geographical center of the property. We've kept it here for strategic reasons, to aid the future growth of this community. However, we are open to a better site being proposed by the Lagi representatives in the future. It is more important to select a location for construction which causes the least amount of disturbance or damage to the other priceless natural features within the property. The estimated age of a catenary vault structure made out of compressed earth blocks can be anywhere between 50-100 years, once suitable protective layers are added.

It will take time to offset the monetary cost of the solar panels, but it will slowly happen within the project's lifetime. We estimate that the 12,636 Sq.ft of South, South-East and South-West facing vaulted surface can accommodate roughly a 188 kWp solar panel system. This will produce approximately 320,755 kilo-Watt hours of electricity every year. This is equal to a monetary saving of 35,000 US Dollars every year. The cost of making this structure can vary greatly depending on the soil quality, adding or reducing on the sophistication of current design and the extent of community participation. We estimate it to be anywhere between 2.0-3.4 million US Dollars. Our technical partners will be the Auroville Earth Institute based out of Pondicherry in India. They are experts in the making of all kinds of earth structures and have years of experience in this kind of work.