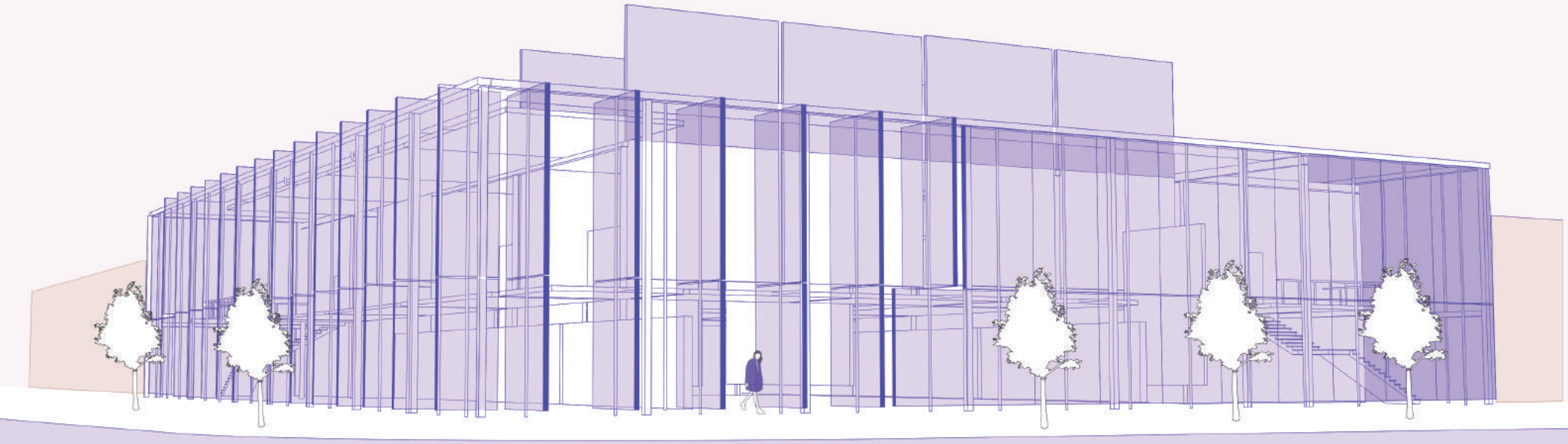
PORTFOLIO

Lauren Yatar
laurenyatar.com
yatar.lauren@gmail.com



IF CITY, THEN [X,Y,Z]

M.ARCH THESIS, Spring 2017

What if we used more human-centered data to create a parametric structure?

The goal of this project is to produce a building that responds to what people are saying about the area using social media and transform that information using some form of sentiment analysis that categorizes the information into positive/ negative data and convert this data into a percentage.

PROCESSES

DENSITY SITE MAPPINGS

As an alternative form of site analysis, I began to look at the different possible connections different twitter topics could have and what this could look like physically.

TEXT ANALYSIS

At the heart of this project was combing data science related methods, including mining for real tweets, cleaning the data, and completing a simple dictionary method analysis using python and various NLP packages.

GRASSHOPPER & RHINO

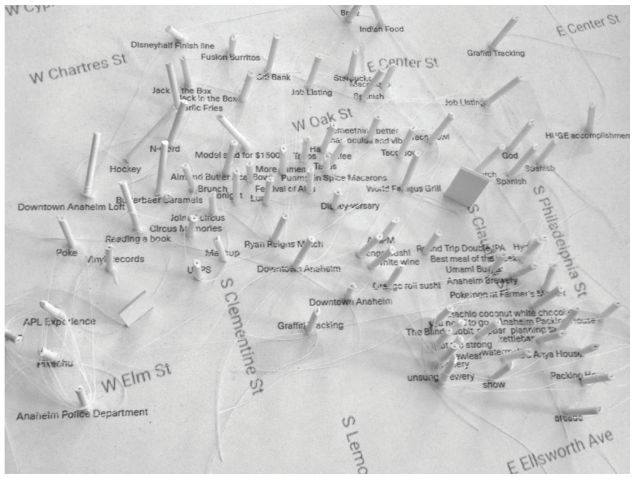
To create a parametric form a grasshopper file was set up so that only the percentage would need to be changed. Openings were to be calculated randomly based on these numbers.

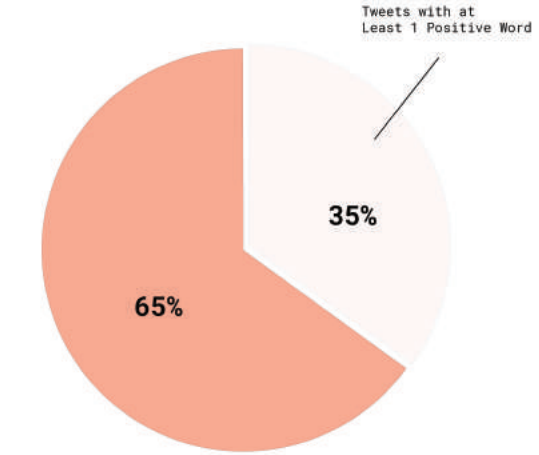
Sorted by Ratio of Positive Words to Tokens in Sentence

	text	text_lc	text_token	tokens_pos	pos_count	pos_count_prop
1103	Grateful	grateful	[grateful]	[grateful]	1	1.000000
2551	Hope ya thriving	hope ya thriving	[hope, ya, thriving]	[hope, thriving]	2	0.666667
5579	Good night	good night	[good, night]	[good]	1	0.500000
6037	great idea	great idea	[great, idea]	[great]	1	0.500000
5670	So strong yet so gentle	so strong yet so gentle	[so, strong, yet, so, gentle]	[strong, gentle]	2	0.400000
5219	Im real proud of myself	im real proud of myself	[im, real, proud, of, myself]	[real, proud]	2	0.400000
4985	@FlabbyPlump0BBW you welcome beautiful	@hairyplumpbbw you welcome beautiful	[@, hairyplumpbbw, you, welcome, beautiful]	[welcome, beautiful]	2	0.400000
57	Wow. Just wow. https://t.co/32pQxP03MK	wow. just wow. https://t.co/32pqxp03mk	[wow, ., just, wow, ., https, :, //t.co/32pqxp...	[wow, just, wow]	3	0.375000
5733	I'm excited for this comeback	i'm excited for this comeback	[i, 'm, excited, for, this, comeback]	[excited, comeback]	2	0.333333
2464	@PaysleeOnMtc Beautiful	@paysleeonmtc beautiful	[@, paysleeonmtc, beautiful]	[beautiful]	1	0.333333
5238	I love you	i love you	[i, love, you]	[love]	1	0.333333
5001	Well this sucks	well this sucks	[well, this, sucks]	[well]	1	0.333333
3435	@Josh_Angel97 easy	@josh_angel97 easy	[@, josh_angel97, easy]	[easy]	1	0.333333
5610	No Pos Wow	no pos wow	[no, pos, wow]	[wow]	1	0.333333
1165	A miracle !	a miracle !	[a, miracle, !]	[miracle]	1	0.333333
4535	Women are just so fucking awesome	women are just so fucking awesome	[women, are, just, so, fucking, awesome]	[just, awesome]	2	0.333333

Sorted by Number of Positive Words

	text	text_lc	text_token	tokens_pos	pos_count	pos_count_prop
5803	Happy birthday to one of my first Twitter frie...	happy birthday to one of my first twitter frie...	[happy, birthday, to, one, of, my, first, twit...	[happy, friends, friends, love, hope, great]	6	0.171429
1007	You're going to feel uncomfortable in your new...	you're going to feel uncomfortable in your new...	[you're, going, to, feel, uncomfortable, in, y...	[live, boldly, settle, just, live, live]	6	0.222222
5221	happy birthday to this ball of sunshine and ha...	happy birthday to this ball of sunshine and ha...	[happy, birthday, to, this, ball, of, sunshine...	[happy, happiness, love, hope, great]	5	0.200000
5096	Pretty light on my run tonight. Super fun run....	pretty light on my run tonight. super fun run....	[pretty, light, on, my, run, tonight, ., super...	[pretty, light, super, fun, love]	5	0.208333
5809	#freestuffOC FREE MOVING BOXES AVAILABLE FOR P...	#freestuffoc free moving boxes available for p...	[#, freestuffoc, free, moving, boxes, available...	[free, moving, just, free, moving]	5	0.178571
4914	@feelicityyy HAPPY BIRTHDAY FELICITY!! I hope	@feelicityyy happy birthday felicity!! i hope ...	[@, feelicityyy, happy, birthday, felicity, !,...	[happy, felicity, hope, wonderful, love]	5	0.250000
4593	I will never support letting people get a free...	i will never support letting people get a free...	[i, will, never, support, letting, people, get...	[will, support, free, especially, better]	5	0.185185
2171	Happy birthday to one of my favorite human bei...	happy birthday to one of my favorite human bei...	[happy, birthday, to, one, of, my, favorite, h...	[happy, favorite, hope, love, fun]	5	0.227273
1904	Awesome student-athlete, will fit into our sys...	awesome student-athlete, will fit into our sys...	[awesome, student-athlete, ,, will, fit, into,...	[awesome, will, fit, well, excited]	5	0.312500
3642	HAPPY BIRTHDAY YOU FINE DIME PIECE YOU BETTER ...	happy birthday you fine dime piece you better ...	[happy, birthday, you, fine, dime, peice, you,...	[happy, fine, better, angel, pretty]	5	0.200000
4489	I wanna wish this very special human a very ha...	i wanna wish this very special human a very ha...	[i, wan, na, wish, this, very, special, human,...	[wish, special, happy, truly, right]	5	0.200000

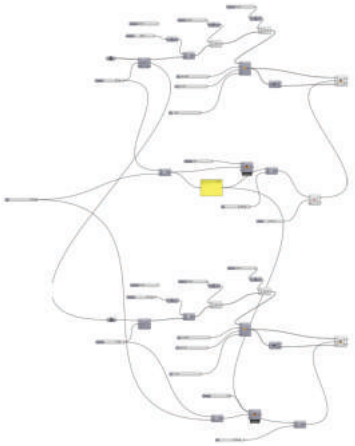


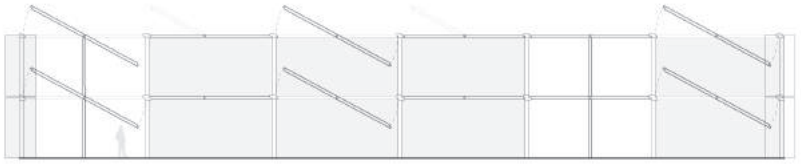


35%
positive

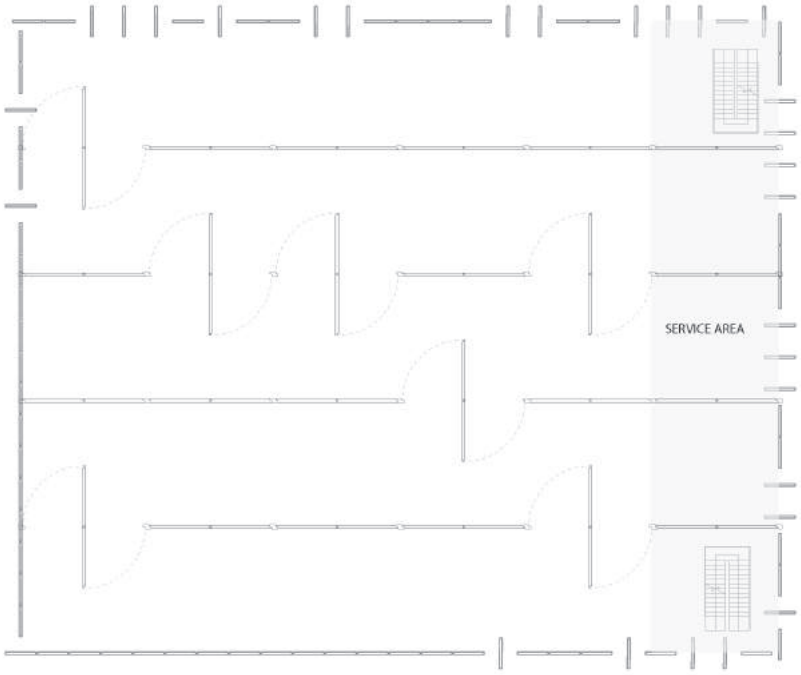
Most Common Positive Words:

```
"['just']", 162), ("['love']", 87),
("['will']", 60),("['happy']", 50),("['good']", 48),
("['great']", 47),("['interested', 'great', 'fit']", 42),
("['might', 'great', 'fit']", 35),
```





Section

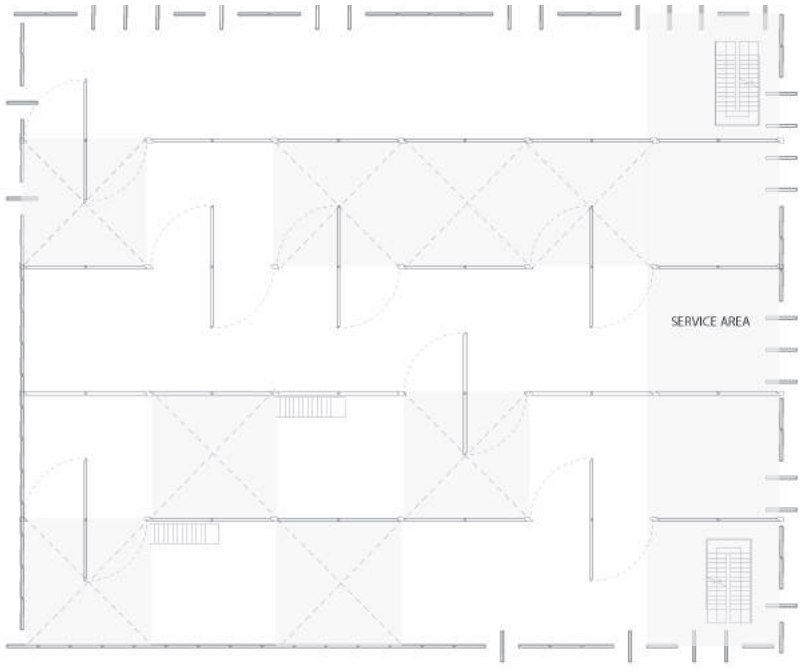


Floor1

60% Positive

GENERATING FORM

The façade panels, upper floorplates, and the roof are all positioned (as in open or closed) based off of the sentiment percentage and are held into that position until an update is initiated (decided by our almighty building controller). Floor panels are removed from the middle so that any second-floor space has access to a staircase. For users who feel the need for control, the middle partitions on the first floor (see section) can pushed and locked into a desire place.



Floor 2

A simple way to think of this is that each type of opening is a variable and the percentage is applied to each variable.

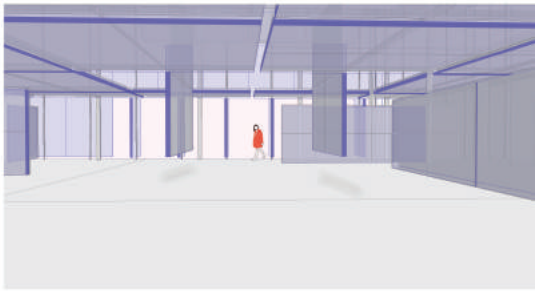
.

POSITIVE SENTIMENT

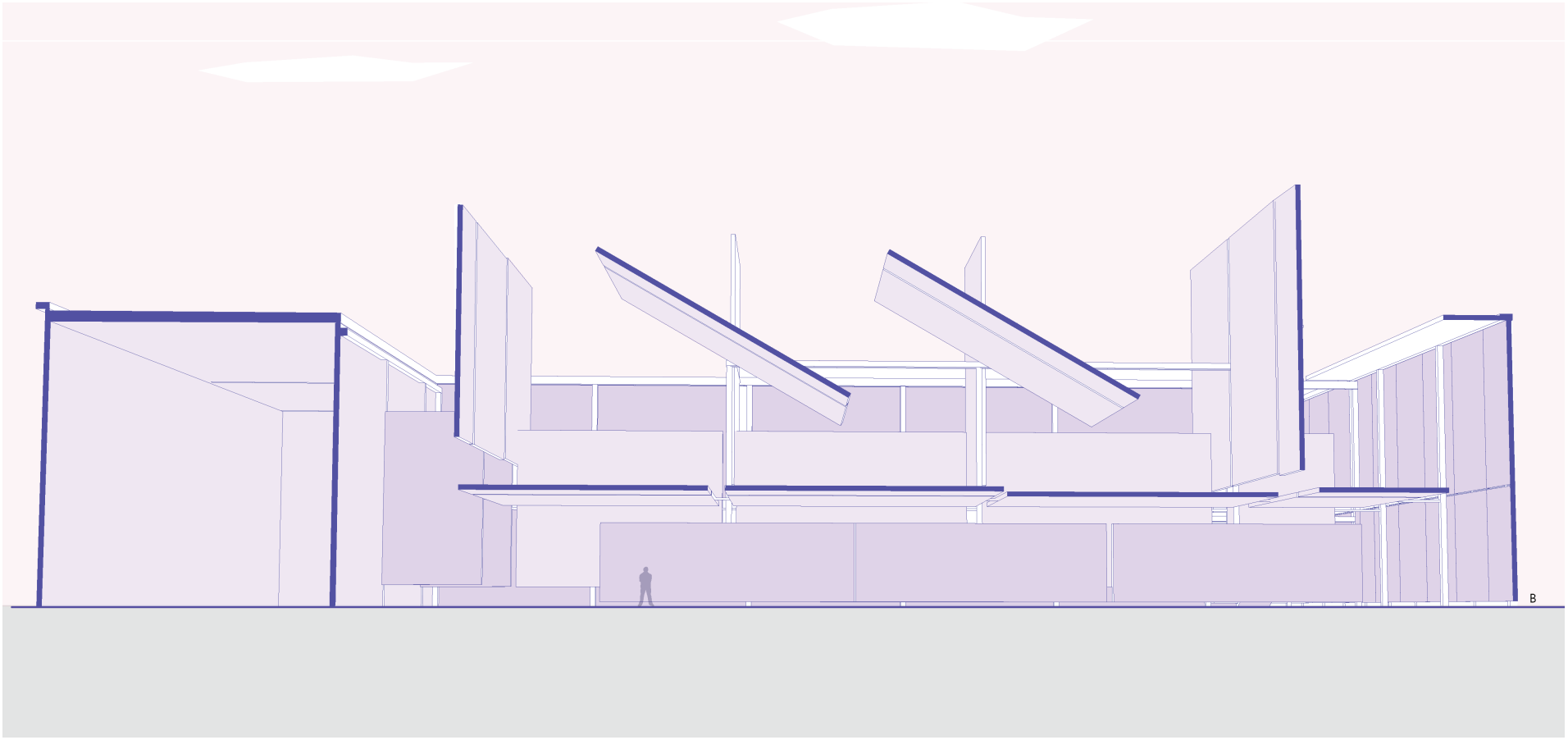
```
if positiveTweets.count > negativeTweets.count:
      save percentage of positive Tweets as percentage;
      return 'happy';

if weather is not raining
      continue;

if mood == happy {
            return calculate number of openings.}

countNumber of open floorBoards.

if number of open floorBoards < percentage*
      totalFloorBoardNumber {
      calculate percentage*totalFloorBoardNumber -
      number of open floorBoards;
      save as number of floorBoards to open.
      }

for floorBoard when number of floorBoards to open <
      floorBoards open {
      rotate closed floorBoard by pi/2 in yz direction.
      if no location set, set from center floorboard.
      }

for facadePanel when number of facadePanel to
      open < facadePanel open {
      rotate closed facadePanel by pi/2.
}


for roof <= positiveProportion*totalRoofNumber {
      choose:
            rotate floorBoard by pi/2 in xz direction.
            rotate floorBoard by pi/6 in xz direction.

}

// happy = lets get close and intimate.
```

NEGATIVE SEN TIMENT

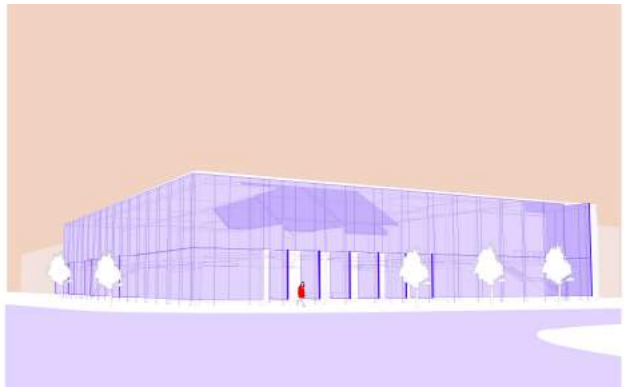
```
if positiveTweets.count <  negativeTweets.count:
      save percentage of positive Tweets as percentage;
      return 'angry';

if weather is not raining
      continue;

if mood == angry {
            return calculate number of closings.}

countNumber of closed floorBoards.

if number of closed floorBoards < percentage*
      totalFloorBoardNumber {
      calculate percentage*totalFloorBoardNumber
       - number of open floorBoards;
      save as number of floorBoards to open.
      }

for floorBoard when number of floorBoards to close <
      floorBoards close {
      rotate closed floorBoard by pi/2 in yz direction.
      }

for facadePanel when number of facadePanel to
      close < facadePanel close {
      rotate closed facadePanel by pi/2.
      }


for roof <= negativeProportion*totalRoofNumber {
      choose:
            rotate floorBoard by pi/2 in xz direction.
            rotate floorBoard by pi/6 in xz direction.
      }

if negativeTweets.count > positiveTweet.count:
      for facadePanel opening's location:
            chose ideal exit locations for openings

angry = more space + more exits.
```



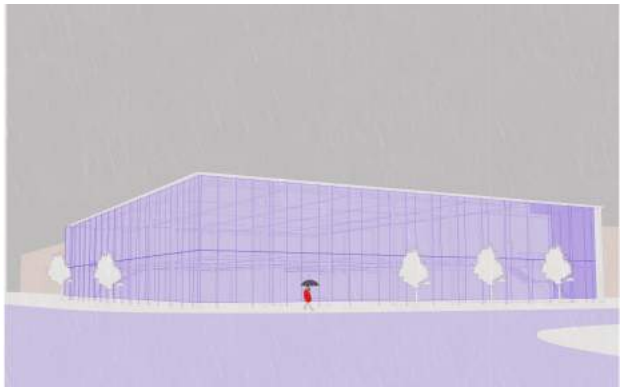
In the case of this building, it responds to positive and negative tweets (based off of a percentage). The building would be x% open as the twitter source is x% positive, unless the weather would override the conditions. If it was raining, the building would be fully shut no matter how positive the tweets were.



100% POSITIVE TWEETS
AND SUNNY



50% POSITIVE TWEETS
AND SUNNY



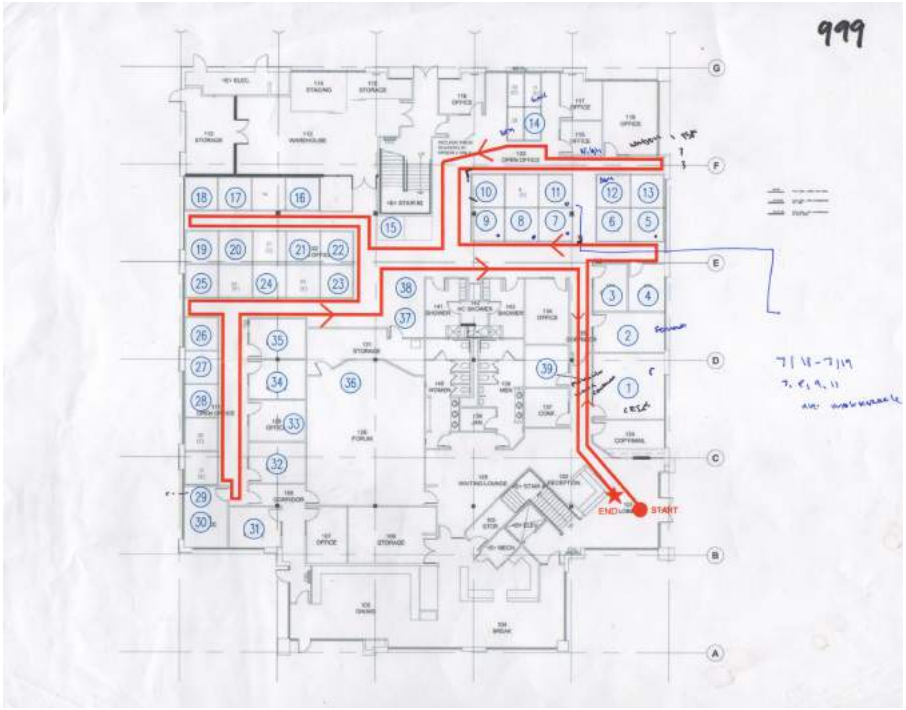
0% POSITIVE TWEETS/ 100% NEGATIVE
AND/OR
RAINING

WORKPLACE OBSERVATIONAL FIELD STUDIES

WORKPLACE STRATEGY OBSERVATIONAL STUDIES
Student Consulting Intern, HOK Summer 2016

Completing design research introduced me to the impact of qualitative data on spaces and inspired me to look at what other ways this information could be used in design.

To collect data, we needed to know what information to collect. In general, the goal was to get an idea of what the habits of employees were like. Criteria was generally based on previous field studies that were conducted. Some of the things we looked at were the space type such as if the person was in a cube or an office. It was a way to see if people needed more offices. In addition, we looked to see when the space was occupied and if there were meetings. Some places have unused meeting rooms. It's also important to see what kinds of tasks people were doing such as are they more likely to be taking calls or crunching numbers. I was in charge of creating these spreadsheets and loading them onto ipads. We also had paper forms just incase. This format made it so that we could send the spreadsheet immediately after each hour of study and it could be analyzed by an analyst on our team.

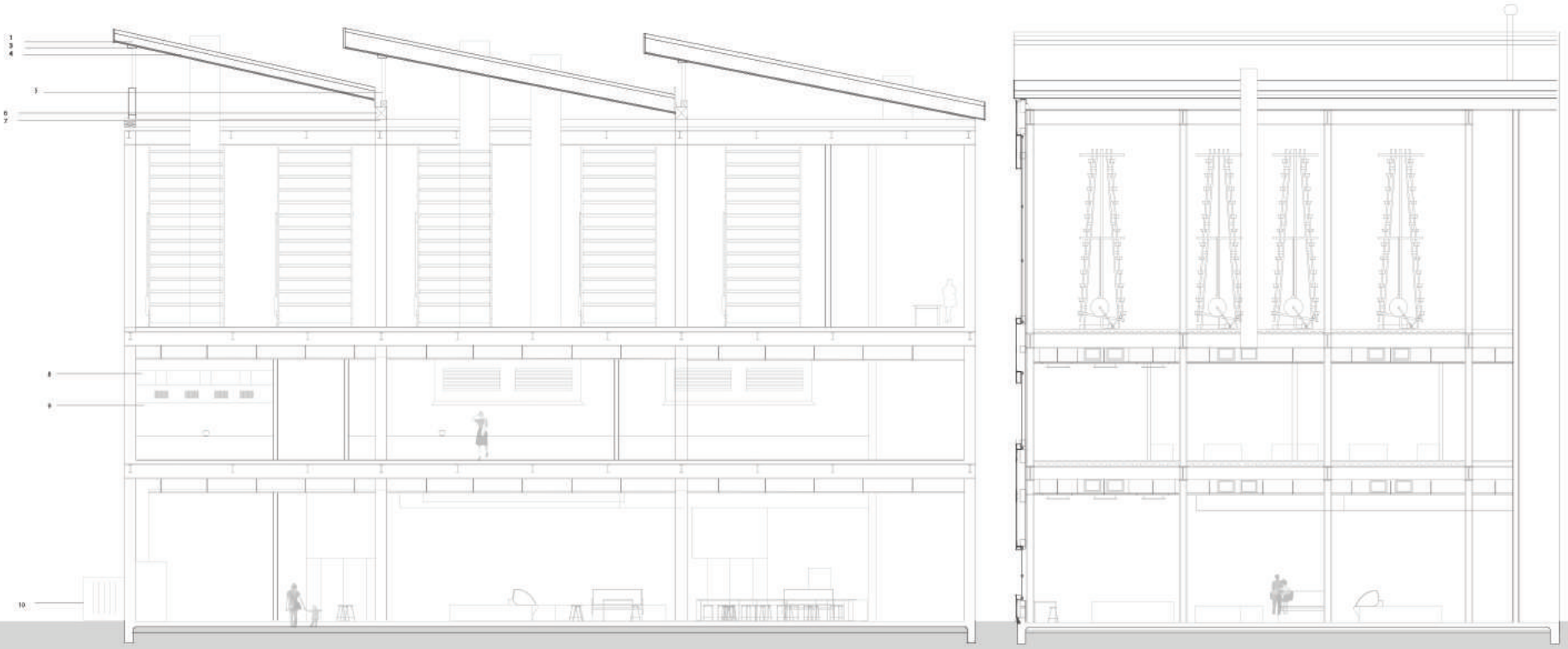


Integrated Building Studio

FOOD BUILDING,
ARCH 203, FALL 2016

This building is organized in a way to zone off worker activity from customer activity.

Circulation is pushed to towards the back, near the east, while there are two entrances for customers, one in the west and one south. Customers circulate in a circular manner around the food booths like a cafeteria line with seating on the outskirts. While the overall building favors the west as a front, at the ground level, both entrances have an equal importance – food booths face the west and the information desk greets the south. Since the shops are temporary, the column grid acts as a grid marking, so that shops can know the coordinates of where they are positioned. Everything can change and even the panelized system can eventually be rearranged. The absence of cladding signifies where windows and doors are, but this holds no permanence. Everyone is just a tenant of this building and holds no ownership.



1. Roof sheeting
2. Fascia
3. Rigid foam insulation over vapor retarder
4. Roof battens 900 mm o.c.
5. Aluminum window
6. Gutter box
7. Structural beam
8. Exhaust duct
9. Ventilator
10. Heat pump

OUTLINE SPECIFICATIONS

1.1 SUMMARY

A. Rainscreen cement panel system and accessories.

1.2 QUALITY ASSURANCE

A. Installer shall have a minimum of five (5) years of proven experience in the installation of the specified products on projects of a similar size and scope.

B. Install a full wall mock-up on the building in a location as directed by architect, if required.

C. Mock-up shall incorporate panels and all accessories, including flashing and windows.

D. "Swisspearl", is a natural materials so some degree of color variation is to be expected.

1.3 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, and handle materials in accordance with the site and environmental conditions prescribed by the manufacturer.

B. Remove damaged materials from the site.

1.4 MATERIALS

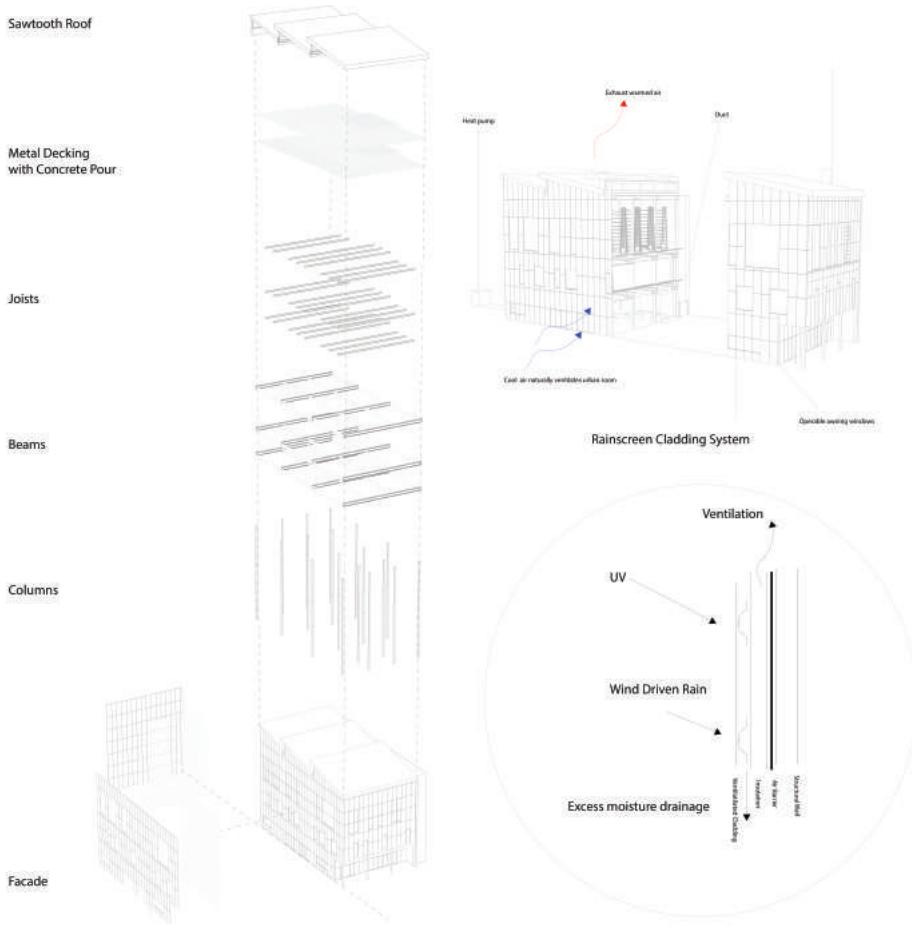
A. Panels Material

- a Swisspearl Cement Composite as distributed by Muralis Architectural 604-980-6414. Cement, silicon-calcium strengthen with a combination of polyvinyl fibers with asbestos, fiberglass or formaldehyde.
- b. Size: 1220mm x 2500mm/ 3040mm
- c. Thickness: 8mm
- d. Weight: 15kg/m. sq.
- e. Surface: Smooth
- f. Must be installed by a Certified Dealer/Installer
- g. Fastening: Galvanized/ stainless, size and type as recommended by panel Manufacturer for applicable substrate.
- h. Factory applied surface treatment to provide repellent properties on all six sides. Coatings do not contain any solvents.
- i. At least 40 year documented panel life expectancy.
- j. Homogenous smooth semi-matte surface finish.

B. Metal Sub-framing

- a. Rivet, mandrel A3 steel, body AlMg3
- b. Aluminum, fixed point sleeve
- c. Bore concenter gauge
- d. Aluminum vertical panel support profiles
  - i. Interrupted every 3m (approximately) for installation from floor to floor.
  - ii. Interruptions of the profiles must coincide with panel joints.

OUTLINE SPECIFICATIONS CONT.



e. Fixed/ slipping panel fastening points
f. L-flashing
i. Kept in position without fasteners
g. Vertical panel joints
i. Joint width 5mm – 8mm.
ii. Close off the panel joints and make them almost watertight.
iii. Do not seal any joints.
h. Horizontal panel joints
i. Joint width 6mm – 8mm
ii. Can be used to prevent water from penetrating into ventilation cavity.
iii. 2mm shorter than panel to avoid the flashing showing vertical joints.

C. Fasteners
D. Thermal insulation

1.5 SOURCE QUALITY CONTROL
A. Testing Agency. User engaged.

1.6 INSTALLATION

A. Panels:
a. All penetrations to the panel for the work of other trades shall be made water tight.
b. Install panels, and systems in accordance with manufacturer's printed instructions and reviewed shop drawings.
c. Secure panels with fasteners and equipment as recommended by the manufacturer.
d. Install panels with joins in like with stud work behind, leave a minimum 5/16" joint between panels.
e. Keep minimum distance to corners and edges as directed by manufacturer.
f. Install panels true to line and level with clean cut edges and joints.
g. In extruded aluminum Rainscreen attachment system, a minimum 5/16" join must be maintained for expansion and contraction.
h. Any penetrations of panel system must be properly sealed with a sealant.
i. Finished installation shall be properly secured, free of rattles, distortions, efflorescence, damaged, or chipped components.

B. Sub-frame engineering
a. Engineer/contractor are responsible for the design and installation of all sub-framing parts including all pertaining fasteners.

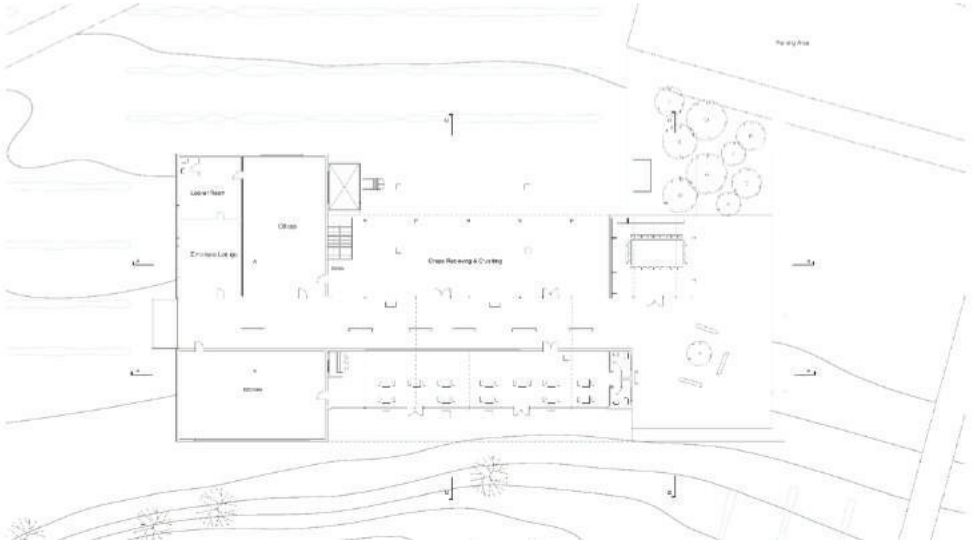
C. Upon completion, all equipment, tools, surplus materials, and garbage shall be removed.

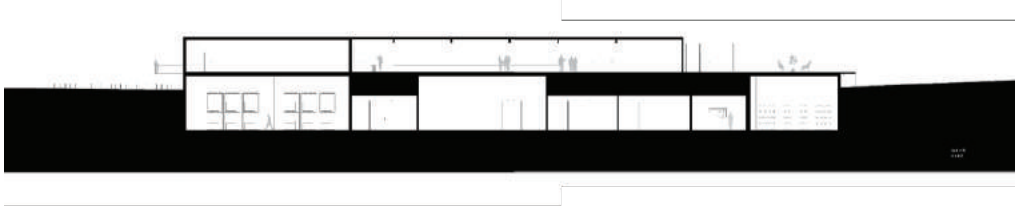
1.7 FIELD QUALITY CONTROL
A. Testing Agency. User engaged.

WINERY IN LOGRONO

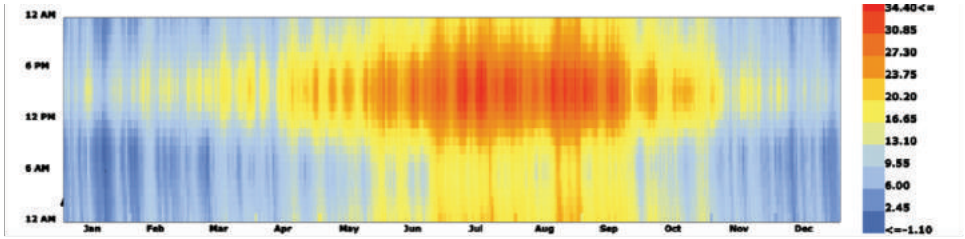
ARCHITECTURAL DESIGN AND ENERGY SIMULATIONS
ARCH 200B/ ARCH 240 Winter 2015

The project under study is a restaurant area of a winery located in Logrono, Spain. The restaurant area is a long, thin rectangular box with top to bottom glass windows facing southeast (these windows in this report will be refered to as “south windows”) and opposite to those windows is a long, large window. The goal of these windows was to create “visibility” of both the guests and of the vines for the guests to look out at. This overexposed approach has left this space to be essentially a glass box. However, while these glass facades can allow for a lot of light to come through, there are issues of too much light and moreover the issue of energy consumption are problematic.



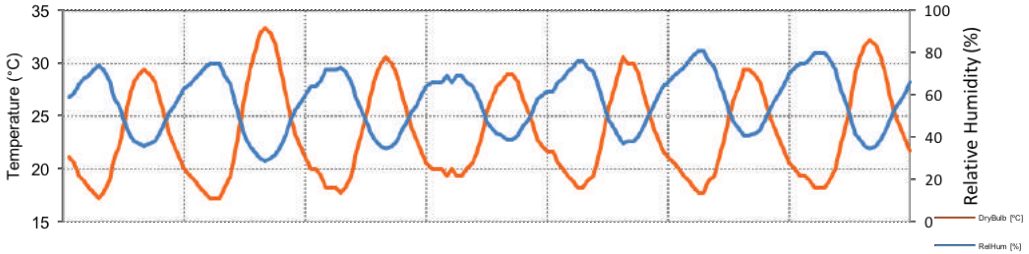


HOURLY DRY BULB MAP FOR LOGRONO, SPAIN

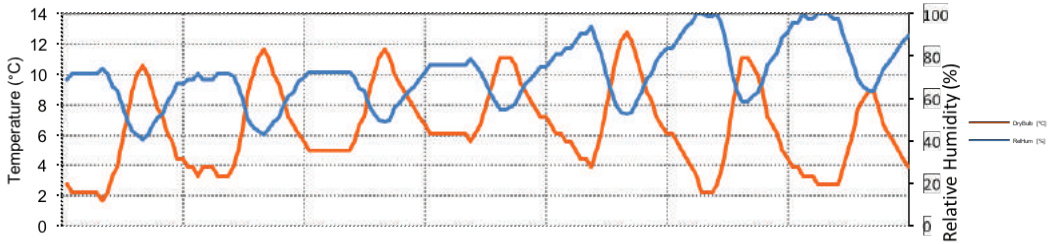


DIURNAL RANGES FOR LOGRONO, SPAIN

Hottest Days

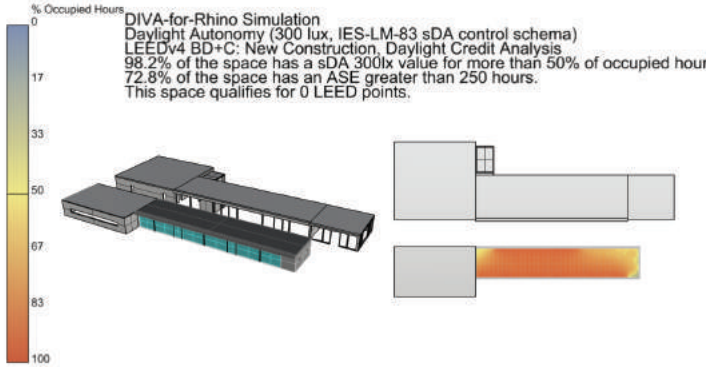


Coldst Days

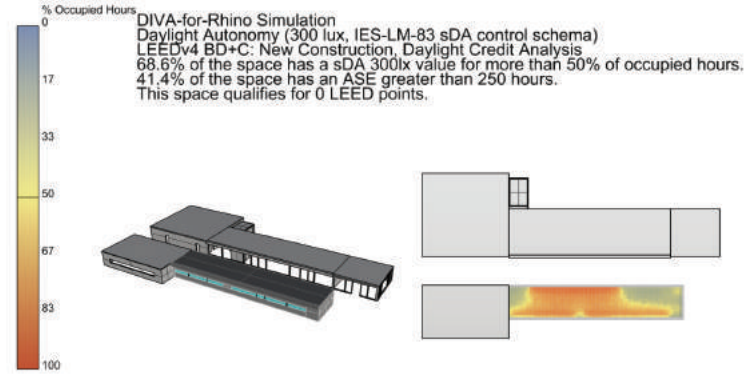


ENERGY CASE SIMULATIONS

Base Case

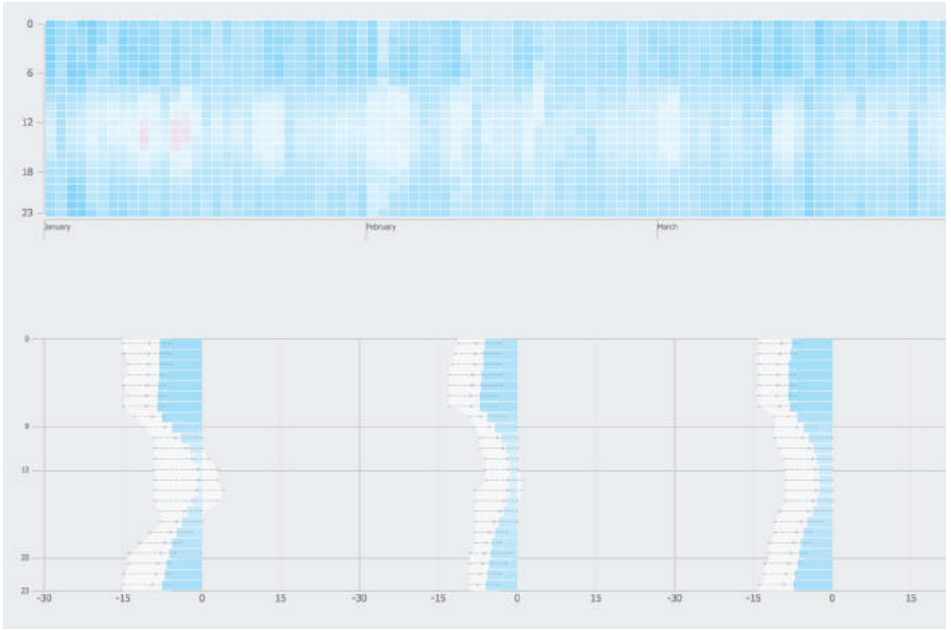


Case D – 20%< Windows to Wall on the South, Window extends from 2m to 1.264m, Wall Breaks through middle of South Window Line



HOW FAR FROM COMFORT

An epw file compatible web-based d3.js data visualization tool of how comfortable a climate is.
http://laurenyatar.com/comfort.html



Background & Objectives
Architects and building scientists use climate data to inform their design decisions but many of the current visualizations are difficult to understand. For this project, I aimed to do three things:

1. Make it easier for architects to understand what the climate is like.
2. Challenge Conventional Climate Visualizations
3. Create an interactive tool.

This tool is aimed at architecture and building science students who are already familiar with epw files and have a basic understanding of building science, energy, and the environment.