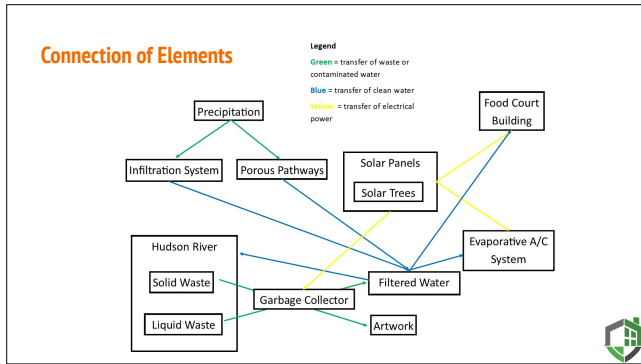Hello everyone we are GT2 and are here to present our project Sculp-City. The main idea behind Sculp-City is for it to be a unique and inviting sustainable environment that allows street artists to showcase their art in an open space area. Coherent with the NYC landscape and the idea of having a purely artistic park, we also decided that Sculp-City would differentiate itself by having mainly man made structures such as solar trees and evaporative air conditioning systems, making it a sort of futuristic park.
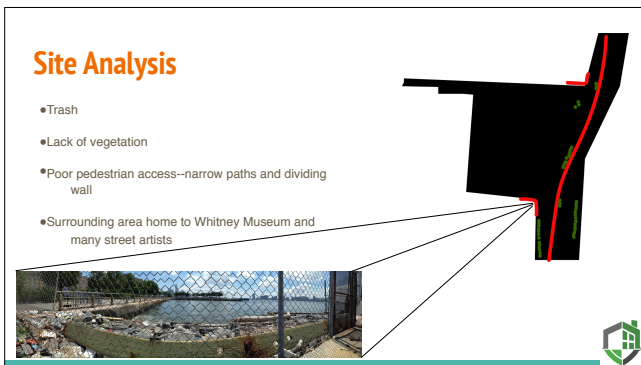
While visiting the site in the Gansevoort Peninsula the main issues we found in the area was the amount of accumulated trash, lack of vegetation, and poor pedestrian access. We felt like these three things made the area less appealing for the public and therefore decided to focus on them while developing Sculp-City. On this map we can see the main areas where trash was found, the narrowness of the pedestrian paths, and the small patches of vegetation found along the area.
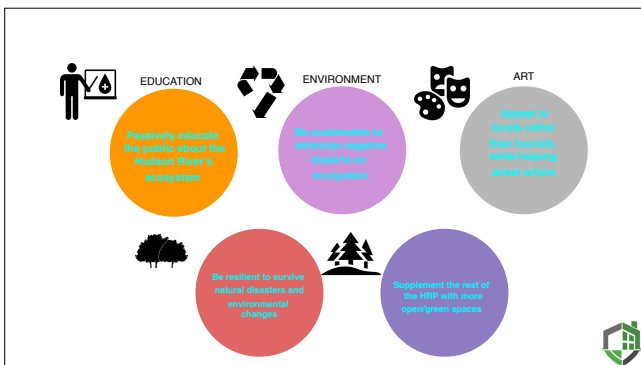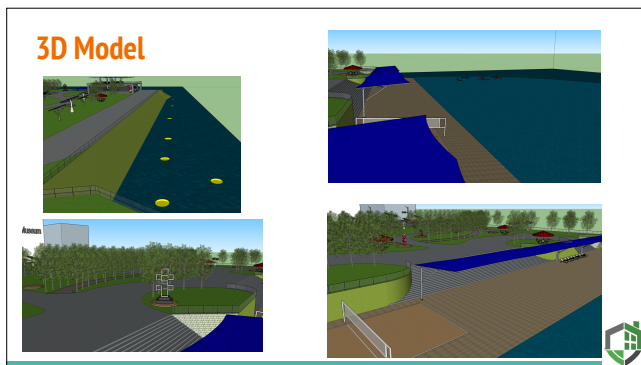

As a result of our findings, we decide to design a park with three main elements which are education, environment and art. Firstly, We want to educate the public about the Hudson River's ecosystem. Secondly, Be sustainable to minimize negative impacts on ecosystem, Finally, Appealing to locals rather than tourists, while helping street artists, to provide source for artists to design their sculpture. In addition, we want the park to be resilient to survive natural disasters and environmental changes and also supplement the rest of the HRP with more open/green spaces.

Connection of Elements

Legend

Green = transfer of waste or contaminated water

Blue = transfer of clean water

Yellow = transfer of electrical power

When developing a concept, we wanted to ensure the integration of the various elements of the park. This allows for a smoother user experience as well as fewer ecological and economic impacts. We strived to implement multifunctional systems for garbage collection, water filtration, and electric power that would work in tandem with each other.
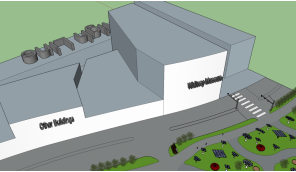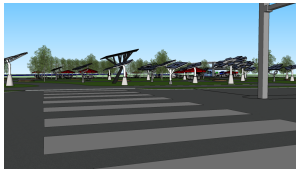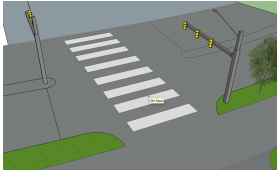

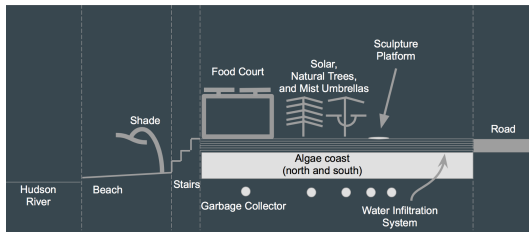1:100 Scale Plan

Top view

3D Model

Beach

3D Model (contd.)

New crosswalk

Section Diagram

Sculpture Platform

Food Court

Solar, Natural Trees, and Mist Umbrellas

Shade

Road

Hudson River

Beach

Stairs

Algae coast (north and south)

Garbage Collector

Water Infiltration System

3D Model

Welcome to Sculp-City

Park Element Base Maps

Solar Trees

Garbage Collection
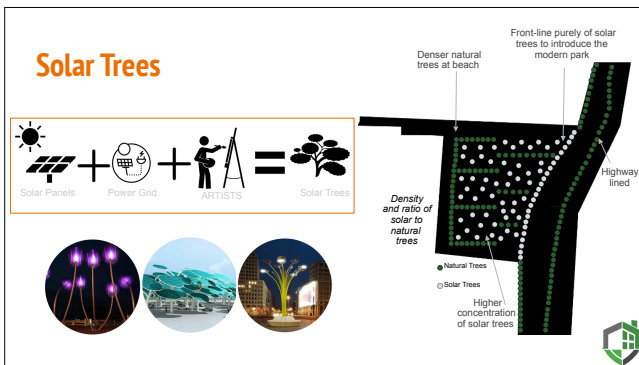
Sculpture Distribution

Planting

Evaporative A/C

Food Court
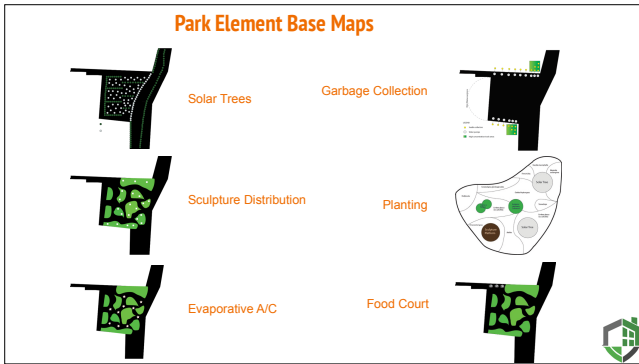
We decided to include the following elements in our design: power sources in the form of artistically-designed solar trees, platforms and clearings for sculptures and other artwork to be displayed, air conditioning with evaporative misters, a system to collect waste floating in the surrounding river, plantings that will provide year-round visual appeal to the park, and an area for the vending and enjoyment of food.

Solar Trees

Solar Panels + Power Grid + ARTISTS = Solar Trees

Front-line purely of solar trees to introduce the modern park

Denser natural trees at beach

Highway lined

Density and ratio of solar to natural trees

Natural Trees
Solar Trees

Higher concentration of solar trees

One of the main features of our park are the solar trees. Following the idea of having a sustainable and modern park we want most of the trees within our park to be solar man-made trees. These will be designed by some of the artists themselves and enhance the experience of visitors, who will feel as if they are in a completely new and art-filled environment. The solar trees work by collecting the sun's energy and transforming it into electricity in a power grid. This grid will be connected by underground systems to the rest of our sustainable projects and can also serve as charging stations for our visitors. In this map, which isn't to scale, we can see the distribution and ratio of solar to natural trees in Sculp-City. Closer to the highway, there will be natural trees, to make the area more visually appealing and inviting. Within the park, more solar trees. And as we move closer to the waterfront, and transition back into nature there will be a line of natural trees.

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Evaporative A/C Systems
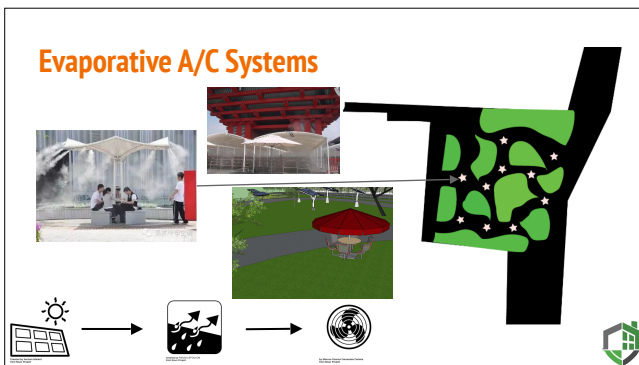
To provide a cooler area outside the building in the park, we decide to use the evaporative air conditioner system. These systems are powered by the solar energy and by cooling the vapor released from the system, it can cool a specific area so that the pedestrians can have a comfortable place to have a break and relax themselves. What's more we put all the system in the corner area so that anyone can find the nearest cool area not matter where they are. In addition, these can also be used in winter, if we can warm the vapor and release them, it will provide the same function as it has in the summer.

Garbage Collection - Seabin System
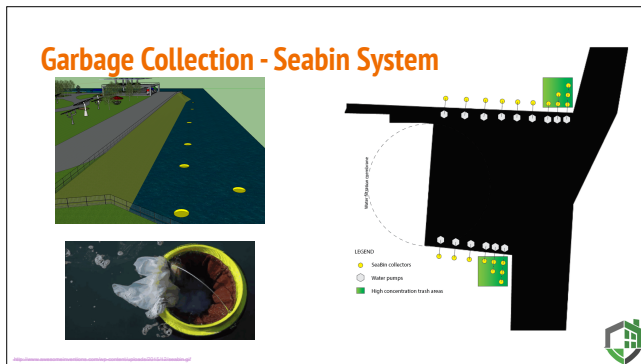
To address the issue of garbage at the site, our group has decided to utilize the Seabin garbage collection system. This system has been designed to function in shallow areas of water close to shorelines, and consists of a series of bins made of recycled material connected to pumps on land. The bins are capable of collecting both liquid and solid pollutants from the surface of the river, which allows the park to have a positive environmental impact and look more appealing to visitors. The pumps will filter the river water, which can then be used in a variety of applications. You can see in the diagram that the Seabins will be placed along the northern and southern edges of the peninsula, as a filtration membrane will keep waste away from the beach area of the park. There will be extra Seabins located in the corners highlighted in green, since that is where we observed the highest concentrations of trash in our site analysis.

SEABIN SYSTEM @ SCULP-CITY:
FROM WASTE TO UTILIZATION
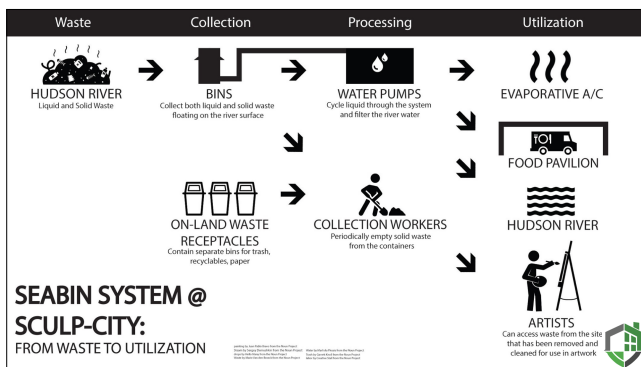
This diagram demonstrates the integration of the Seabins with other features of the park. As you can see, the multifunctional system will help the environment by removing pollutants, will provide water to elements of the park that need it such as the food court, and will present artists with the opportunity to use garbage from the Hudson within their artwork.
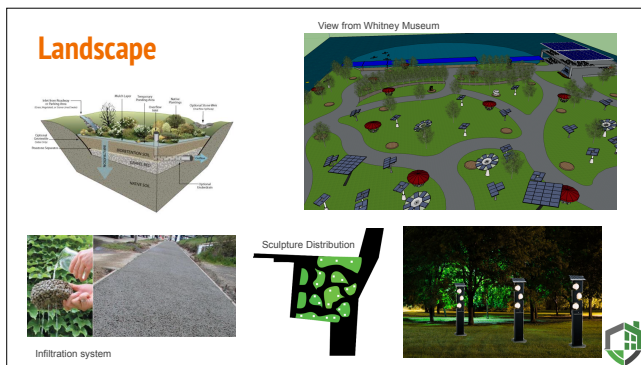
Landscape

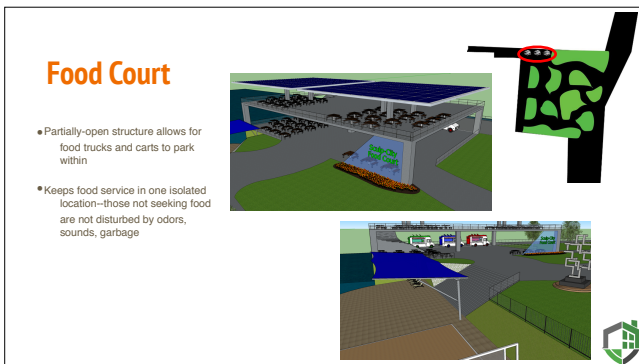Sculp-city's landscape will be mostly flat, so that the visitor can view as much as possible. The paths will all be made of porous concrete which will allow for an infiltration system that will then power the rest of our facilities such as the food court and restrooms. Additionally, so that the park is functional at night time we will implement solar powered lamps also designed by the artists themselves.

Beach & Waterfront
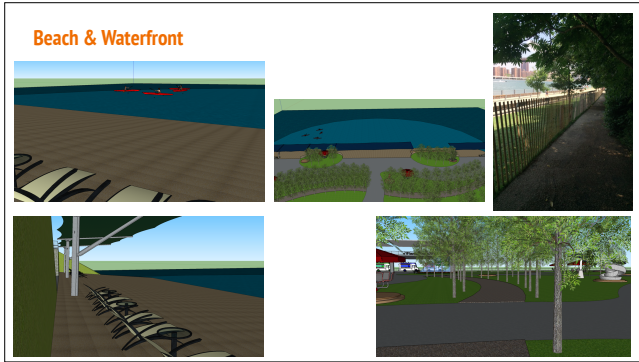
Another important feature of our park is the beach. We are adding in a filtered water membrane with a 250 ft radius out into the water. This will permit visitors from our park to swim in the Hudson river, making their experience at Sculp-City even more unique. Finally, building on on the idea of having a line of natural trees close to the waterfront, this shaded path will allow visitors to escape from the New York heat and transition into the natural beach.
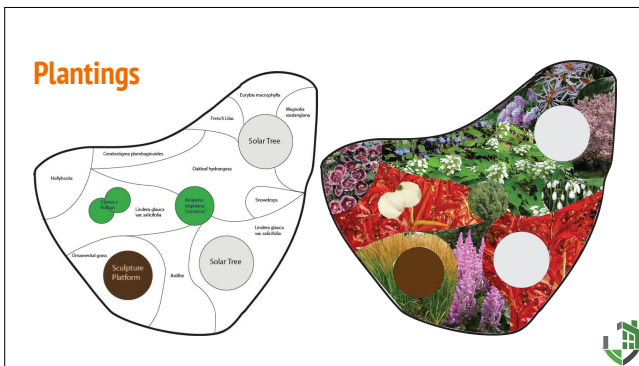
Plantings

These diagrams represent our choice of plantings for one sample pocket of land at Sculp-City. When designing the planting plan, we made sure to include a variety of species, so that there is no time during the year at which the park looks barren. There will be something in bloom during any season.

Food Court

- Partially-open structure allows for food trucks and carts to park within

- Keeps food service in one isolated location--those not seeking food are not disturbed by odors, sounds, garbage

One of the most important parts of the park is the food court, there are a few restaurants opposite to the river park, so the pedestrians need to go across the street to get the food. But after we put a food court in our park people will get the food more conveniently because they don't need to go across the street. Also the food will be provided by the food trucks which can be powered by the solar energy that can be designed by the local artists. When talking about the food, we decide to put many traditional food and even different types of food all over the world which can provide the fantastic taste that people never experienced before. In case that people don't want to go inside the park to get food we can make the trucks in the the entrance of the park. Then people can enjoy the food and park better.

Thank you

Completed by: Alizer Khowaja, Paula Assis, Griffin Kearns, Yun Hao Ran Li

Columbia University: Sustainable Urbanization

July 15, 2016