

## **Open & Floating Living Room in Copenhagen**

### **General**

The idea of an "Open and Floating Living Room in Copenhagen" comes from the sculpture of the Mermaid opposite to the site. The Mermaid is one of the landmarks in the city and she sits near the shore so my design is to correspond to the Mermaid on the opposite side which could provide an open space for the visitors to see the sculpture from its opposite side. This open space could also let the visitors to enjoy the view of the city from another perspective.

Living Room is not just restricted on the ground but also on the water so it comes up with the idea of floating living. In the summer-time, the visitors could relax and enjoy the view of the city on the water. In the winter-time, the grassland would be turned to be covered by snow and it would be turned to a skiing ground which the visitors could ski and ice skate there.

### **Form**

The form of the urban furniture in the design comes from the famous Danish cookies which could highly represent the country. The furniture is called "Småkager" (Cookies) and there are 2 types of Småkager, "Jord Småkager" (Ground Cookies) and "Vande Småkager" (Water Cookies). The diameter is 10m for each Småkager.

The Jord Småkager could be a seating area in summer and it could be turned to a playing tool in the winter since it is movable and it could be moved on the ice in the winter. When the people sit on the Småkager and their friends push it to move around on the site.

The Vande Småkagers are linked by the chain with the edge of the ground and the people could jump on it and enjoy the view from the perspective on the water.

### **Pattern**

The pattern of the urban furniture distribution is like the islands in Denmark, distributed in the Baltic Sea. The Småkagers would be integrated with the tree so it could create an atmosphere of integration of nature (Tree) and human (Småkager).

### **Colour Scheme**

The colour of the urban furniture is mainly based on the colour of the Denmark's national flag - red and white. A supplementary colour blue is added which represents the element of water that integrated with land and lime colour of the floating furniture represents the landscape on ground that integrated with the water.

### **Energy Harvesting System**

There are 4 main energy harvesting source which combined both nature and human. The design of the urban furniture would be integrated with the sensor which could help to collect the solar energy and energy from human activities. Planting could also help to lower the temperature in the area.

#### **A. Kinetic Energy Harvesting System**

##### **1. Cycling Energy Collection System**

Cycling is one of the green transportation and it is one of the most popular transportation tool in Europe especially in Denmark so there is a great potential to collect the energy by the energy generating by cycling. The system is to install the energy collectors on the wheels of the bike and it could be bought in the town center. When the biker cycle the bike, the movement of the wheels could generate energy and the collector could collect the energy. When the visitors arrived the site, they could plug their collector into an USB adapter and insert it to the Energy Collection Station at the entrance of the site. There are 2 stations in the site and they could store the energy that they collected. The electricity company could collect the storage periodically for supplying the electricity to the neighborhood.

##### **2. Human Activities Energy Collection**

Besides, human is also one of the sustainable resources on energy generation so an adapting watch is introduced and the system is similar to the Cycling Energy Collection System but this one is to collect the energy from human activities such as running, walking and exercising etc.

##### **3. Piezoelectric Generation**

It would be installed under timber deck and also the generator would be located on the grassland which could collect the energy by the vibration created by human walking and movement on the ground. The generators are located in the central part of the site since most of the activities are focused in the central area. In the previous research, it shows that it could help to generate 50 watt electric by human walking for every minute.

#### **B. Solar Energy**

Solar cell would be the main material on the surface of the urban furniture and the bike racks so that it could help to collect the solar energy since the site is an open air area which would expose to the sun in most of the time. The cell would be also installed to the surface of the floating urban furniture since there is a water-proof cell. The energy would be stored in tank in each furniture and regarding the floating furniture, it would be stored in the central part of the module.

#### **C. Landscape**

Natural Landscape is also a valuable resource to energy saving so in the design, planting is also one of the strategies that would be introduced. Tree planting and shrub planting are amalgamated with the urban furniture design which could create a better green environment for the visitor and also the citizen in Copenhagen. It could also help to lower the temperature of the city which could help to slow down the speed of Heat Island Effect.

The design is to create a platform for both human and nature to work together on energy harvesting and also create another gathering place for the visitor and citizen for enjoying the beautiful view of the city from another perspective.