

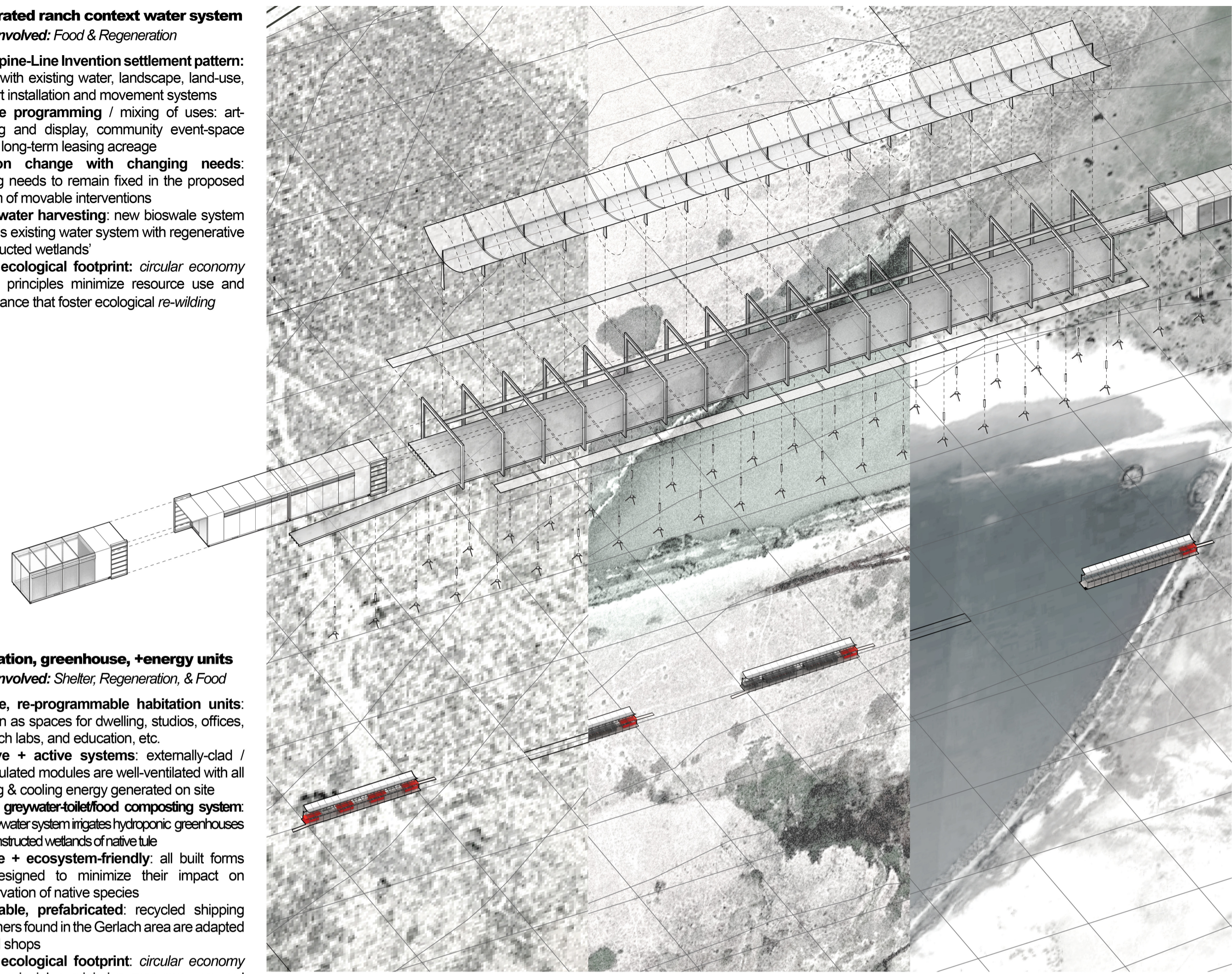
# SENSOR-FIELD

**SPINE-LINE INTERVENTIONS: linear settlement plan along central spine of road, irrigation canal and reservoirs for energy infrastructure, habitation/greenhouse/energy units + wind-light observation tower**

## 1 integrated ranch context water system

*systems involved: Food & Regeneration*

- new Spine-Line Invention settlement pattern:** works with existing water, landscape, land-use, land art installation and movement systems
- flexible programming / mixing of uses:** art-building and display, community event-space and/or long-term leasing acreage
- location change with changing needs:** nothing needs to remain fixed in the proposed system of movable interventions
- stormwater harvesting:** new bioswale system extends existing water system with regenerative 'constructed wetlands'
- small ecological footprint:** *circular economy* design principles minimize resource use and disturbance that foster ecological *re-wilding*



## 2 habitation, greenhouse, +energy units

*systems involved: Shelter, Regeneration, & Food*

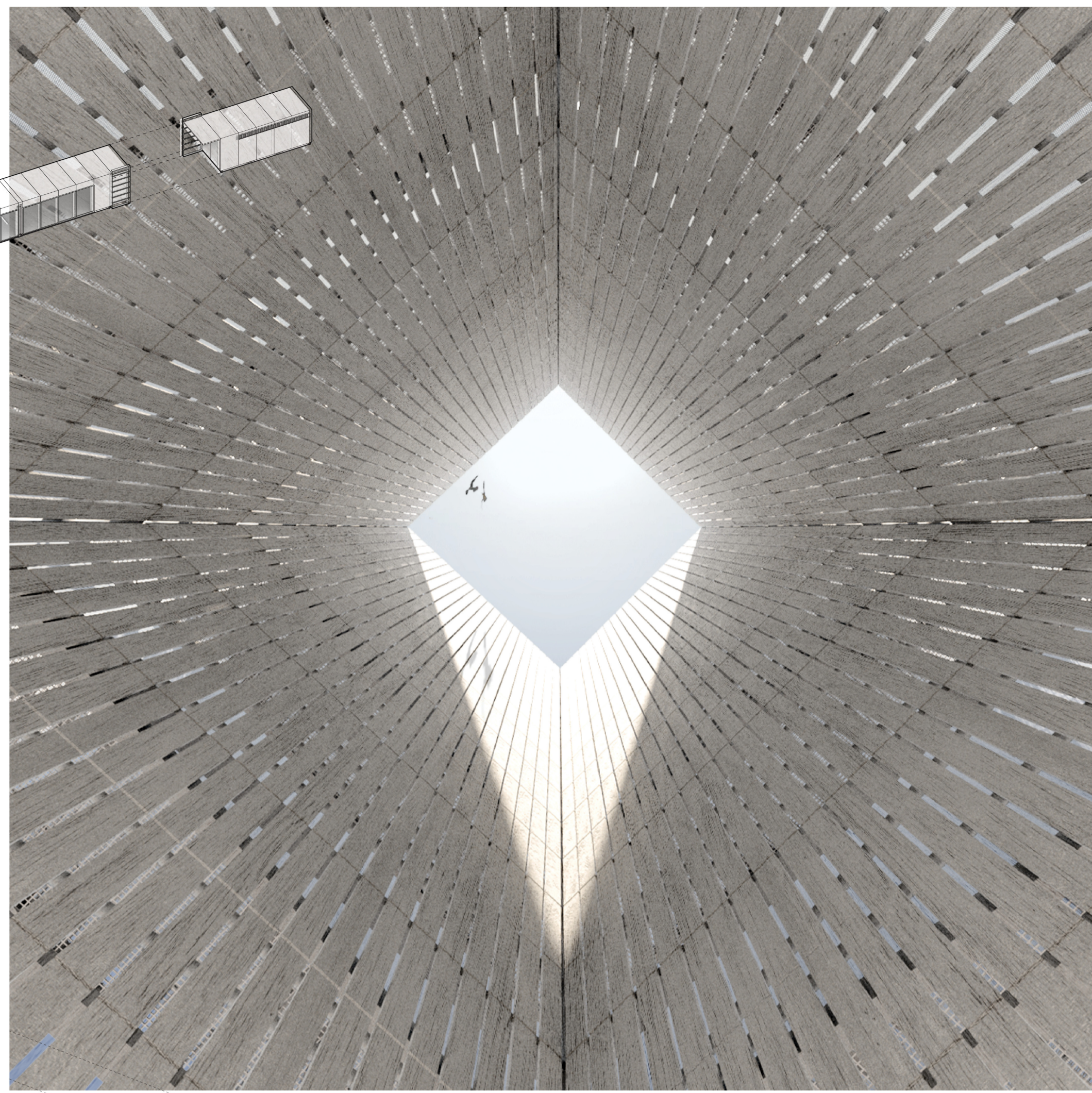
- flexible, re-programmable habitation units:** function as spaces for dwelling, studios, offices, research labs, and education, etc.
- passive + active systems:** externally-clad / R5-insulated modules are well-ventilated with all heating & cooling energy generated on site
- on-site greywater-toilet/food composting system:** the greywater system irrigates hydroponic greenhouses and constructed wetlands of native tulle
- wildlife + ecosystem-friendly:** all built forms are designed to minimize their impact on conservation of native species
- affordable, prefabricated:** recycled shipping containers found in the Gerlach area are adapted in local shops
- small ecological footprint:** *circular economy* design principles minimize resource use and disturbance



## 3 parabolic trough solar collector + scaffold

*systems involved: Shelter & Energy*

- affordable, prefabricated:** lightweight, portable galvanized steel frames on portable footings; also easily disassembled & re-located
- cost-effective CSP technology:** parabolic mirrors pivot with sensors to sun's path, telling 'solar time,' and producing surplus energy
- net positive / near-zero carbon emissions:** energy powers scaffold systems; surplus energy re-charges ranch vehicles + equipment
- sun-rain shield:** troughs on scaffolds shelter open-air porches and living units; frames and 'reflects' the surrounding landscape
- wildlife / ecosystem-friendly:** elevated scaffold avoids disturbing wildlife + ecosystem flows and processes on the ground
- small ecological footprint:** scaffold and inhabitation systems touch down lightly on sites with *circular economy* design principle.



## 4 Fly Ranch wind-light observation tower

*systems involved: Energy & Regeneration*

- site marker:** material lower half marks Sensor-Field high point, virtual upper half marks Pleistocene Lake Lahontan plane
- split-program types** outer half of tower = lookout tower; inner half of tower = skyspace-chapel for contemplation
- open-air / heat-stack core:** neutral plane of air pressure (equal air exfiltration/infiltration) to experience and educate
- windbelt technology:** powers tower systems; net positive with surplus energy used as an electrical charging station
- affordable, prefabricated system:** easily-transported and assembled on site from locally-fabricated steel and -reclaimed wood planks
- small ecological footprint:** carbon emissions approaching zero with circular economy design principles embodied throughout

**GLOSSARY OF TERMS**  
**Mapper:** a new, globally networked planning-process software interconnecting community with diverse information sources across scales  
**Sensor-Field:** the network of all Fly Ranch sensor sites on USGS 1 kilometer/1/2 kilometer coordinate grid monitoring a wide range of Fly Ranch biosystems processes  
**Sensor Point:** an individual sensor site within Sensor Field comprised of one Sensor Rod and monitoring equipment  
**Sensor Pole:** an individual polished, stainless steel poles containing an environmental monitoring and communication technologies at each Sensor Point in Sensor Field  
**Spine-Line Inventions:** the larger settlement plan of 50-meter 'dashes' that locates Rib Cages within Sensor Field to organize the process of incremental growth  
**Rib Cage:** a 50-meter steel scaffold of 17 ribs supporting sensor-kinetic parabolic-mirror troughs, deck + habitation units within  
**Wind/Light Tower:** place for observing of wind, light and panoramic views at the highest topographic Sensor Point site within the Sensor Field of Fly Ranch.

