Design Statement

Kesey Square sits at the heart of Eugene however, it is consistently empty.

Our group is interested in researching what issues affect Kesey Square primarily through analysis of atmospheric and social phenomena. By understanding these phenomena better we hope to have a clearer understanding of what the problems affecting the square are in order to implement design focused design strategies to mitigate these problems and provide a more attractive experience for those visiting Kesey Square.

Big Questions

What environmental conditions affect the functionality of Kesey Square throughout the year?

What social conditions currently shape the user group of Kesey Square?

How can we create more a more enjoyable atmospheric condition within Kesey Square?

How can we make Kesey Square a more enjoyable social space for multi-generation users?

How can we introduce a larger identity of Eugene within Kesey Square?

Atmospheric Phenomena

- Rainfall
- Temperature
- Humidity
- Barometric Pressure
- Sun Exposure
- Wind Speed

Social Phenomena

- Population
- Demographics
- Location
- Grouping
- Interviews

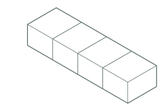
Analysis Tools

- Ardunio Uno
  - DHT - 22
  - Sound Sensor
  - Rain Sensor
  - Particle Sensor
- Ladybug
  - Radiance Analysis
  - Local Wind Rose
- Manual Collection
  - On-Site Analysis
  - Data Points

Data Inputs

- Atmospheric Data
  - Temperature (Hourly)
  - Comparative Temperature (Weekly)
  - Rain (Hourly)
  - Comparative Barometric Pressure (Hourly)
  - Radiance (Yearly)
- Social Data
  - Population (Hourly)
  - Grouping (Hourly)
  - Demographic (Hourly)
  - Population Average (Weekly)
  - Local Events (Weekly)

Design Outputs


Public Seating


Social Space


Canopy


Usable Space


Focused Lighting


Dynamic Atmosphere

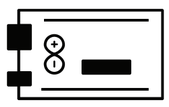
Data Inputs

Sensor Type

- DHT-22 Sensor
- DHT-22 Sensor
- DHT-22 Sensor

Arduino Processor

Arduino Uno



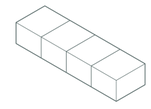
Design Object Specific Inputs

- Surface Temperature & Ambient Temperature
- Pressure Differences in Semi-Local Area
- Local Rainfall
- Local Humidity

- Local Rainfall & Semi-Local Rainfall
- Existing Radiance Analysis
- Semi-Local Pressure Differences

- Local Ambient Temperature
- Time (Yearly) & Time (Hourly)
- Other Local Weather Phenomena

Design Outputs


Public Seating

Seating is located as a result of data regarding local temperatures, social trends and relationships out of the square.


Canopy

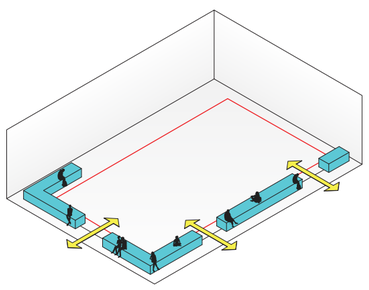
Canopies designed to maximize solar protection and to be responsive to incoming storms and rainfall. These canopies are grouped to create different protection scenarios for different seasons.


Focused Lighting

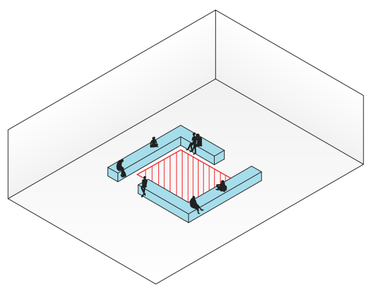
In ground lights designed to highlight different locations within the square depending on current weather conditions so that users are guided to interact with ideal atmospheric area on site.

Social Design

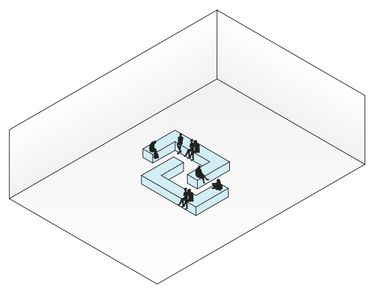
At the beginning of the term, our team sat and looked at some of the social conditions we anticipated designing for within Kesey Square. These typologies centered around the user groups who inhabit Kesey Square and center around creating a diverse space where there is a place to enjoy the square for a wide range of users.



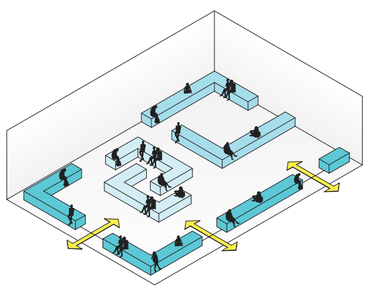
Edges
Provide double sided seating along the edges of the space to develop an urban room within the square with views in and out of surrounding businesses



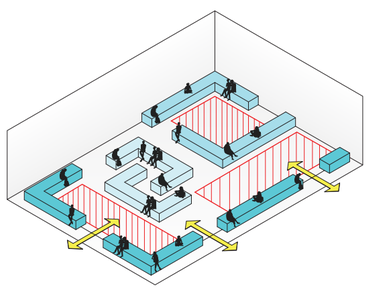
Kids
Create a central space which is framed by seating to provide parents a protective view while also providing a solid edge to the street



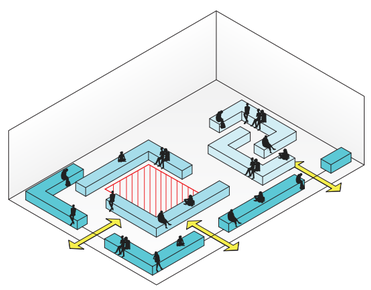
Social Spaces
Create diverse social spaces which provide opportunities to connect or disconnect from others in the space.



Combine
Connect these different typologies to encourage interaction between different social groups and users



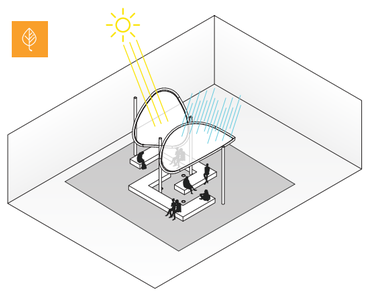
Flex Spaces
Use interstitial spaces between social spaces to provide green space / event space / or flexible space capable of adapting to users



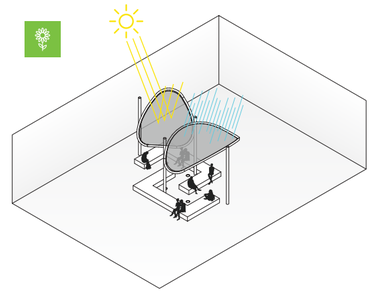
Versitility
Internal modules should be moveable to support changes in the uses of the space and the needs of the users

Module Design

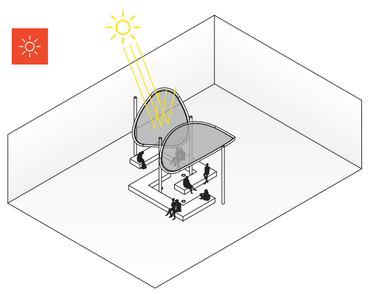
To better understand our final module, our group looked at how these seating and canopy conditions might differ across the four seasons. In Eugene, we found that the primary issues affecting these modules were related to sub and water and these issues change depending on the time of year. As a result, we were interested in thinking about how our module could adapt itself to the seasons using the data we have collected from the arduino sensor.



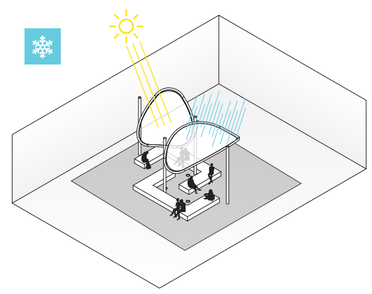
During the Fall, the canopies should provide adequate protection from rainfall while also be made of a transparent material to allow as much sunlight into the space as possible in order to actuate thermal massing.



During the Spring, the canopies should provide protetion from both rain and sun.



During the Summer, the primary issue affecting the space is heat so the canopies should be made of non-transparent material to provide shading from the sun.



During the Winter, the canopies should act similar to the requirements during Fall by providing protection from rain while also allowing light to pass into the space.