

# FIELD ACTION JOURNAL

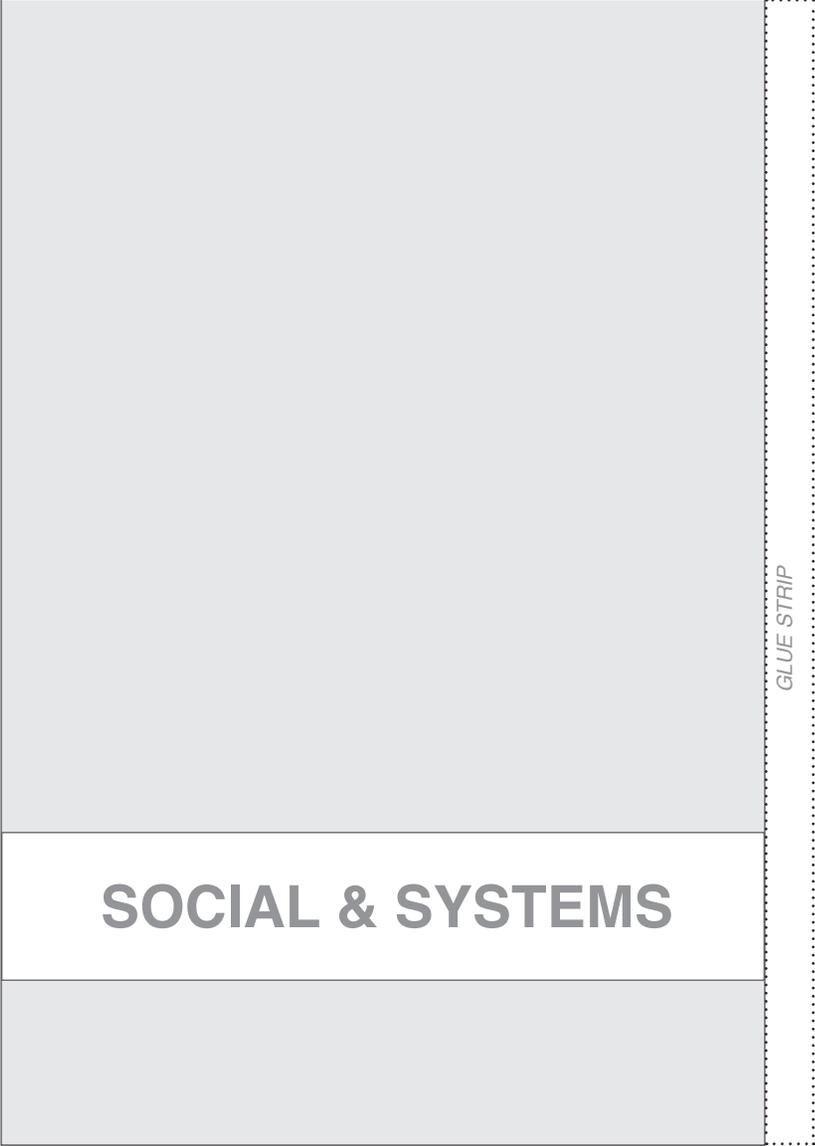
DESIGNING MIGRATORY  
STRUCTURES

NIDHI MANOJ RAIPANCHOLIA

SUSTAINABLE SYSTEMS

PARSONS THE NEW SCHOOL FOR DESIGN , SPRING 18  
INSTRUCTOR: CAROLIN MEES

GLUE STRIP



**SOCIAL & SYSTEMS**

GLUE STRIP



Using Map Quest as my basic outline for the map along 14th Street, Houston, the East River and the Hudson River, I precisely draw a silhouette along the streets of the map. Then after researching about the different community gardens in the city on 596 acres, LivingLotsNYC and oasisnyc, I outlined along the different spaces, with different colors indicating towards different types of community gardens.

GLUE STRIP



Image courtesy Museum of Reclaimed Urban Space



For this class we visited the Museum of Reclaimed Urban Space and it was an eye-opening experience. I learned about the first hand experience of a squatter along with his role in preserving the community gardens, reclaiming the Lower East Side along with other acts of activism and protests. The museum was beautifully decorated with archival pieces of local activists and artists during the successful squatting movement. The Museum along with

other surrounding buildings provide homes for the homeless and the people in need along with provide for the community, along with their innovative strategy to improve American urban conditions with their community gardens. These community gardens have positively impacted many low-income urban areas for example the affordable food grown at lower prices with the benefit of fresh and chemical free produce. As well as the physical well being of those people, community gardens are known it improve the psychological well being of the people.

GLUE STRIP



**CLIMATE CHANGE & ENERGY**

GLUE STRIP

1.A) How do plants function by having leaves of specific shape for water collection? Some plants, such as pineapples, have a unique surface on their leaves that allows them to collect water in a central tank where it can be absorbed and utilized. Other types of places such as bromeliads have a convex shape, which allows them to drip down into the central tank with the force of gravity, enabling the plant to collect life sustaining nutrients from the standing water over a long period of time.

B) How do plants function by having leaves of specific



Credits- gardening-  
knowhow.com

shape for water storage? The leaves of bromeliads are also coated in small surface cells that are raise like bumps that catch water as it drops. These hairs are coated in tiny wax crystals therefore it does not absorb the water, it simply collects and stores it until it rolls down to the central tank.

C) How do plants transform CO<sub>2</sub> into O<sub>2</sub> using leaves for photosynthesis? Through the process of photosynthesis, using the sun's energy along with the water absorbed through the roots, plants absorb carbon dioxide through the leaves paired with hydrogen to produce sugar, which is known as food for the plants. During the process of creating the sugar for the plants, oxygen is released into the atmosphere through the plant.

GLUE STRIP

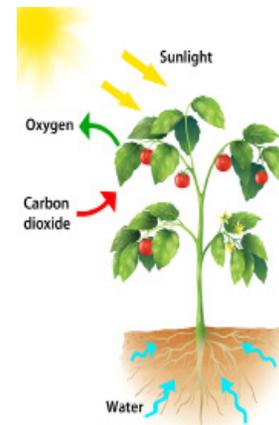
D) How do plants provide cooling? Through the process of transpiration, plants release water through their leaves resulting in a cooler surrounding atmosphere as the water turns from liquid into vapor.

E) How do plants filter pollutants from water? Plants contain bacteria attached to their roots, therefore when contaminants are digested, the bacteria break down or sequester the toxins leading to cleaner or filtered water.

F) How do plants remove pollutants from soil? Similar to the process of plants use to filter out toxins from the water, they also do so for soil. The process begins with specific plants, that make themselves poisonous to avoid being eaten, by absorbing the contaminants into their tissue and breaking them down, therefore, reducing the pollutants in soil.

tissue and breaking them down, therefore, reducing the pollutants in soil.

G) How do plants filter pollutants from the air? Through photosynthesis plants have the ability to convert CO<sub>2</sub> and other gases to O<sub>2</sub> but apart from that plants have the ability to filter air through root associated microbes that convert toxins into nutrients that they eat.



Credits- photosynthesiseducation.com

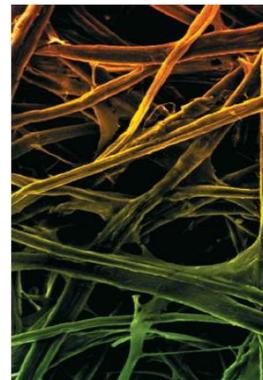
GLUE STRIP

H) How do plants work together with insects? With pollination, the process by which flowering plants reproduce, where a plant produces pollen and ovules which carry a genetic material that must be combined in order to create seeds. This process is carried out with the help of insects, who carry out the pollen from 1 plant to another. Therefore, insects help protect and grow flowering plants.

I) How plants consist of cellulose that is then used as a building material for which products? Cellulose is the substance that makes up most of a plant's cell walls and is therefore the primary building material for plants. However, cellulose can also be used to make paper, film, explosives, plastic, clothes and many other industrial uses.



Credits- Alegri



Credits- scienceclarified.com

GLUE STRIP



Credits- BIG

We began our UN presentations by taking about the Danish's hand, especially Copenhagen, in sustainability. The talk started off by talking about the beautiful interiors of the United Nations Trusteeship Council Chamber, the room we had the chance to sit in, designed by the Danish Designer, Finn Juhl. Finn Juhl used his knowledge and creativity along with his Danish roots to design the minimalist yet colorful room. Through the video I watched beforehand, I learned that the room

enforcing a more democratic feel through the arrangement of the seating rather than the theater style it was previously. Other than that, the speaker continues to educate us on the Danish's role in sustainability while combating their increase in population, specifically in Copenhagen due to their shortage in conveniently located and reasonably priced housing accommodations.

GLUE STRIP

They solved this problem by building revolutionary low-cost housing, Urban Rigger's, using readily available shipping containers that float in urban harbors. However, rather than continuously praising Danish sustainable architecture, the speaker also spoke about the unsuccessful, time consuming and expensive bridge that allows cyclers to cycle over

the water. This piece of architecture had been called many unflattering names only to signify that even some of the most modern and sustainable places go through failures.



Credits- [archdaily.com](http://archdaily.com)

GLUE STRIP



Credits- sustyvibes.com

Before watching This Changes Everything: Capitalism vs the Climate by Naomi Klein, I wasn't quite educated on the use of fossil fuels and climate change along with effects on the smaller details other than the atmosphere as a whole. I was aware that the environment was slowly deteriorating, however, this documentary showed me the effects of capitalism and greed on not only the environment but the people as well. Along with that the documentary not only highlights the problems,

Naomi Klein also contributes to the discussions on the strategies to help solve and take action for these changes. Unlike most documentaries Klein doesn't continuously discuss the state the obvious sense of emergency of this situation and instead she focuses on informing us about the many mass movements emphasizing the conflict between hierarchy and collaboration, which I found much more effective and informative than others. Around 29 countries depend solely on energy

GLUE STRIP

from fossil fuels and the combustion of such gases produce immense amounts of sulfur and mercury creating smog. Not only are these gases harmful to human health as it causes cancer, asthma and multiple different issues, it also contributes to acid rain and the creation of harmful substances. The goal is simple decrease the emission of carbon dioxide, one of the vital contributors to climate change whereas the difficult part is the people. There are a million ways to take action but

to begin with the basics, speaking up and informing others, increase the use of renewable energy, reduce water wastage, invest in hybrid or fuel-efficient vehicles to reduce your carbon footprint.



Credits- citi.io

GLUE STRIP



Credits- breccorder.com



Credits- dezeen.com

Almost all countries struggle with protecting the atmosphere from air pollution through the burning of fossil fuels from large factories, gases emitted through vehicles and almost anything we encounter in our daily lives factor into the pollution of our air. It may as well be practically impossible to completely discontinue our use of these objects, however, there have been multiple solutions that may contribute to the slight decrease in air pollution but just like any sustainable product, only a few can afford such luxuries. For example, hybrid electric cars reduce the emissions of harmful gases as unlike most cars they

regenerate power through batteries rather than fuel and have the potential to drastically reduce air pollution, however, the majority of citizens are unable to afford most hybrid vehicles. Another solution proposed is renewable energy such as solar panels since they run on sun it is impossible for them to produce energy after sunset. Another design recently produced by a Dutch designer, Daan Roosegaarde, consists of one of the largest "Smog Free Tower." This seven meter tall, metal tower sucks in polluted air through the vent panels along its sides then creates multiple pockets of clean air in its district.

This design has the potential to reduce pollution and toxic air worldwide, moreover, they have begun their journey in one of the most smog filled countries, China. Another product with similar aspects is a one-piece suit that cleans surrounding polluted air. This fashion and technological combination of a product was unveiled in the 2014 Beijing Design Week once again by a team of Dutch designers. Both these products incorporated design, one used architectural design and the other included fashion, which is one of the most important aspects in the world today.



Credits- dezeen.com



Credits- dezeen.com



**Ingredients:**

Strawberries,  
Alum, Water

**Process:**

After washing the wool, I boiled some mashed strawberries in water for an hour, I strained it and added the alum then soaked the wool in for an hour.



**Ingredients:**

Strawberries, Tarta-  
ric Acid, Water

**Process:**

After washing the wool, I boiled some mashed strawberries in water for an hour, I strained it and added the tartaric acid then soaked the wool in for an hour.



**Ingredients:**

Strawberries, Iron,  
Water

**Process:**

After washing the wool, I boiled some mashed strawberries in water for an hour, I strained it and added the iron then soaked the wool in for an hour.



**Ingredients:**

Strawberries,  
Soda Ash, Water

**Process:**

After washing the wool, I boiled some mashed strawberries in water for an hour, I strained it and added the soda ash then soaked the wool in for an hour.



**Ingredients:**

Carrots, Iron,  
Water

**Process:**

After washing the wool, I boiled some chopped up carrots in water for an hour, I strained it and added the iron then soaked the wool in for an hour.

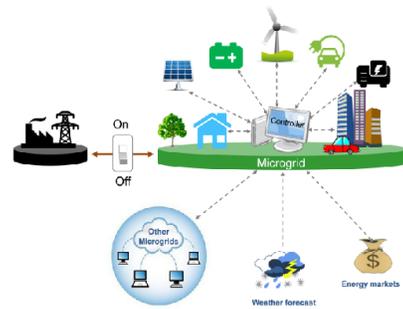


**Ingredients:**

Carrots, Soda Ash,  
Water

**Process:**

After washing the wool, I boiled some chopped up carrots in water for an hour, I strained it and added the soda ash then soaked the wool in for an hour.



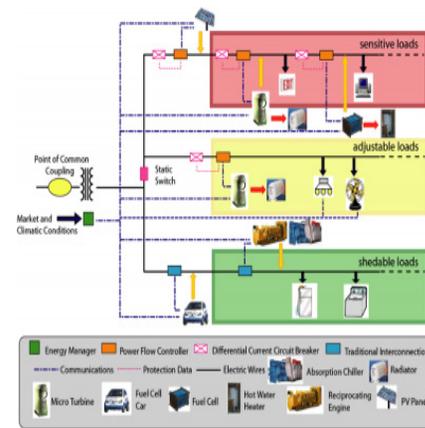
Copyright Berkeley Lab

Credits- Microgrids at Berkley Lab

A micro grid is a local energy grid with control capacity, meaning it has the ability to disconnect from the traditional grid and function independently. A micro grid generally connected to the grid can be powered by distributed generators, batteries or renewable resources such as solar panels. The micro grid is made up of four aspects including distribution, control system, alternative generation and lastly energy storage, one of the most important functions. While it is connected to the grid, the micro grid has a renewable energy source, therefore, in case of an emergency energy storage is extremely necessary and can be used while waiting for an alternative generating source to turn on. Micro grids are very effective during times of emergency, however, during rare occasions, low voltage could possibly cause reverse power flows that may lead to complications. Other disadvantages

include stability issues, low inertia and unreliability. Moreover, micro grids also include multiple benefits such as the fact that micro grids facilitate the assimilation of renewable energy generation for example, wind and fuel cell generations without requiring re-design of national distribution systems, as well as, the energy storage system that balances out the demand for local loads. University of California, San Diego is one of the examples that are involves with micro grids and have spent millions of dollars on this project. In this university, the micro grids are used as a source for electricity, heating and cooling, supplying almost 95% of this to their daily population of 45,000.

Regarding how to build a micro grid, the first and most important component is the power source such as solar panels. Next is the power management aspect which involves transforming the electricity generated from the power source into electricity used for most appliances. The next step includes the energy storage system which is essential to any micro grid as it allows it to balance the electricity and therefore makes it accessible



Credits- Microgrids at Berkley Lab

at all times. Lastly the electricity consuming device which supplies energy from the overall micro grid system.

Credits- Microgrids at Berkley Lab





Credits- Science.Howstuffworks.com

A. Why are people displaced by climate change and forced to move temporarily or permanently?

Climate refugees, people displaced by climate change, are usually forced to move due to extreme weather situations such as droughts, desertification, rise in sea level, etc.

B. Where do refugees go that have to leave permanently due to an extreme climate condition affecting their home? Where can environmental refugees migrate? What are the difficulties and concerns that climate refugees face when having to leave their home that is threatened by an extreme climate condition?

Climate refugees, although not legally considered a refugee, therefore, are not offered legal protection, choose between migrating to another country or migrating within their own countries. Climate migrants also may be in danger of becoming stateless.

C. What is the effect of large numbers of environmental refugees of the same origin coming into a country? What are the challenges for a country to accept and then to integrate climate refugees?

Some conflicts include major international implications, from the risk of radicalization and political instability, to the spread of infectious diseases, along with an enormous strain on public services.

D. What is in your understanding the definition of a refugee?

From my knowledge, a refugee is a person who has been forced



Credits- ultima-ora.rp

Kiribati, a low-lying Pacific island nation known as one of the most threatened parts of the world due to climate change such as the tidal surge and scientists have therefore predicted it would be uninhabitable within decades. The latest climate models predict that the world's oceans would rise 5 to 6 feet by 2100 and that would therefore threaten the very existence of large segments of the population. Causeways would be washed away, damaging the economy, degrading coral reefs because of warming water, allowing stronger, rougher waves, increasing erosion and disrupting food supplies,

mainly consisting of fish forcing people to immediately move away. Refugees forced to leave their homes, in this case were urged by the government to "migrate with dignity," allowing residents with employable skills a place of refuge more than 6,000 acres of land, 1,000 miles away in Fiji. However, packing up one's life is not as easy as it may seem, Kiribati's residents seemed skeptical especially those who did not believe they had the skills needed to survive abroad or those who believed god would protect them against the climate change.



Credits- fpmagazine.eu

One of the biggest challenges of large groups of environmental refugees taking shelter in one country is the extremely high costs, in this case the seven million dollars they needed to purchase Fiji, which the government later called off, instead using those resources towards climate-change related development. However, in my opinion I believe rather than lending all the countries resources towards advancement towards climate change, a fraction should go towards helping the people during times of immediate need

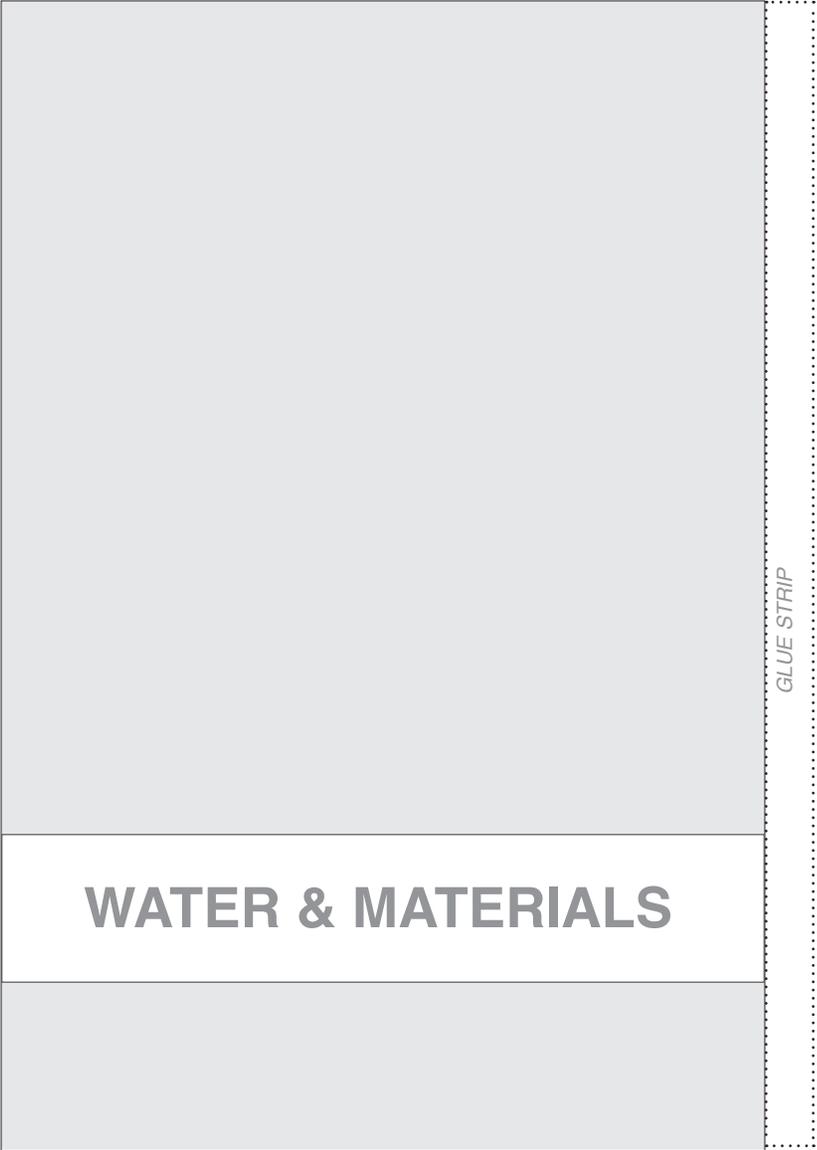
since in the end there is no one of completely stopping the effects of climate change, only a way to delay it, especially those who are uneducated and suffer great losses. Moreover, from this article, I learned that a refugee isn't just a person being forced out of their homes in order to escape a war, this word also includes a person required to escape their country due to severe weather conditions.



Credits- Harvard Gazette

Now a days almost everything contains plastic, papers, cups, cutlery, plastic bags, etc. therefore bioplastic is overall a more sustainable and less wasteful approach to saving plastic. Moreover, as I began to research I found out that bioplastic was relatively simple to make as it used a combination of starch, water, vinegar and glycerin. Bioplastic has the ability of creating sizable amounts of plastic using relatively less chemicals and contaminants, without harming the environment. The qualities of such

plastic include a variation of either thin or thick, smooth texture along with a clear tint.



**WATER & MATERIALS**

GLUE STRIP



During our trip to the Lower East Side Ecology Center, we learned first entered a room consisting of snakes, dead butterflies, insects and other fascinating things. However, our trip was focused on the LES Ecology Center's approach towards recycling, specifically composting. We were taken to a large muddy field with massive containers surrounding us for their people-powered methodology towards creating urban

ecology that includes green healthy living through recycling. They also had a small, start up corner dedicated towards worms for breaking down food. This trip was extremely educational as we learned the basics and the complex information about composting and how smelly it really is along with how we ourselves can support composting in our homes.

Healthy Materials- Material ConneXion Library-

Structural, Rigid- Stainless steel wire filaments

Flexible skin material- Bioplastic

Solar energy- Thread wrapped around wire

Water drainage- Metal tube

Waterproofing- Silicone sealant

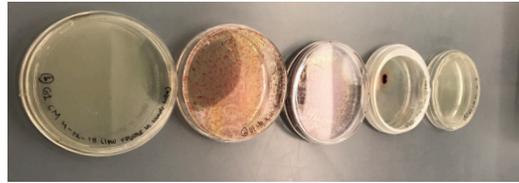
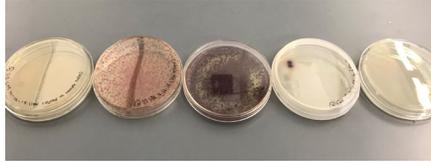




Our field trip to the lab was extremely educational and moreover it was more exciting as it was something we didn't usually learn about. We tested 5 samples for whether they were contaminated and learned to proper regulations for testing along the way.. Waterway's, specifically in New York are contaminated with sewage during the rains since these

extreme climates tend to overwhelm the city system and pushes polluted waters into places it is not supposed to go. A small-scale method of preventing the digestion of contaminated water is to stop dumping around rivers and clean them up, dispose of harsh chemicals, including pesticide, set up a composting pile and many other ways.

GLUE STRIP



For our possible future sustainable design experiment, we decided to create an interactive app called 'Sustainagram.' The overall aim of this app was to inform a large audience about sustainability in general as well as the water contamination. Moreover, we did that by including a game feature which comprises of matching together similar bacteria unlocking new levels later opening the user up to more facts about sustainability and gaining more and more points. Another feature our app

would include is a picture uploading area where users can inform others about for example what they found in the rivers or just an image capturing their newfound love for composting. Regarding the advertisement for this app, we decided to feature sponsors such as people of higher statuses who have the ability to further the app and broaden the audience