

FIELD ACTION JOURNAL

DESIGNING MIGRATORY
STRUCTURES

SUSTAINABLE SYSTEMS

PARSONS THE NEW SCHOOL FOR DESIGN , SPRING 18 IN-
STRUCTOR: CAROLIN MEES

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GLUE STRIP

SOCIAL & SYSTEMS

IDENTIFYING COMMUNITY GARDENS:

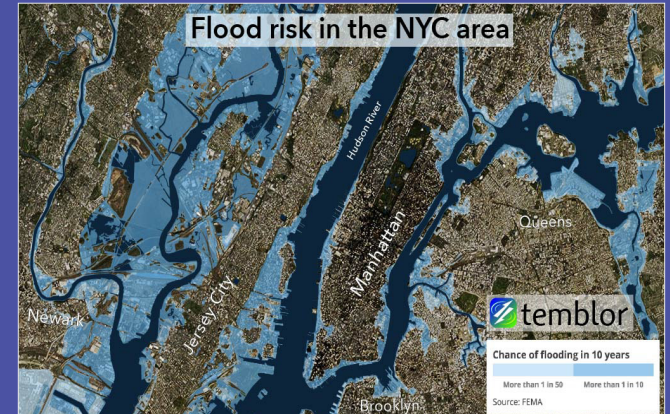
Feiled Action Project. 1 (Part 1) .



The above drawn image illustrates communi-ty gardens and public open spaces withing the areas between 14th street and Houston Street. Commnuty gardens play a critical role in a con-temprary cit like NewYork as they not only con-tribute to the well being of a community but helps in the growth of an urban open space network and land preservation. Identofying these gardens are critical in order to help preserve the spaces.

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Sinc e the 1950's floods in the US have drasti-cally increased . As you know flooding is natu-ral phenomenon in which a certain region is submerged by excess water quantities. As so-meone living in a place prone to flooding it cri-tical to identify the flood risk within the area as flooding is a lfe threatening disaster. Identifying these areas also help in planning proper infra-structure and drainage systems. They also help in distinguishing how to prepare for such occu-rances. Hence , the image below represents the areas in New York City that are prone to flooding.



Temblor, Inc. "US Flood Maps: Do you live in a ood zone?" Temblor.net, 2 May 2017, temblor.net/earthquake-insights/us-ood-maps-ood-zone-1146/.

Feiled Action Project. 1 (Part 2) .

Community gardens are a way of creating sustainable and ethical ways of a certain type of livelihood. They are collective sections of land used for various purposes from growing fruits to building a space for educational and social activities. These gardens that are ususally run and established by volunteers help in demonstrating a larger and clearer awareness of the environment. have both socia-economic and ecological benifits.



Meier, Allison, et al. "Reclaiming Vacant Public Land through Design." Hyperallergic, 13 Jan. 2016, hyperallergic.

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Some of these benifits ts include providing a space for other living organisms like birds, insects etc. Creating this sort of a sustainable agricultural site also help in preserving certain plants and owers. Through the trip we also learnt about the basics of composting and how they enrich the soils in a more organic and inexpen- sive way. Building a community garden also establishes a sort of cultural identity within a certain community, which inturn builds on community activism. Finally , it not only provides a place for recreation but also strengthens the value of the land and the neighbourhood.



[Thttps://famousankles.com/2008/06/02/sixth-street-and-ave-nue-b-community-garden/](https://famousankles.com/2008/06/02/sixth-street-and-ave-nue-b-community-garden/)

CLIMATE CHANGE & ENERGY

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ROLE OF PLANTS:

Feiled Action Project. 2 (Part 1) .

(A & B) The shape of a leaf of plant often depends on the region the plant grows. Dessert plants for example often have small yet swollen and spiny leaves that are not as a bright green in colour in comparsion to oher plants. This is due to the outcome of the adaptation to the climate of a plant. The leaves are often swollen as they are used to store large quantities of water for a longer period of time, due to lack of rainfall. Small leaves are also grown as this would mean the plant would require less water and the smaller the surface area of the leaves, the less likely chances of high loss of . As dessert plants store their water in the leaves.



Coila, Bridget. „Facts About Plants in the Desert“ last modified April 24, 2017. <http://sciencing.com/plants-desert-5779434.html>

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(C) Chloroplast located in the leaves of a plant have a pigment called chlorophyll harnesses energy from the sun then acts upon the water absorbed by the roots of the plant or tree by splitting the hydrogen from the oxygen inside a water molecule. Carbon dioxide exhaled into the atmosphere by animals and humans is then absorbed by the plant's leaves and paired with the hydrogen to produce sugar. The sugar is turned into plant food, and the extra oxygen created during this process is released into the atmosphere.

(D) When water vapour is transpired from leaves into the atmosphere, the vapour present in the atmosphere helps in cooling down the air in the surrounding.

(E) Plants generally have deep root systems that anchor soil and act as filters, collecting dirty runoff from streets and rooftops and separating out pollutants while absorbing water and decreasing flooding

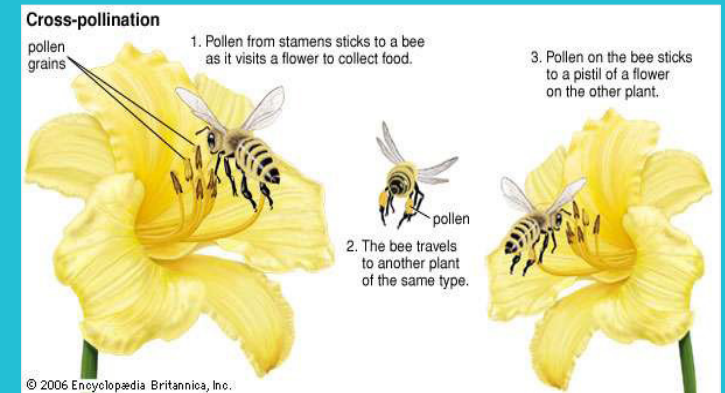
(F) One highly carcinogenic contaminant commonly found in soil is called polycyclic aromatic hydrocarbons plants absorb these toxins and disperse them into the plant cells.

(G) Apart from the fact on how plants convert the Carbon-di-oxide in the air into oxygen the root-associated microbes convert toxins in the air into nutrients, the plants not only eat but thrive on them.

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(H) This question can be answered through one word, pollination. It is the process in which plants reproduce, in which insects often play a critical role. Flowering plants need to get pollen one flower to another and this could be done through the help of animals, insects or wind. Bees, wasps, butterflies, moths, flies and even some beetles can carry pollen from one flower to another. For self-pollinating flowers, insects move pollen to the parts of the flower that need it. Some insects can carry pollen over long distances, which can help to spread genetic diversity in a plant population. This process started through a mutual benefit as in the early ages plants and insects evolved together. Here, the insects were attracted to the scent of the pollen and helped in the reproduction process and in turn the insects received food and protection from the plants.

GLUE STRIP



„Cross-pollination.“ Encyclopædia Britannica. Accessed February 24, 2018. <https://www.britannica.com/science/cross-pollination>.

(I) Carbon dioxide and water react together in the presence of light and chlorophyll to make glucose and oxygen. The glucose is converted into starch, fats and oils for storage, which is used to make cellulose for cell walls. According to how it is treated, cellulose can be used to make paper, film, explosives, and plastics, in addition to having many other industrial uses.

UN COURSE EVENT REFLECTION:

Feiled Action Project. 2 (Part 2) .

Through the field trip to the United Nations Trusteeship Council Chamber I was able to identify two specific concepts that play a critical role in climate change and design. To begin lets discuss the steps that Denmark took in creating a more sustainable environment. More than 20% of Denmark's energy comes from renewable energy. They are able to do this even through keeping the city aesthetically pleasing. So who's responsible for these concepts to be built? It's the designer. As Sir Terence Conran said and I quote "The designers job is to imagine the world not how it is, but how it should be." In other words looking at approaches like Denmark has taken in creating a world where we as designers can play a role in building a more green society, by adapting and identifying ideas that promote sustainable energy. I think that most of these ideas or answers to such issues are present within our surrounding.

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We see patterns, shapes and indicators to certain renewable concepts within nature it self. Hence, adapt to our nature and recognize the concepts and as a designer it is critical for us to avoid creating more products of artificial materials even though it may be of less cost on the long wrong we would still be paying a larger price to fix the harmful impact that we have caused through the use of these artificial products. The diagram below illustrates few pointers that we as I designer need to keep in mind while working on sustainable concept. Through the seminar we also briefly



GISuser. " Anything Geospatial AnyGeo. November 17, 2008. Accessed February 22, 2018. <http://blog.gisuser.com/2008/11/17/developing-sustainable-technologies-inspired-by-ideas-from-nature/>.

looked into the impact of capitalism in sustainability. Capitalism often leads to inequality that acts a barrier for the 99% to have a say in the decision making process in terms of development in a country . As the main purpose of the capitalist is profit and not what impact their process has on the environment.

The movie “This Changes Everything” directed by Avi Lewis illustrates the different perspective on the diverse challenges faced by different countries on climate change and how the main issue of the increase in climate change is this story that we have been telling ourselves about how we have taken over nature and are above it. Through the lens of this movie we come to an understanding that this pursuit of money, money more than we require only leads to the death of human beings and our environment.

The problematic issue that this movie focuses on is these countervailing forces that lobby the government. In other words the impact of capitalism in climate change. Socio economic inequalities that is increasing with power of capitalists makes the decision making process harder as lower classes struggle to gain a voice for their opinion on global issues like climate change and are effortlessly silenced.

Private enterprises who work for profit have a strong role in decision making on the industrial development and most of these industries heavily rely on fossil fuels and release harmful toxins. They do not focus on the impact of the hazardous role of trade deficit on the people living in these spaces that they are determined to occupy or even the space itself.

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These so called economic growth systems and capitalist completely exploit the natural resources.



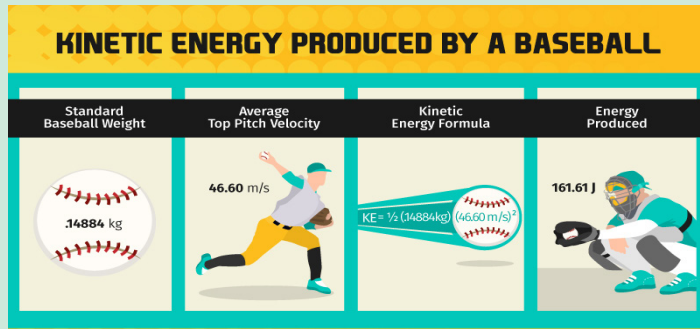
Carlo Allegri, Peoples Climate March, 2014

The movie also clearly illustrates that if large population of citizens of country, place or even a village come together, fight and identify the source of a problem or the enterprise they could achieve great lengths through protests and never giving up. This is not just a fight to save our environment but also a fight for our lives.

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Chosen Energy form: Kinetic Energy:

(A) Kinetic Energy is formed due to the motion of an object. This form of energy can be stored in films, batteries a capacitor. Lets lok into the example of a baseball being thrown as shown below.



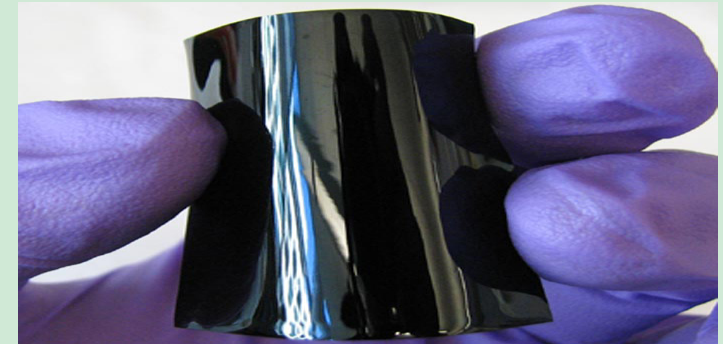
Wearefanatics.com. Accessed March 06 2018. <http://wearefanatics.com/comparing-sports-energy/>.

(B) Kinetic Energy is highly renewable and does not cause any pollution in the air, as it does not involve in the process where an element needs to be burnt. Having Kinetic Energy is also inexpensive once built. Not to mention the availability of the source is abundant. However, Kinetic Energy does hold its on disadvantages like keeping the movement required to build this energy constant, the expenses to harness this energy Finally, to produce large amounts of energy, the machines needed to harness the kinetic energy must be substantial, both in size and quantity, which requires a large amount of available space.

(C) Kinetic Energy does not directly harm any sort of living creature. However as mentioned above it does take a large amount of space which would therefore mean occupying more land for industrial use.

(D) The only item needed to create kinetic energy is a force great enough to overcome the friction of the object with the surface it is on. A good examples of utilizing Kinetic energy are explored below

- MIT students developed a polymer film that can generate electricity by drawing on a ubiquitous source: water vapor. The new material changes its shape after absorbing tiny amounts of evaporated water, allowing it to repeatedly curl up and down. Harnessing this continuous motion could drive robotic limbs or generate enough electricity to power micro- and nanoelectronic devices, such as environmental sensors. Using energy that would otherwise be wasted is appealing at a time when plans to fight climate change include using less energy or energy with lower carbon emissions.



Singh, Timon. „MIT Develops Polymer Film That Harvests Energy From Water Vapor.“ Inhabitat Green Design Innovation Architecture Green Building. January 11, 2013. Accessed <http://www.inhabitat.com/2013/01/11/mit-develops-polymer-film-that-harvests-energy-from-water-vapor/>

Feiled Action Project. 4

(A) Microgrids support a flexible and efficient electric grid by enabling the integration of growing deployments of distributed energy resources such as renewables like solar. In addition, the use of local sources of energy to serve local loads helps reduce energy losses in transmission and distribution, further increasing efficiency of the electric delivery system.

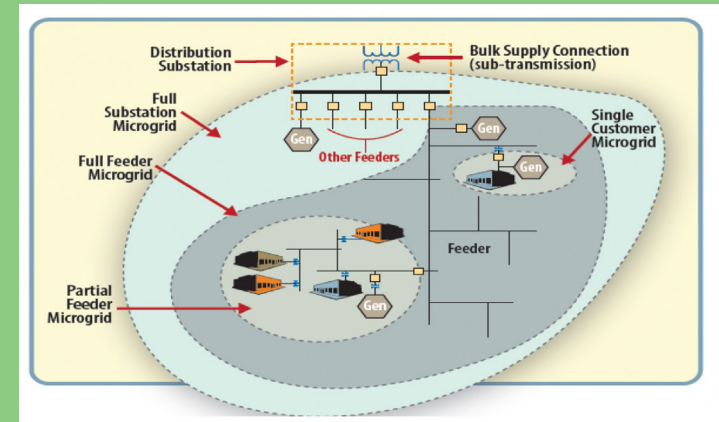
(B) Microgrids provide efficient, low-cost, clean energy, enhance local resiliency, and improve the operation and stability of the regional electric grid. Microgrids won't be a core part of the clean-energy transition until they serve all three grid needs — greener, more reliable, more resilient.

(C) Bennu Solar, SELCO, Practical Action and d. light are corporations involved. Microgrids are better for animals and humanity because they are cleaner and more sustainable for the environment, meaning their habitats are safer and less animals are killed due to lack of natural recourses.

(D) For designing Microgrid, the following factors can be considered.

1. Load profile (including critical loads) of indidual house and peak load requirement of entire village

2. Renewable source availability like; solar insola
3. Highsolarandwindpotentialareashouldbeidentified
4. Optimum sizing of solar PV, wind turbine installation capacity,(according to annual monthly average solar/wind potential)
5. Energy storage devices (optimum size) and backup diesel fired generation facility to cover high priority critical loads (during the absence of renewable energy sources availability)
6. Necessary distribution network lines and electrical equipments according to load profile and location of loads



<https://www.energy.gov/oe/activities/technology-development/grid-modernization-and-smart-grid/role-microgrids-helping>

A- Since we are discussing about climate here we can safely say that the effect is long term and the environment to an extent becomes uninhabitable due to chances of rise in diseases, scarce access to basic needs and the risk of losing one's life. Individual migrants' decisions to leave their homes vary so widely: deciding causality between economic 'pull' and environmental 'push' is often highly subjective. And finally, disaggregating the role of climate change from other environmental, economic and social factors requires an ambitious analytical step into the dark. In short, drawing a causative, linear line between climate change and forced migration is very difficult.

B- Refugees generally migrate to safer places where the climate conditions are less destructive, these places usually tend to be neighbouring countries. Refugees face a lot of poverty, however with that comes several other hardships, some of them being; adapting to cultural shifts, Like language barriers, trouble with transportation is an issue that affects nearly every aspect of life for refugees and immigrants, access to medical services, in fear of being deported, finding a living space and a job, unfortunately refugees

are often exploited as their knowledge about how the socio economy of another country is not known

C- Economic impact of refugees on host countries are controversial and little understood, the question of refugee impacts does not lend itself to conventional impact evaluation methods. The major effect is the mixture of heritage and loss of racial originality. But we aren't living in the Stone Age and I'm pretty sure such mixtures will create genetically strong humans so that issue should be overlooked. One of the challenges faced by a country is crime control.

D- Refugee means someone who has been forcibly displaced from his/her home country/region due to certain harmful irreversible conditions whether this may be due to damaging climate change, socio-economic factors and even due to a break out of a war.



Times, Saubhadra Chatterji Hindustan. Don't Allow Use of 'catastrophe', 'refugee' to Describe Myanmar: MEA to MPs." <https://www.hindustantimes.com/>, November 20, 2017. <https://www.hindustantimes.com/india-news/don-t-allow-use-of-catastrophe-refugee-to-describe-myanmar-mea-to-mps/story-1FZkFOFI-LipJj04am9vXP.html>.

(A) For this projects I decided to work with wood and bio leather. I choose these materials because they work best in cre-ateing the besidnt model and bring out an interesting texture. Including the fact that the material is sustaina-ble I was also interested as to how bio leather could be manipulated in order to grow into a different form.

(B) The gel-like film, grown by a symbiotic colony of bacteria and yeast (SCOBY), feeds on a mixture of vinegar and sugar. The fact that the fiber is 100 per-cent biodegradable is a significant benefit for the fa-shion industry, which by its very nature generates a lot of waste, The fabric sustainable fabric or mate-rial that is biodegradable and goes back into the soil as a nutrient rather than taking up space in a landfill.

(C) A couple qualities that my material will have is a good overall texture, easy manipulat-i-on of shapes and forms, a space to grow plants and place solar panels. Comparatively, the wood that I will be using provides a strong and rigid

(D) Since my structure is mean't as hurrican relief space the sustainble material would have to be replaced with metal or a material that serves similar qualities.