

2012 MERIT

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LYCEUM

A traveling fellowship in Architecture



LYCEUM [COMPETITION]

MEMORIAL [UNVEILING HISTORY]



CONTEMPORARY STATE



DAM INSTALLATION



WATER DISPERSION



DUCKWEED HARVESTING



Duckweeds are aquatic plants which float on or just beneath the surface of still or slow-moving fresh water bodies.

As of March 2011, Rudy Behrens, an aerospace engineer, has patented system that is capable of producing a megawatt of electricity for the same price as coal or nuclear energy — and significantly cheaper than wind or solar.

-KVAL NEWS
<http://www.fao.org/AG/AGAInfo/resources/documents/DW/Dw2.htm>

LYCEUM COMPETITION

Reactivating a quarry

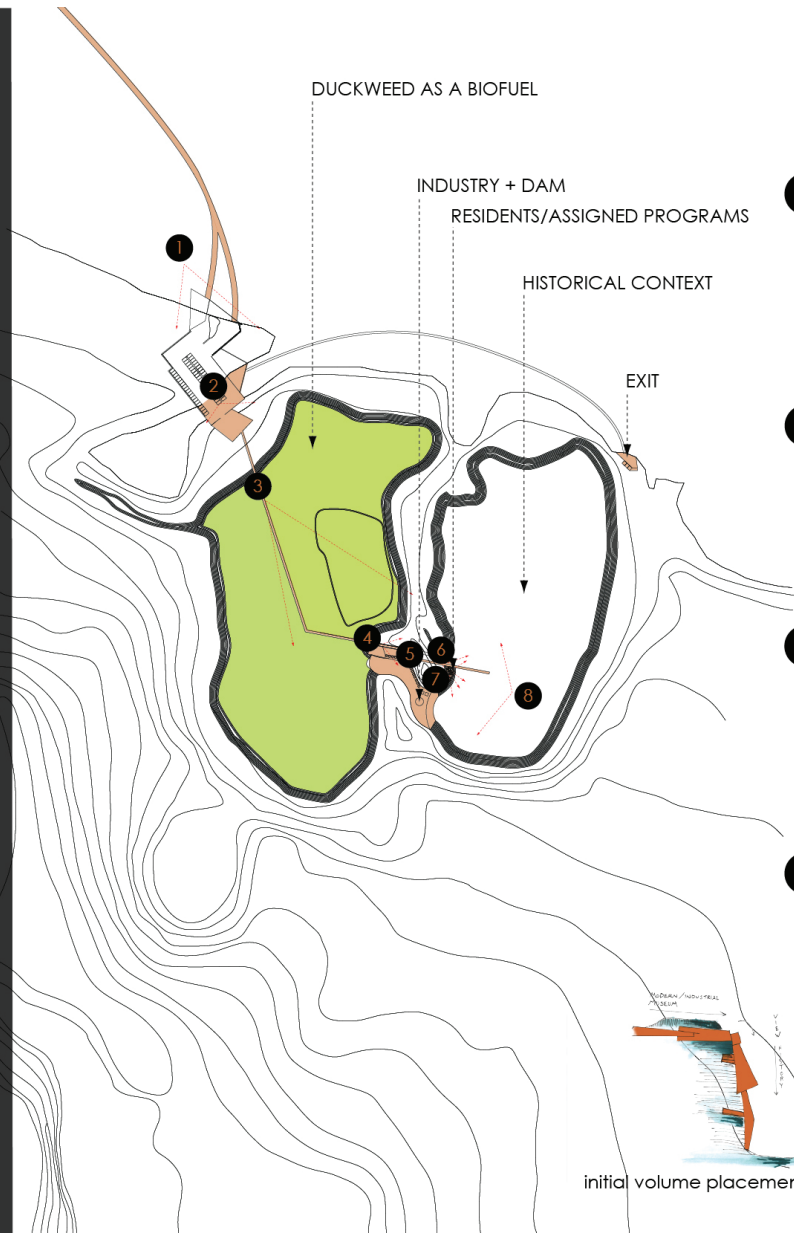
Barre, Vermont
Lawson Quarry

Self-Sufficient Architecture

Throughout human civilization, society has pierced earth's surface in response to needs. And today we are left with torn cavities filled with history. And it is here, through this proposal that a closed loop energy cycle is un-birthing, and a hidden chronicle is unveiled.

The new entity transforms its contemporary system, into a reactive quarry. The intervention colonizes a weak splinter within Vermont's fabric, by turning a water-filled container, into a duckweed farm. Duckweed has been harvested for bio-fuel as of March 2011, using only sunlight, water, Nitrogen, Phosphorous, and Potassium: which are abundant elements in granite quarries. Duckweed is a resilient multi-cellular organism, which doubles in biomass within 30 hours, and grows even faster in unfiltered water, cleansing the water in the process. Hibernating during the freezing winters, this plant would only be harvested during the months of April-September and stored for heating purposes during the winter. This project believes that the function of the building is conceived as an extension of the environment that surrounds it. It hints toward the possibility for a unique experience where industrial production and living quarters are intertwined and brought together as neighbors.

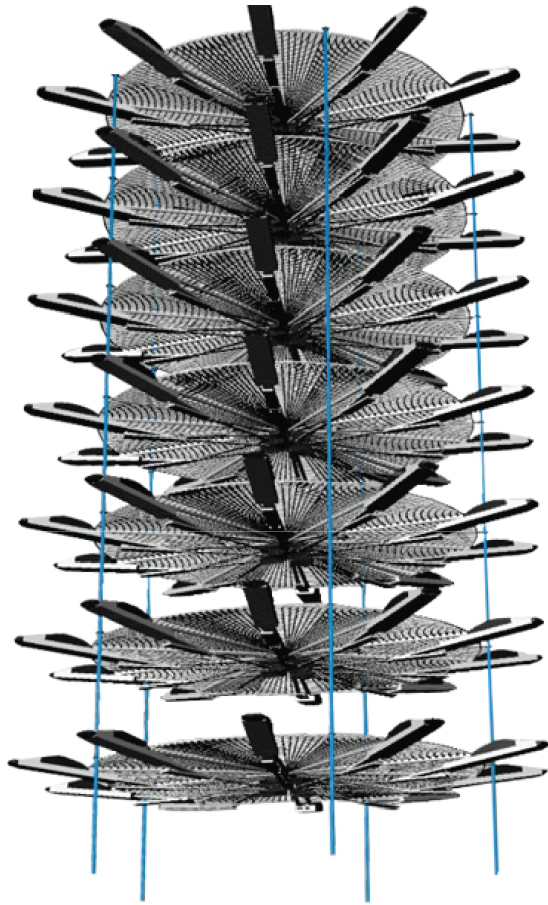
In addition to yielding energy, this territory sits 450 feet atop its neighboring community, illustrating the opportunity to also operate as a hub for collecting and dispersing water + energy to the town below, because it is Architecture's responsibility to re-connect to the larger framework.



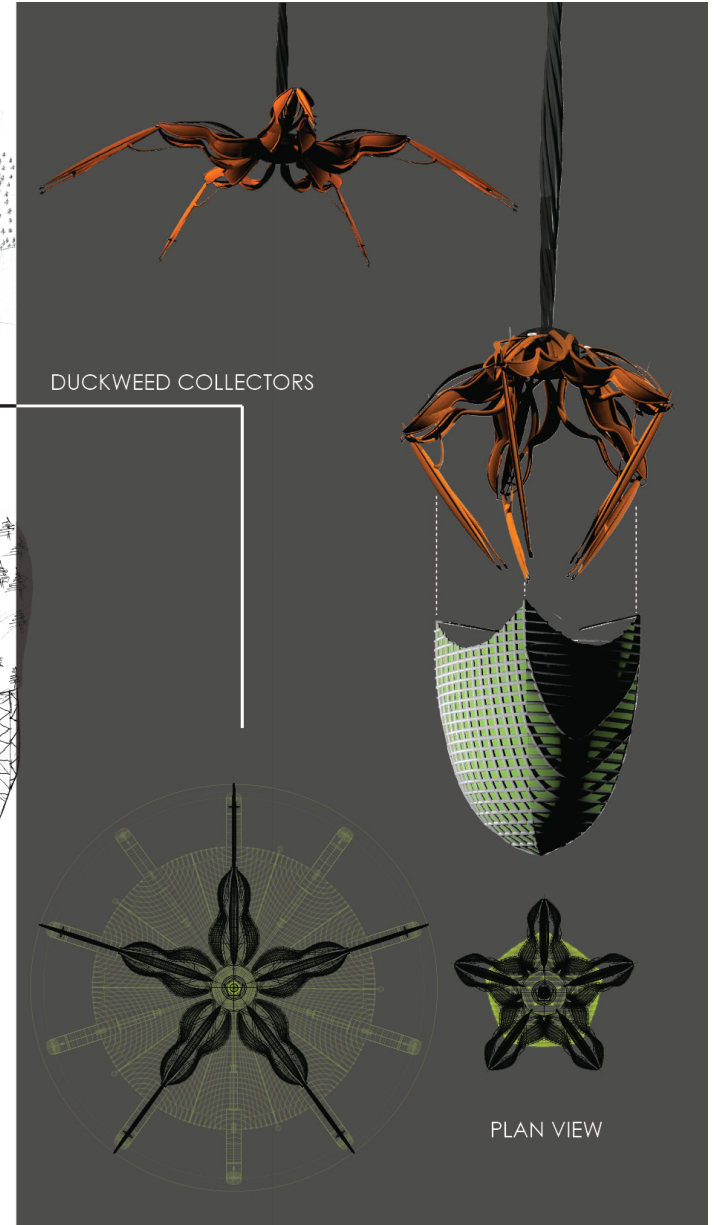
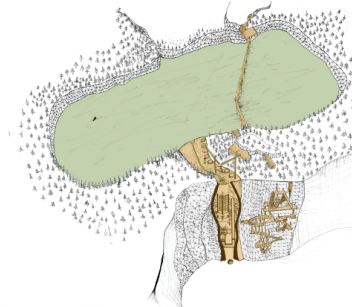
SEQUENTIAL JOURNEY [STEPS 1-8]

1		2	
3		4	
5		6	
7		8	

This sequential process attempts to explain what a quarry can become and what it was through progressional events. the journey begins with MODERNITY and ends with the understanding of HISTORY

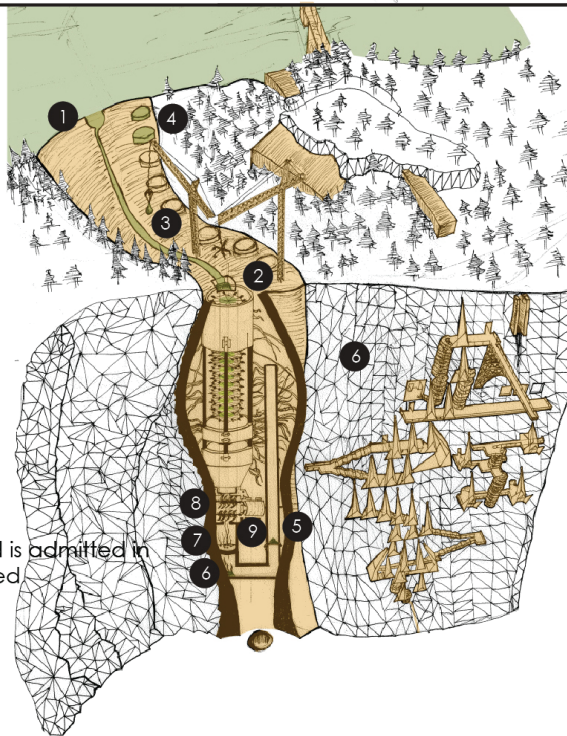


DUCKWEED EXTRACTION [ENERGY]

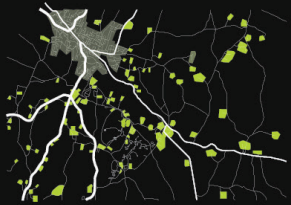


Nine [Steps]

1. Dam skins the top of the water, so that only duckweed is admitted in
2. Duckweed is dumped into nets, where it is then trapped
+ Excess water falls into tank
3. Duckweed nets are extracted by claws
4. Duckweed is then dried and stored in green houses
5. Duckweed is sent to the bottom
6. Duckweed is burnt
7. Water is boiled
8. Water vapor spins turbines
9. Wire coil/magnets produce energy



ENERGY Distribution



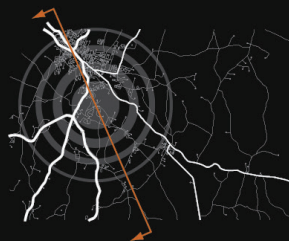
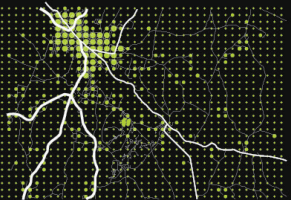
≈ 10 buildings per



farms
parks
lawns



irrigated farms
irrigated parks
irrigated lawns



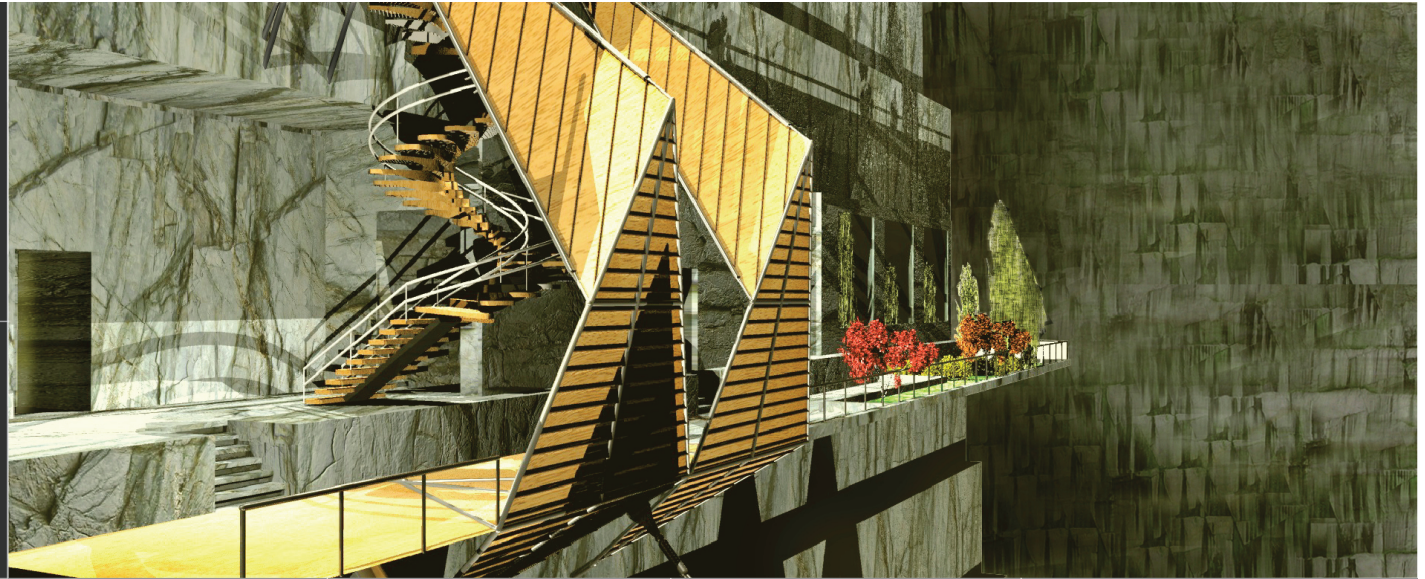
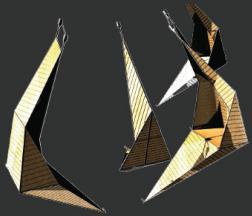
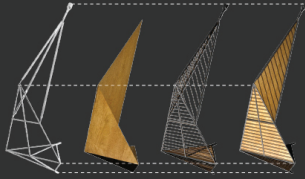
radius ≈ 8.1 Km

the goal would be to activate every quarry into one unified system



WATER Distribution

[Why pods?]



Artist and museum continuously attempt to captivate a moment in time. These pods are reflections of instances. Not only do the pods display historical information during a given era, but they also produce artworks that celebrate the quarry's existence. The pods would contain records about incidents that have occurred during that year. Time would be measured in depth. And pods would explain events such as: where the granite went or if someone died. The disjoint pod arrangements are utilized to allow the passerby to understand context and then reflect on it while looking at the quarry.

[Why vertical?]



The site is currently a quarry with hidden history



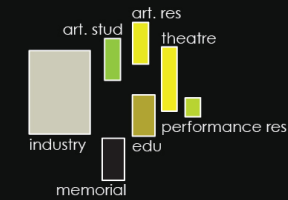
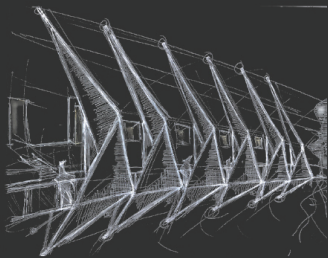
Building over it, would diminish historical identity



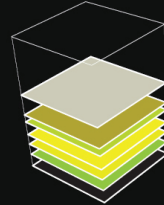
Stacking respects both identities



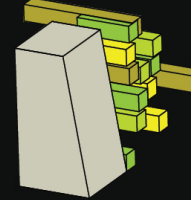
Stacking will create a hidden monument



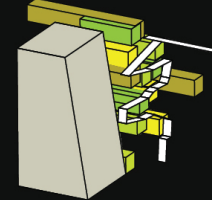
Basic program cluster



Determining amount of square footage



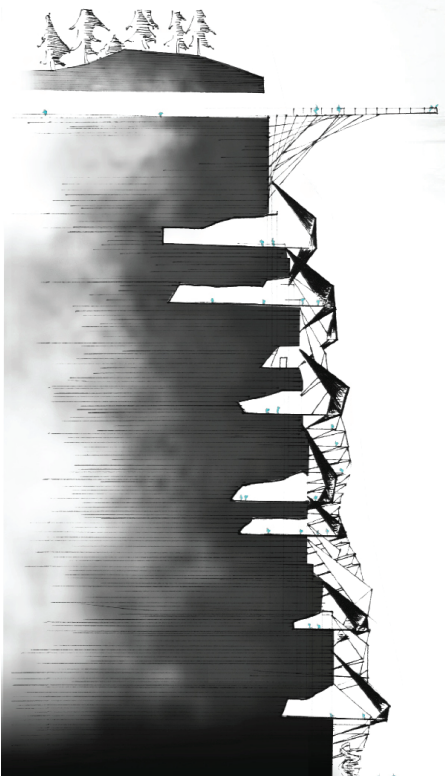
Burrowing into the granite to create stable temperatures



Connecting private space through a public circulation

granite used as temperature insulator

heat ← → cold



1830's

1986

