# The Elements



### The 5(-1) Elements of the Site

Deeply grounded in their environment, the Paiute people believed that power (pooha) could reside in any natural object including stone, water and geographical features, as well as in natural phenomena such as the sun and wind. The project arises through the pure interaction between these basic Elements of Nature, with the simple purpose of creating a conditioned, flexible room that can facilitate various year-round activities in the context of an expansive and harsh desert climate.

As such, the design is a fusion between the geology, the water (hot and cold springs) and the seasonal fluctuations of air flows, which results is a new spatial condition. The startegy resides in a simple reorganization of site-specific sediments into a structure and system that will recalibrate the air and water flow to facilitate multiple human activities.

#### <u>1. Air (Determining the System)</u>

Fly Ranch is set within a regional ecosystem of extremes, with hot dry summers and cold wet winters. The temperature ranges from below 0 °F (-18 °C) in the winter to over 105 °F (40 °C) in the summer.

In order to use the extreme climate conditions to our advantage, we propose to condition the air through an evaporative cooling system. It is a system inspired by the Persian Yakhchāl, which is an ancient type of evaporative cooler. Above ground, the structure had a domed shape, but had a subterranean storage space. It was often used to store ice, but sometimes was used to store food as well. The subterranean space coupled with the thick heatresistant construction material insulated the storage space year round.

The wind towers enable the circulation and cooling of warm air through the interior spaces.

#### 2. Water (Determining the Location on Site)

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The location of cold and hot ground water is determining the location of the room and tower duos. The cold water is used for cooling the air in the summer (it is also transformed into drinkable water), while the warm water of the geyser is used for heating the space in the winter. As such, the system is reversible: it acts as a wind tower in the summer and as a chimney in the winter.

> 2. Hot Water (Geyser) Winter Room

Wind Tower /

Room

Chimney

1. Cold Water (Well) Summer Room

## <u>3. Earth</u> <u>Geologic Taxonomy</u>

construction system. construction system.

## Engineered Soil A 'Filter' & 'Sponge'

of the tower.

<u>4. Space</u>

Cold Water Springs for COOLING

1. Summer

The Summer Room is a flexible space that can be used for various Flyranch programs: from events to workshops, performances and other activities. Filtered water is accesible from within the room.



In order to take advantage of and celebrate the geological context, we're proposing a combined rammed earth and gabion

By analyzing the geologic taxonomy of the site, we understood that the context is extremely varied in sediments that will serve as a perfect palette for a rammed earth



The Tower is a layered system of various sediments escavated and collected from multiple locations of the site, engineered to cool the air flowing through it, as well as to 'absorb' (with the deployement of a pump) the ground water. The layers act as a filtering system as well, drinkable water being collected and made accessible at the bottom



Rammed Earth (compressed, very dense)





Gabion (largegranulation, low density)

## (Enabled by the interaction of the other 3 elements)



2. Winter

The Winter Room is an enclosed space that is fully conditioned through the circulation of warm water across the lower section of the tower, so that Fly Ranch activities can continue all year round.