

2021 SUGHEY ZAVALLA-ZUÑIGA

THE HYBRID





# THE HYBRID

EAST AUSTIN COMMUNITY CENTER

## DEDICACIÓN

**papá y mamá,** este libro es para ustedes por todo el apoyo constante, el aliento y la fe en mí. gracias por darme una oportunidad que nunca tuvieron.  
**si se pudo!**

**amigos y familiares,** este libro es para todos ustedes por todo el apoyo constante y la fe en mí. Sin todos ustedes, no estaría aquí hoy.  
**gracias.**

**compañero de la vida,** este libro es para ti por todo el apoyo y aliento diario. por todo el cuidado y amor en esas noches eternas.  
**gracias.**

## ACKNOWLEDGMENTS

### **marcel erminy, chair**

thank you for helping me explore my interests and ideas to the fullest. the depth and richness of the project is largely accredited to our long conversations.

### **michael o'brien, co-chair**

thank you for helping me make my ideas into a reality. your input was invaluable, each of our discussions took the project into higher levels of refinement and clarity.

### **shannon van zandt, member**

thank you for all your advice throughout the project, your expertise was extremely helpful to the development of the project and the future of my career.

### **james haliburton, studio prof.**

thank you for helping me see the opportunities within my own design. your guidance and support were extremely important throughout the project.



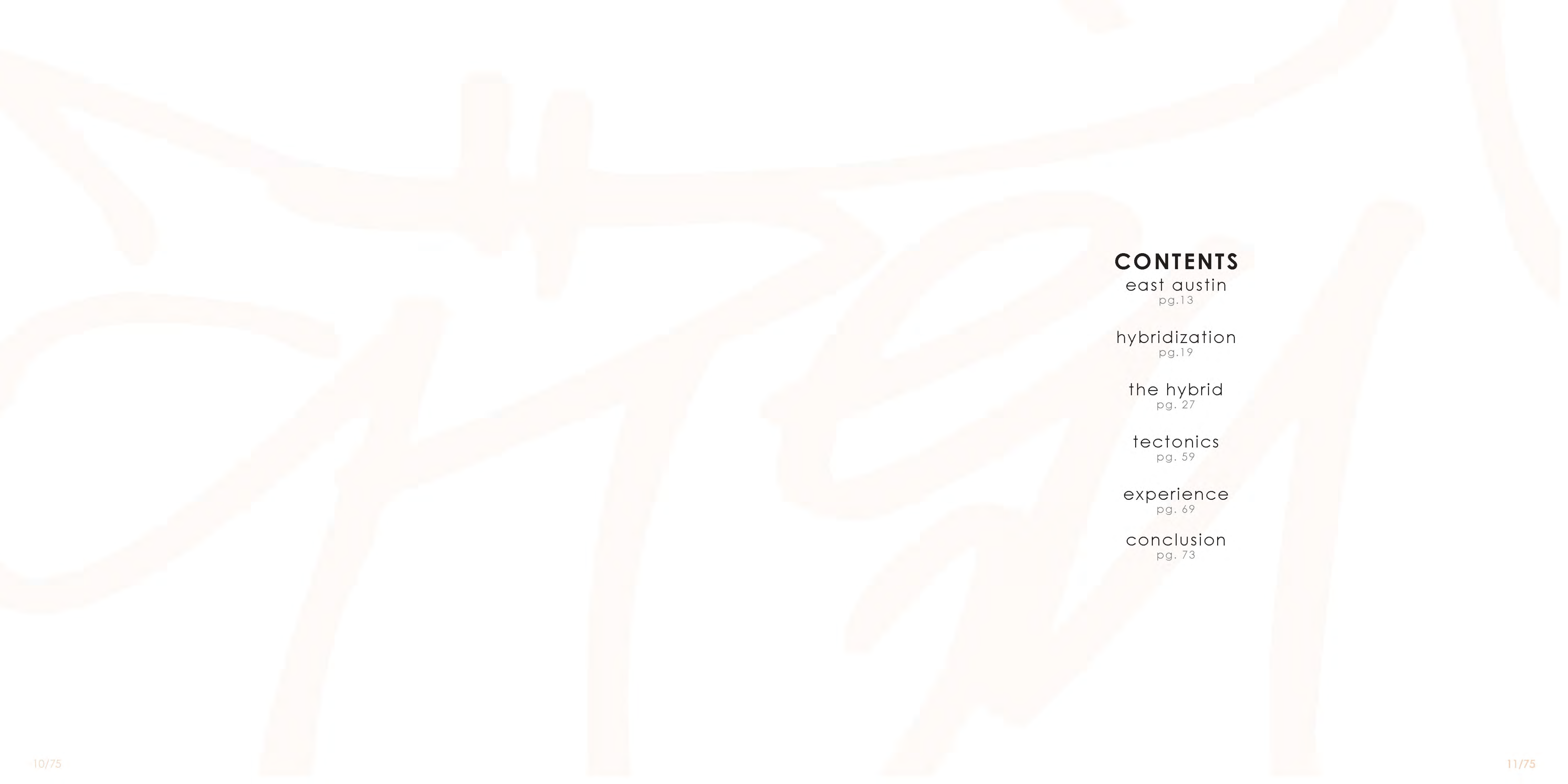
## ABSTRACT

*the architect's role is to fight for a better world, where  
he/she can produce an architecture that serves  
everyone and not just a group of privileged people*  
-oscar niemeyer

architecture should be inclusive,  
for all ages and backgrounds.  
Socially inclusive spaces that  
support all age groups and  
backgrounds are important in  
every architectural building,  
but specially in civic buildings.  
community centers are a  
prime example of the need for  
inclusive architecture as they  
serve a variety of people, from  
children to adults, from un-  
abled to abled, from the poor

to the rich. a community space  
has the ability to bring together  
a wide range of ages and  
backgrounds to interact and  
communicate as one. through  
the study of hybridization in  
architecture and a proposition  
of architectural tectonics,  
the hybrid community  
center serves as a space  
of interaction, connection,  
identity, and belonging for  
anyone in east downtown austin.





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## east austin

east austin texas, east of ih-35 in, a historically working class neighborhood has recently become an arts district and trendy neighborhood for developers targeting a young urban population. rooted in a vibrant history of blues and jazz by the settling african american and latino community, east austin represents the cultural richness and lives of minorities since the 1900's. in addition to the diversity of homes, businesses, and people, the region continues to symbolize an important and meaningful aspect of austin's history.

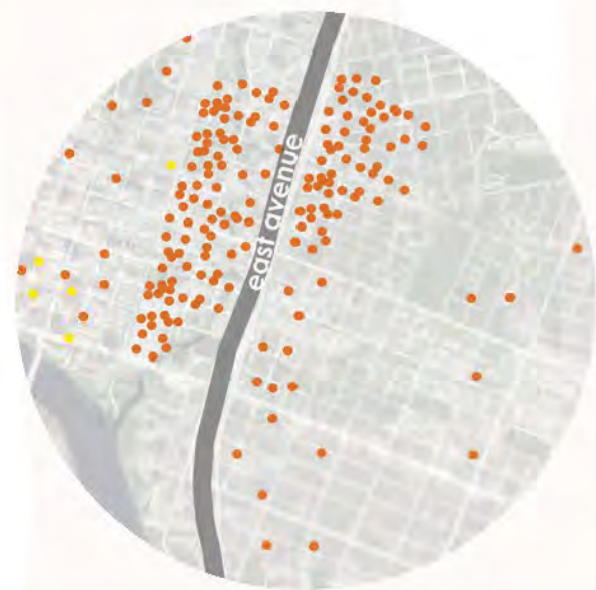




1880

1990

2021



african americans



latino population



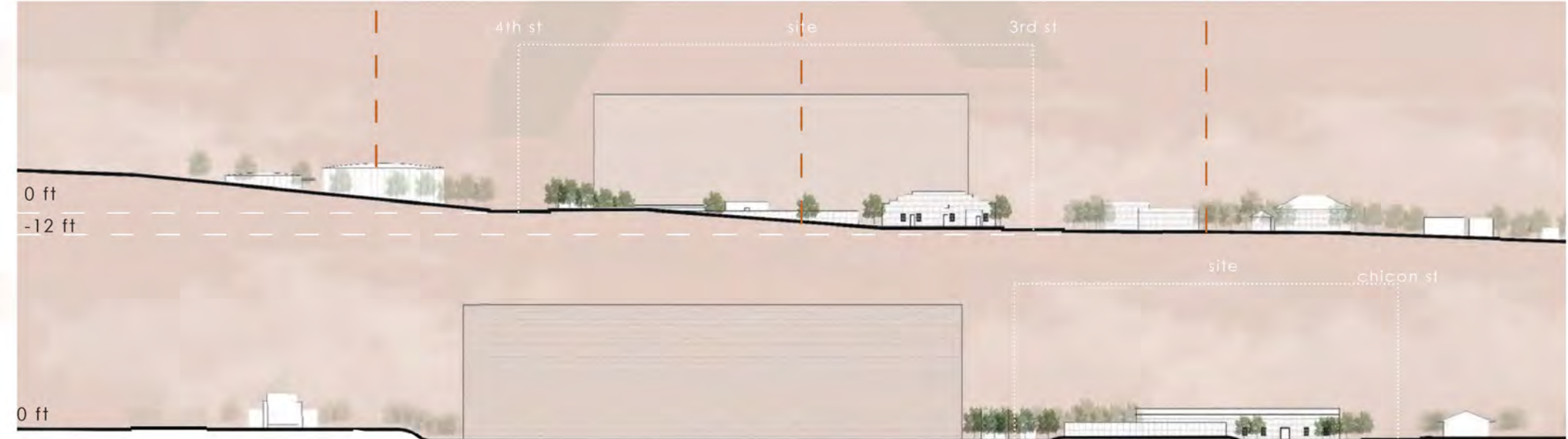
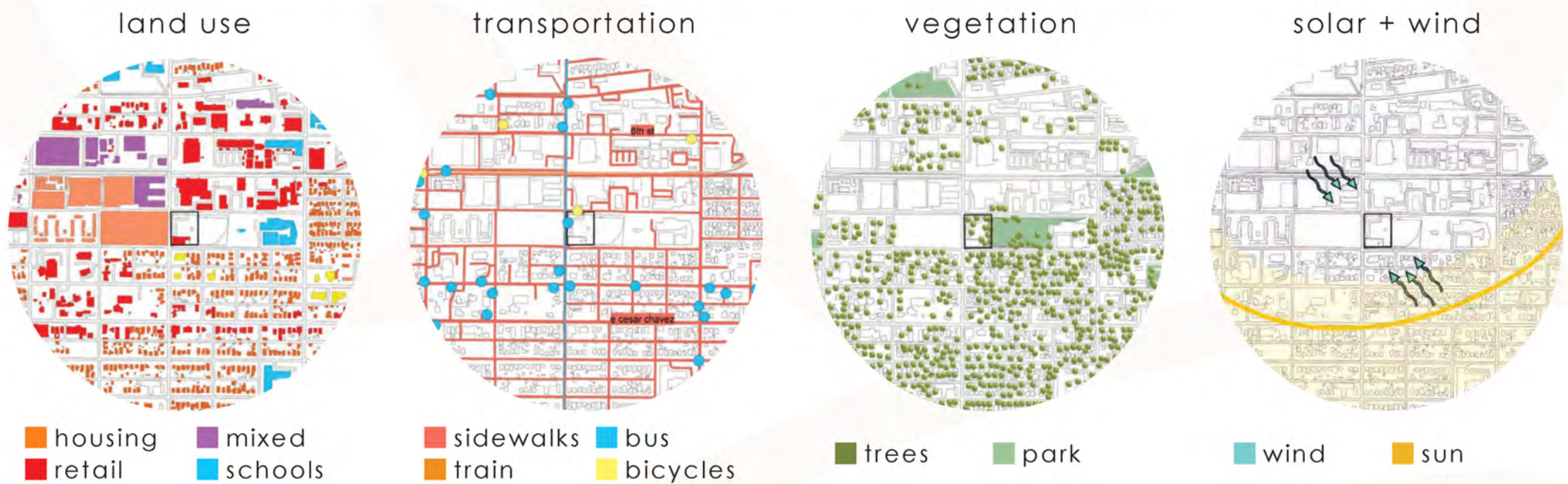
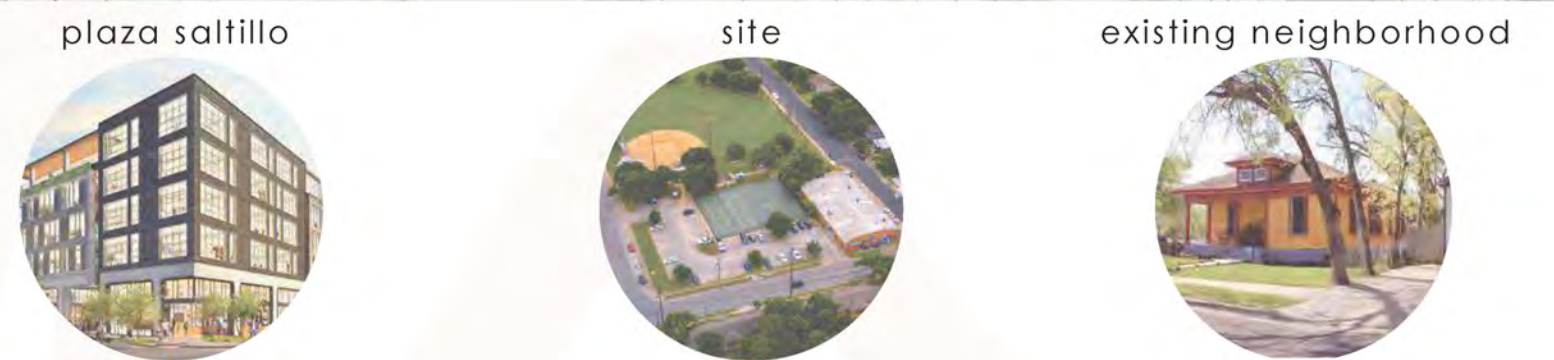
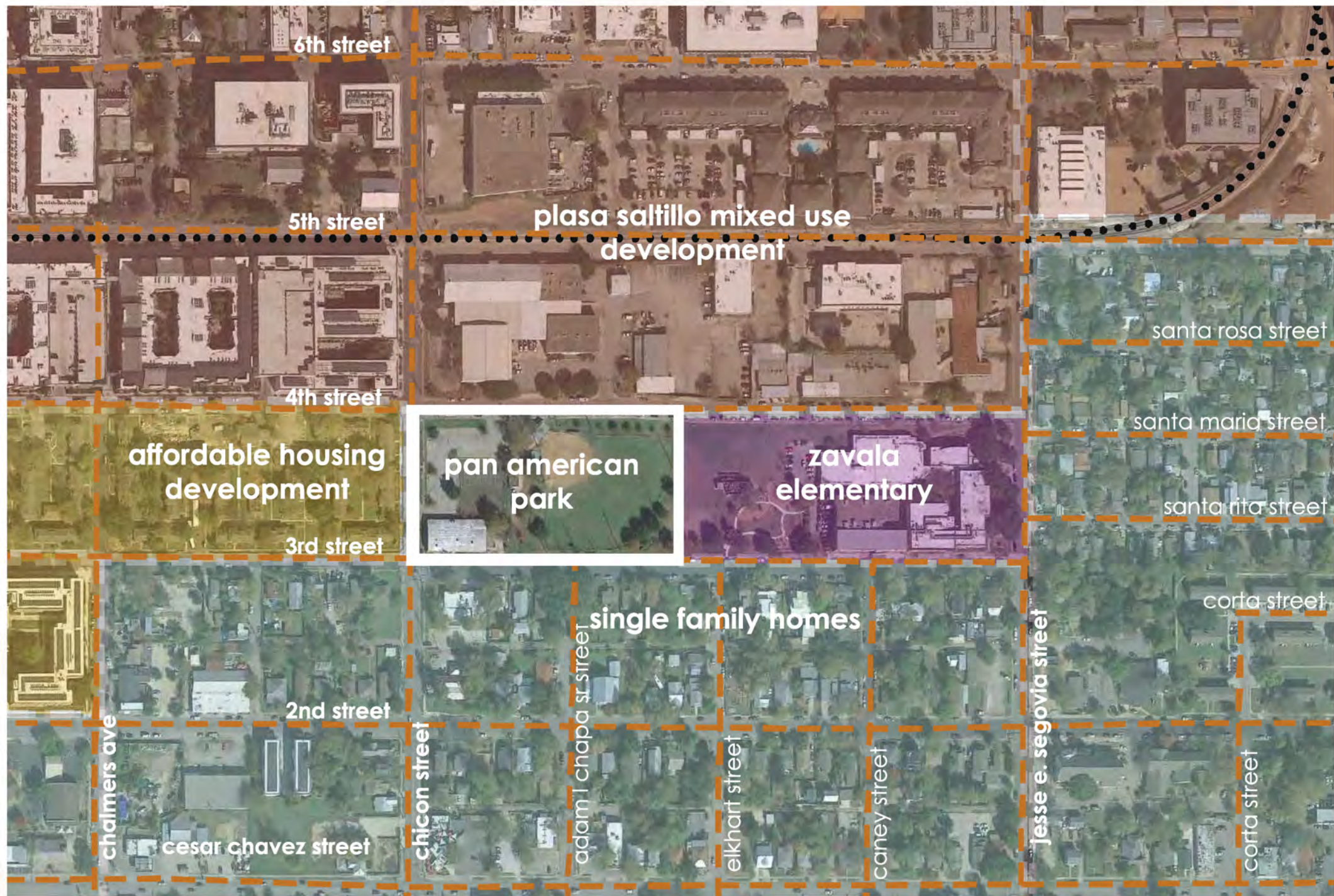
white population



since the 1880's east austin has been home to african americans & latinos. in the 1900's, more than 1.6 million african americans free from slavery migrated from the south to northern cities like austin, texas. in the 1990's, segregation rules created the "negro" district, which concentrated all minority services across east avenue (now IH-35) in east austin. as austin expands the "negro" district historic population is rapidly decreasing while the white population increases due to new development. however, despite gentrification, the african american and latino culture are still celebrated through art, graffiti & murals in its streets.







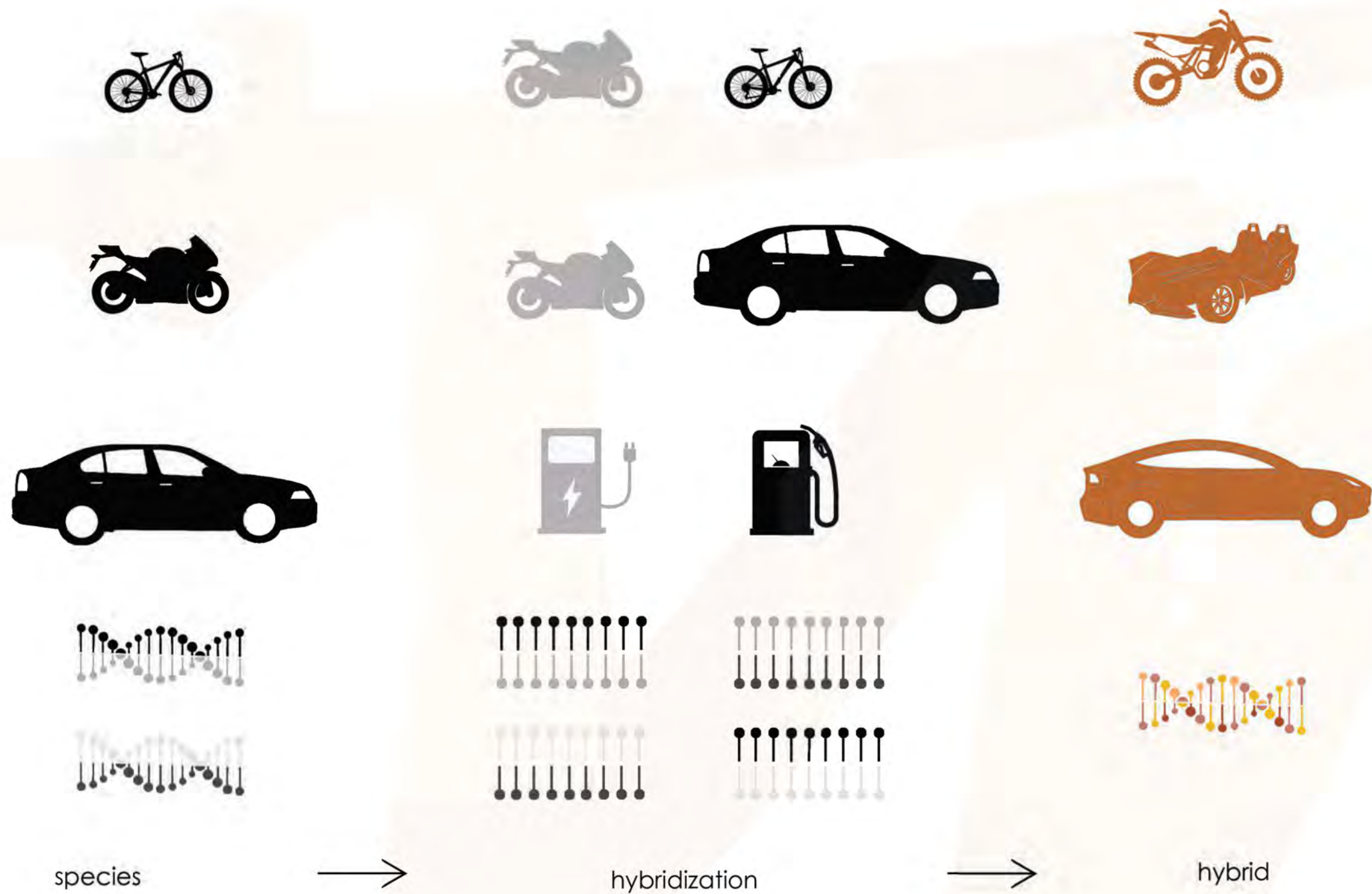




## hybridization

austin, texas is one of the fastest growing cities in the US and in Texas since 2010. as austin continues to grow, east austin in particular has experienced gentrification in its communities. east austin has developed from an affordable and single family housing district to a hybrid one, consisting of commercial, residential, social, retail, and business uses. as east austin continues to develop, bringing new and existing residents together is a necessity. this idea is then explored through the design of a community center open to everyone.





## hybridization

the term hybrid comes from the latin word, *hybrida*, meaning the off-spring of two dissimilar animals. hybridization relates to the process of mixing two different things resulting into a whole with parts of the two. hybridization is primarily used in species' dna but it has evolved into everyday things such as transportation vehicles, and now, architecture. for years, hybridization was only centralized around the creation of dna. hybridization in dna is necessary in maximizing the stability and structure of electrons in their orbitals that make up dna.

in chemistry, hybridization is the concept of mixing atomic orbitals into new hybrid orbitals (with different energies, shapes, etc., than the component atomic orbitals) suitable for pairing of electrons to form chemical bonds. the bonds created within the dna allow for new species to be created as one.

today, in our every day life we encounter a variety of hybrids. transportation is an example of a continuous creation of hybrids. starting with a bicycle and ending with a car, several types of hybrids are seen.

a car, a 3 wheel motorcycle, motorcycle, and a dirt bike can be traced back to a bicycle. advances in technology, allowed for the creation of a motorcycle. combining a motorcycle and a bicycle created the dirt bike. further advancements in technology created the car, but the mixture of both a motorcycle and car, created the 3 wheel motorcycle. today, the hybrid concept in technology is explored primarily in hybrid cars. the hybridization in transportation today, as seen in dna, maximizes the functions generated by each.



hybridization is referred back to dna but in recent years it has been applied to architecture. hybridization in architecture is understood as a built-environment where unexpected functions come together and make a single habitable building. in addition, a hybrid structure is defined as a structure with multiple uses interconnected, but also responds to the evolving methods of social interaction in the world. the intersection of a variety of spaces within a whole primarily allows for the interaction of its users and visitors.

recently, united nations has projected that the current world population of 7.3 billion people is expected to increase and reach 9.7 billion by the year of 2050. the increase in population led to mass consumption of resources creating immense land pressure in cities. as a result, many innovations such as mixed-use and vertical architecture have been implemented to reduce this land pressure. however, hybrid architecture goes beyond the scope of a mixed-use building that mixes functions but those functions are not necessarily required to interact.

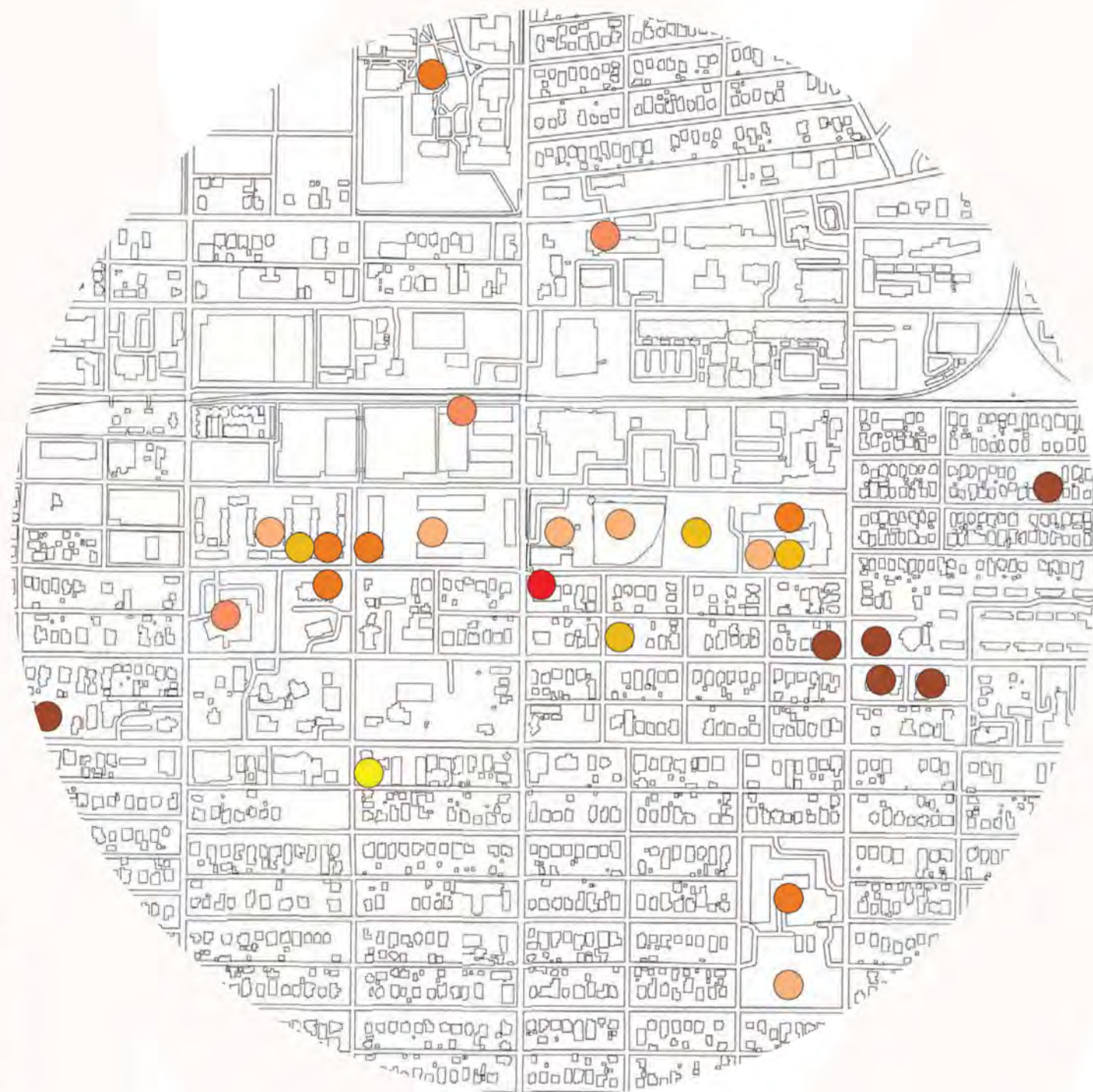
## hybrid in architecture

true hybridization is achieved through the relationship of each program with one another in a single building. steven holl states, "hybrids are incomplete and necessarily rely on the organization of the whole in a way that reorganizes the social dimension of the building." (holl, hybrid ii, pg. 23).

hybrid architecture is an exploration to reduce land pressure ,not by designing something new but by re-thinking the current process of infrastructure design in buildings, such as a community center.

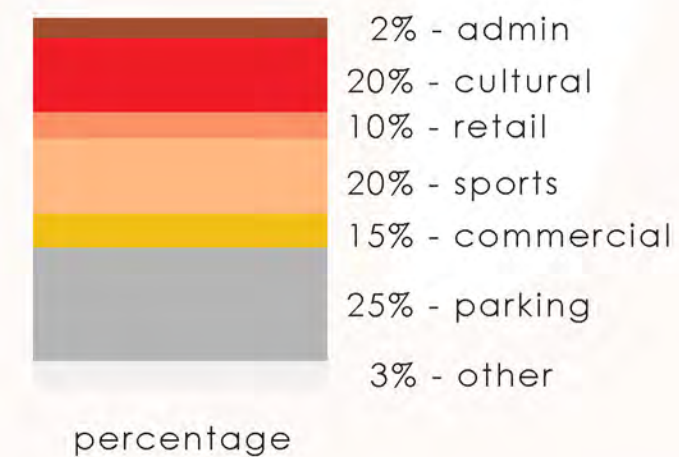
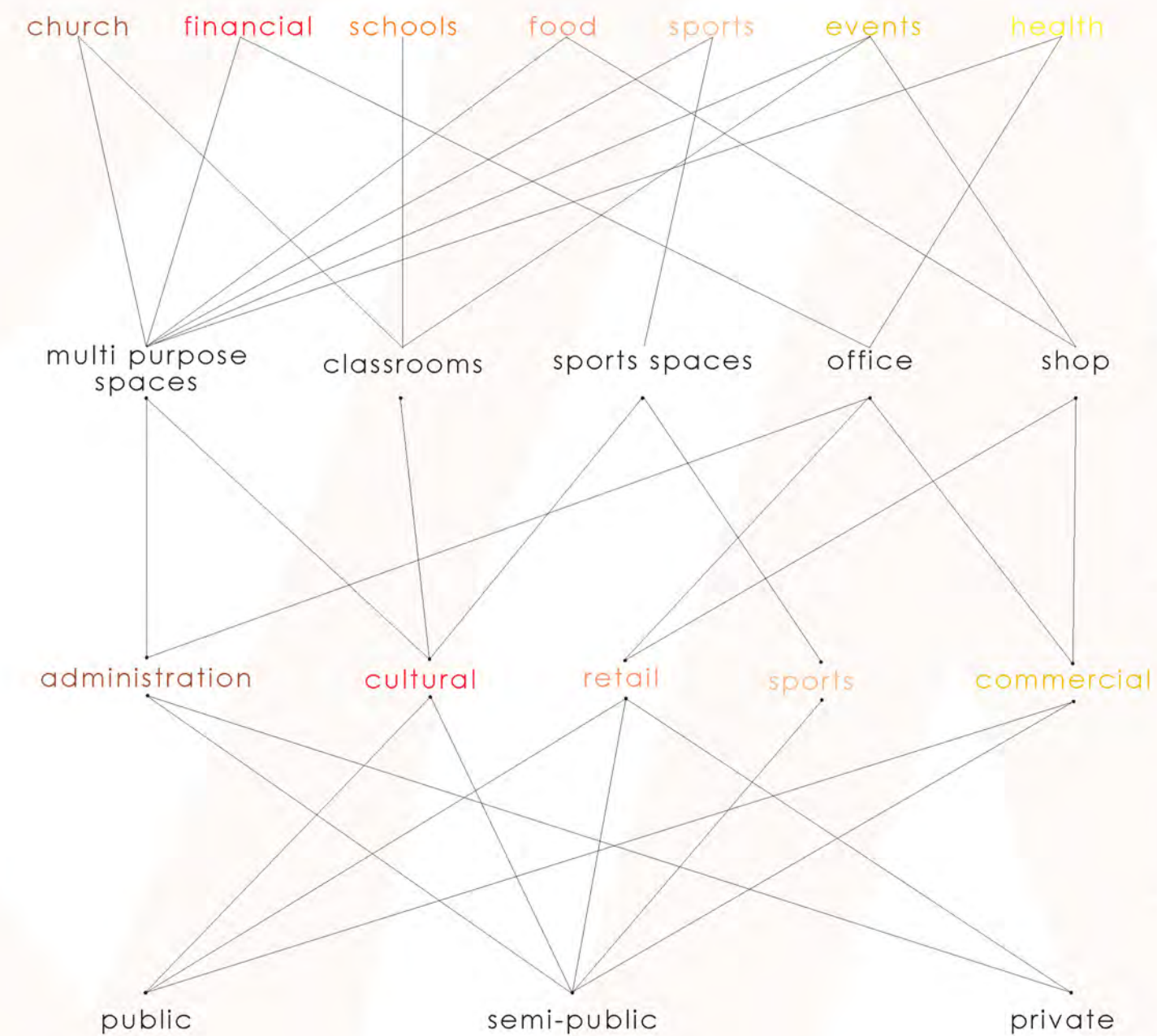


■ church  
 ■ financial  
 ■ schools  
 ■ food  
 ■ sports  
 ■ events  
 ■ health



## community activities

community centers are public locations where members or visitors of a community gather for group activities, social support, public information, entertainment, and other social purposes. activities within a community defines the character created by the center. depicted above are community activities available around a 1/2 mile radius (15 min walk) from the site. the mapping of these essential community activities was necessary to determine the existing and necessary community activities on the site.



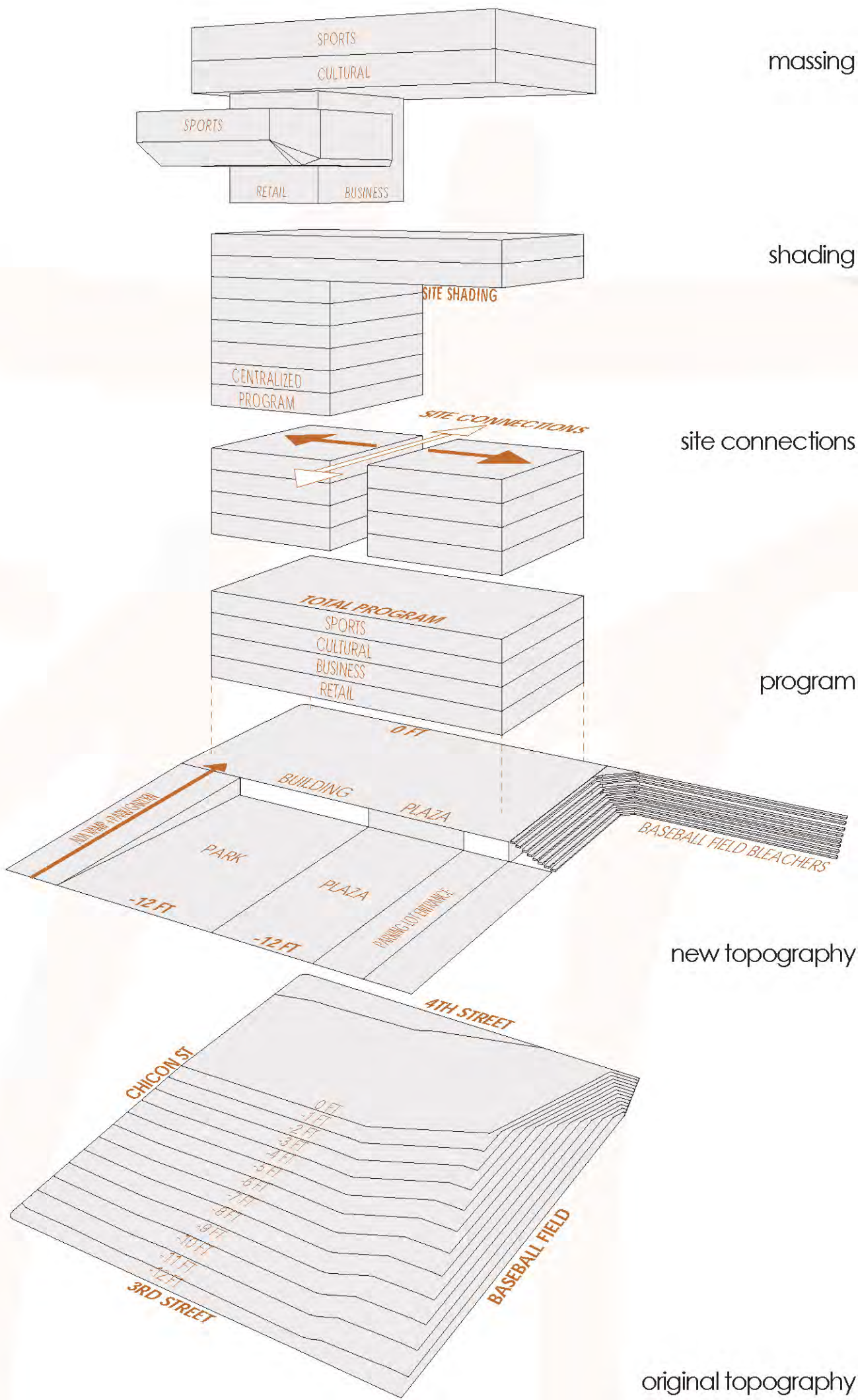
## program

community activities promote resident involvement, not just in programming, but also by building relationships between people of all ages and backgrounds within the community. activities within a community give people the opportunity to meet new people and grow to love their town and community. these activities translate to the building spaces, promoting social interactions within and take into consideration the historic and upcoming functions necessary to celebrate east austin as a diverse community.



concept development

the site encompasses a 200 ft x 300 ft lot (60,000 sf) that declines twelfth feet from 4th street to 3rd street making up the **original topography** along the site. in an effort to develop the site, the existing baseball field and declining topography are taken into consideration. the **manipulated site** incorporates a park/plaza responding to the residential side along 3rd street and an ada ramp along the declining chicon street. as a response to the multi-story plaza saltillo buildings, a raised platform is incorporated into the site where the rest of the **program** sits on and parking is tucked in below the platform. setting the total program on the platform, **site connections** are then explored. through a split of the massing, 4th street developments and 3rd street single family homes are connected through the site. in an effort to create a habitable space for the community 24/7 the split program is stacked, creating a **shading** device for the plaza below. the shading device is created by the cultural and sports functions in the building that are placed above the ground floor. lastly, the **massing** is created by three volumes taking into consideration the necessary functions in the community.

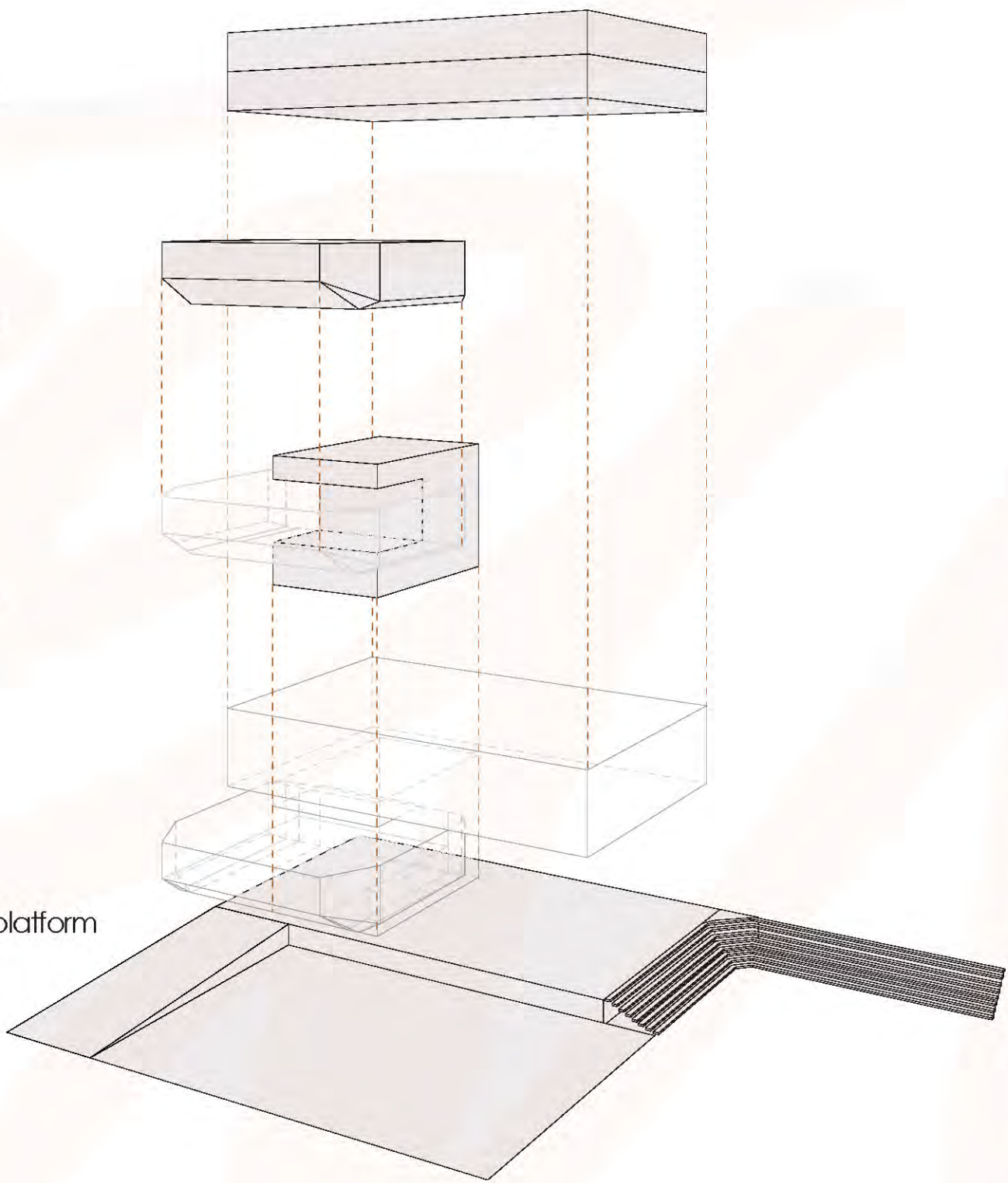


mass 3

mass 2

mass 1

raised platform



massing

the building is made up of three stacked volumes and a raised platform. the **raised platform** allows for the foundation to incorporate a park, plaza, and parking underground. corresponding to the single family homes and need for more park area, the raised platform integrates a shaded park area and a sloped garden. in addition, the platform connects to the existing baseball field through the incorporation of bleachers attached to the platform. **mass 1** is designed as a retail and commercial volume extending from the plaza to the shading device above it. the mass also provides support for mass 2 and mass 3. **mass 2** encompasses part of the sports area in the program. it incorporates and takes on the form and dimensions of the existing roller derby track on the site. the mass depicted from the dimensions and needs of a roller derby space, created a parametric semi floating mass that sits and is supported by mass 1. lastly, **mass 3** incorporates the cultural area and the majority of the sports area in the program. the design of the mass 3 not only provides shading to the plaza underneath but also fills the roof with athletic activities that make the roof a place of entertainment and city views.





the hybrid





4th street

|||||bike station

bleachers

bleachers

baseball field

chicon street

bus station

9 ft

7.5

5.5

3.5

1.5

building/plaza 0 ft

park -12 ft

plaza-12 ft

3rd street





-22  
parking

0 15 30 45 ft



1. lobby
2. outdoor stairs
3. parking
4. ramp
5. storage
6. greenery



-12  
parking + plaza

0 15 30 45 ft



1. lobby
2. outdoor stairs
3. parking
4. up/down ramp
5. concession stands
6. park/plaza







the building is lifted off the ground allowing for an open-air parking garage, exposed to light, fresh air and nature. the paid parking lot is designed to serve as a revenue collector for the building and the community itself. ramps and stairs connect each floor but also to the park and plaza outside and on top of the parking.



designed to promote human interaction and serve as a social hub for the community, the park contains a garden with ada accessible walkways, seating areas, open grass areas and concessions stands. trees are placed all over the park providing shade throughout the day allowing users to use the park all year long.





0  
ground level

0 15 30 45 ft



- 1. lobby
- 2. restrooms
- 3. rental office spaces
- 4. retail rental spaces
- 5. plaza
- 6. baseball bleachers



+15  
rental offices

0 15 30 45 ft



- 1. lobby
- 2. restrooms
- 3. rental office spaces







rising from the parking lot and park, leveled with 4th st., a plaza is designed as a veranda-like public space shaded by the building. the community's culture is celebrated through art and graffiti painted by the community residents on floor tiles, 90 feet tall retaining walls and banners.



the first, second and third floor rectangular volume consists of rental office spaces available for community business owners. these spaces are designed as areas for businesses to be close to the community and keep revenue within the neighborhood, thus helping growing east austin through its existing residents.

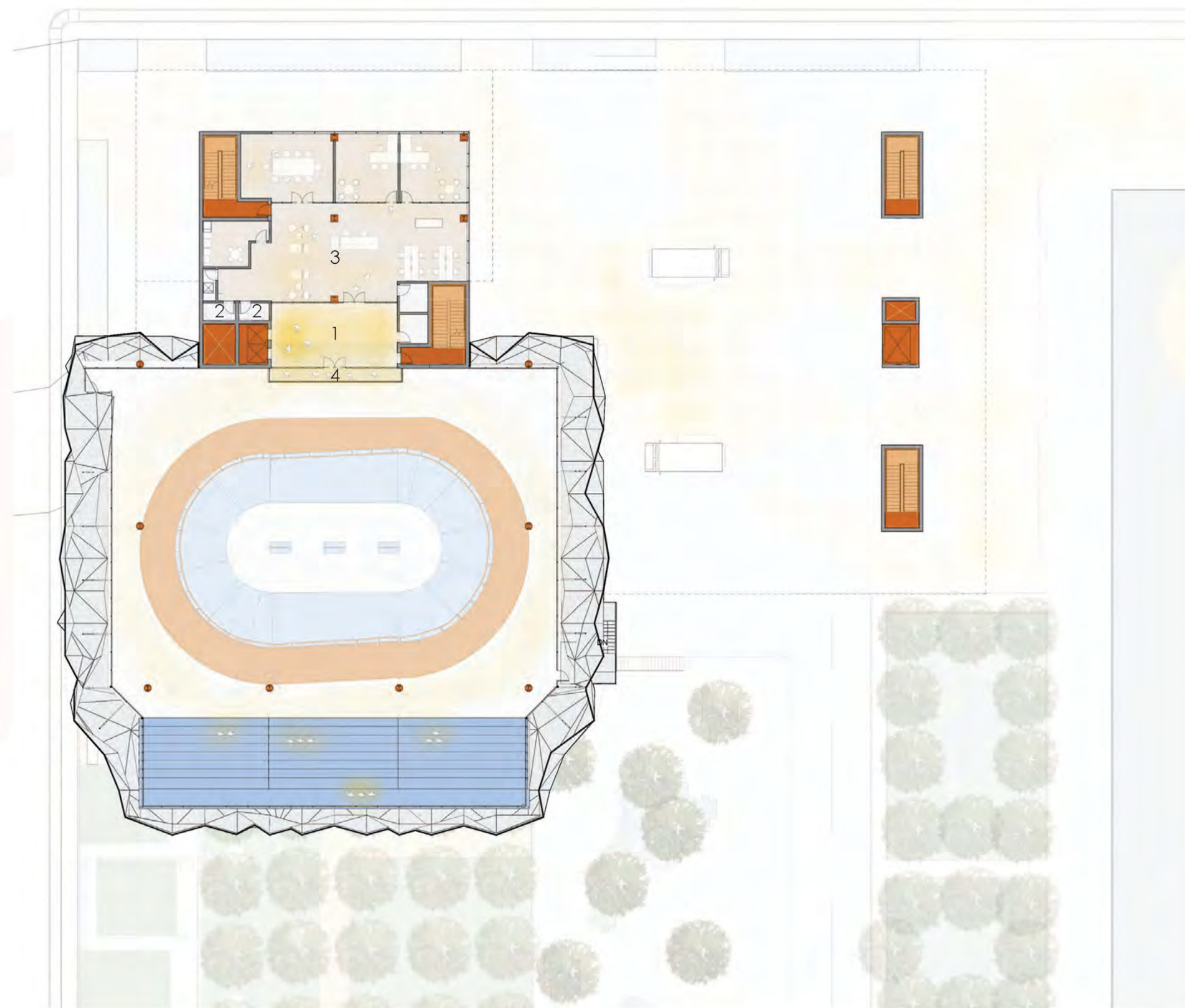




**+30**  
roller derby + office spaces

- 1. lobby
- 2. restrooms
- 3. rental office space
- 4. roller derby

0 15 30 45 ft



**+45**  
office spaces

- 1. lobby
- 2. restrooms
- 3. rental office spaces
- 4. roller derby lookout

0 15 30 45 ft







the parametric volume adjacent to business and retail spaces is designed primarily to house the existing roller derby track but also serve as an event center for the community. through wits open and flexible area, performances and sports events are hosted by the residents bringing in revenue to their own community.





+60  
cultural level

0 15 30 45 ft



- 1. lobby
- 2. restrooms
- 3. multi-use classroom
- 4. multi-use gallery
- 5. outdoor terrace



+75  
cultural spaces

0 15 30 45 ft



- 1. lobby
- 2. restrooms
- 3. multi-use large workshop
- 4. multi-use medium workshop
- 5. multi-use small workshop
- 6. lounge areas







cultural floors are designed as open and flexible to accommodate a variety of events such as art galleries, reception areas, yoga classes, dance classes, pilates classes, and community meetings, in the space depicted above, thin walls are hung from the above structure allowing for a flexibility in art displays.



the cultural volume consists of different size workshops and classrooms also designed with an open and flexible concept allowing for a variety of community activities to happen over the years.





+90  
sports spaces

0 15 30 45 ft

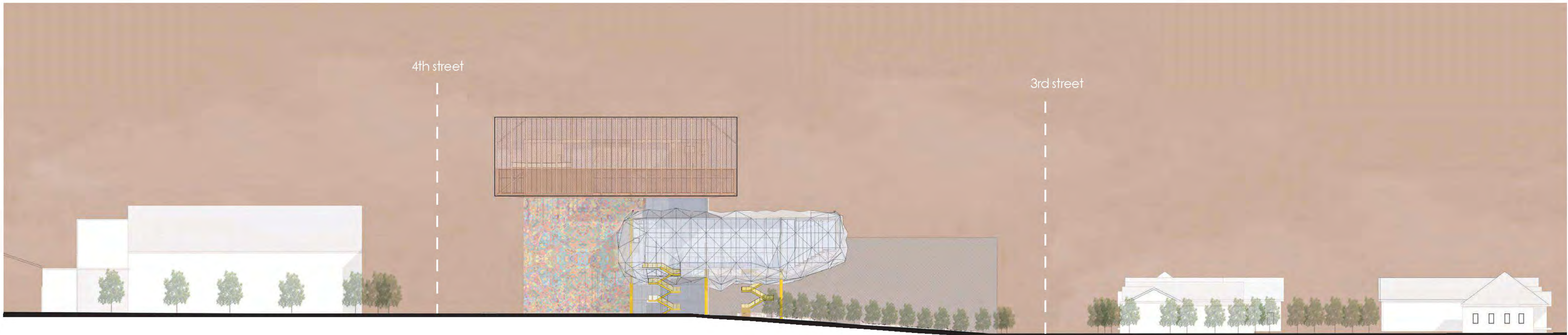


1. lobby
2. restrooms
3. pickleball courts
4. basketball court
5. volleyball court
6. viewing/seating areas



the rooftop of the building is a n open-air sports floor with a variety of existing and new sports courts for the community to enjoy day and night. the floor is accessible through the inside of the building but also from the exterior stairs and elevator on the plaza floor.





context elevations

0 30 60 90 ft

taking into consideration the site's slope and the divide in building's height from 7th street to 3rd street, the community center responds to its context. the incorporation of a park and plaza along 3rd street responds to the single family homes on the south side. as a comparison, height of the building is set on the north side, responding to the mix-use and business side of the site.





east elevation

0 10 20 30 ft

the plaza is designed as a veranda-like public space shaded by the building which is supported by three 90 feet tall masses with circulation elements such as fire stairs and an elevator. as an effort to create a place for the community, graffiti is used as art representing the community the austin texas graffiti artists.

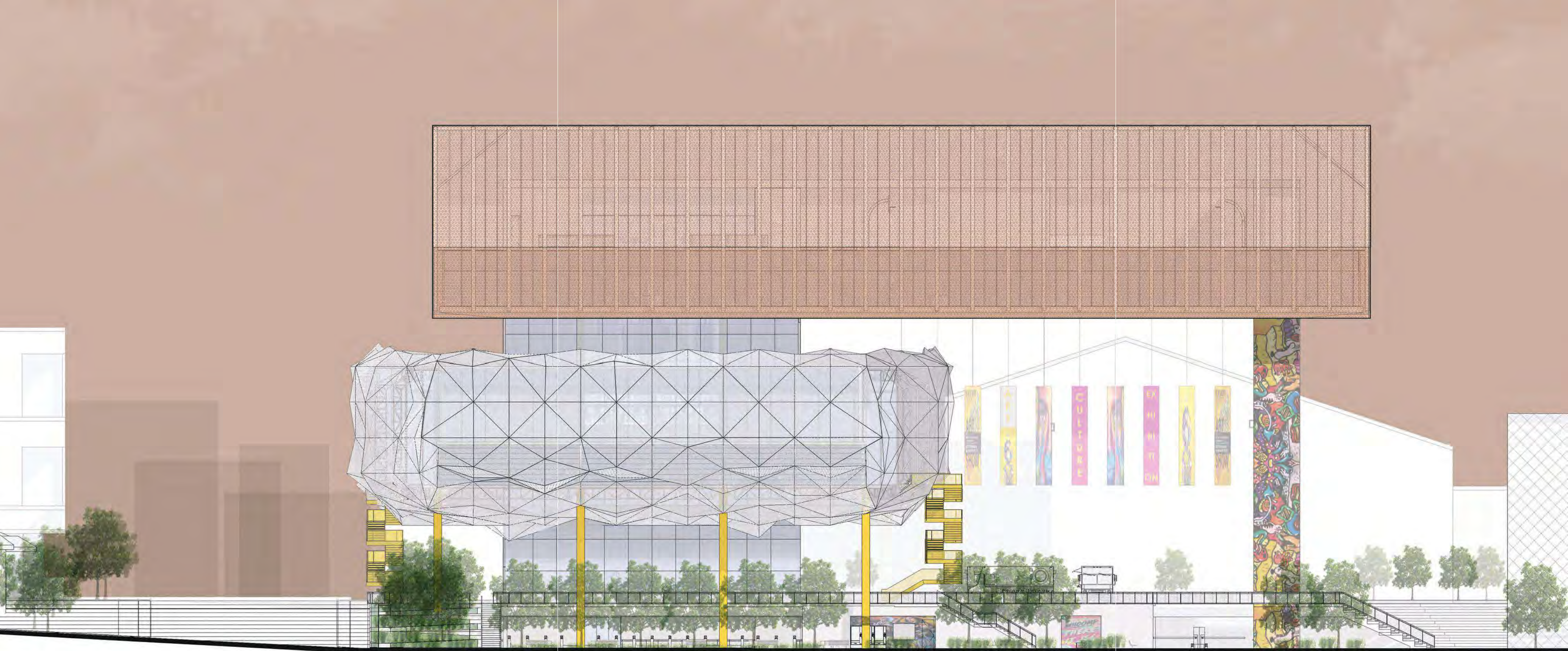




the spaces throughout the building are designed to promote interaction between each space but primarily interaction between users. the main circulation is centered in the building, allowing for people to connect and interact in each floor.





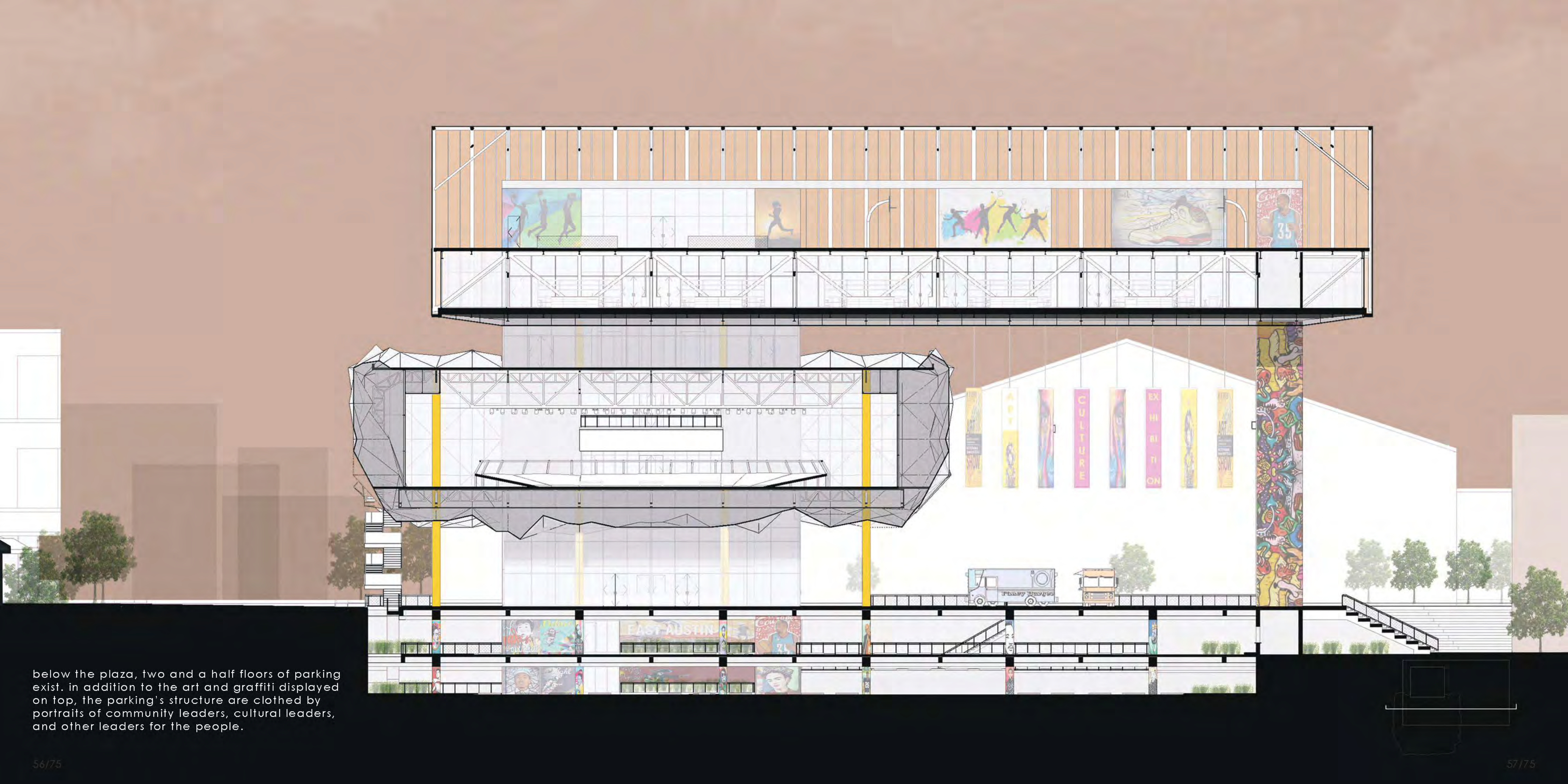


south elevation

0 10 20 30 ft

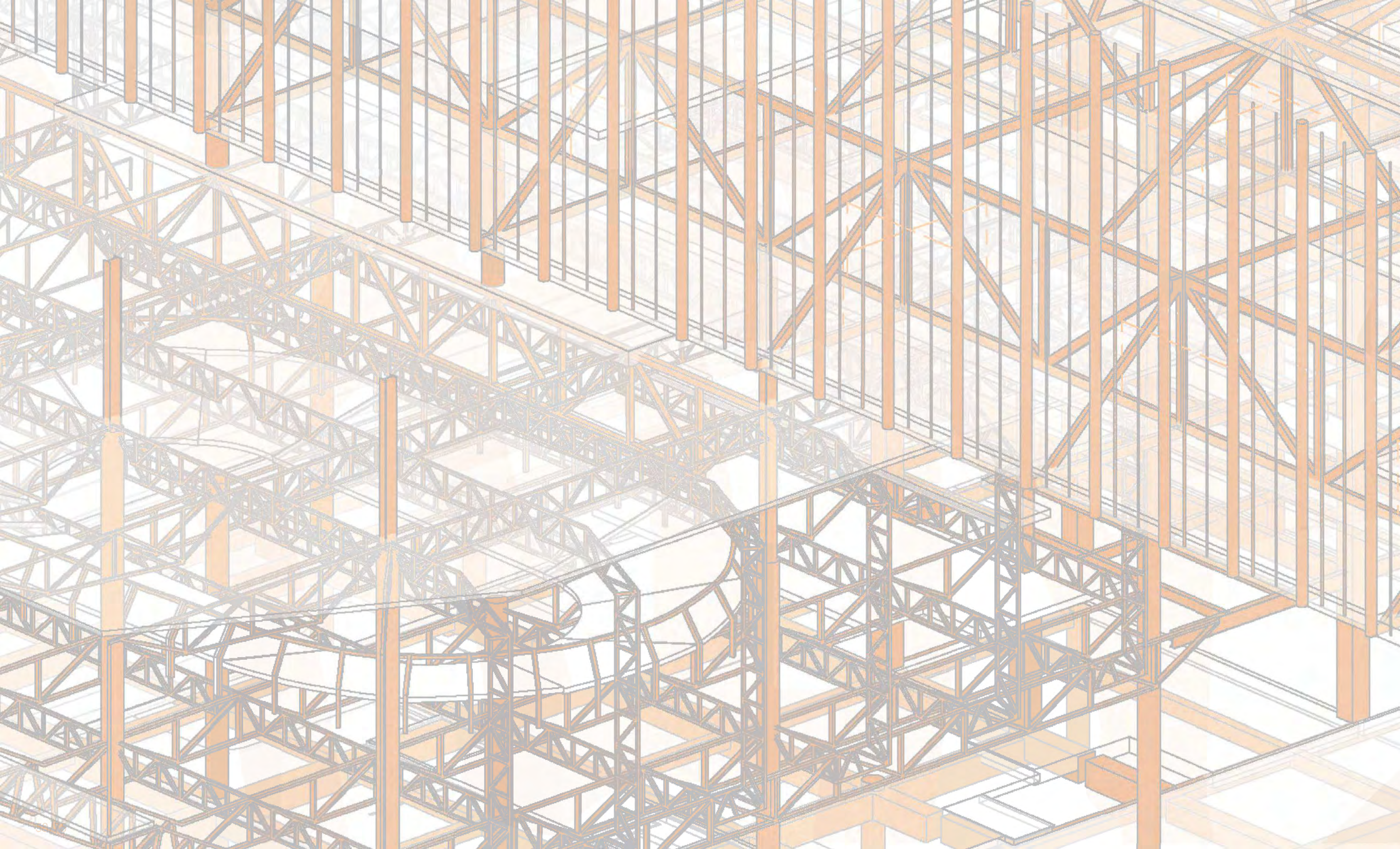
the community center is a space for people of all ages and backgrounds to come together as one. the veranda-like plaza is roofed by banners with announcements of upcoming events within the building keeping the community aware of events they can all take part in or attend.





below the plaza, two and a half floors of parking exist. in addition to the art and graffiti displayed on top, the parking's structure are clothed by portraits of community leaders, cultural leaders, and other leaders for the people.



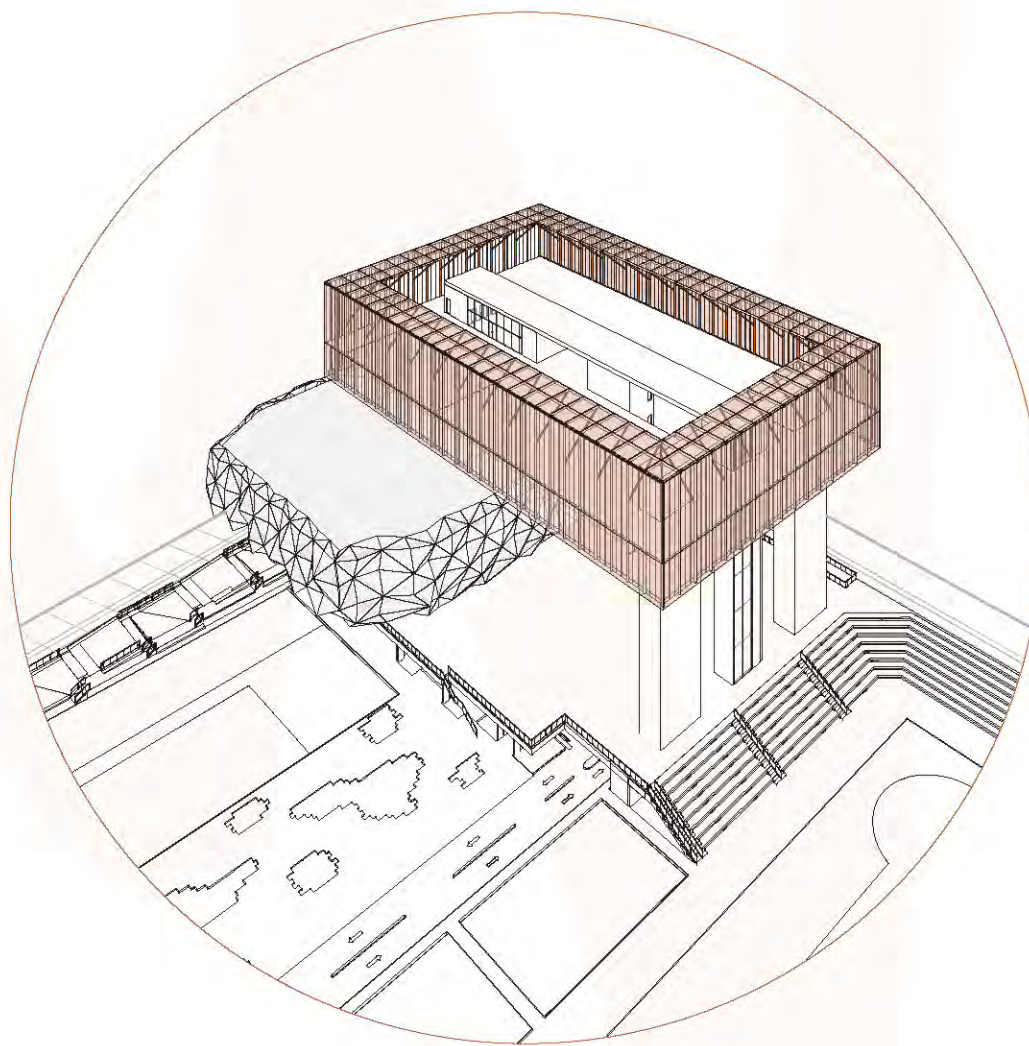


## tectonics

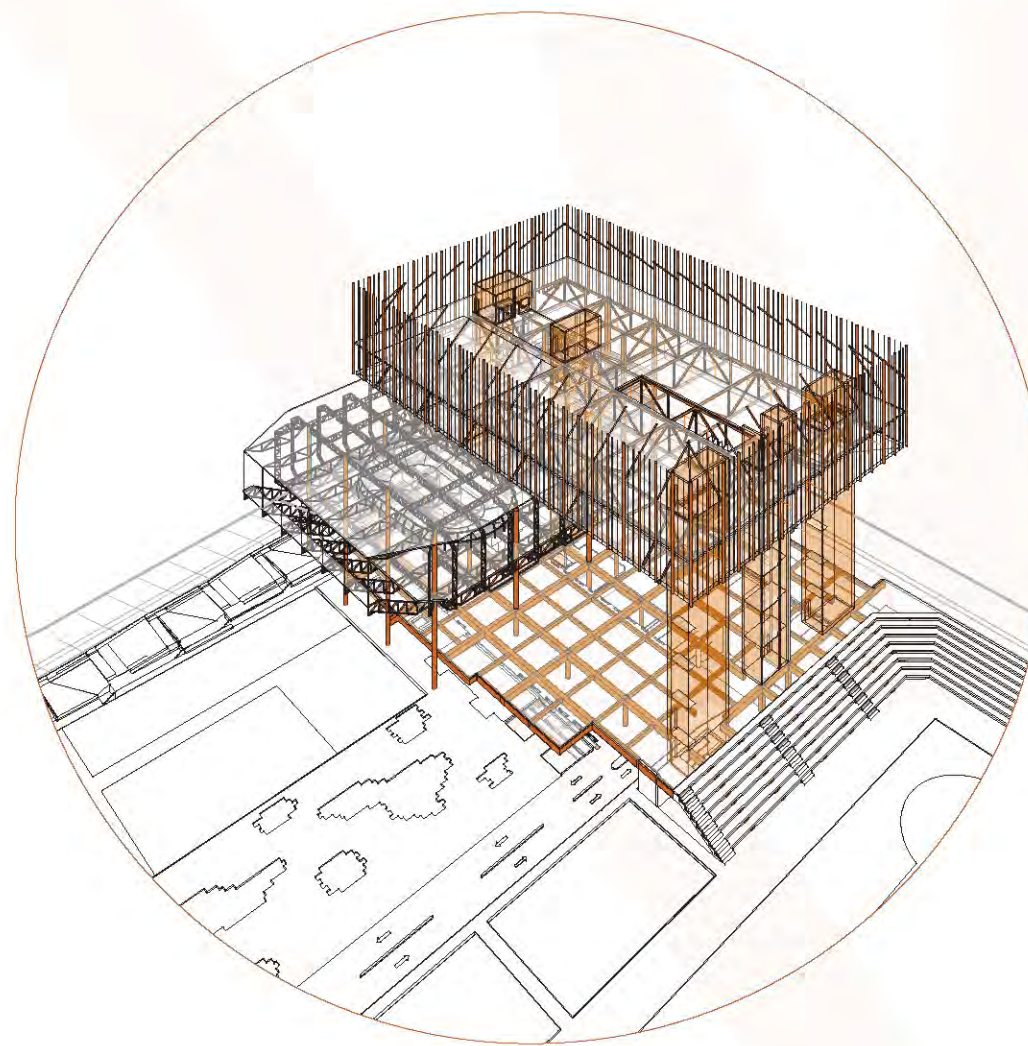
the architectural form is a result of its construction, structure, representation, and materiality - architectural tectonics. throughout the years, architectural philosophers created a push and pull on the meaning on architectural tectonics. However, the meaning of tectonics remains: the belief that the construction of architecture is worthy of being expressed in the design of architectural space. It seeks the intersection of the design of a space and the reality of the construction necessary for the built form to exist.



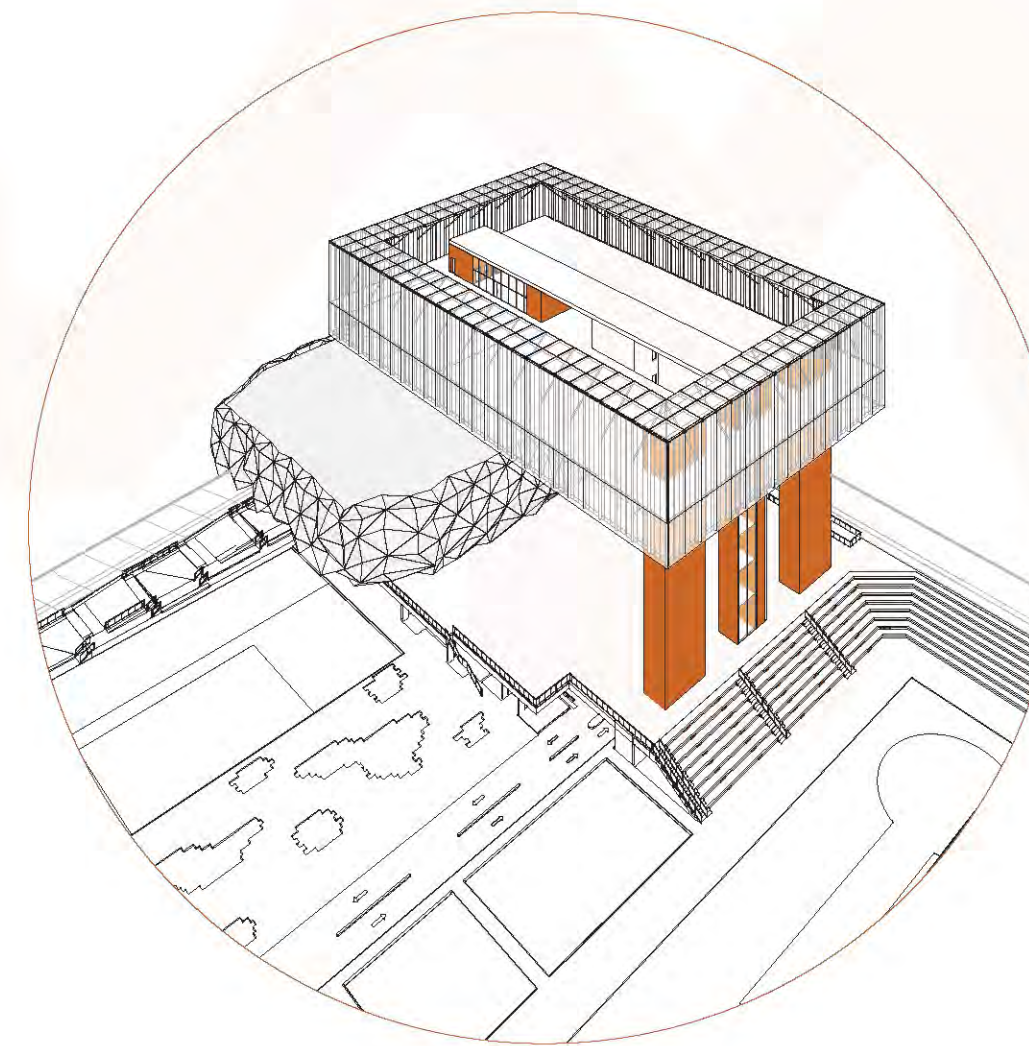
building



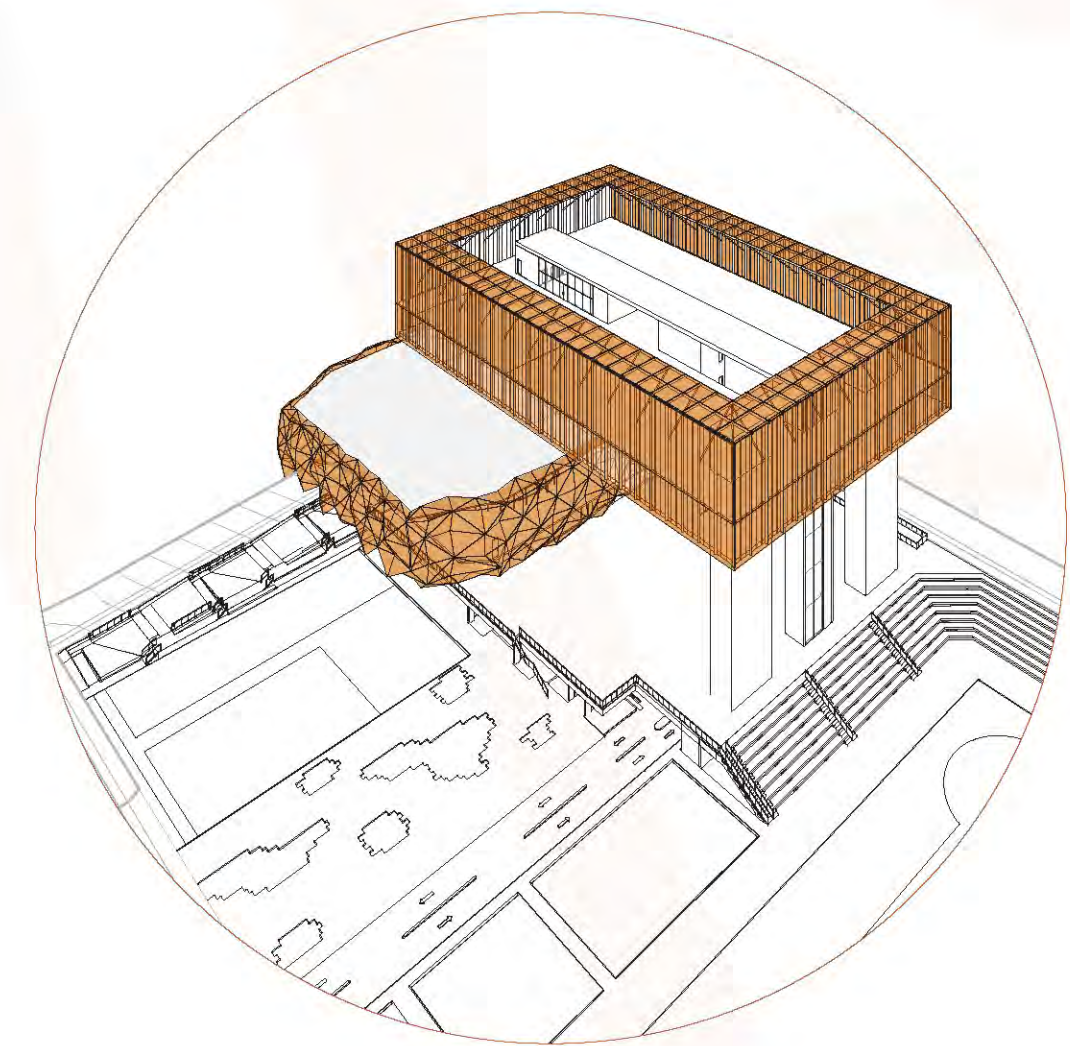
structure



circulation



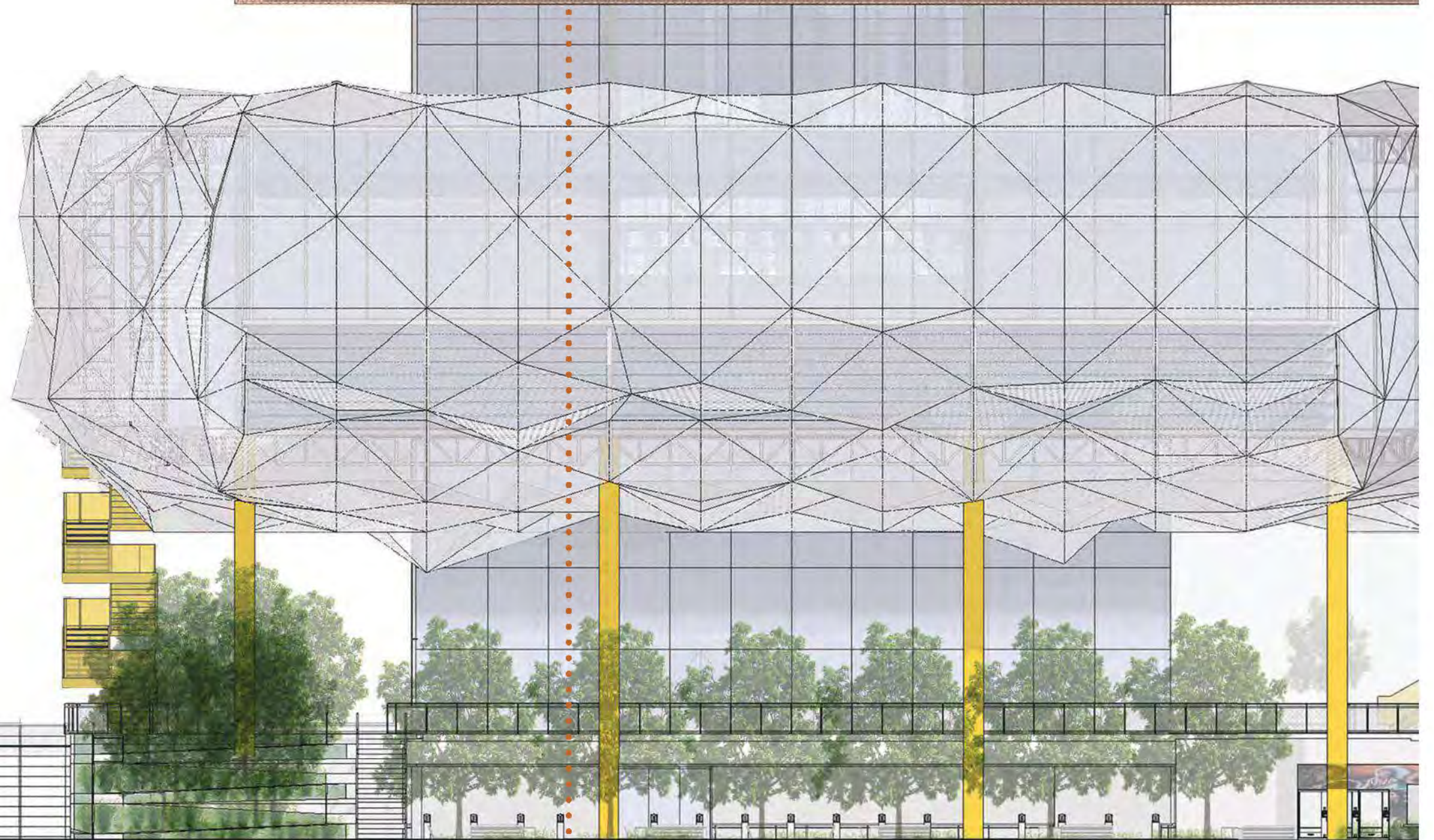
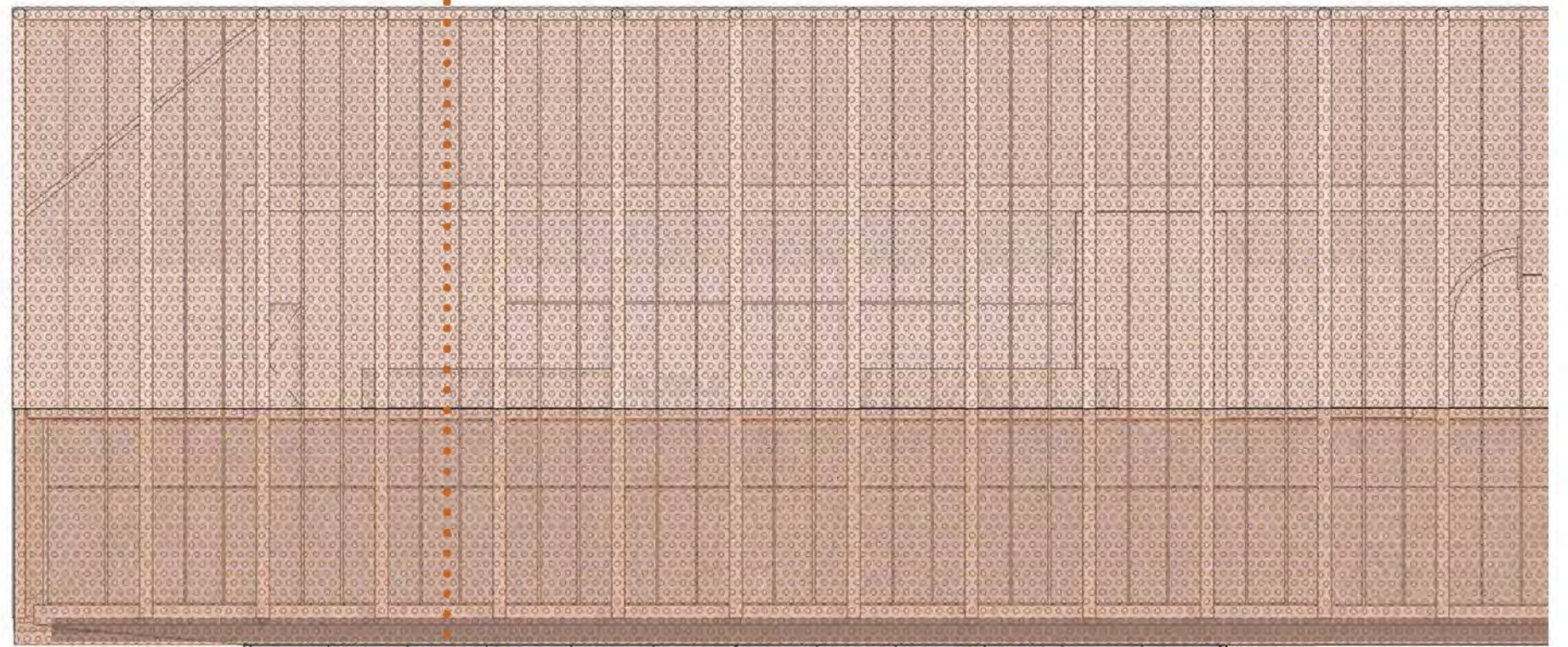
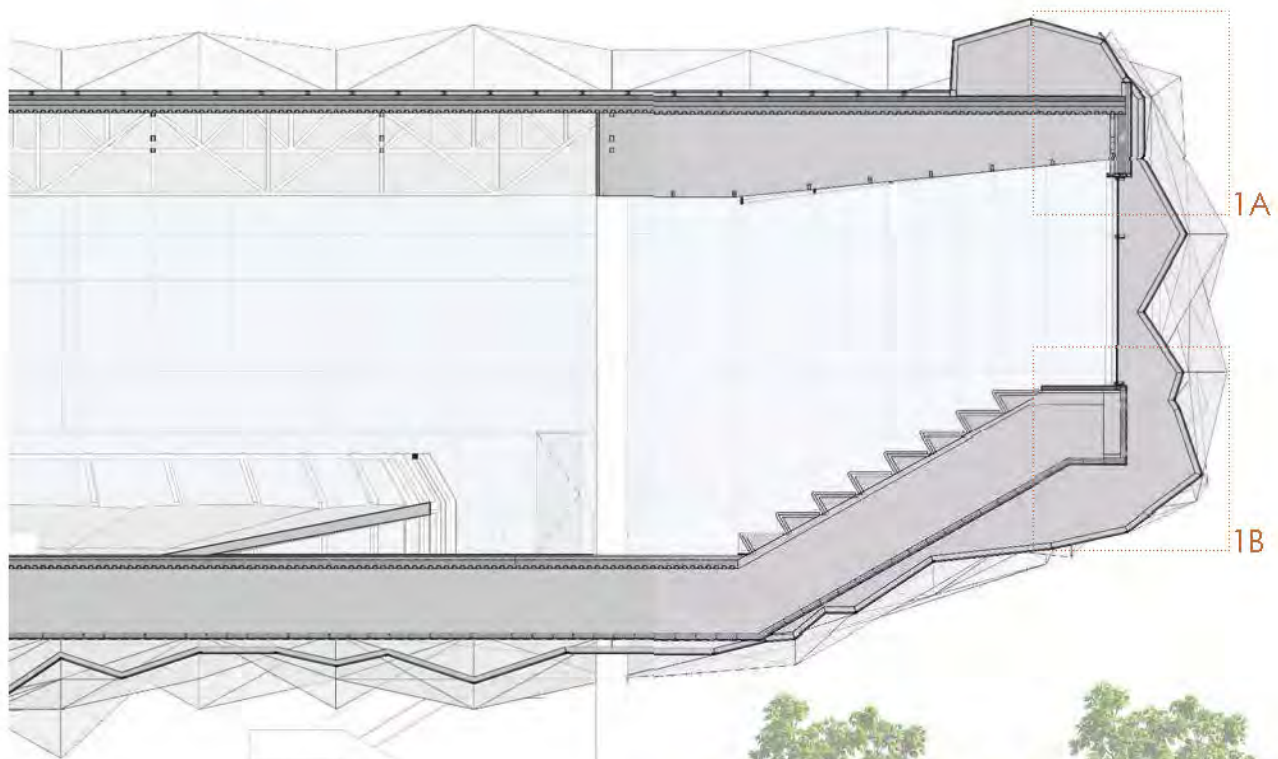
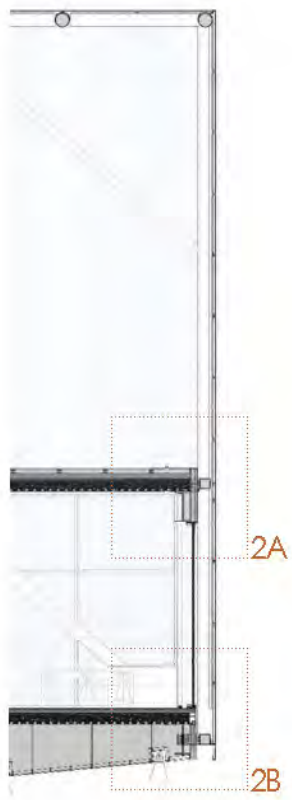
skin



the term tectonics derived from the greek word "techne" and "tekton" which translated to carpenter and builder. rooted in the ancient civilizations of greece and rome, during the 18th and 19th century, architectural theorists shifted tectonics from something specific and physical to a more generic notion of making.

tectonics is defined as an integrated system of architectural expression primarily based on plans and structure of a building, and secondarily ornamentation. through the exploration of tectonics, the built object created offers a structure for spaces and functions to exist simultaneously and be expressed in and out.



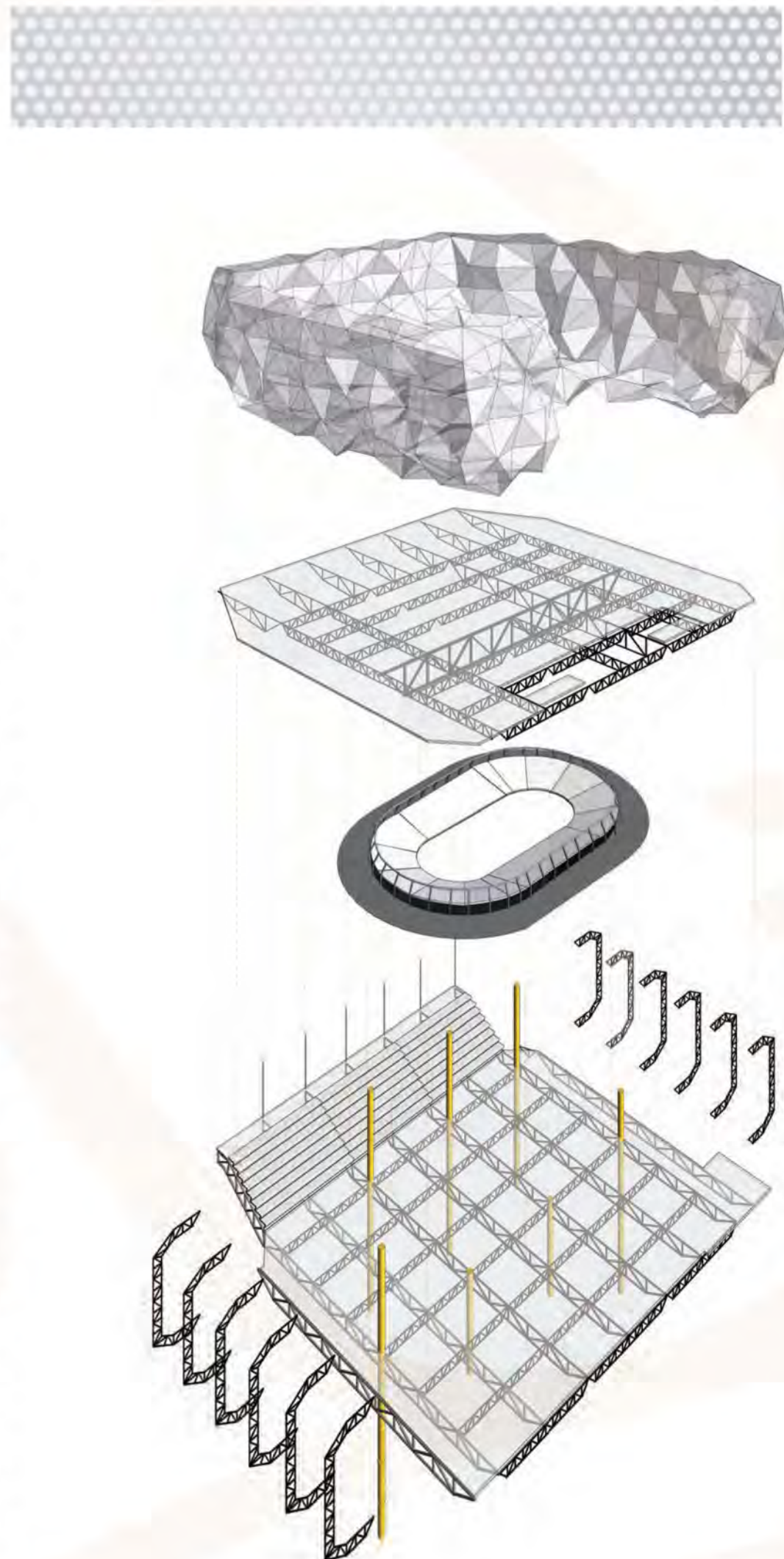




## roller derby mass

the existing site is located along a park that integrates spaces for sports such as baseball, pickle-ball, and roller derby. **roller derby** is a full contact sport that originated in the 1880's in chicago. during the 20th century, texas became the home of the best roller derby teams in the country. competitions were started in texas, making the sport known all throughout the country. despite the importance and yearly competitions in texas today, there is not a designated space for practice or competition events. as an effort to integrate the needed and existing program of the design, the roller derby track and requirements created one of the main masses in the building. **the mass** within the building celebrates the importance of the sport in texas.

the mass is designed as a multi-use space with a focus on roller derby. the mass is composed of **structural trusses** all around creating the floor, the walls, and the roof. as an attempt to represent the sport culture, **the skin** is composed of parametric perforated metal panels and glass. the skin is created by triangular metal panels with circular openings. the design of the panels surrounding the mass allows for a **transparency** from the inside and outside, welcoming people to interact in the building's events.



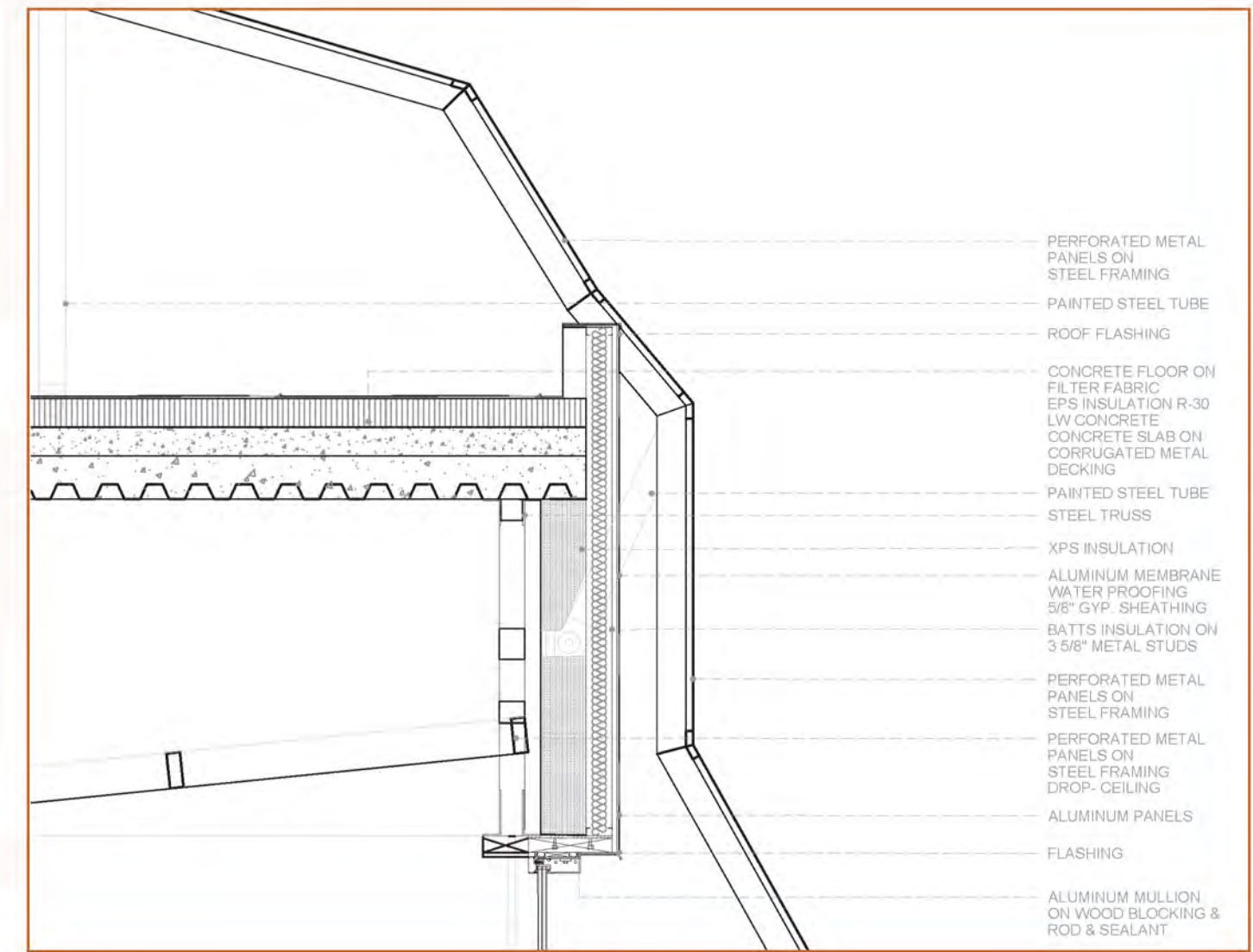
material

skin

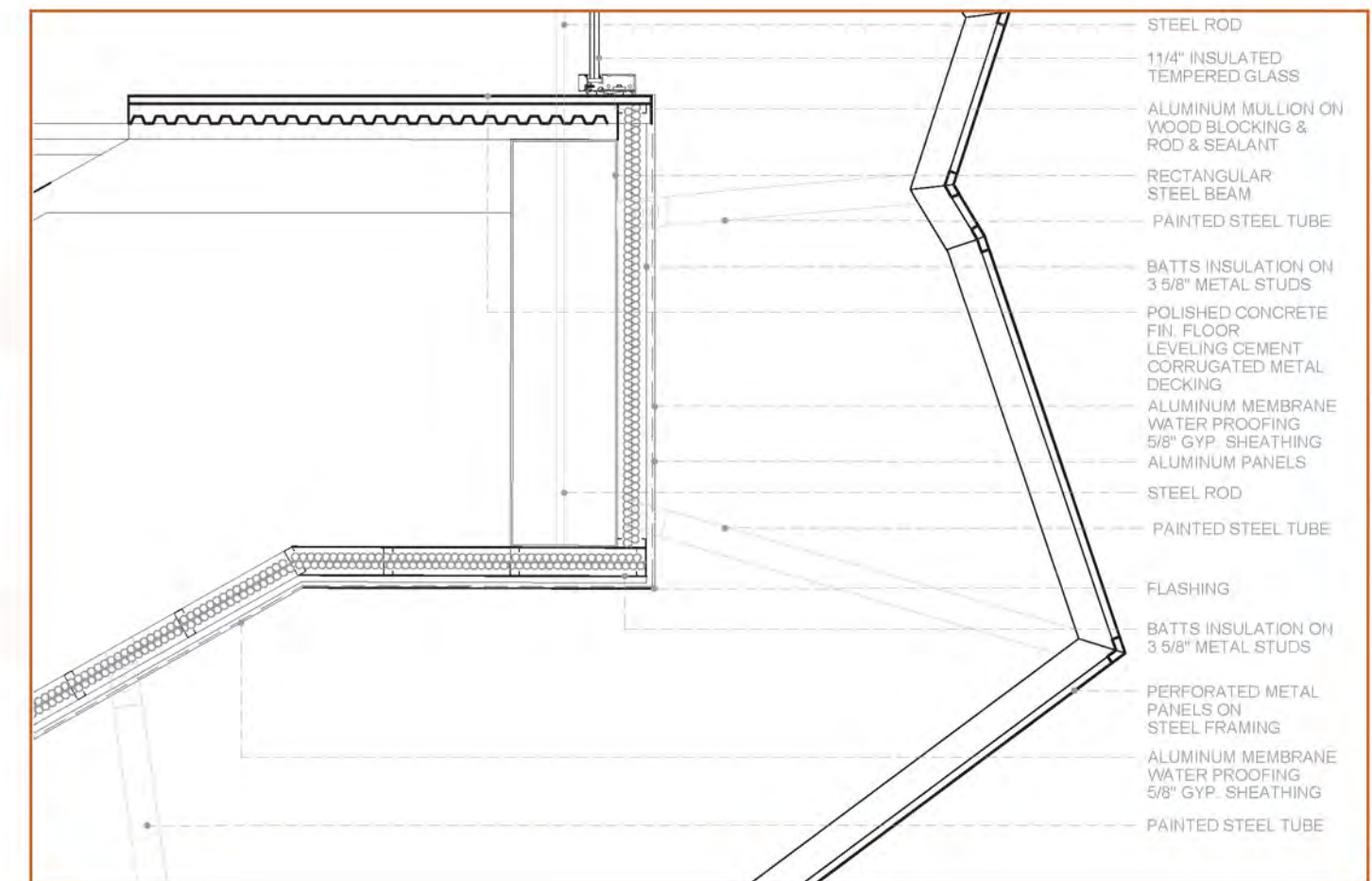
roof structure

roller derby track

floor structure



1A



1B



## cultural + sports mass

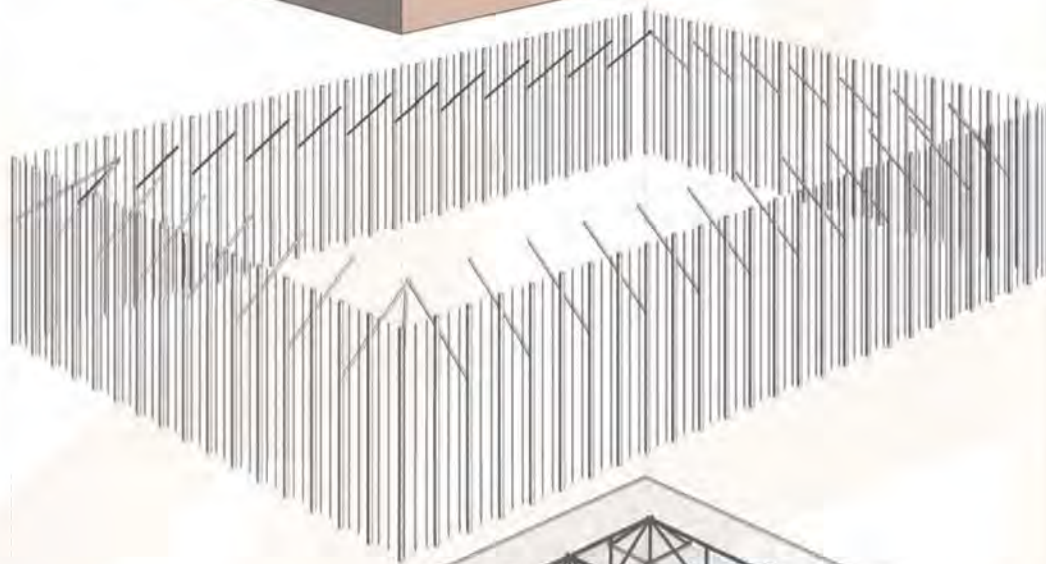
a community center is where members of a community gather for group activities, social support, information, and events, therefore, the cultural spaces are what make up this community center. the mass of these space is multi-functional as it consists of an **enclosed and open floor** for a variety of activities. **the enclosed floor** is where workshops, classrooms, and meeting rooms are located. **the open floor** is an outdoor sports floor with a variety of athletic courts and gathering spaces. **the structure** of the floors are floor to ceiling structural trusses that allow for the cantilever across the plaza below. these trusses are primarily supported by core elements on the ends made of up load bearing walls. in addition, taking into consideration austin's climate and sun path, the mass consists of a **shading skin system** that shades the workshop spaces and acts as bearing walls for the outdoor sports spaces on the roof. the skin is made out of perforated **corten steel panels** extending from the cultural floor to the sports floor. the apertures are designed to be smaller on the cultural floor, providing maximum shading for the interior spaces. in contrast, the apertures of the panels on the sports floors are larger, providing maximum views and air circulation while still providing structure.



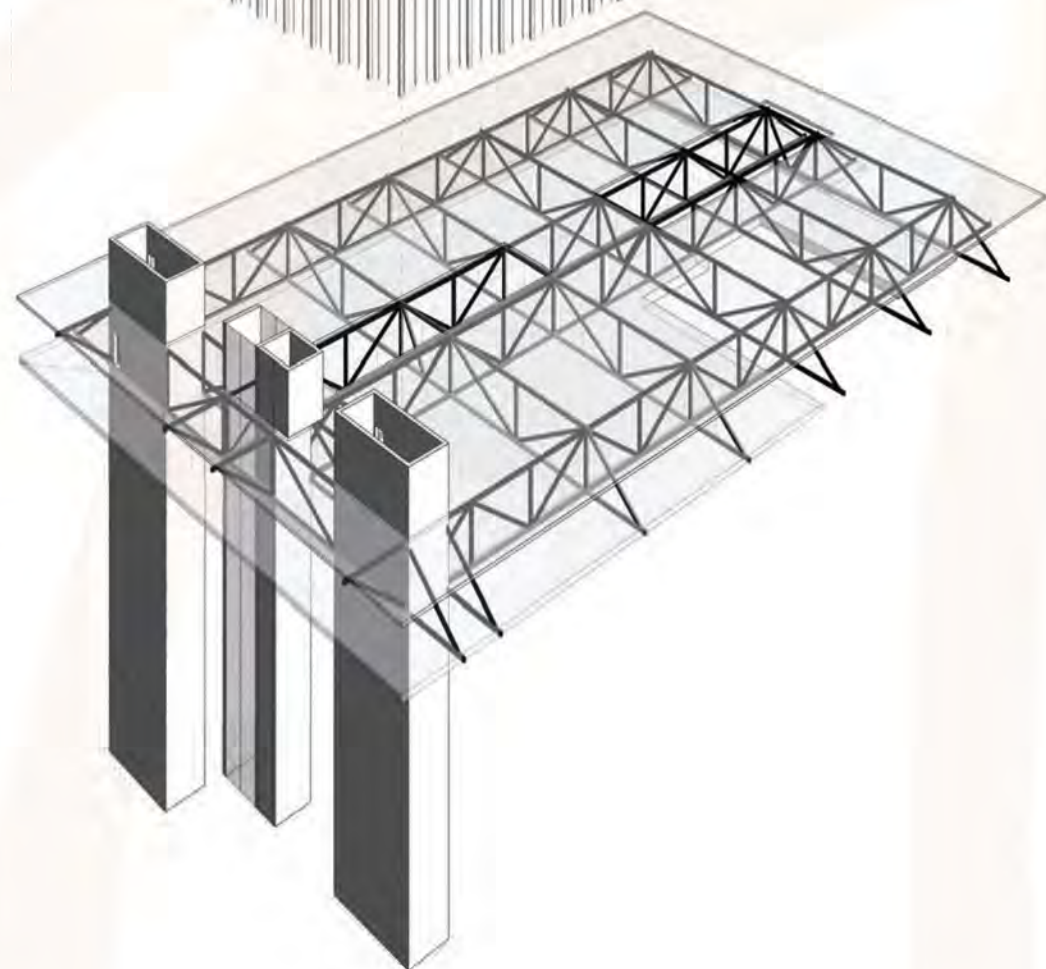
material



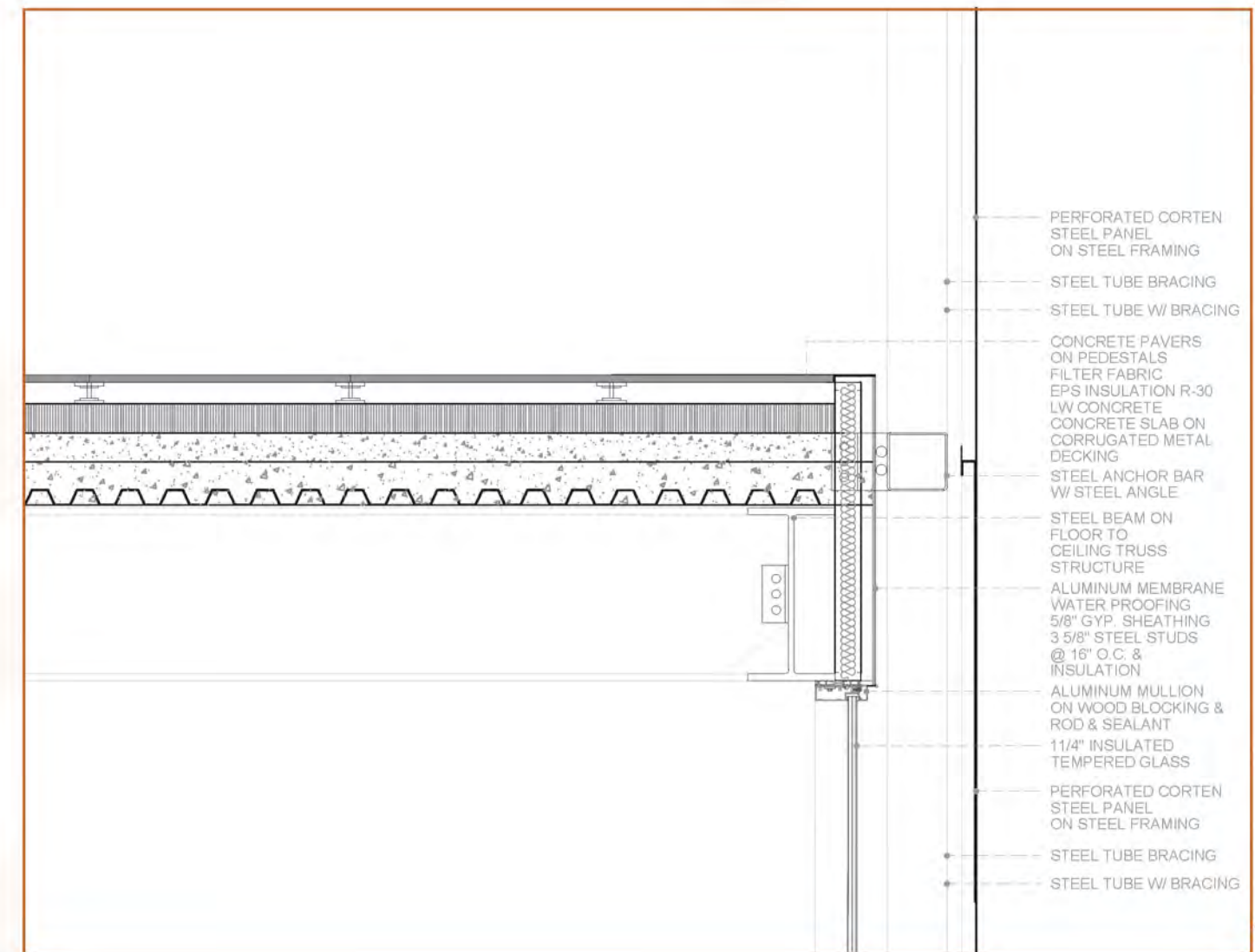
skin



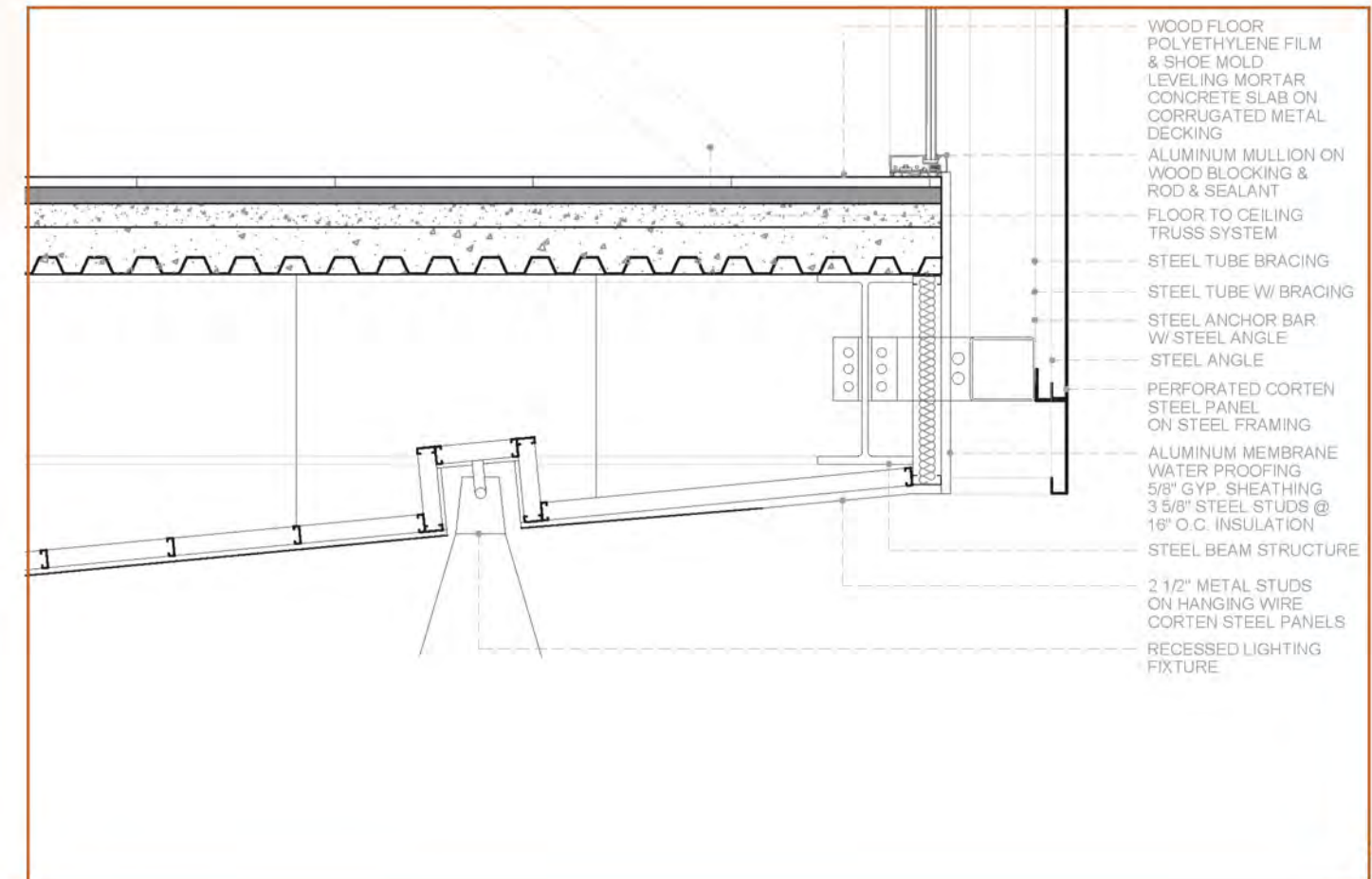
skin structure



structure



2A



2B





## experience

the building's structure and spaces are designed not only to be used in the weekends or in the evening, but 24/7 as community members are able to. people are able to visit the center for special events yearly, monthly or weekly, but also hourly.









## CONCLUSION

just like a community center is for people of all ages and backgrounds, architecture should also be inclusive in all ways. the built-environment should be a blend of context, culture, program, tectonics, and people. i believe that architecture should be a place for everyone to feel welcomed and recognized despite being white or black, able or un-able, rich or poor, young or old.



