**SAGE SPARK construction methods**

**FUEL PRODUCTION SITE: CONSTRUCTION**

1. **SUBTERRANEAN**
   After initial inspection, the initial digging starts to build and place the foundations. The dig starts with mixing the earth and gravel to strengthen the planar area, followed by further digging to create the hole for the foundation. The mix is then used to reduce the embodied carbon from construction footprints.

2. **RAMMED EARTH**
   Once the foundations are placed, the walls will be framed and filled with earth to be rammed in layers. The earth will be reinforced with steel bars, ensuring the ability to take the dead load.

3. **FUNCTIONS + MECHANISMS**
   The press mechanisms and platforms will then be installed and secured in place, while backfilling in appropriate areas to allow for installation of flooring, stairs, plantings, and other finishes in the designated areas.

4. **HILL CREATION**
   The final step is to create berms around the site with excavated soil, where retaining walls will keep the soil in place. The walls are made from rammed earth, with the surrounding organic materials.

**FOUNDATIONS**

The retaining walls are made from rammed earth. It will be reinforced with steel bars, ensuring the ability to take the dead load from the soil retention.

The footings comprise of the excavated earth mixed with 5% polymer and 2% cement, with reinforcing steel.

The foundation "wall" under the footings is 2% cement mixed with the excavated material and compacted in 150mm thick layers at a time.

**DESIGN PRINCIPLES**

**VISTA FRAMING AXIS**

Situated on the 1997 Burning Man site, the press is a compact (12ett) row. Built near a Black Rock City, it is a last resort for the current BRC.

The site acts as a guide, one enters from the southern end and finds direct views towards the the Hualapai Flat and to the visitor's final destination, the main commons.

**THREE TIERS OF INTERACTION**

Comprising three tiers, the site offers different interactions at each level.

First tier is listening. Visitors must physically and sightlessly coordinate by listening to their partners. The second tier is a listening and seeing. The wind will reveal the visitors' secrets to those who listen, and the cistern will reveal a distant BRC to those who look carefully. The third and highest tier, emphasizes seeing. Elevation offers a sweeping view of the site.

**BRICK PRESSING PROCESS: DETAILS**

**BRICK PRESSING MECHANISM**

As the screw jack goes up, the pressing plate pushes the loaded mix of miscanthus material, densifies them and drains the excess water from the mold, leaving the condensed materials with the brick shape inside the press as biomass fuel bricks.

**FIREFLOWER BIOMASS FUELS**

Burners have diverse needs. The briquette is adaptable; left whole, it is stackable, easy to transport, and offers shelter from the wind to kindling. Broken apart along seams left by the mold, it can be used comfortably in a variety of contexts, from lanterns to stoves.

**ADDITIONAL OUTPUTS OVER TIME**

**ASHES TO SOAP**

Combined with food waste fats, ash from the fire can be used to make natural soap to support non-toxic bathing at Fly Ranch and Black Rock City.

**TOWARDS MYCELUM BRICKS**

Mycelium is the vegetative part of a mushroom. The fine white filaments can saturate a substrate like rice hulls and gravel to strengthen the planar area before mixing with the materials. Combined with food waste fats, ash from the fires can be used to build seasonal structures. Mycelium bricks are stackable, easy to transport, and offer shelter from the wind to kindling.