



STUDIO JOURNAL

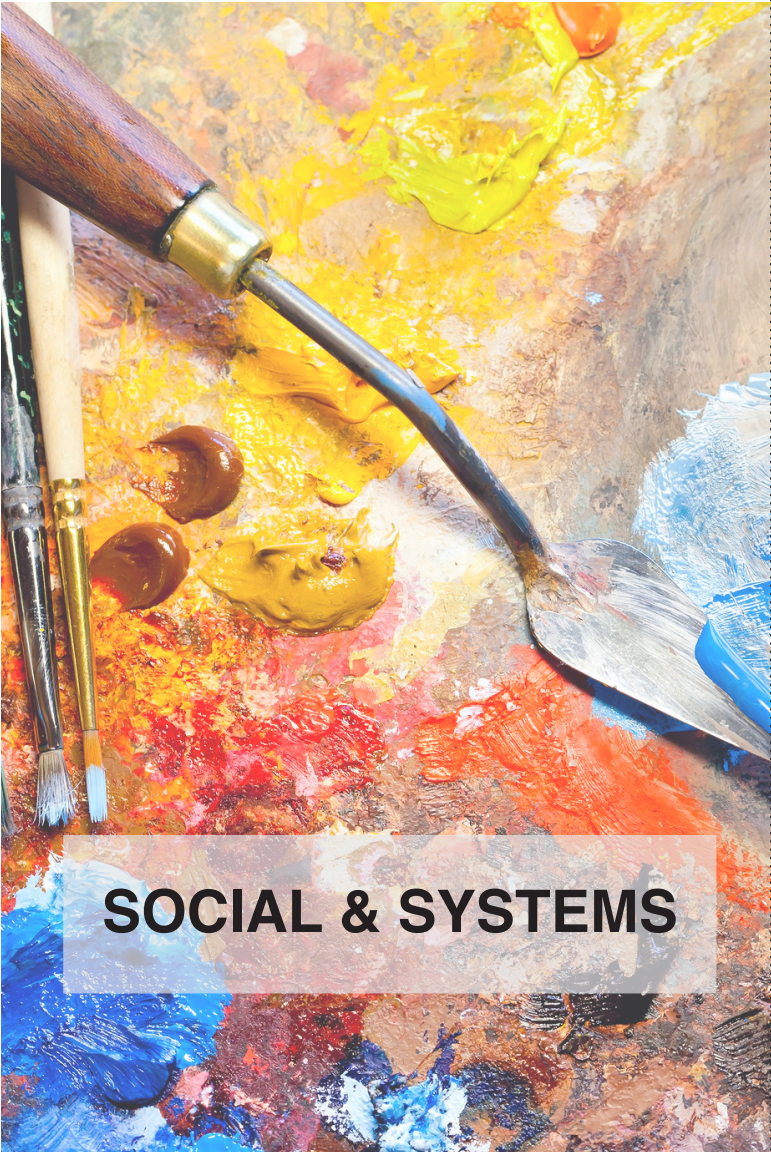
SUSTAINABLE SYSTEMS

DESIGNING SUSTAINABLE NOMADIC STRUCTURES

Dasha larotskaia

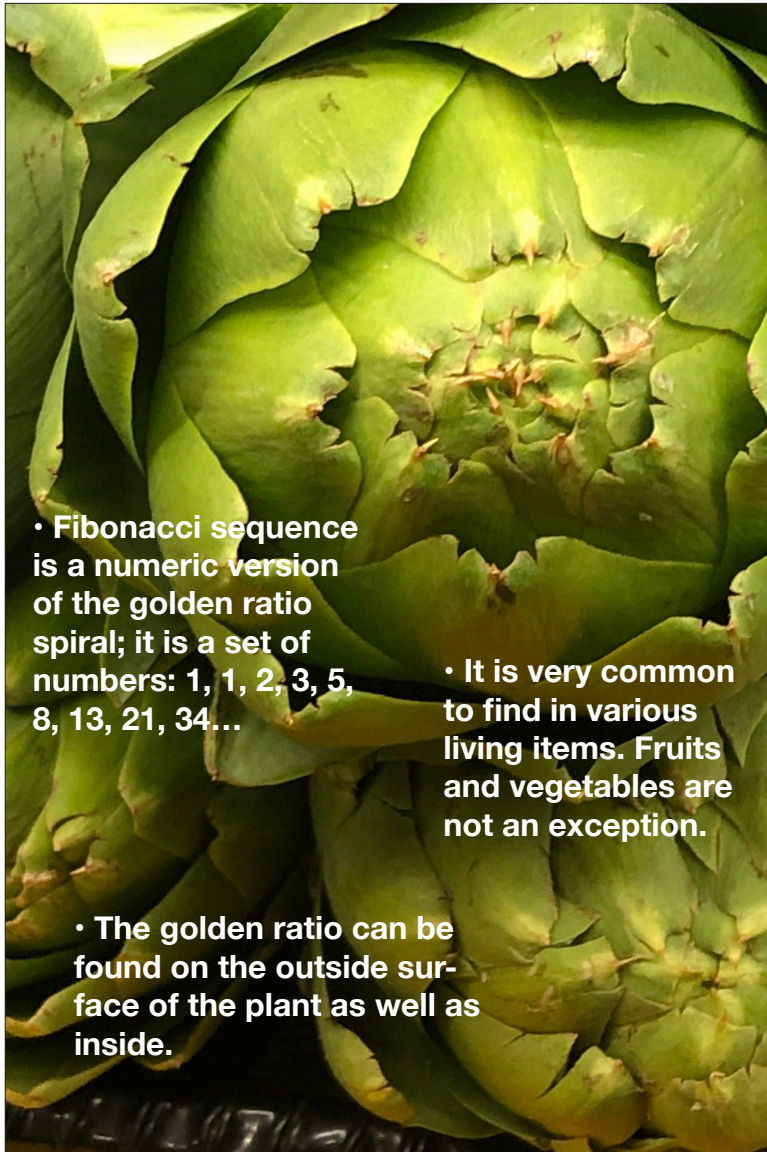
PARSONS THE NEW SCHOOL FOR DESIGN , SPRING 19
INSTRUCTOR: CAROLIN MEES

GLUE STRIP



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SOCIAL & SYSTEMS

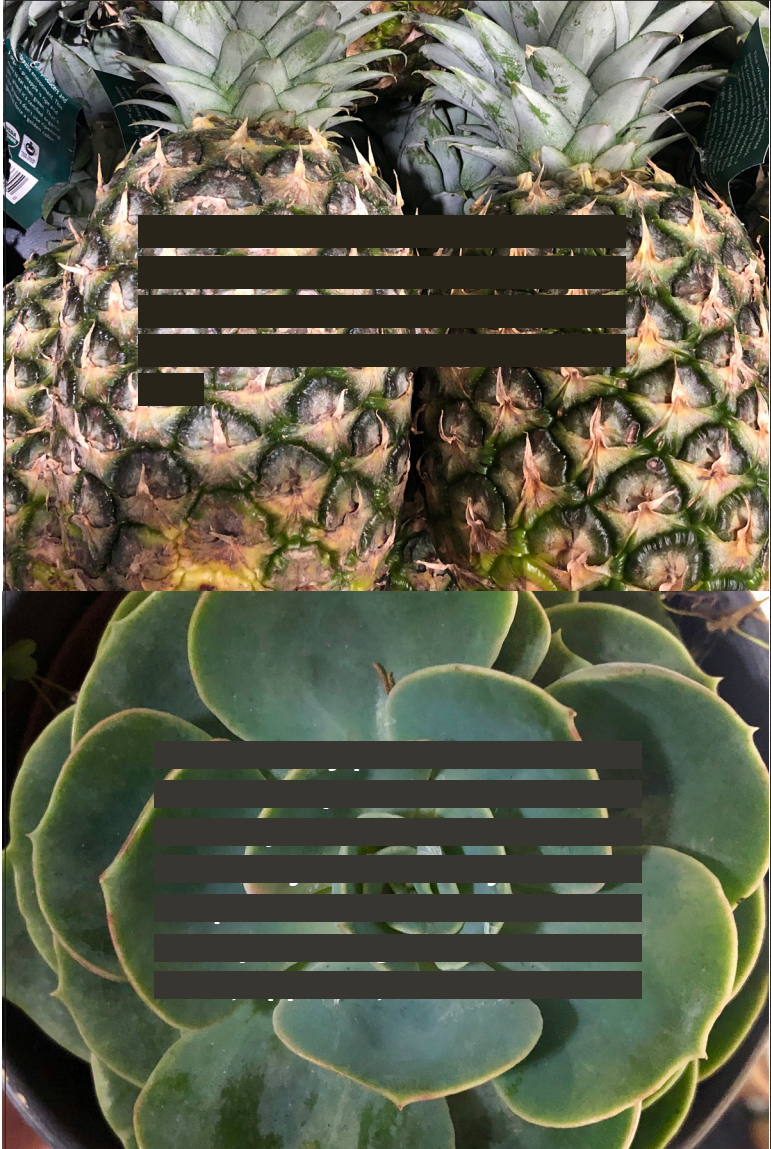


- Fibonacci sequence is a numeric version of the golden ratio spiral; it is a set of numbers: 1, 1, 2, 3, 5, 8, 13, 21, 34...

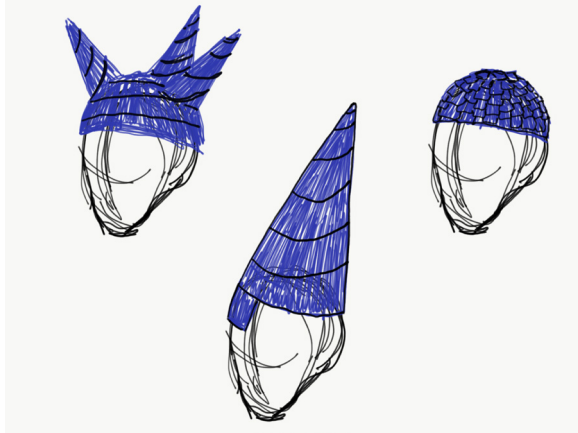
- It is very common to find in various living items. Fruits and vegetables are not an exception.

- The golden ratio can be found on the outside surface of the plant as well as inside.

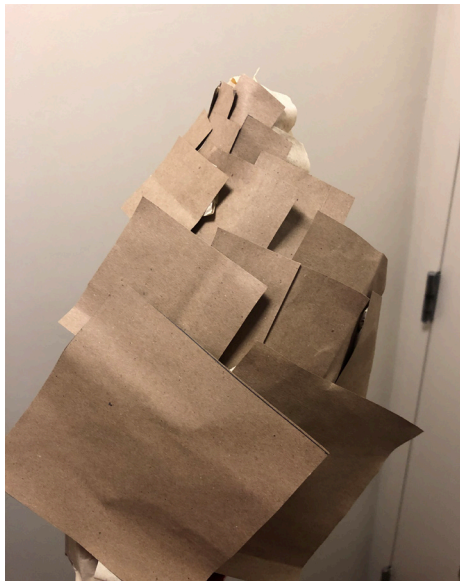
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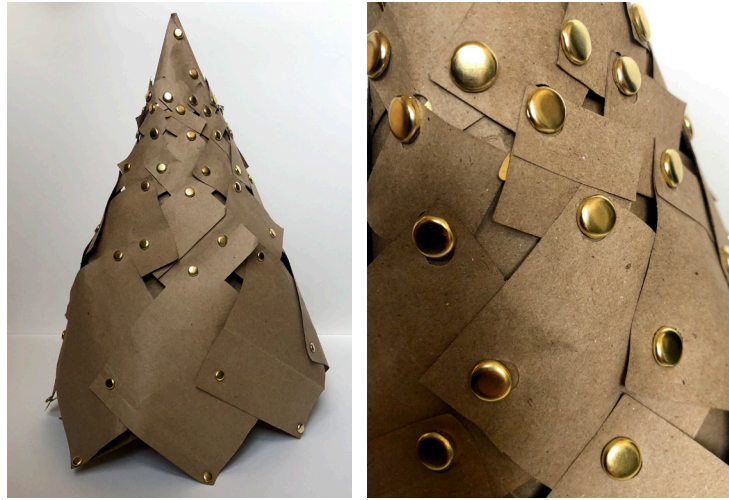
Pic. 1
Sketches



Pic. 2
25%

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Weather armour



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CLIMATE CHANGE & ENERGY

Rainwater collection

To collect rainwater it is necessary to have a surface, the bigger the better.
There are several devices on the market that resemble a backpack and which you can use for collecting rainwater and in some cases immediately drinking it.



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Thermal insulation

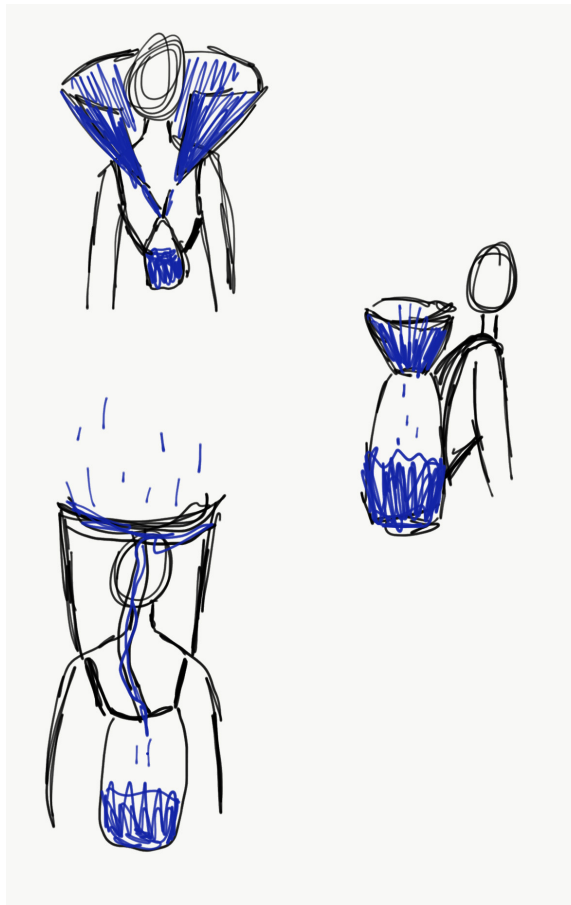
Thermal insulation is green by its very nature because it saves energy by keeping the warm air in the house during the winter and out during the summer.

There are various materials from which your insulation can be made: cotton, icynene (made from castor oil), sheep's wool or recycled materials.



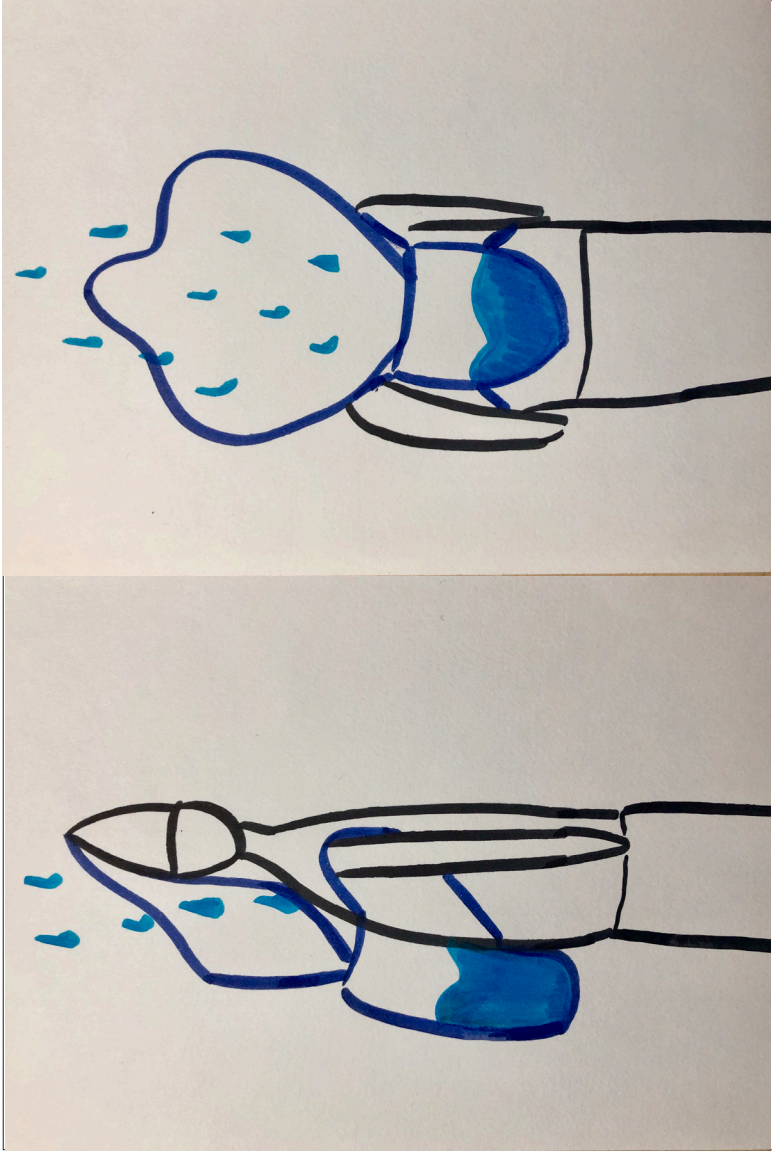
Pic.1 Spray foam Pic. 2 Ceramic yarn

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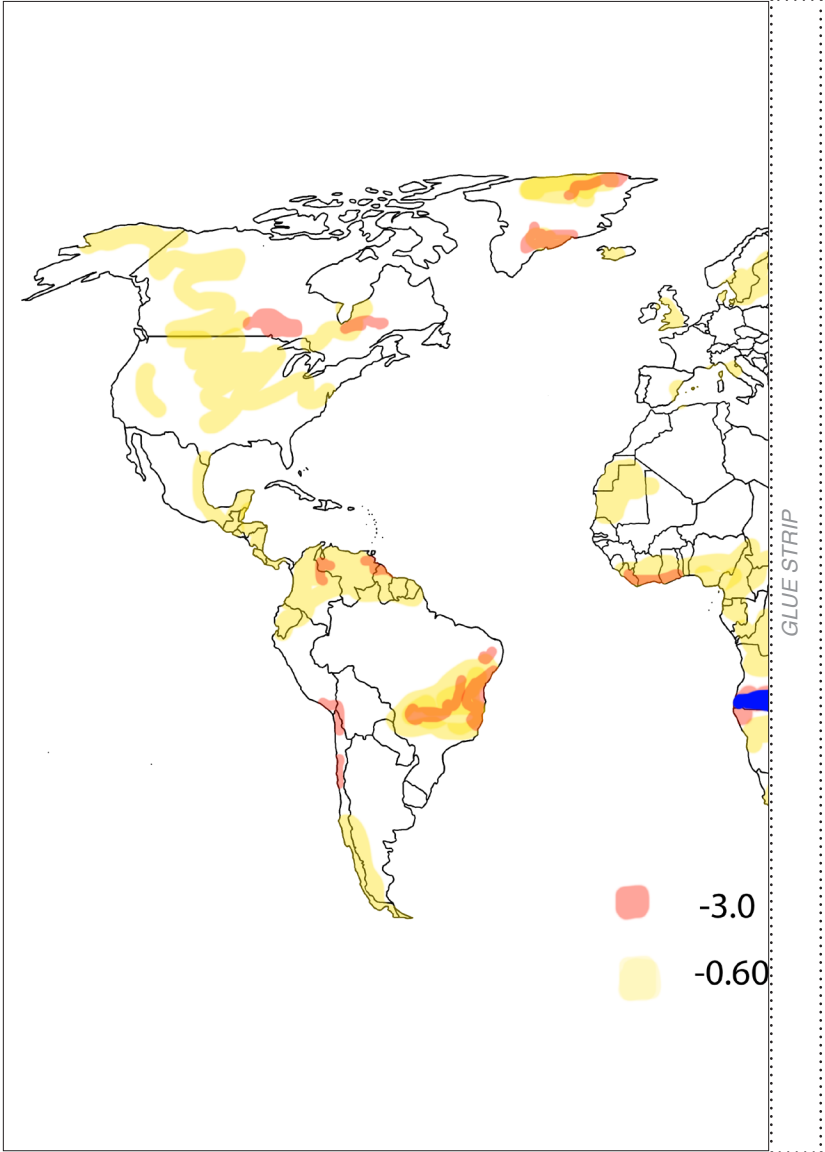


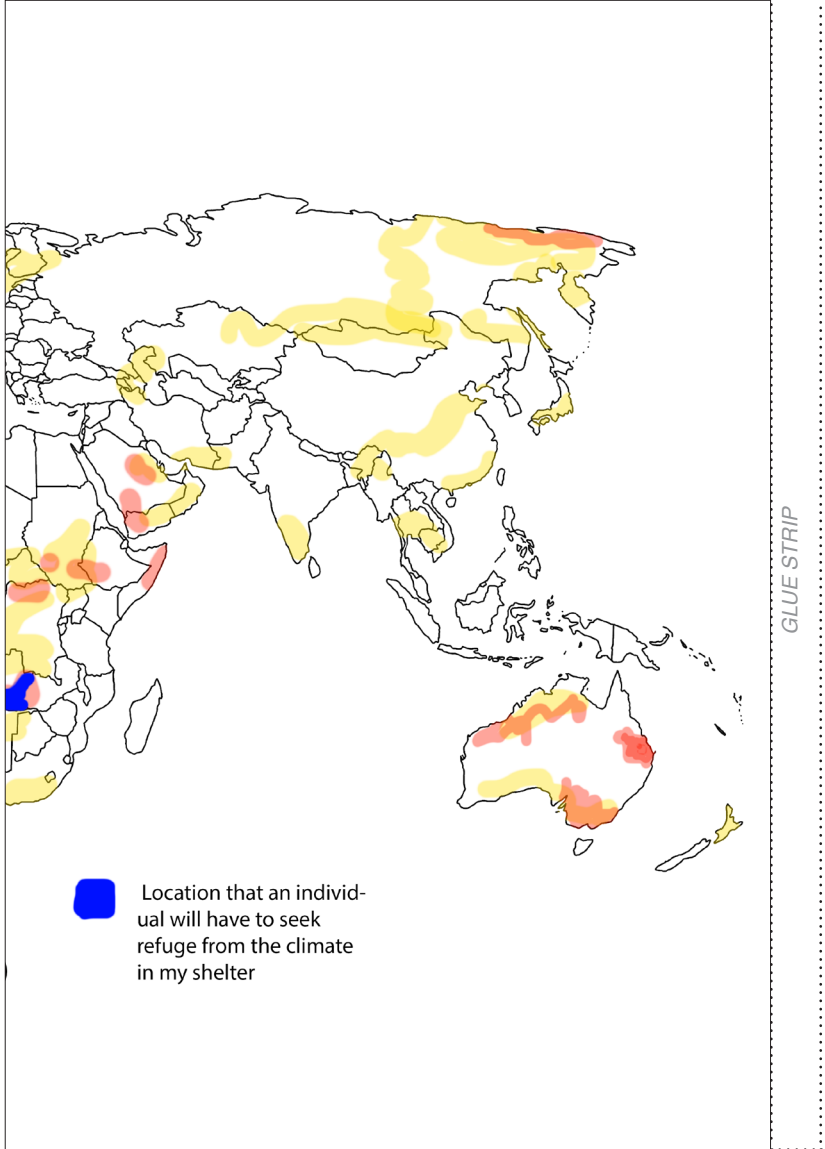
Portable rainwater collection device (sketches)

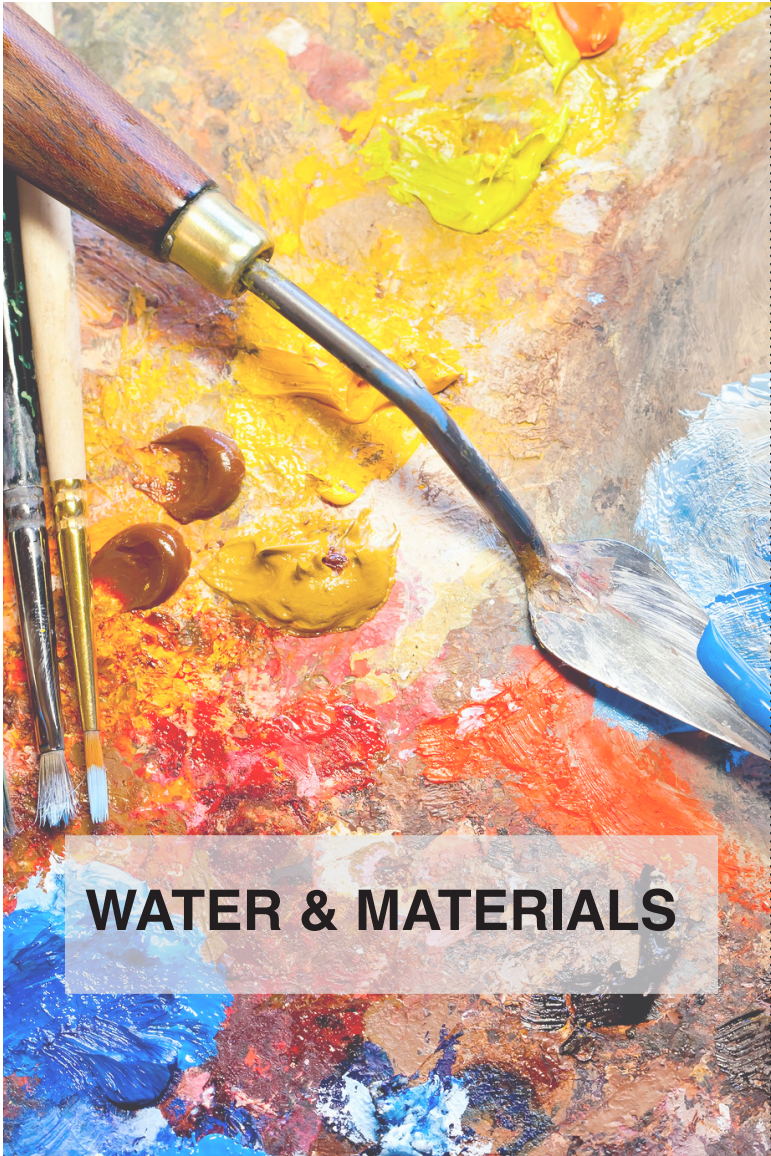
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GLUE STRIP







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WATER & MATERIALS



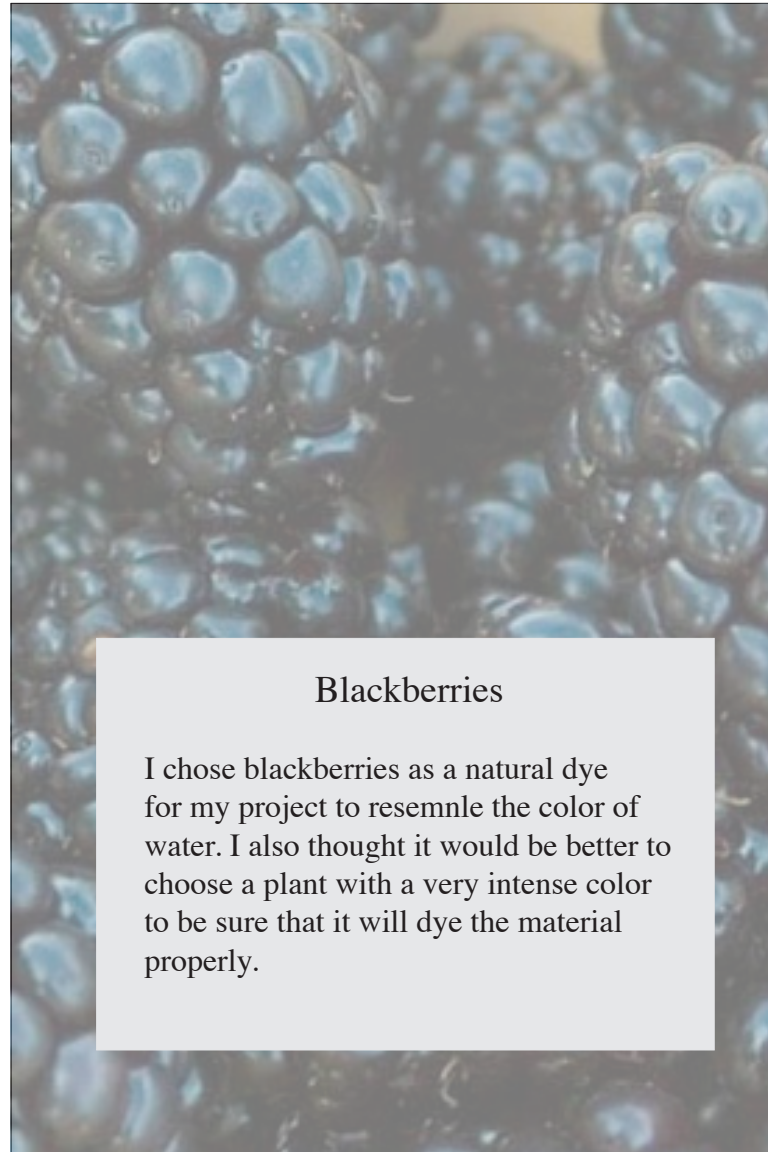
Natural dyes

- The color pigment can be extracted from a plant by using a dye-bath.
- To fixate the color pigment on a natural fibers it is necessary to use mordant.
- The dyes that are commonly used for clothes production are usually chemically made which creates an oily scum and gives the water a bad appearance and foul smell and prevents the penetration of sunlight necessary for the process of photosynthesis.
- Chemical dyes usually consist of chemicals like mercury, lead, chromium, copper, sodium chloride, toluene, and benzene, which causes severe health problems especially for the factory workers.
- To waterproof wool and kombucha leather you can use oils such as olive and coconut or wax.

Natural dye sources:

- Red / Pink: Pomegranates, beets, raspberries, blueberries, cherries, red and pink roses, avocado skins and seeds, lavender
- Orange: Carrots and carrot roots, orange peels, yellow onion skins
- Yellow: Lemon peels, celery leaves, turmeric, paprika, marigolds, sunflowers
- Green: Spinach, parsley, peppermint leaves, artichokes
- Blue / Purple: Blackberries, red cabbage, grapes, blueberries, red mulberries, hibiscus
- Brown: Dandelion roots, oak bark, walnut hulls, tea, coffee, acorns
- Gray / Black: Blackberries, walnut hulls, iris root

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Blackberries

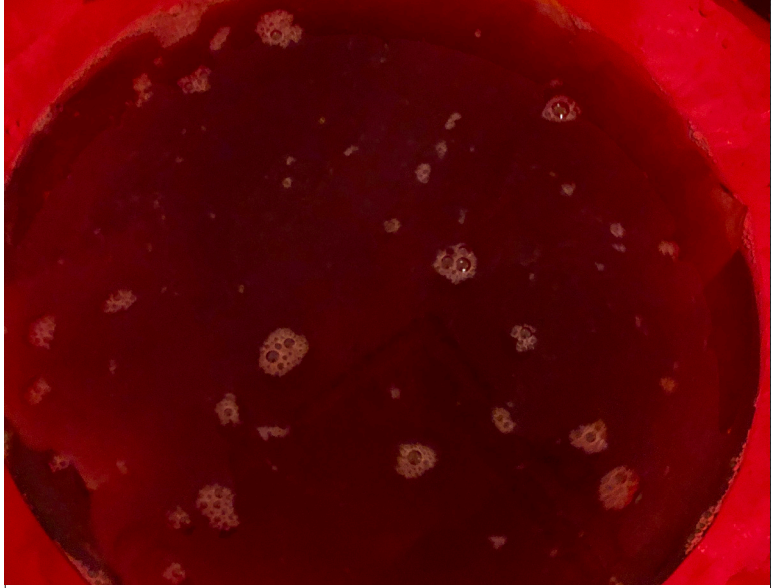
I chose blackberries as a natural dye for my project to resemble the color of water. I also thought it would be better to choose a plant with a very intense color to be sure that it will dye the material properly.



Making the dye out of blackberries



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Dyeing kombucha leather



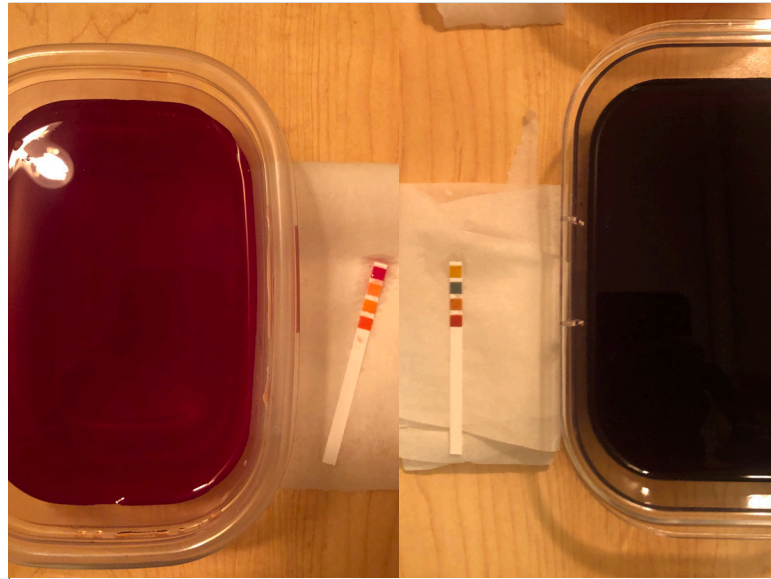
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Preparing the dye for wool



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Dyeing wool



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Final piece



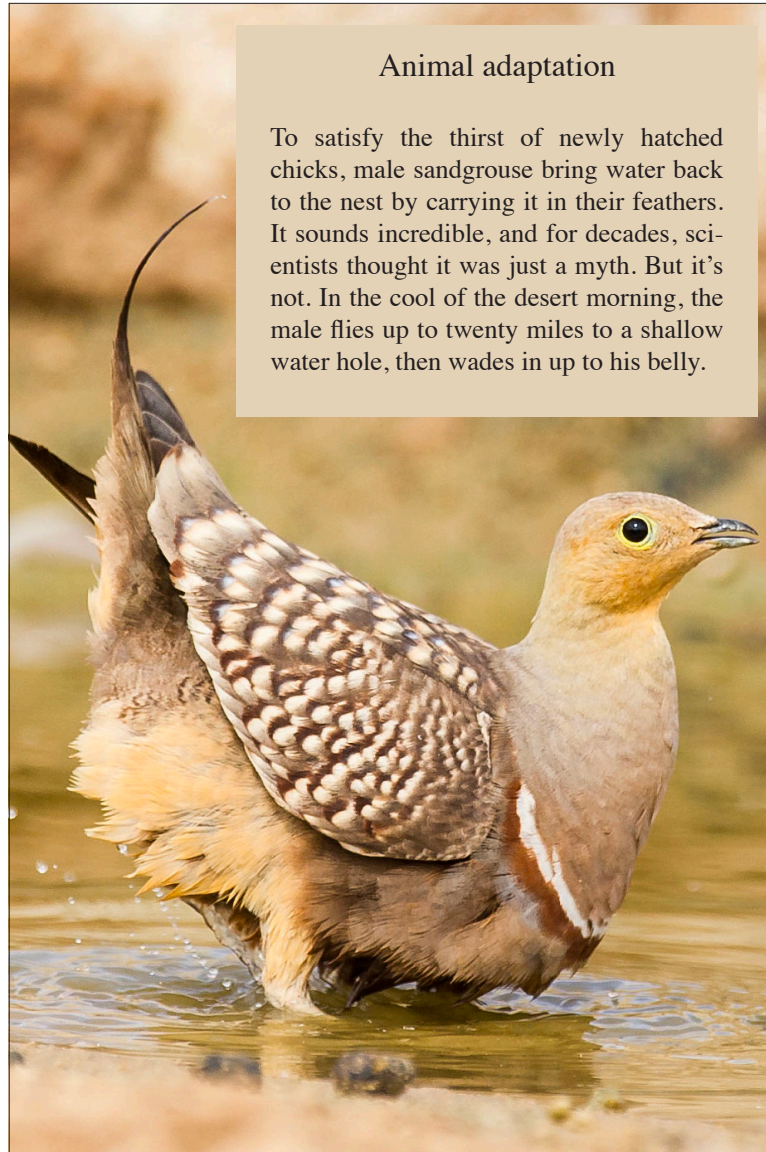
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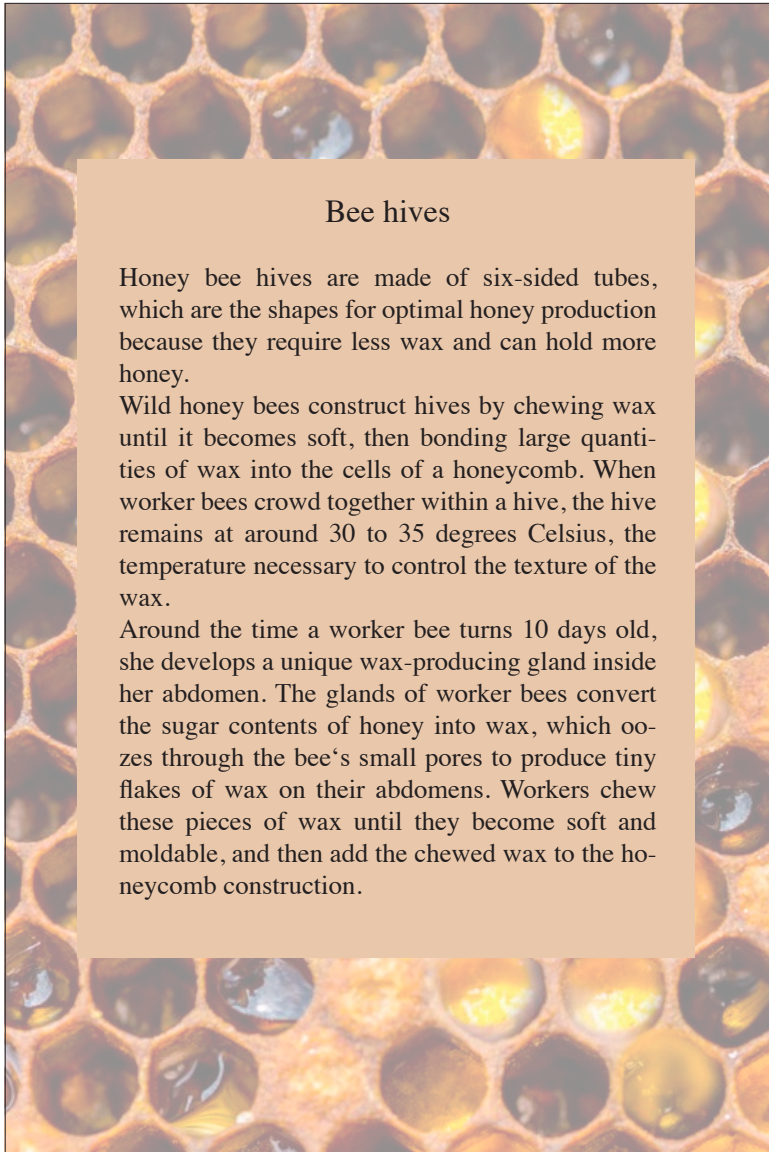
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Animal adaptation

To satisfy the thirst of newly hatched chicks, male sandgrouse bring water back to the nest by carrying it in their feathers. It sounds incredible, and for decades, scientists thought it was just a myth. But it's not. In the cool of the desert morning, the male flies up to twenty miles to a shallow water hole, then wades in up to his belly.



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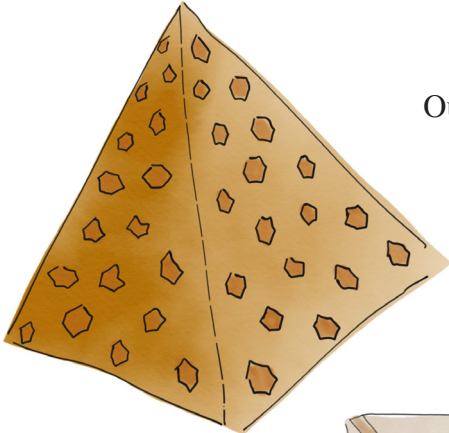
Bee hives

Honey bee hives are made of six-sided tubes, which are the shapes for optimal honey production because they require less wax and can hold more honey.

Wild honey bees construct hives by chewing wax until it becomes soft, then bonding large quantities of wax into the cells of a honeycomb. When worker bees crowd together within a hive, the hive remains at around 30 to 35 degrees Celsius, the temperature necessary to control the texture of the wax.

Around the time a worker bee turns 10 days old, she develops a unique wax-producing gland inside her abdomen. The glands of worker bees convert the sugar contents of honey into wax, which oozes through the bee's small pores to produce tiny flakes of wax on their abdomens. Workers chew these pieces of wax until they become soft and moldable, and then add the chewed wax to the honeycomb construction.

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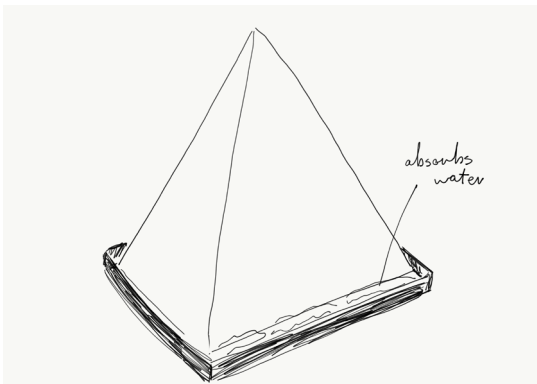
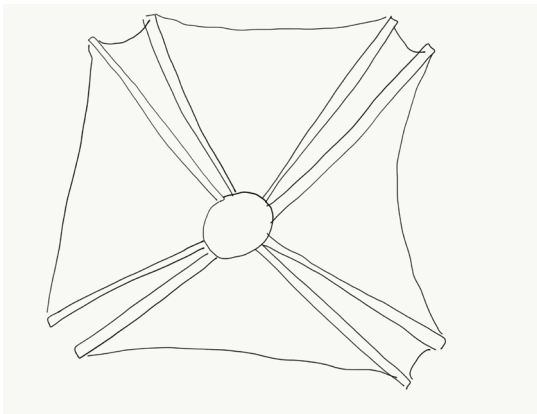
Outside view of the tent



Inside view of the tent



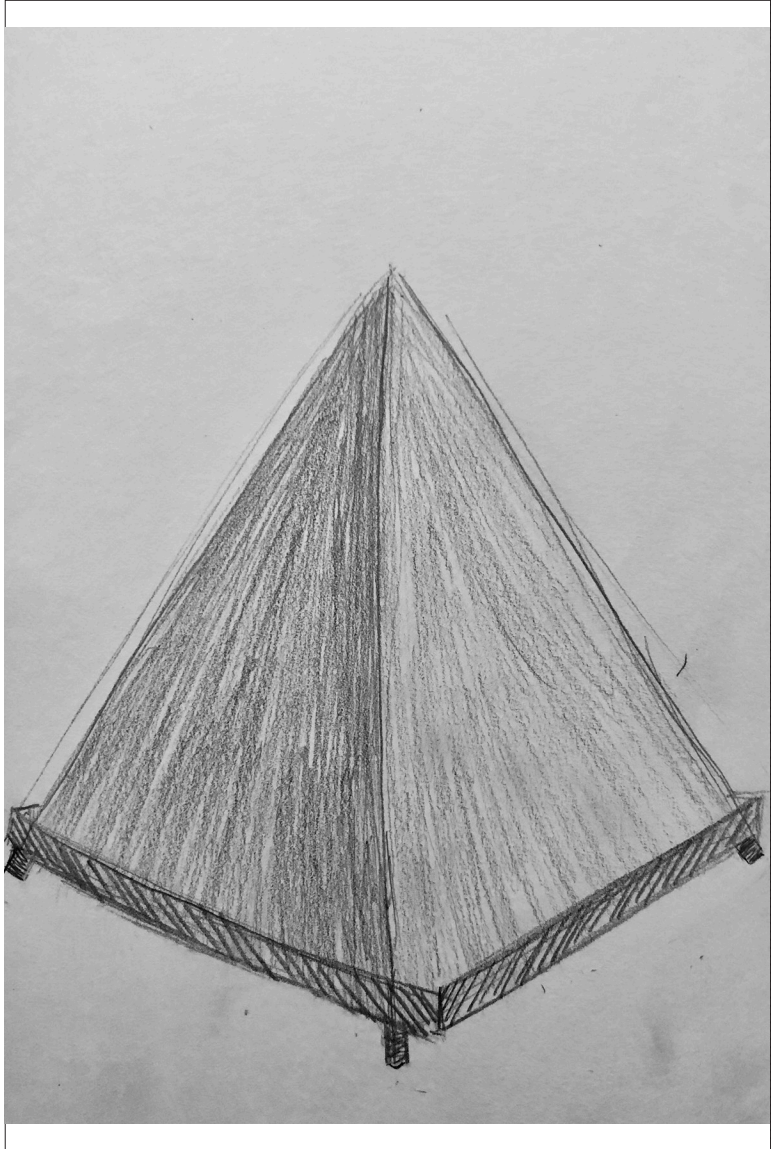
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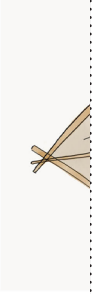
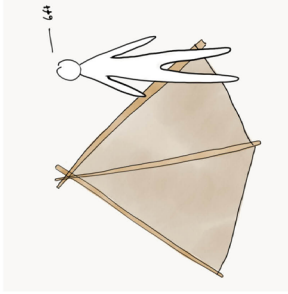
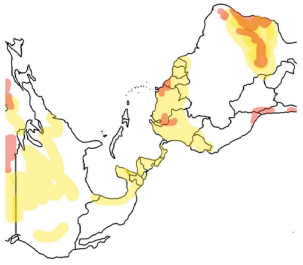
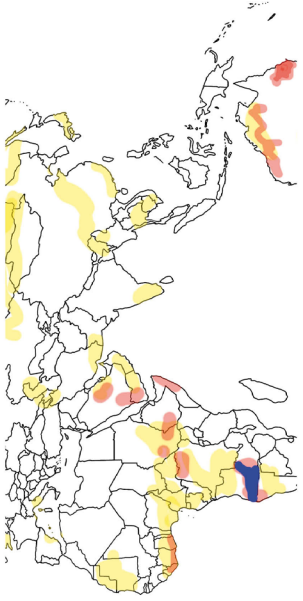
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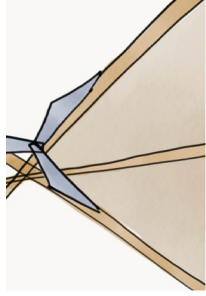
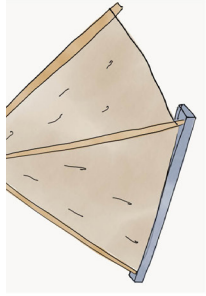
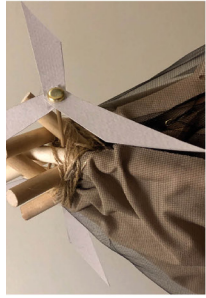
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This tent will shield a person from the sun during the day and from the cold at night. It consists of 4 panels that are tied together at the top, so it is easy to take it apart if needed. The top net layer makes it possible to collect water by turning fog into dew; it is also removable which allows to use it as a regular tent. The wind turbines on the top of the tent make it possible to generate your own power, which can later be stored in batteries. The trenches are designed to keep the water in one place until the person decides to use it, they can also act as planting pots which will be automatically watered every night because of



Structure
superPan®
FINSA - FINANCIERA
MADERERA SA
MC 9023-01

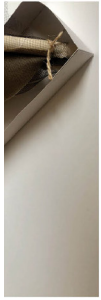


Water collection
SuperCharged Noir
- AM-2082-B and AM-
2082-C
Artistic Milliners



Wind turbines
TeXtreme® 1062 -
Innegra
Oxeon AB
MC 6138-05

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the change in temperature.

Dasha Iarotskaia

SUSTAINABLE SYSTEMS, PARSONS SCHOOL OF DESIGN / THE NEW SCHOOL, SPRING 2019, INSTRUCTOR: CAROLIN MEES

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