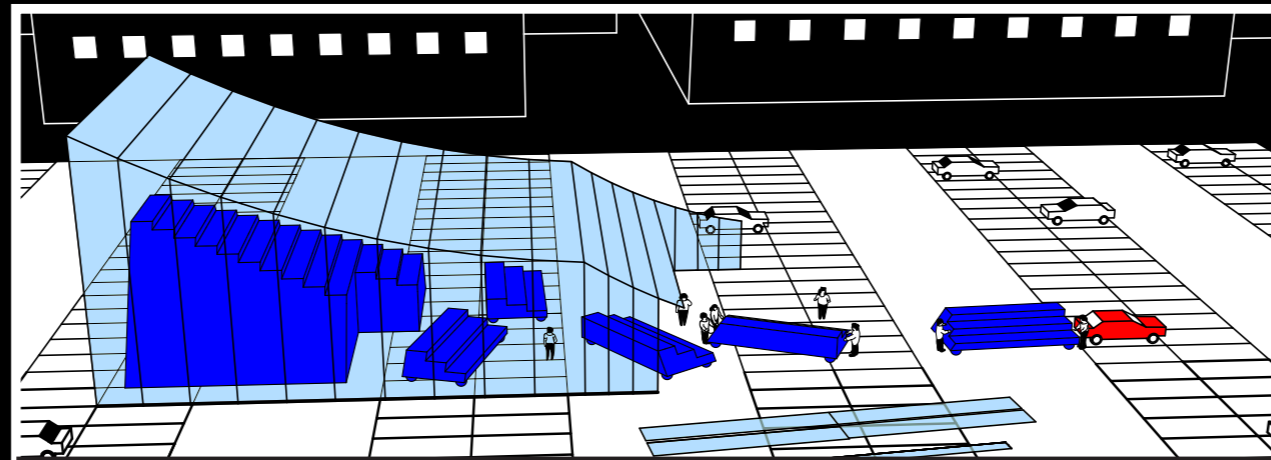
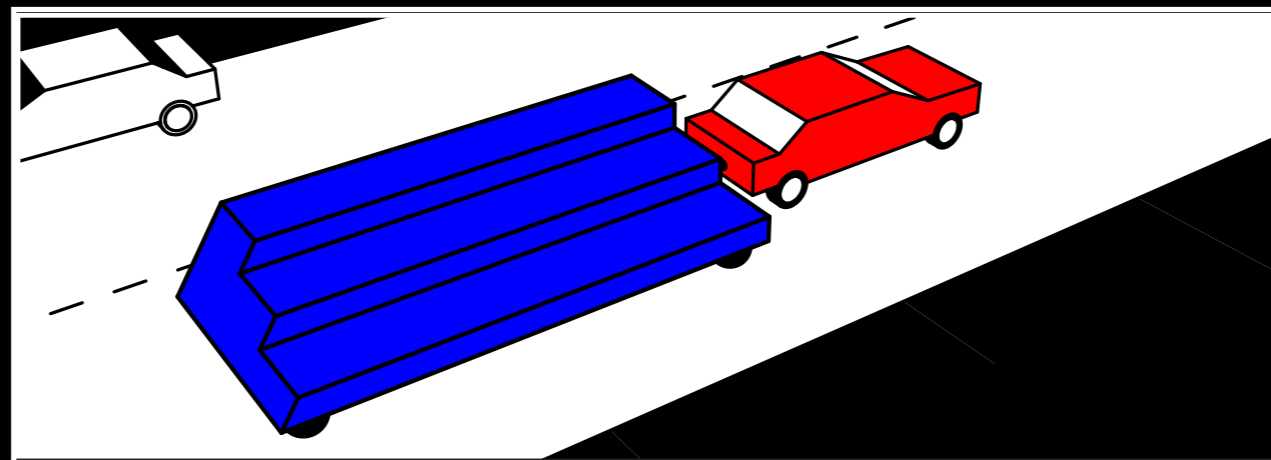


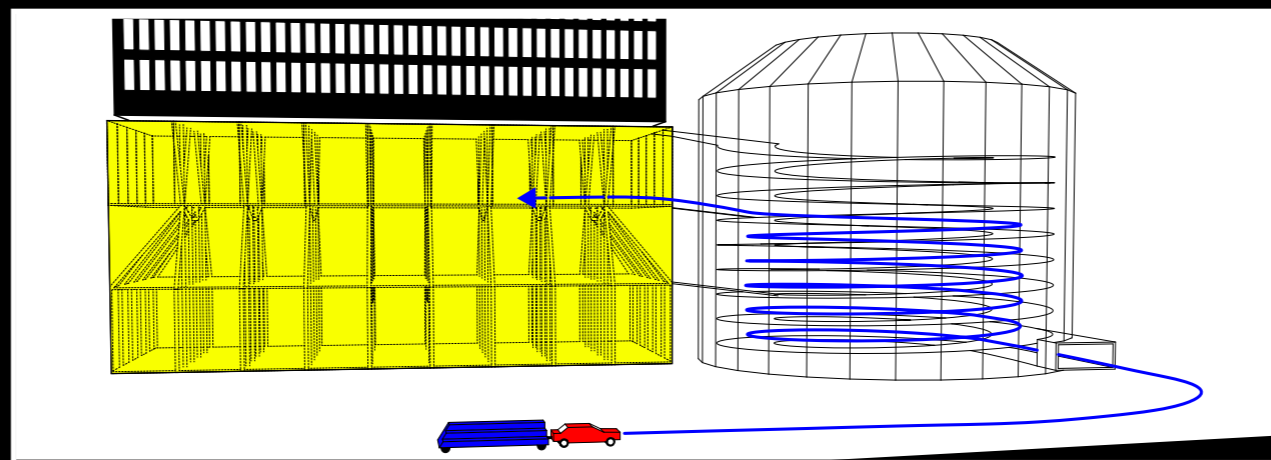
IT'S MIDNIGHT IN LOUISVILLE. THERE IS A BAND PLAYING A CONCERT IN THE PARKING LOT. ON THE GRANDSTAND COVERED BY A TRANSLUCENT TENT AN AUDIENCE LOOKS DOWN AT THE PERFORMANCE BEING HELD.



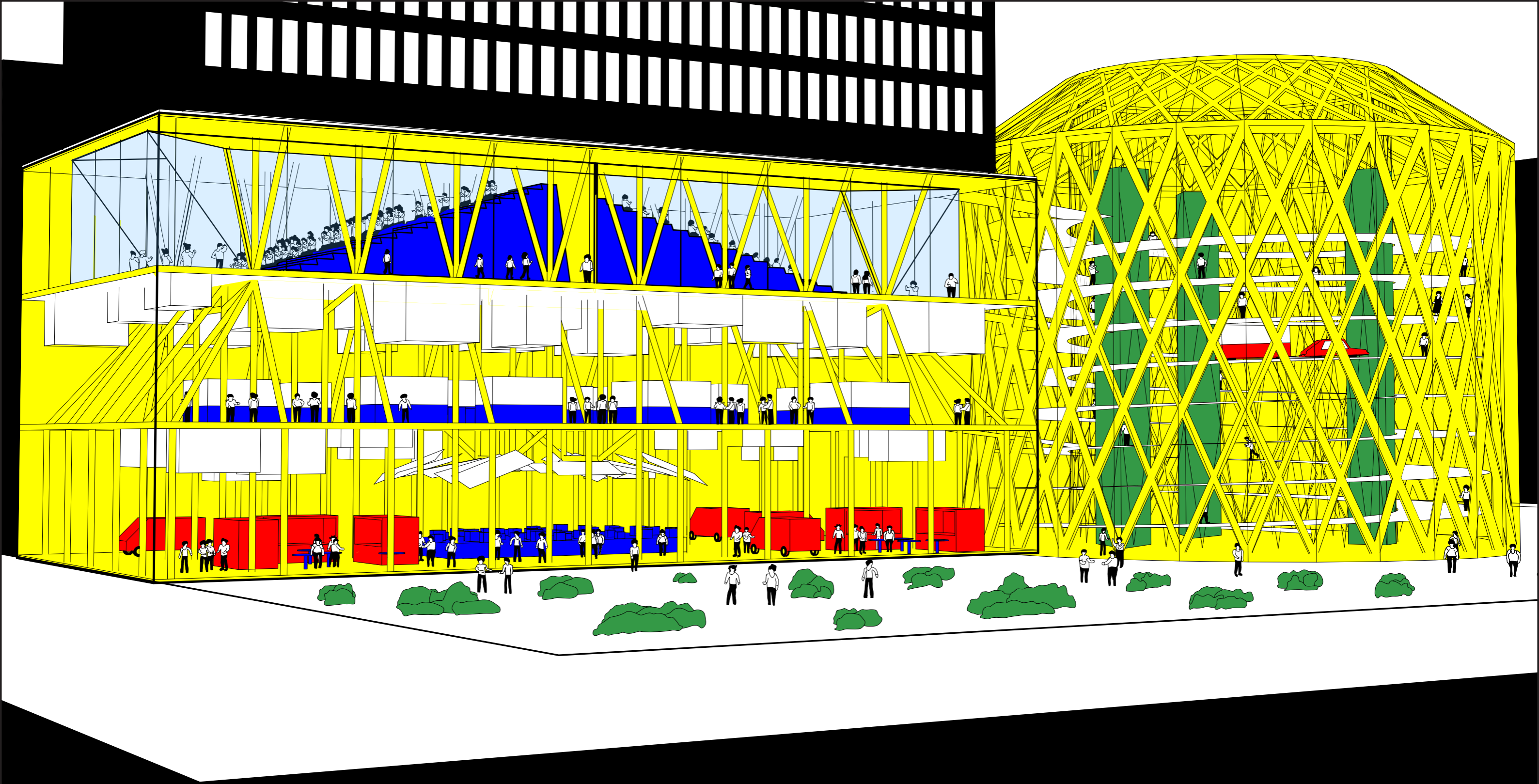
THE FOLLOWING DAY, THE GRANDSTAND AND TENT ARE DISASSEMBLED.



AND TOWED BY CARS THROUGH THE CITY.



TO BE PARKED IN THE MOTHERSHIP.



THIS IS THE MOTHERSHIP. IT HOUSES THE STAGE, TENT AND GRANDSTANDS WHEN THEY ARE NOT ON A PARKING LOT. IT ALSO HOUSES A NUMBER OF DIFFERENT FUNCTIONS THAT CAN BE ROLLED OUT INTO THE CITY'S MANY PARKING LOTS.

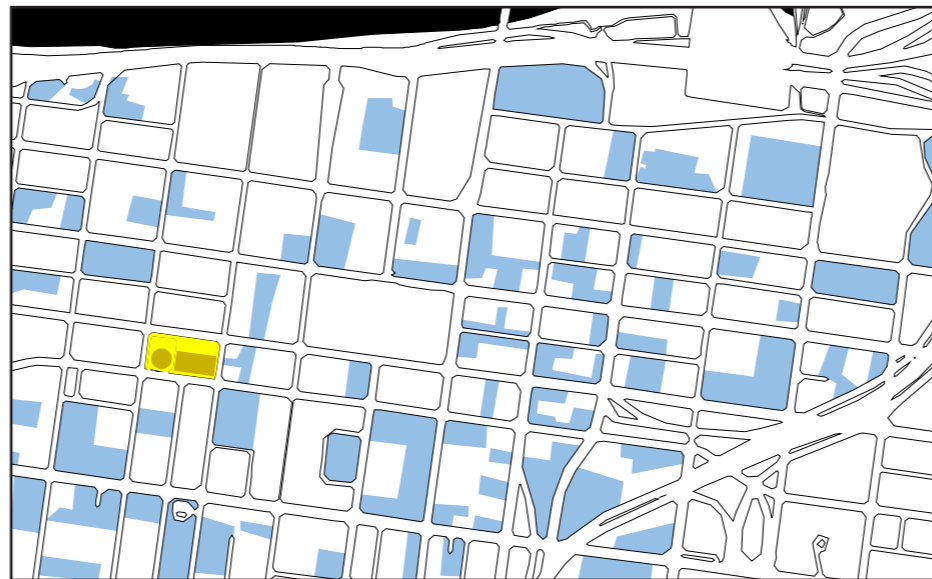
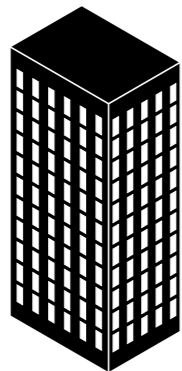
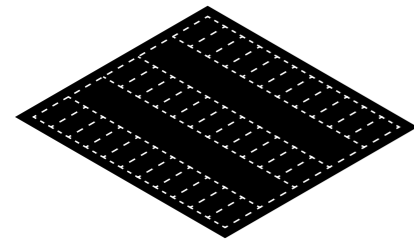
THE MOTHERSHIP

Year: 2019.
Place: Louisville, KY.
Type: Skyscraper refurbishment proposal

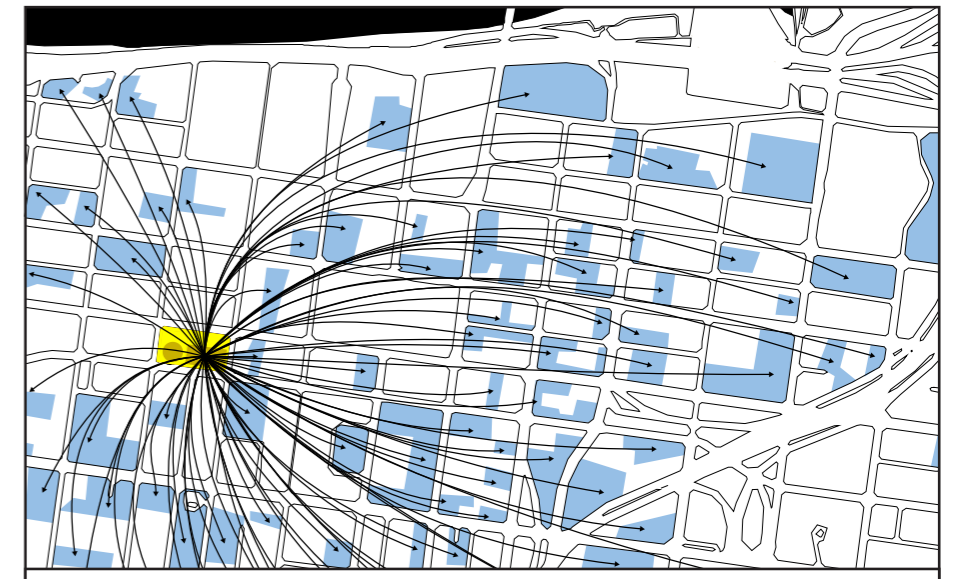
My bachelor's thesis project started in a competition brief from the Acoustical Society of America, but quickly went another direction and instead focused on creating a skyscraper housing mobile interventions.

Hashtags: tactical urbanism, contextual design, illustrations, structural design, acoustical design.

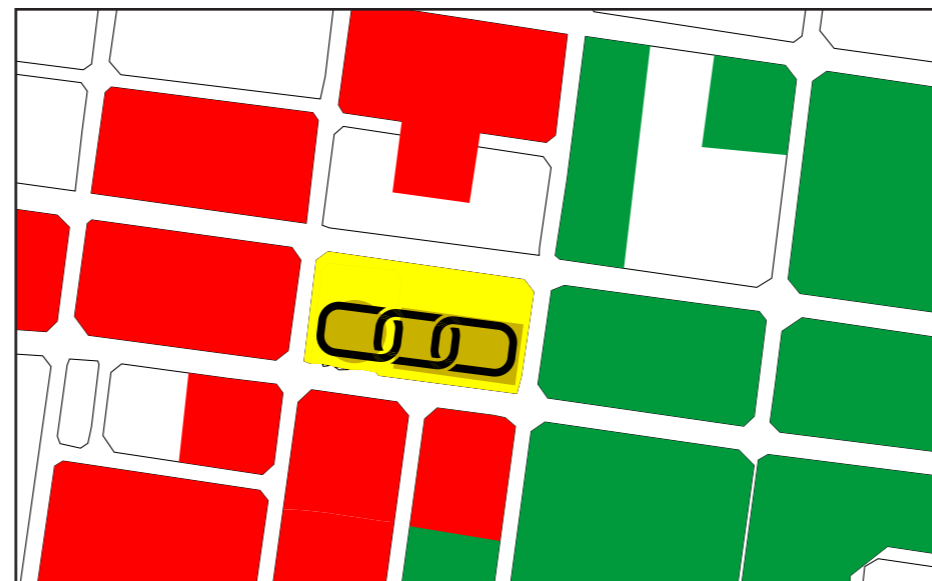
A TALE OF TWO TYPOLOGIES



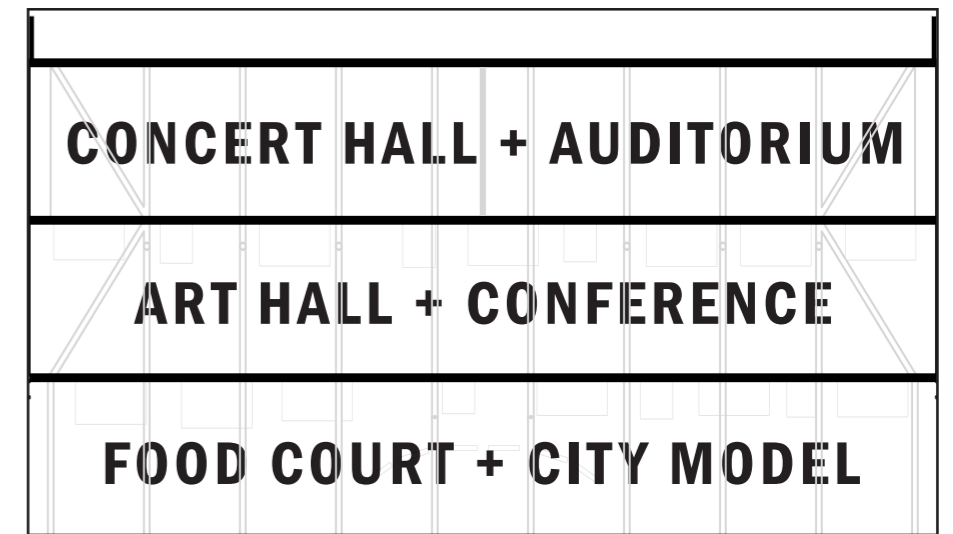
THIS IS A MAP OF DOWNTOWN LOUISVILLE, SHOWING THE ABUNDANCE OF PARKING LOTS (IN BLUE) AND THE PNC TOWER (IN YELLOW)



PARKLETS HOUSED IN THE REFURBISHED PNC TOWER CAN REACH AND ACTIVATE PARKING LOTS IN THE ENTIRE DOWNTOWN AREA.

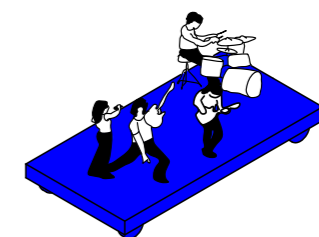
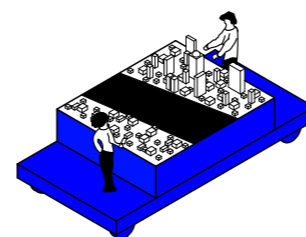
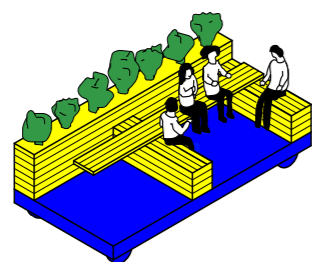


THE PNC TOWER AS A LINK. PUBLIC INSTITUTIONS IN RED, COMMERCIAL PROPERTIES IN GREEN AND THE PNC TOWER SITE IN YELLOW.



WHEN THE PARKLETS ARE NOT ON A PARKING LOT THEY ARE PARKED INSIDE THE PNC TOWER. THEIR DIFFERENT FUNCTIONS CROSS PROGRAM THE TOWER.

Like many other cities in postwar america, louisville faced a tremendous amount of urban renewal in the 50s-70s. Almost the entire downtown area was torn down in order to create a more modern city. The modern downtown in louisville consists mostly of two proble-

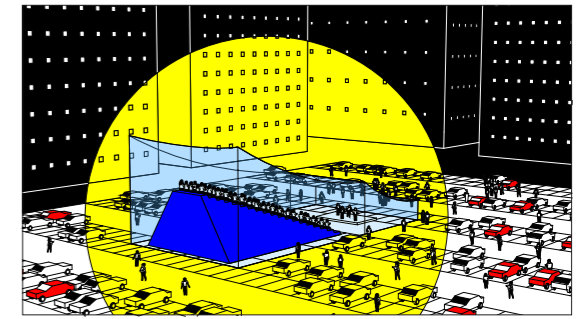
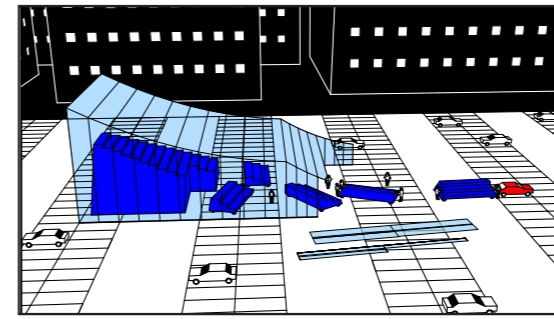
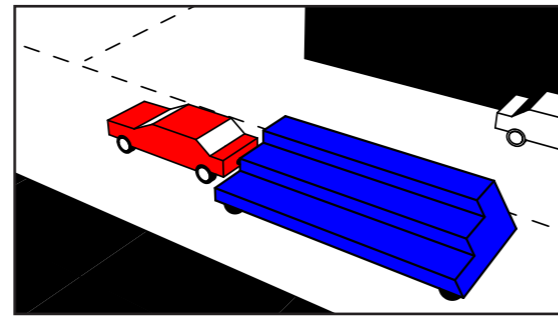
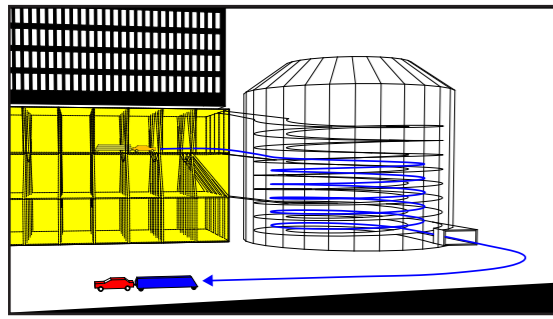


EXAMPLES OF PARKLET CONCEPTS. THEY COULD BE MOBILE PARKS, A CITY PLANNING TOOL OR EVEN BE USED AS A STAGE FOR A CONCERT.

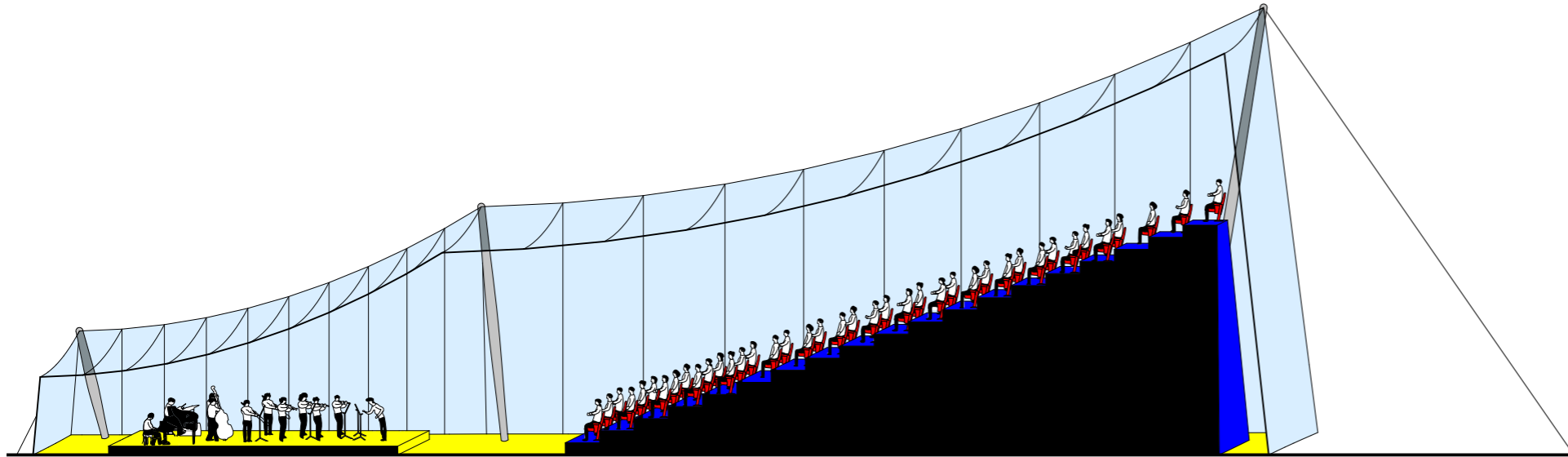
matic typologies: the skyscraper and the parking lot. In this project I worked to gather with a classmate and an acoustics student to create a civic skyscraper which houses parklets. Parklets are mobile interventions that can be placed on a parking lot to activate the space. The aim

of our project was to use these parklets to make the city more democratic. We created the skyscraper that houses the parklets so that they can be used still when they are not on a parking lot. We also did a case study for the use of parklets as a mobile concert hall.

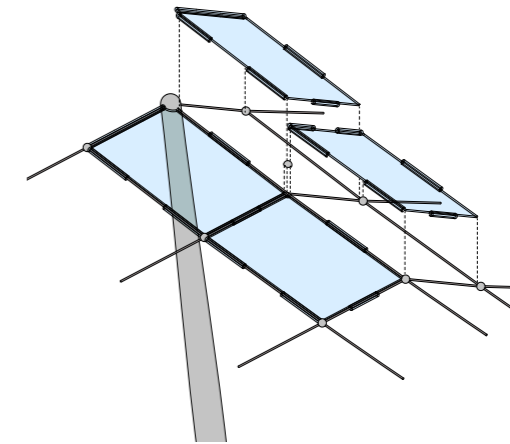
THE PARKED CONCERT HALL



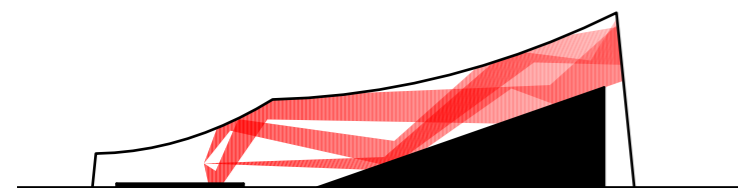
PARKLET OPERATION PRINCIPLE. THE PARKLETS ARE HOUSED IN THE SKYSCRAPER AND CAN EASILY REACH PARKING LOTS IN DOWNTOWN LOUISVILLE.



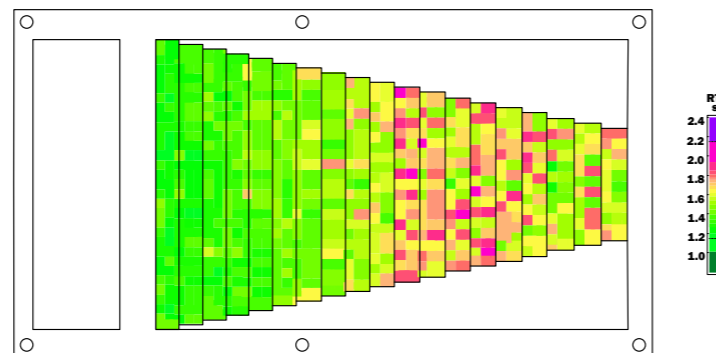
PERSPECTIVE SECTION OF PARKED CONCERT HALL.



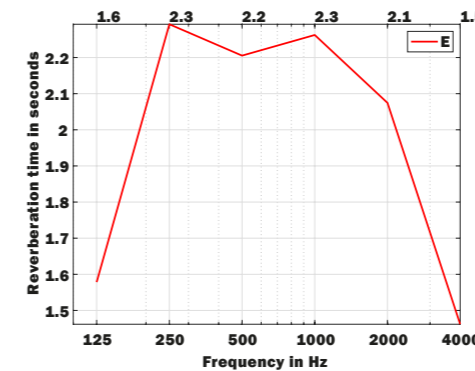
ASSEMBLY DETAIL OF TENT STRUCTURE.



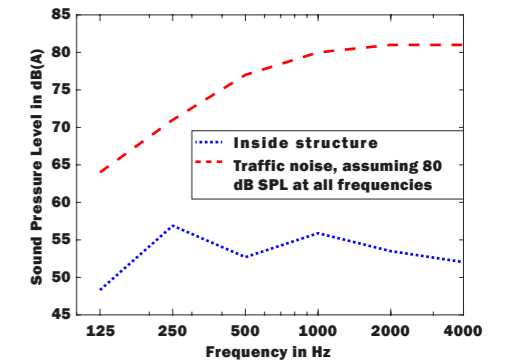
SKETCH OF SOUND MOVEMENT IN PARKED CONCERT HALL.



REVERBERATION TIME MAP FOR PARKED CONCERT HALL.



REVERBERATION TIME GRAPH FOR PARKED CONCERT HALL.



OUTSIDE NOISE REDUCTION GRAPH FOR PARKED CONCERT HALL.

Parklets have the potential of mobilising what is seemingly immovable. The idea of the parked concert hall exemplifies this. To have a concert hall that could be rolled out to any part of the city would be a great asset for the city of Louisville. A problem with “fine” culture art

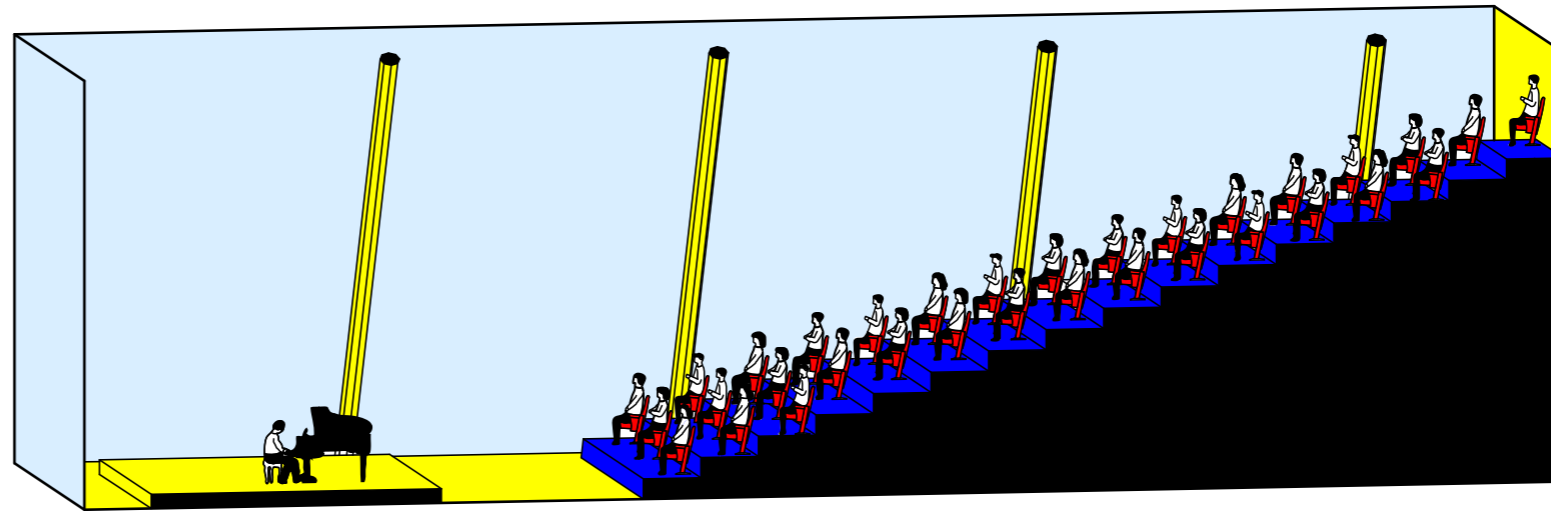
forms, such as classical music symphonic concerts, is that they generally don't reach a wider audience. The parked concert hall can help remedy this by actually letting these art forms appear in unexpected places as a gesture of invitation. The parked concert hall is by no means

limited to symphonic concerts. However, symphonic concerts pose a quite big challenge in terms of acoustical quality compared to other concerts. If the parked concert hall can house a symphonic concert, it can certainly be a host to almost any other kind of concert as well.

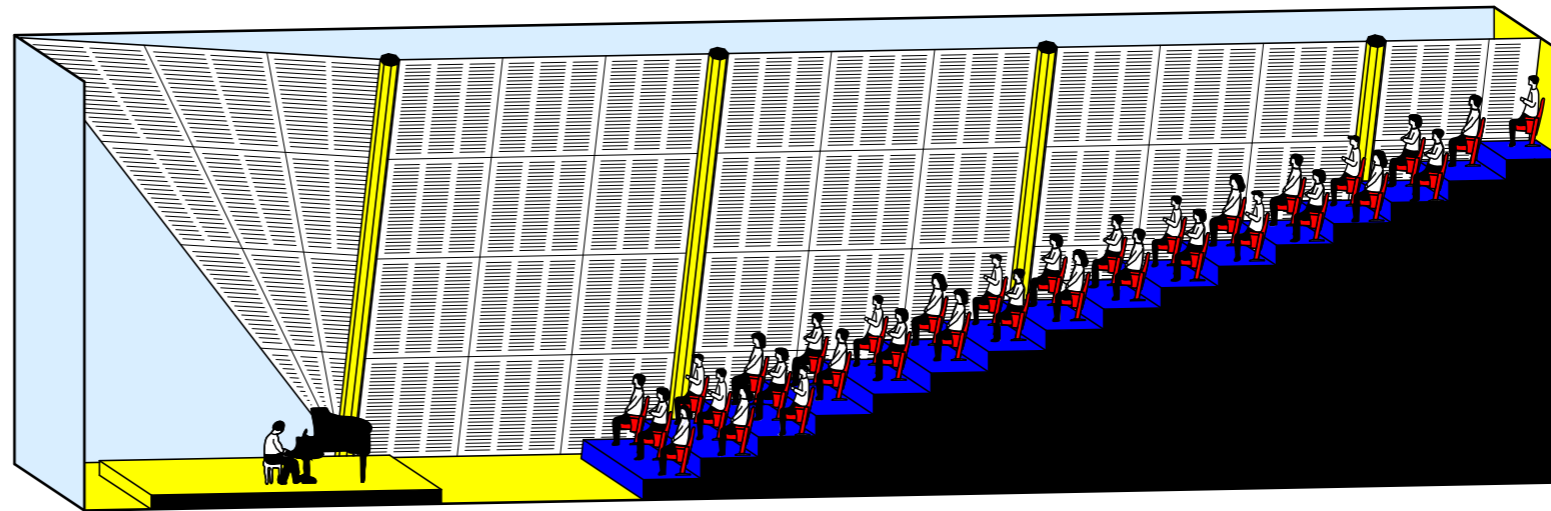
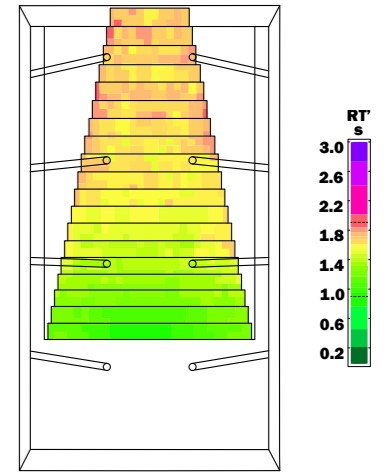
FEATURES SECTION

3RD FLOOR CONCERT HALL

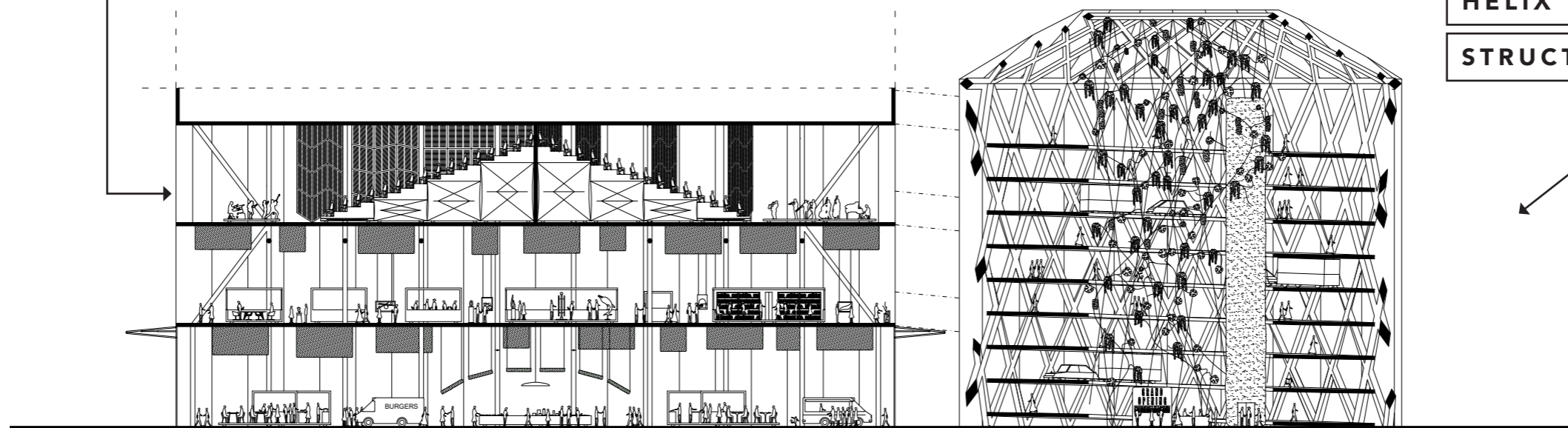
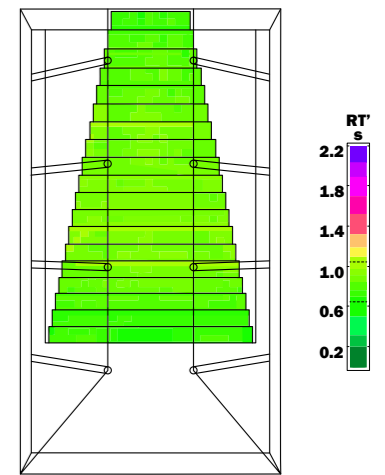
When the outdoor concert hall is parked in the mothership on the third floor, it can still function as a concert hall. Also, the reverberation time can be adjusted via a foldable screen that can be opened or closed to make it possible to adjust the acoustical qualities for both concerts and speeches. The mothership has room for two concert halls and each one can accommodate approximately 300 persons.



OPEN 3RD FLOOR CONCERT HALL WITH CORRESPONDING REVERBERATION TIME MAP.



CLOSED 3RD FLOOR CONCERT HALL WITH CORRESPONDING REVERBERATION TIME MAP.

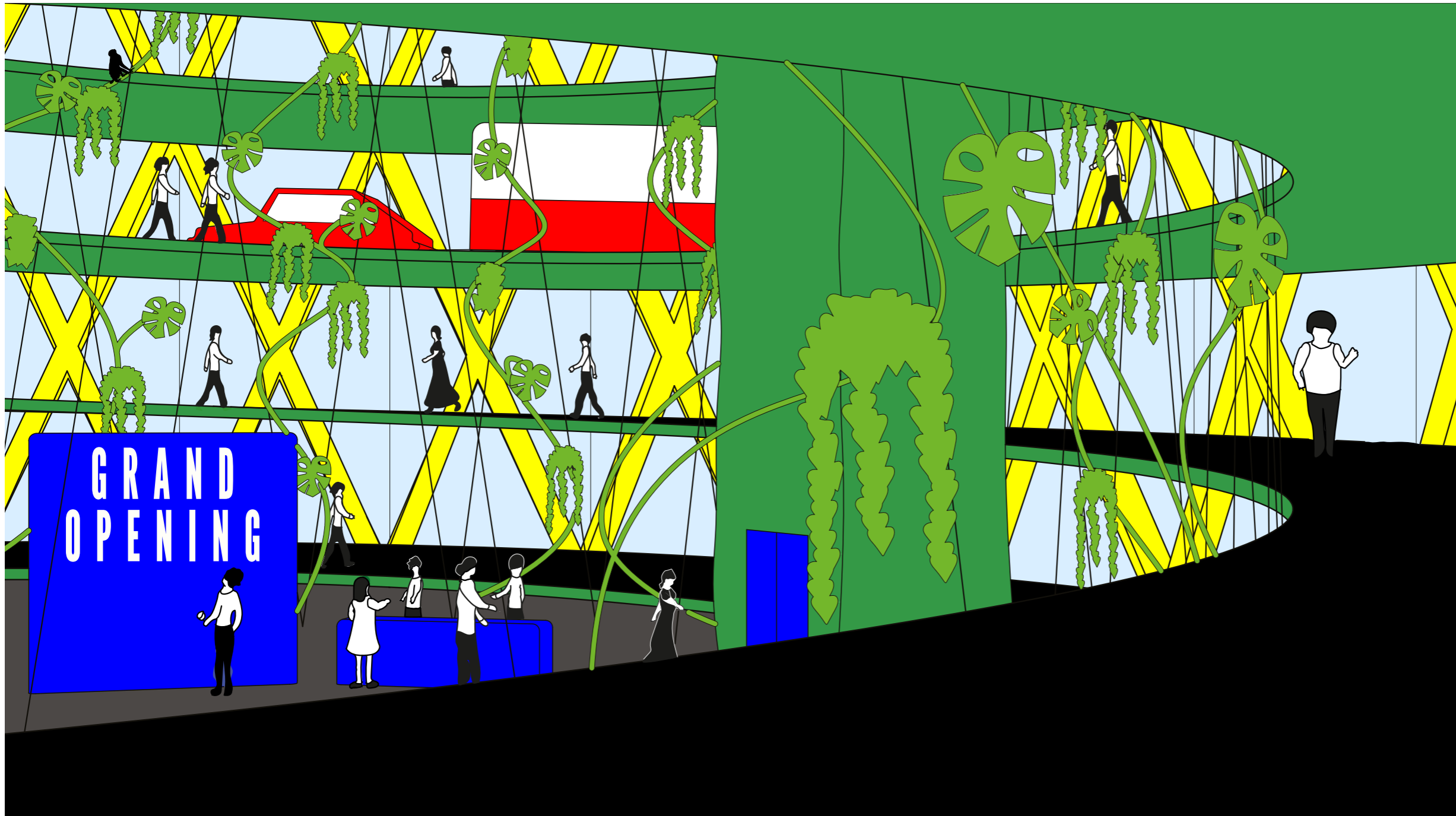


SECTION 1:500

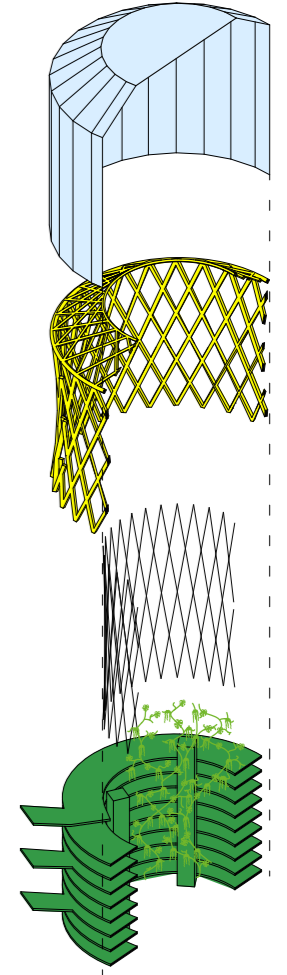
HELIX BUILDING, PAGE 7

STRUCTURAL DESIGN, PAGE 8

THE HELIX BUILDING



IT'S MORNING IN THE HELIX BUILDING. SOME PEOPLE ARE GOING TO AN EXHIBITION, SOME ARE GOING TO REHEARSE FOR THE PERFORMANCE TONIGHT, OTHERS ARE JUST GOING TO THEIR JOBS, CIRCLING UPWARDS THE RAINFOREST'S HELICOIDAL PERIMETER.



EXPLODED VIEW OF HELIX BUILDING.

To enter the main building one has to go through a building containing a helix shaped ramp. This helix building is also used for transporting the parklets in and out of their parking spots. The helix building has lush greenery on the inside. It is a secluded place which shuts

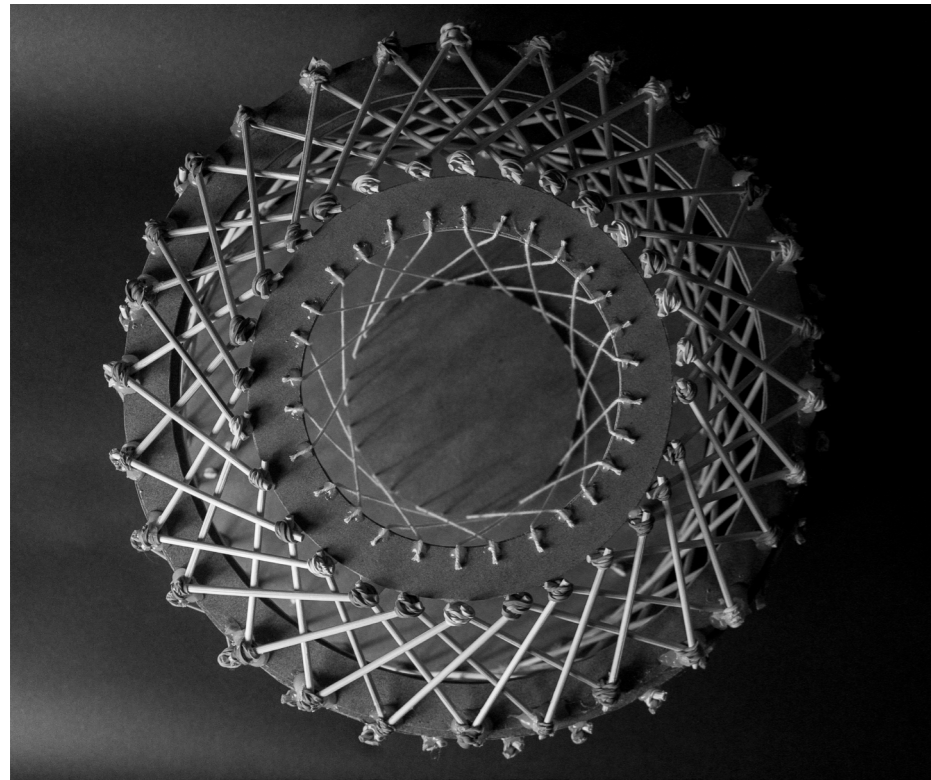
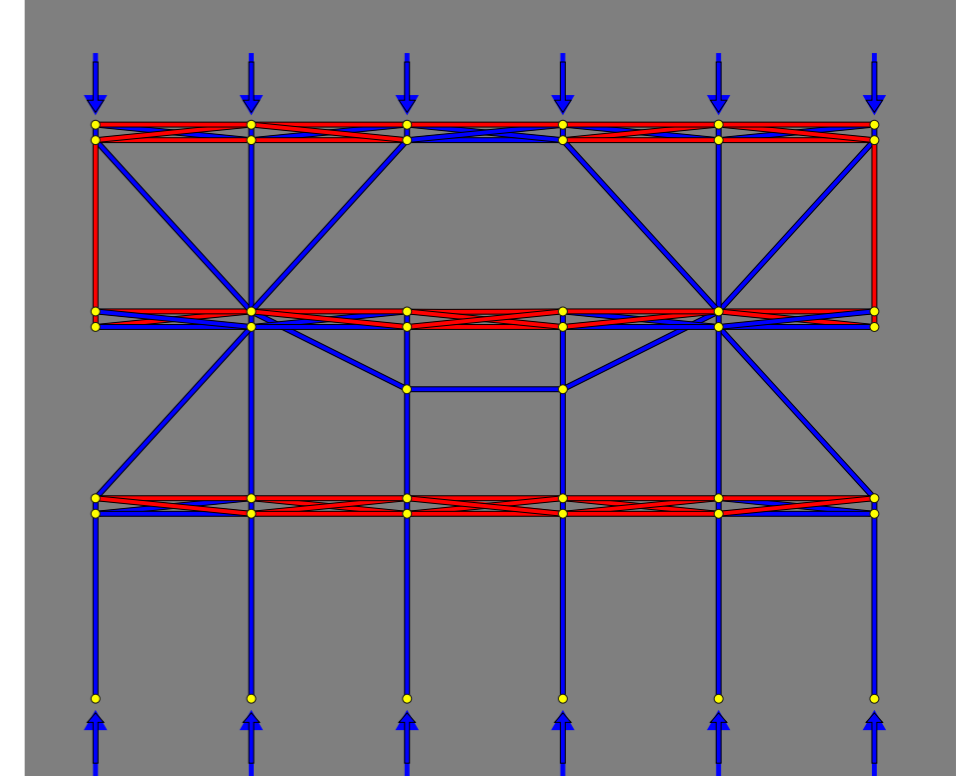
out the noise from the outside traffic. The ground floor of the helix building is also the lobby of the entire skyscraper. Here is the parklet administration where you can book a parklet. The lobby also provides information about upcoming events in the skyscraper and the city.

For the people who work in the rest of the building and who don't want to take the walk up the helix ramp, there are elevators which carry you to the office floors above the mothership. Their elevator shafts are covered in moss which acts as a sound isolator.

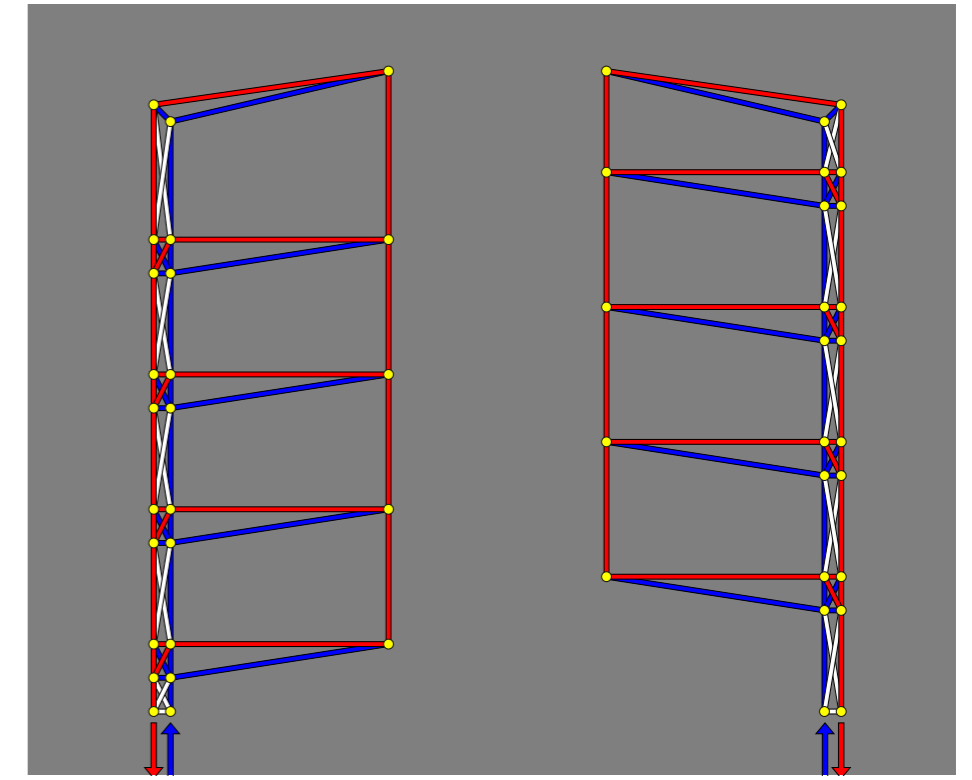
STRUCTURAL DESIGN CONCEPTS



MODEL OF THE MAIN BUILDING'S STRUCTURAL SYSTEM WITH ANALYSIS MADE IN POINTSKETCH2D



MODEL OF THE HELIX BUILDING'S STRUCTURAL SYSTEM WITH ANALYSIS MADE IN POINTSKETCH2D.

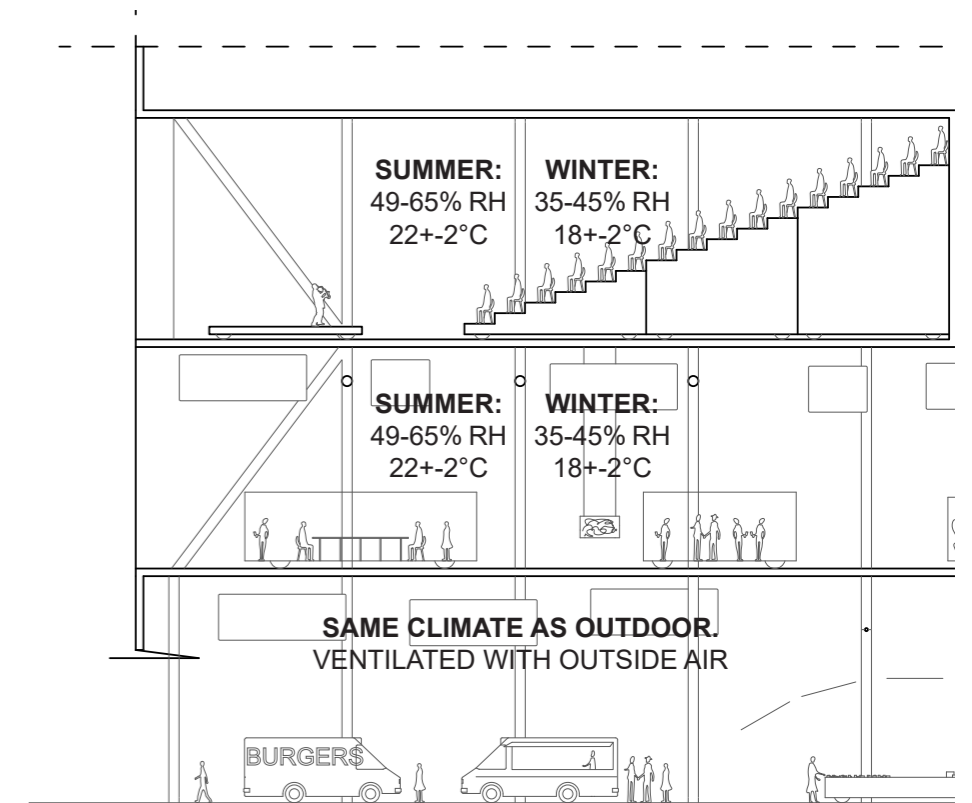
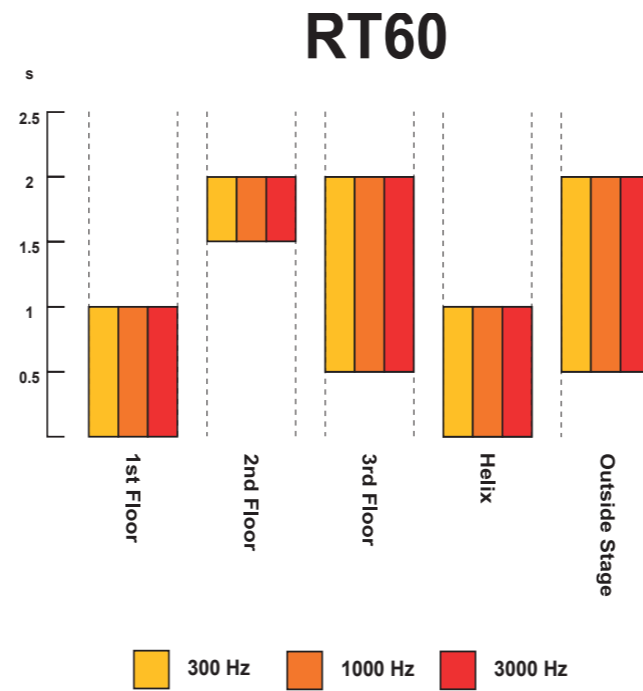
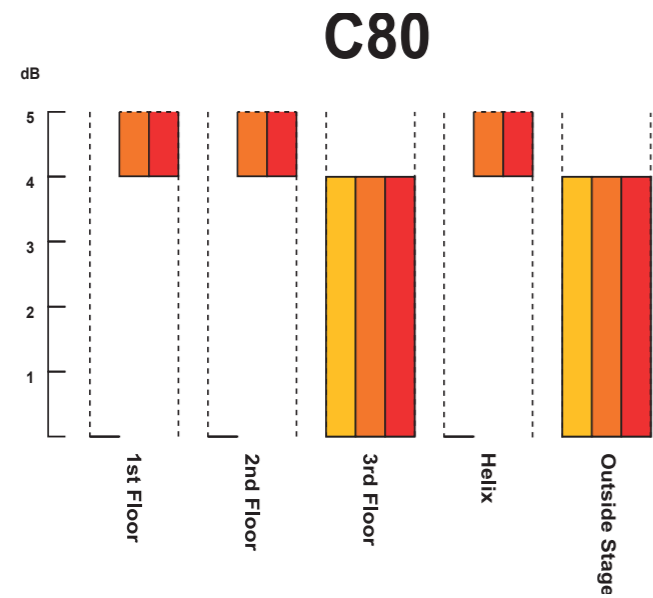


The structural system of the main building aims to open up the third floor by collecting the point loads in the floor. As a parking garage expression is sought after, it redistributes the loads in the second floor using an inverted arch. The ceiling height is doubled compared to

that of the present tower by removing every second floor of the first 6 floors. The structural system of the helix building is based on a hyperboloid, an anticlastic and stable surface that can be constructed from straight members. The structure features an outer hyperboloid

in compression and an inner hyperboloid in tension that is hung from the outer one. Note that in the structural model the outer hyperboloid is modeled as a beam. This is due to the limitations of modelling it in 2D.

CLIMATE AND ACOUSTICAL DEMANDS



The skyscraper is sectioned into different zones, each having different climate and acoustical demands:

At the first floor, a sense of a market place is desired. In the middle, there should be a possibility to have a conversation.

The first floor is supposed to be an extension of the street and thus it is supposed to be ventilated with outside air. It is not to be air conditioned unless the outside temperature is very high or low. Then the doors of the first floor can close and create a controllable climate.

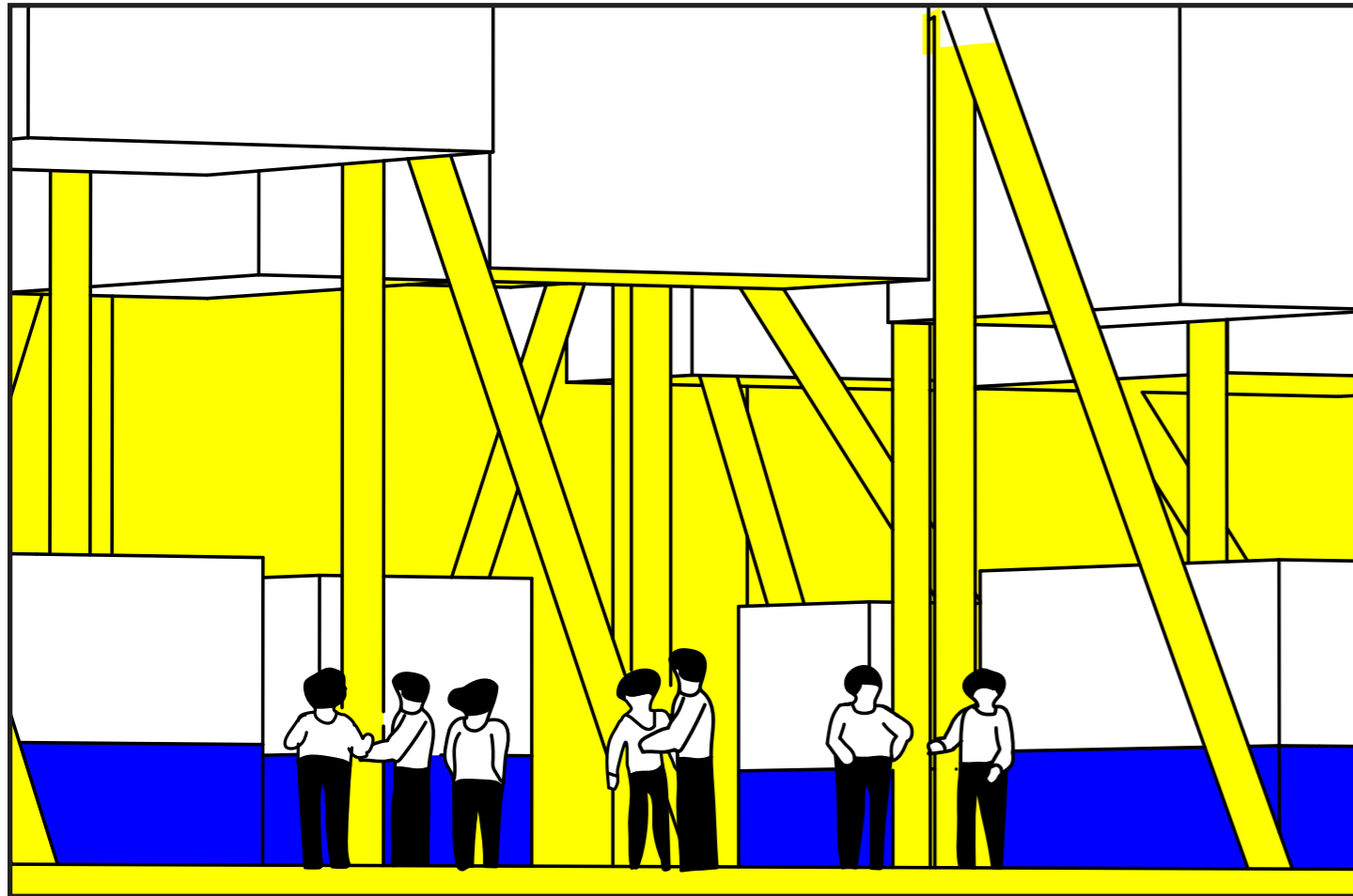
On the second floor there is an art gallery and parked parklets of various functions. It should be possible to talk in the gallery, but it

shouldn't be too noisy. Sound from within the parklets shouldn't disturb the gallery goers. The art gallery is mainly supposed to show art that is not generally shown in mainstream museums, but the climate constraints are supposed to enable showing even very delicate objects.

The third floor has two concert halls with stages for speeches and music. Noise levels should be kept to a minimum. In the third floor concert halls the audience is supposed to have a good musical experience. The climate is also a very important factor in order to create this experience. The concert halls accommodate 300 persons each. The climatic considerations will be derived from this fact.

The helix building is acoustically separated from the outside world. It is supposed to feel like a quiet place of calm. The helix building is supposed to be heated the whole year round. It is supposed to have a good climate for the people commuting through it and experiencing the calm. The moss in the building which acts as an acoustical dampener also help to control the relative humidity of the building. The efficiency of using moss as a humidifier and depollutant is not entirely established and demands a separate investigation.

REFLECTIONS

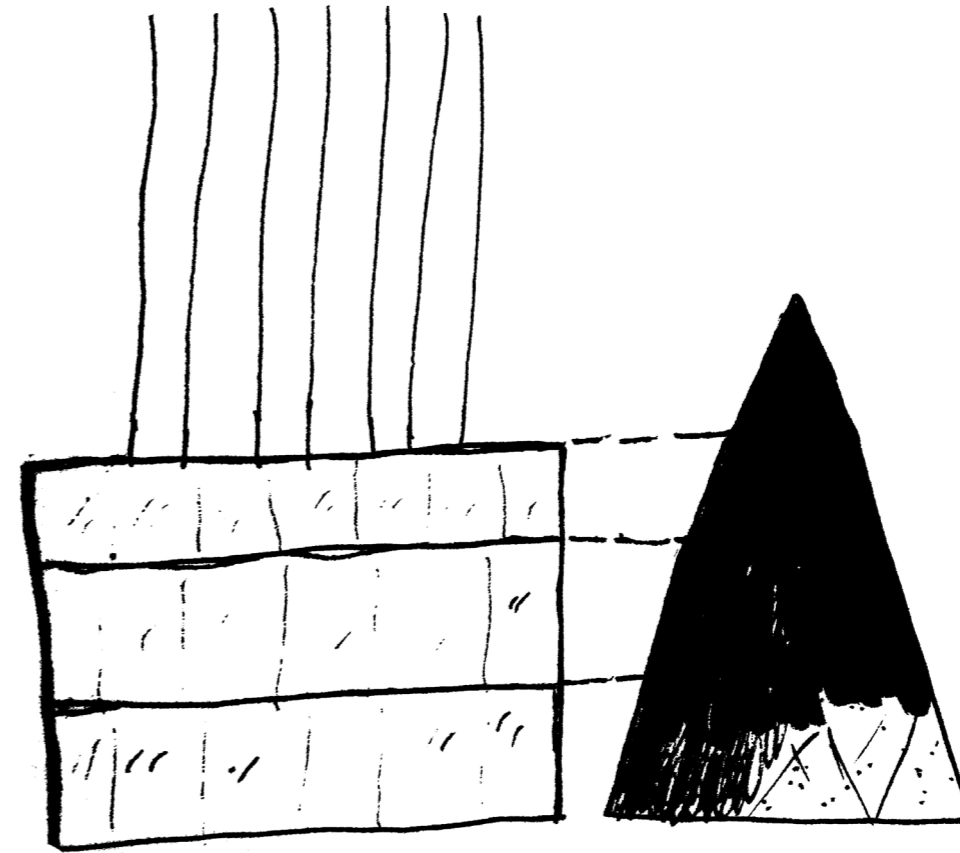


ZOOM IN ON SCALE PERSONS

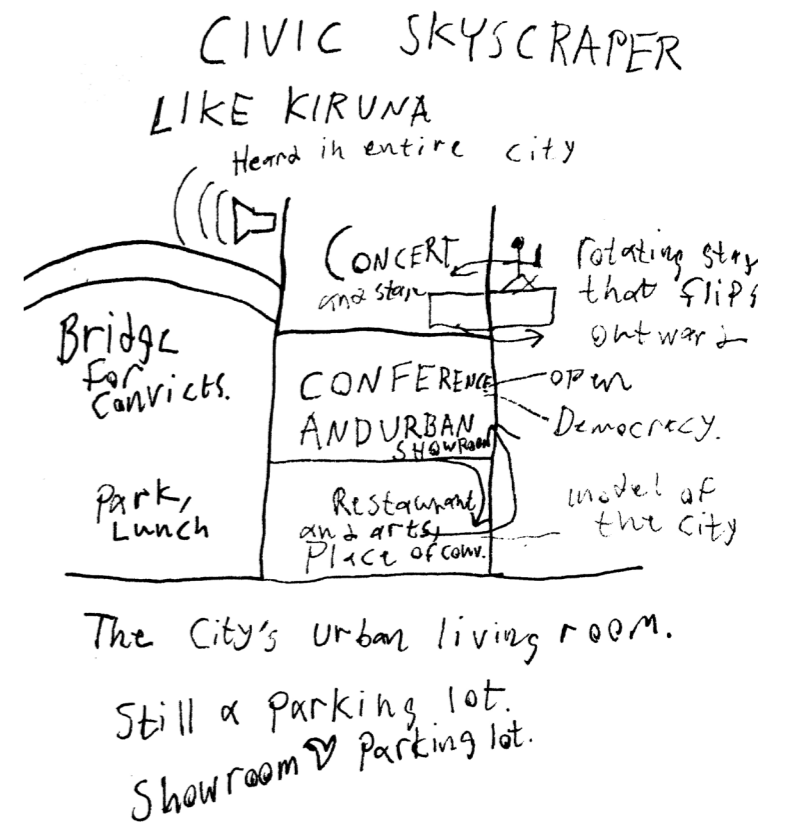
I think that it is important to make a project your own. How otherwise would one be able to put in all the hours required to make something good? I think that I succeeded in making this project my own. Even if this was a group effort, there was different things that we were interested in and wanted to develop. In the end, everybody got to work in a direction they liked, I think. For me, the most interesting things was at first how to cross program the skyscraper in order to make it a place where spontaneous connections would occur. Another thing was how to design the skyscraper in a way that was simple, but so that it would not be confused with something else. This is what led to the helix building being separated from the main building. The idea was to almost make it diagrammatic. One building for circulation and one building for the social functions. The main building in particular is thought of as a mix between a showroom and a parking garage. It

uses a manner similar to the Verfremdungseffekt coined by Berthold Brecht to make it appear as to be referencing the concept of the parking garage, while still being different to it. This is shown in the way that every other floor has been removed from the original structure and how the structural system of the new building is designed to accommodate the concert hall on the third floor while still returning to the original grid on the first floor.

One thing that was important in this project was to develop the design of the parked concert hall in order to make it more believable. It was great that our studies showed that perspex would work quite well to reflect sound and to give the parked hall an actually good sound quality. The visual aesthetics were conceived right at the end of the project. It is heavily influenced by cartoon drawings and intended to be subversive. All the scale persons I drew became an exercise in itself.



EARLY SKETCH OF SKYSCRAPER DIAGRAMMATIC DESIGN



SKETCH OF SKYSCRAPER CROSS PROGRAMMING