Learning Man





Learning man: environmental impact summary.

"The cleanest energy is the one you don't need"

If we want to succeed as a species we will need to change our way of life towards a more efficient and shared usage of resources and energy. But transition can't only be technological, we need to change our relationship to the natural world we are entirely a part of. We need to reduce the philosophical gap we invented between Nature and Culture. This change of paradigm implies that we need to tend towards a joyful frugality: enough is more! We need to detoxify our lives from the overconsumption of energy and resources and focus more on our immediate relationships with others and our surroundings. However we are a technological species and we need to use this asset,

but in synergetic ways, in symbiosis with nature, not against it (and so,not against ourselves).

In our proposal for the LAGI2020 at Fly Ranch, we try to develop a multiple loops ecosystem of resources and energies. These loops are intimately linked to the environment and work together as hybrid biological/artifacts.

Local energies, reasonable uses. Sources of Puha are intended to generate useful energy (exergy) from the heat of the ground. This exergy will be used on-site to avoid loss during transport, providing heat and electricity to the Modular Earth Domes and other future experimentation at Fly Ranch. Since the dome design tends to low energy consumption thanks to its insulation by earth and hay, its energy need is way lower than "conventional" construction.

Local material use and carbon storage. As the domes are mainly built with soil (around 90% of the total weight

of the building), most of the materials don't need to be transported or processed. The 10% consists of wood and hay that store carbon. The use of wood can be seen as cost in the carbon footprint since wood is not produced locally. This carbon cost can be balanced by the carbon storage of the wood as long as it doesn't decompose or burn. The use of this material in an efficient geometry contributes to lower this carbon cost on the project. In regard to the efficiency and scalability offered by the wooden domes, it seems this cost is negligible. Another possible solution would be to reuse potential left other wood from the Burning Man.

Carbon costs.

Plastic bags for the construction of the semi-buried domes are a source of CO2 and non biodegradable materials. Further research and on-site tests should be conducted to try materials of substitution such as jute or bioplastic bags. Since we don't know if these materials are suitable for superadobe, we suggest reusing misprinted grain bags from the agricultural industry to lower the impact.

The metal and light concrete used for the Sources of Puha has a non negligible carbon cost. It is used to produce hot water and electricity without emitting any CO2 or other harmful substances in the environment, so the cost can be seen as an investment that can easily be balanced by the regeneration of the local wetlands and vegetation in the long run.

After all, we think the main carbon cost of our project in Fly Ranch would be caused by the transportation of people gathering on-site for building, maintaining and enjoying the project. Since the project in Fly Ranch is an experimental scalable demonstration of a possible sustainable future, this cost can be seen as a good investment in the future of mankind !