

adoptable space
experimental performing arts center

Andreas Wenzel

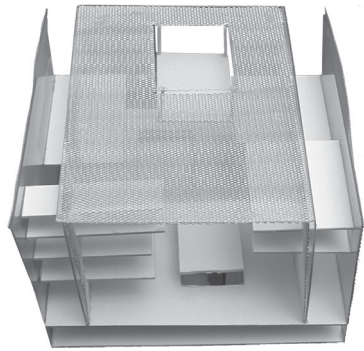
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Thesis submitted to the faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Master of Architecture

Heinrich Schnoedt

William Galloway

Michael O'Brien



dedication

This book is dedicated to Danika, Emil and Paul. May they also get the opportunity to travel and study abroad and expose themselves to different cultures.

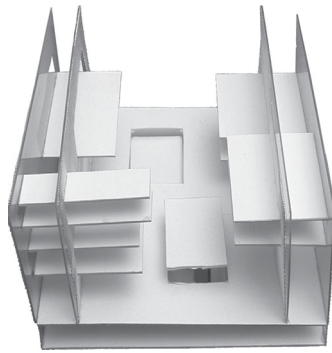
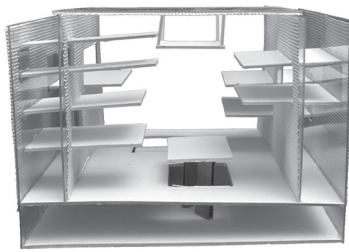


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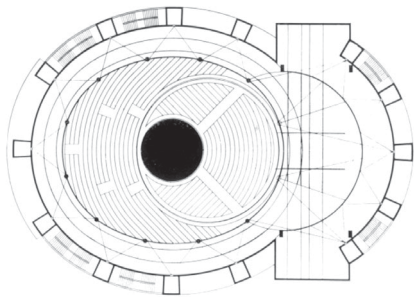
abstract

This project investigates an idea of adoptable space as opposed to adaptable space of generic flexibility.

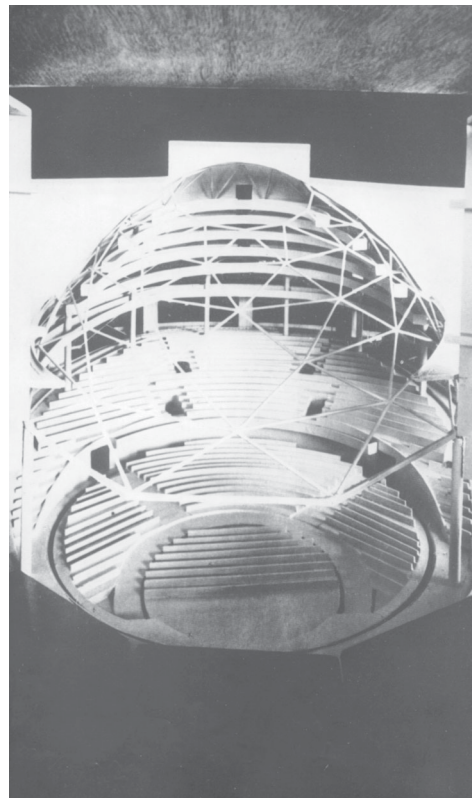
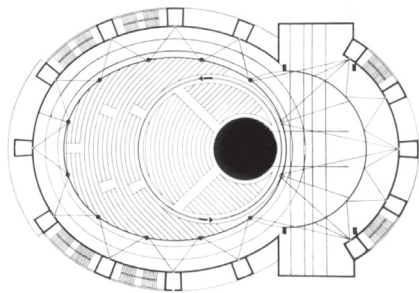
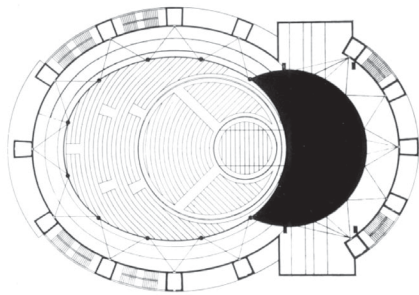
An Experimental Performing Arts Center on a site in Downtown Chattanooga is used as a vehicle to define the nature of space, which offers itself for an architectural adoption.

Simple elements like platforms, walls, doors, windows and curtains are interpreted in a new way and can be used experimentally to let a theater play happen.

Adapting a Place



The unbuilt *Totaltheater*, designed by Walter Gropius, claimed to be a 'Multi-Form' Theater. By transforming from a proscenium into thrust, into arena or theater-in-the-round, it should be 'adoptable' to almost every theater setup.



'Engineering has rarely solved the problems of providing different styles of actor/audience relationship. When engineers announce a technical innovation that will do everything caution is needed especially if they claim to have solved, as no one else has, the problems of either multi-use or multi-form theatre architecture.'

(Iain Mackintosh: *'Architecture, Actor, and Audience'*)



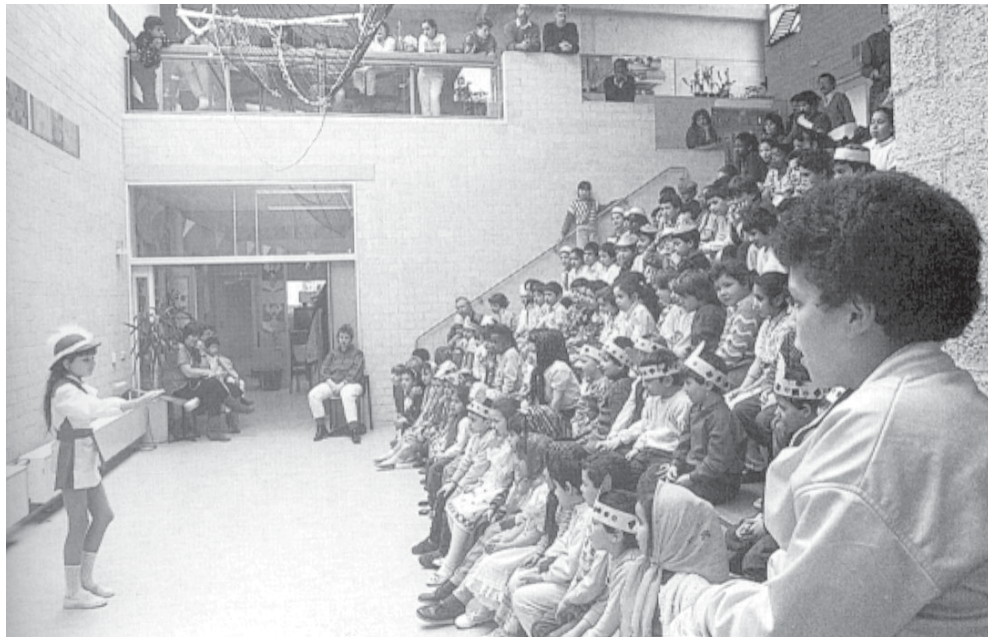
These concept models show the first thoughts about an experimental space. A simple box with movable walls and ceiling can change into different stage setups. The closed box is almost like a black box. By opening one wall you have a framed view out of the theatre space. By moving up the floor and turning down the wall, the box converts into a proscenium or thrust setup. By tilting all four walls the theatre gets an arena shape. By moving the walls further, the boundaries of the space disappear. It is only a single platform and the city creates the new boundary for the theatre.

With a great mechanical effort the space is made adaptable for different situations.

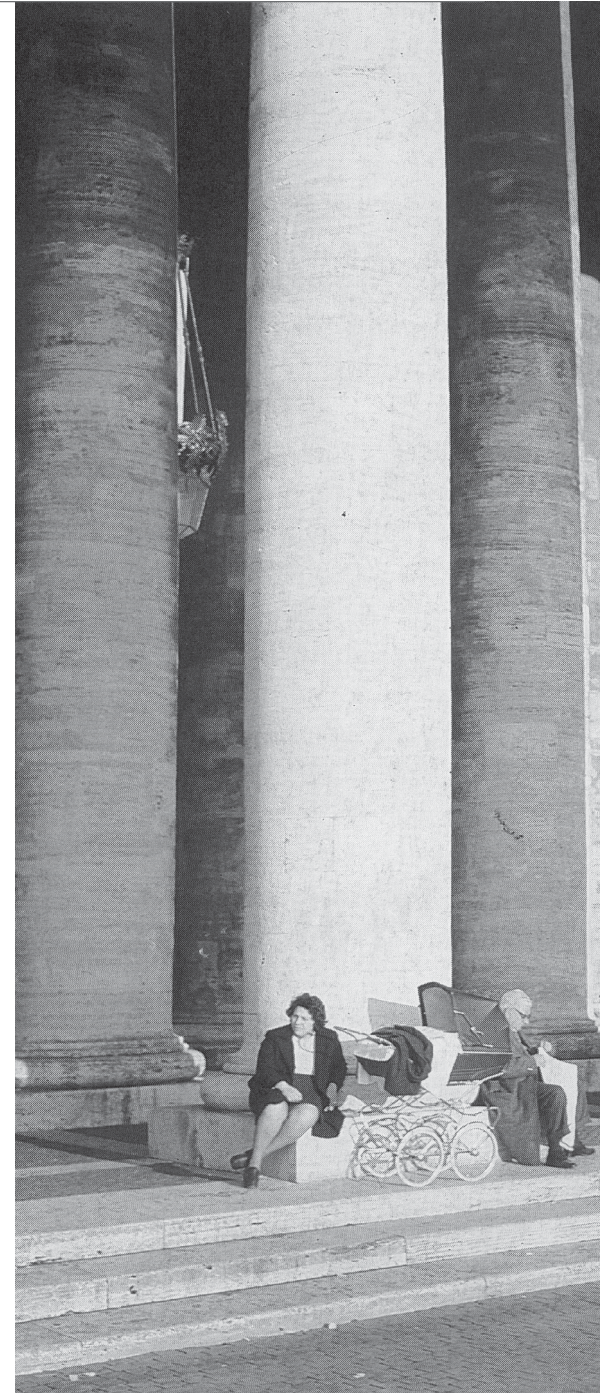
Can the mechanical component be part of the theatre performance? Can one single space really be changeable to accomplish all classical theatre setups? How can the theatre be experimental? Can the mechanical component be part of a theatrical performance?

Adopting a Place

The images on this page show the interior staircase of the Montessori School in Delft, designed by Herman Hertzberger. The stairs are not only designed to bring people from one level to the next. They also offer the possibility to be used as a gathering place, meeting and resting spot or like the picture shows, as a place where an audience could sit to follow a performance.



The image on the right shows the columns of St. Peter's in Rome. People are sitting on the base of the column. The column was not designed as a seat, but by giving it a specific form, multiple possibilities of usage can occur.



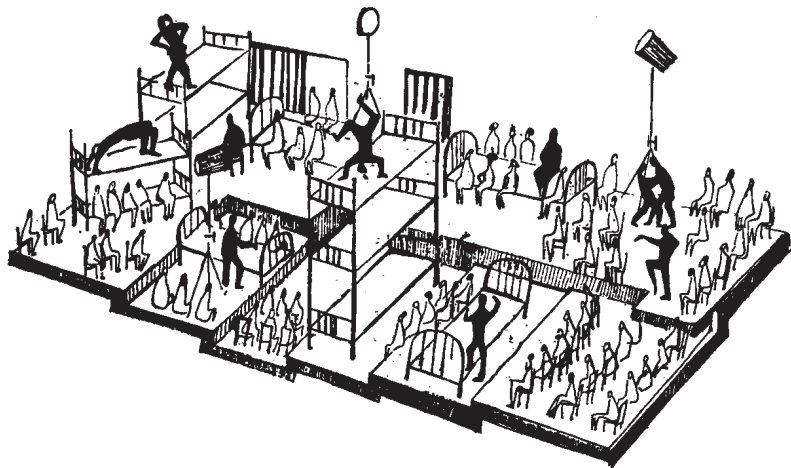
Actors and Audiences



The photograph on the left shows a scene from *The Constant Prince* directed by Jerzy Grotowski based on the text by Calderon-Slowacki.

A fence divides the acting area from the places of the audience. Everybody has a place along the fence. The fence is the dividing element. The fence protects and at the same time allows the audience to get insights into a different world.

The sketch below shows a scene for *Koridian* based on the Text by Slowacki. The whole room is built up to suggest the interior of a mental hospital and the spectators are incorporated into the structure as patients.



The ruin of a submarine shelter in Bremen, Germany is the place for the Theater play '*Das Ende der Menschheit*' (The End of the Human Race). Tanks roll through the shelter, one sees explosions very far away and the audience is continuously moving through the shelter from one set to the next.

There are no comfortable seats as in a regular play and the site lines are by far not perfect.

But the event of walking through the shelter like being on the run for something puts the spectator in a very special relationship to the play. The shelter which was built during the Second World War was obviously not designed as a place for theater plays, but its unique character, the rough, unfinished, concrete surfaces and of course its history made the shelter the perfect place for this kind of theater play.

'When a play activity becomes a play in the theatre a total switch takes place. It puts the spectator in the place of the player. He – and not the player – is the person for and whom the play takes place.'

(Hans-Georg Gadamer: '*Truth and Method*')

Design Process - Development of the Spatial Concept

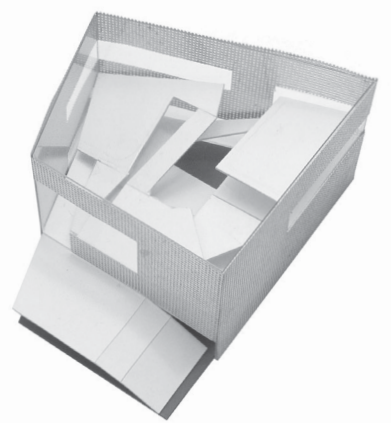
Concept 1

The Theatre is a simple volume. The space is structured by floating subvolumes, which contain the educational spaces. They become part of the Theatre. The boundaries between the performance space and the rooms for edu-



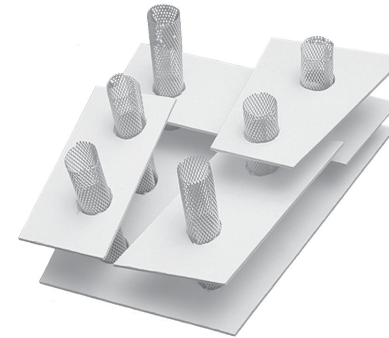
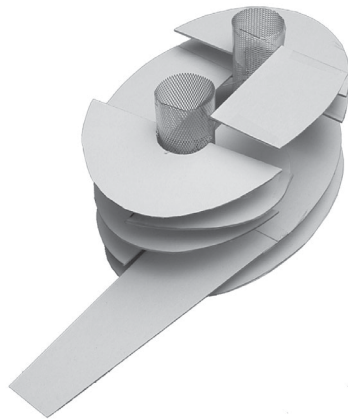
Concept 2

The Theatre is structured by a continuous ramp or staircase. The play as well as other activities can happen on the ramps, stairs and platforms. There are no borders between the playing and the educational



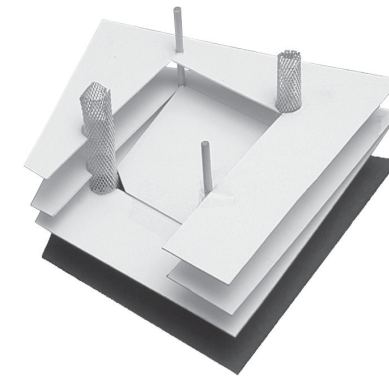
Concept 3

All floating platforms are organized around two huge columns. Beside offering structural support, the columns also act as a vertical connection that contains all service spaces, which are necessary for the use of the



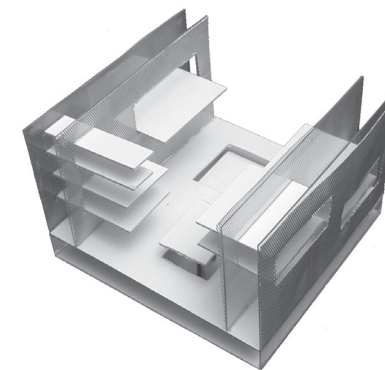
Concept 4

To achieve a better visual relationship, I added four columns. Six points now act as service



Concept 5

The Theatre is a ramp. All educational spaces are organized on U-shaped platforms. Only to service columns support the educational spaces.



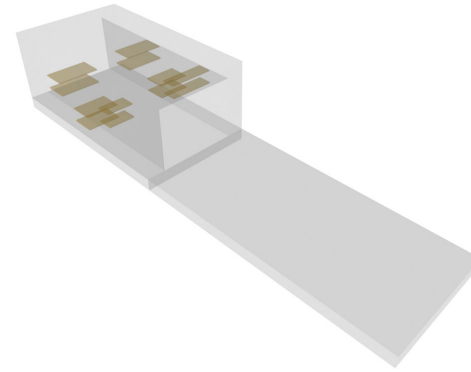
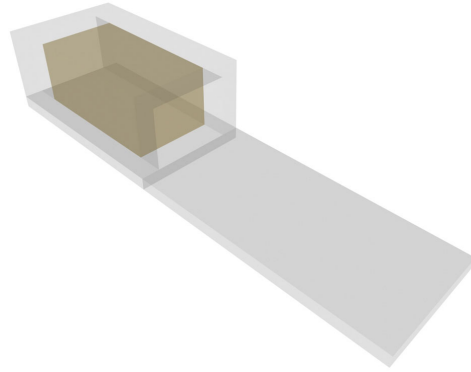
Concept 6

In the final concept, all service elements are organized between two parallel walls. The educational areas are organized on cantilevering planes that float into the main space.



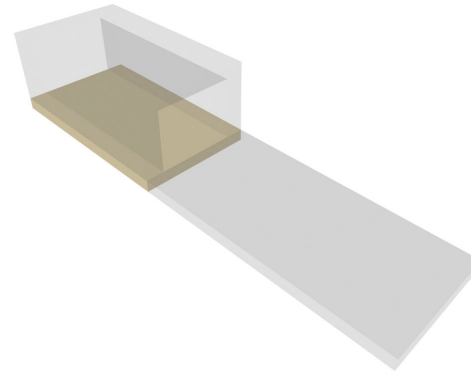
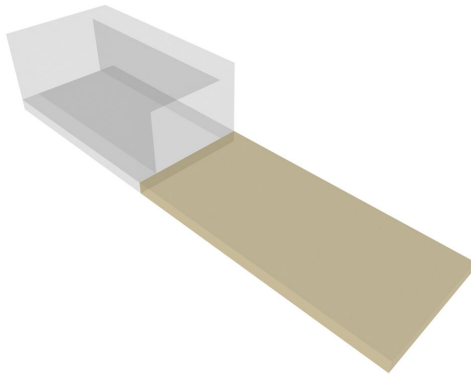
Program

The main space is just a simple cubic volume. Movable curtains divide the space in different acting areas.



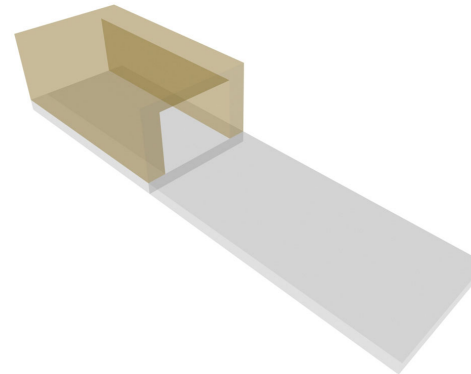
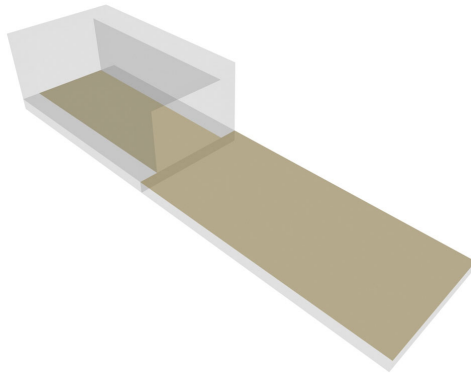
Rooms that cantilever from the service walls into the main space offer places for educational use and also a platform for performing actors in a play.

A plaza extends into the theatre space. The outside can also be a place for the theatre play. The city becomes part of the



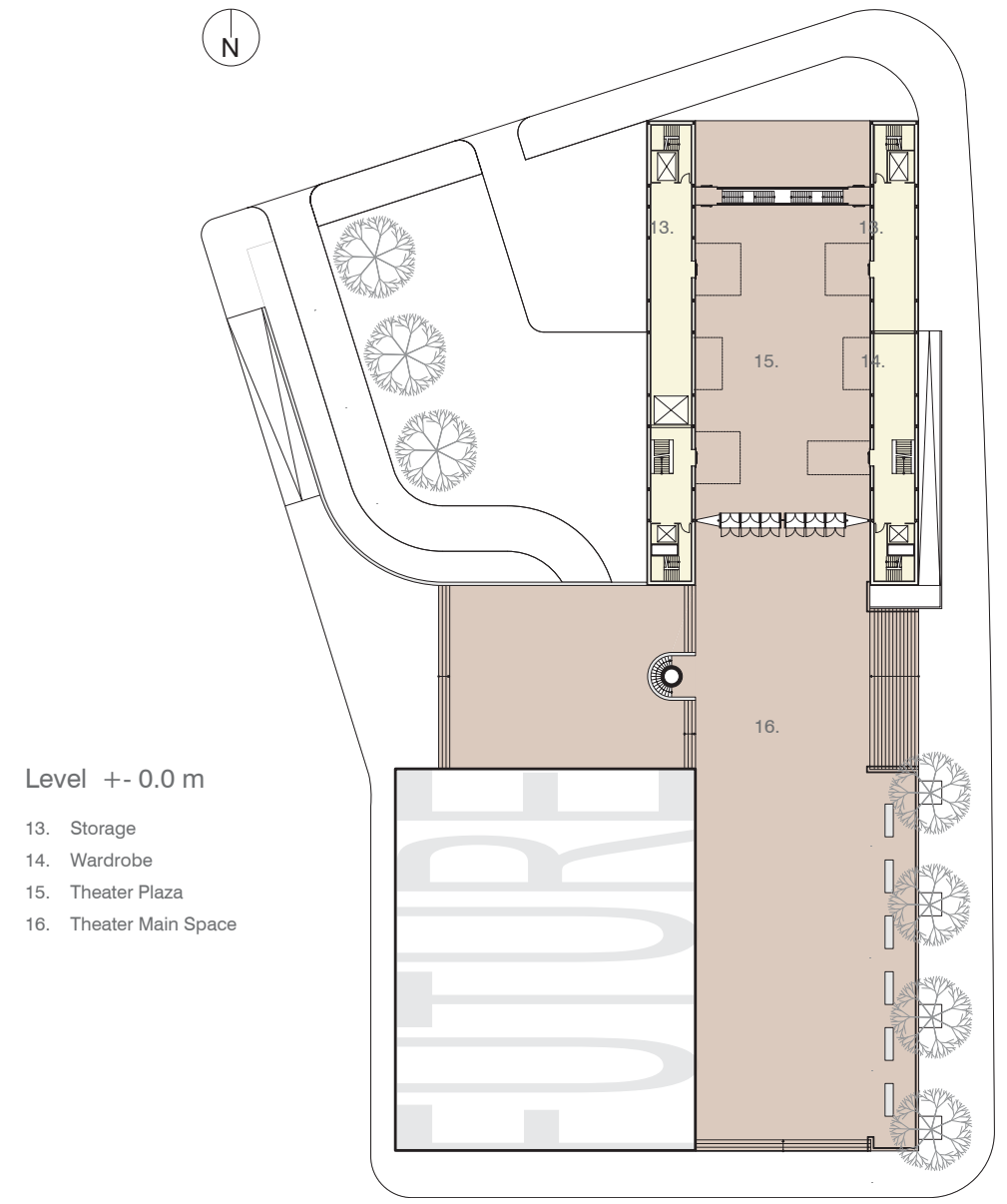
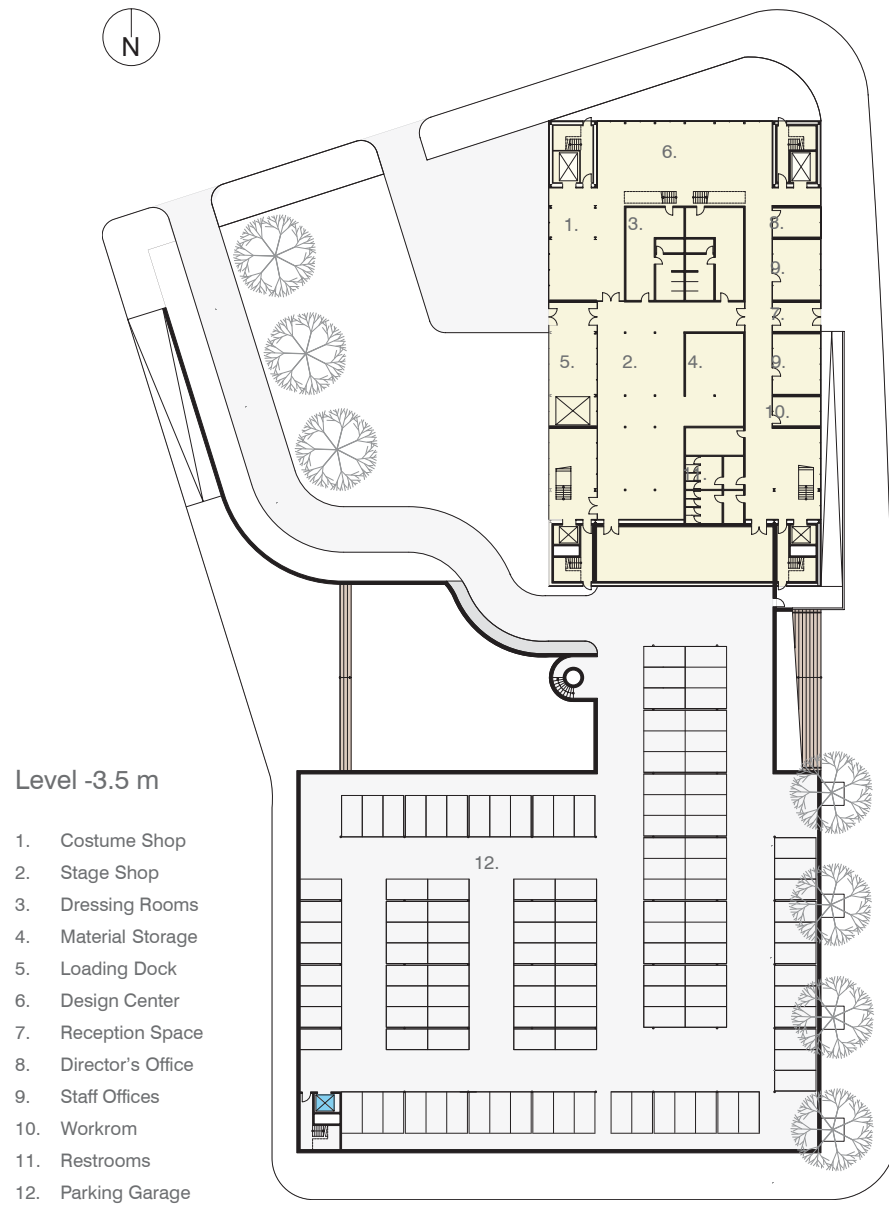
Workshops, offices, dressing rooms and storage places are located on the first floor.

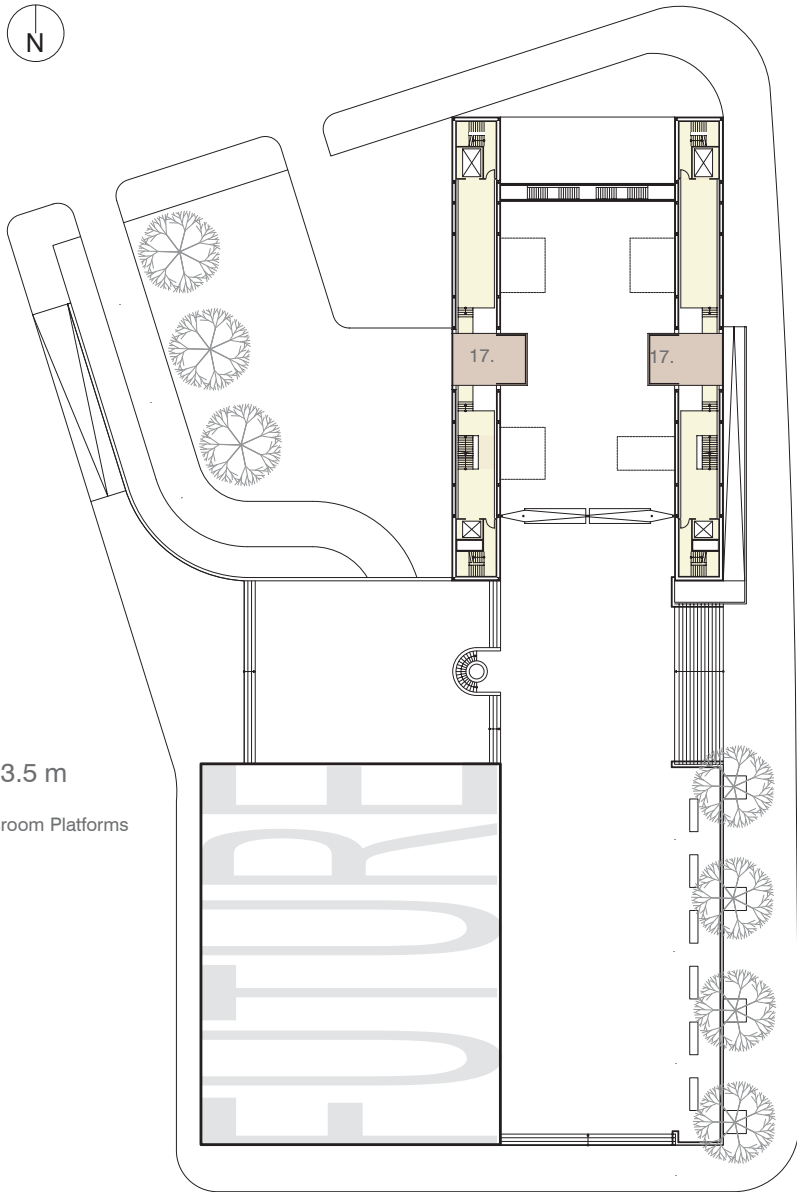
Parking spaces are located below the elevated plaza.



The walls and the roof contain the service spaces. They make a place for stairs, elevators and mechanical systems.

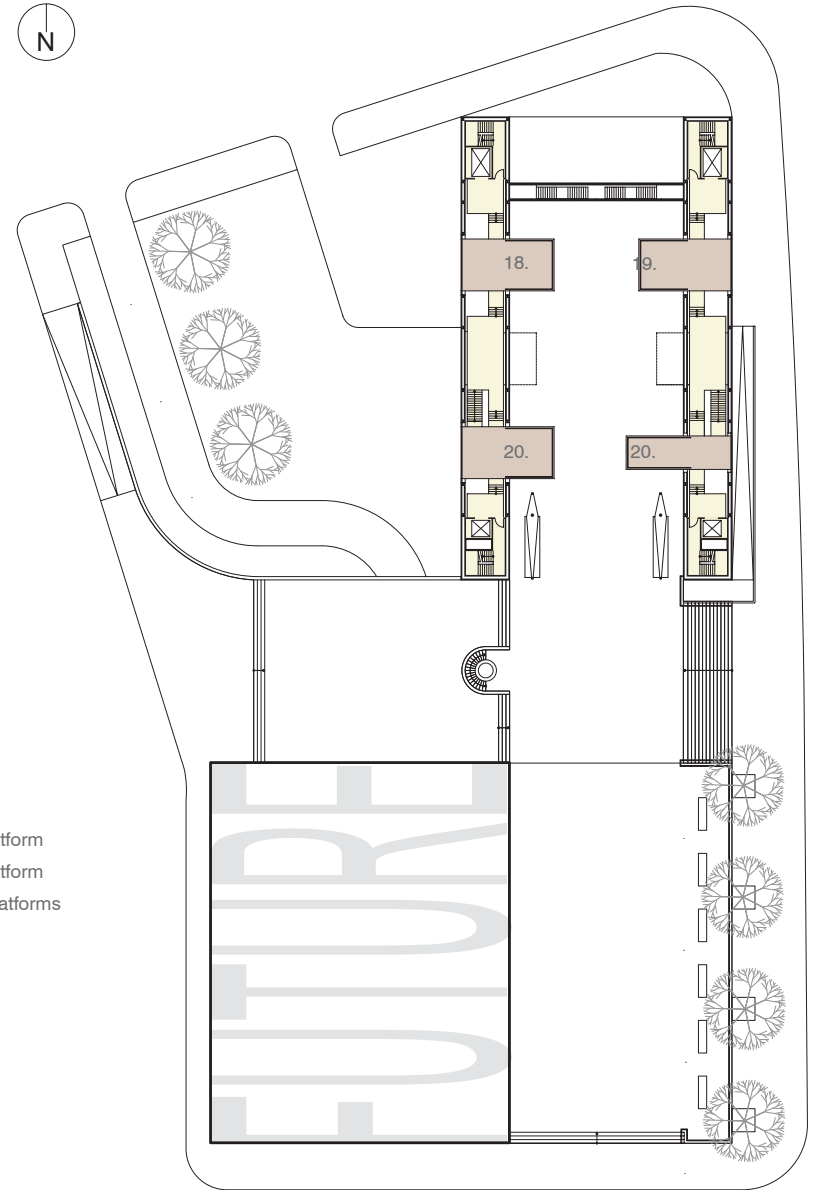
Floor Plans





Level +3.5 m

17. Classroom Platforms

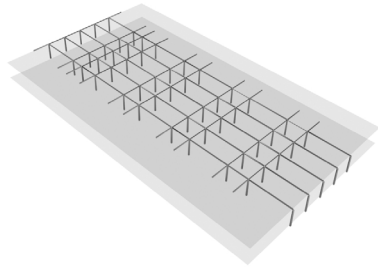


Level +9.0 m

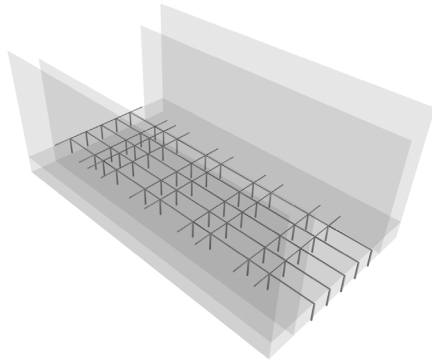
18. Rehearsal Platform
19. Rehearsal Platform
20. Conference Platforms

Structure as the ordering Element

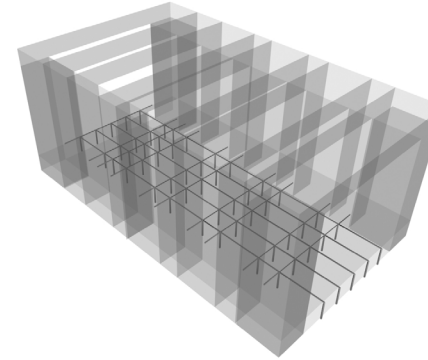
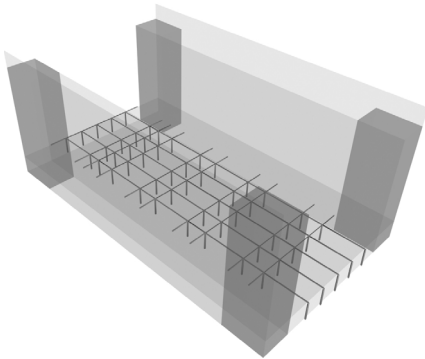
The structure for the first floor is made of simple I-beams on tubular columns.



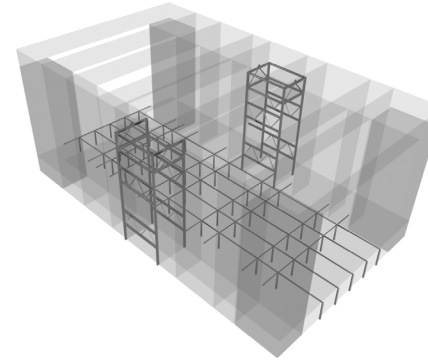
Two double walls are the main structure, which contains the service elements.



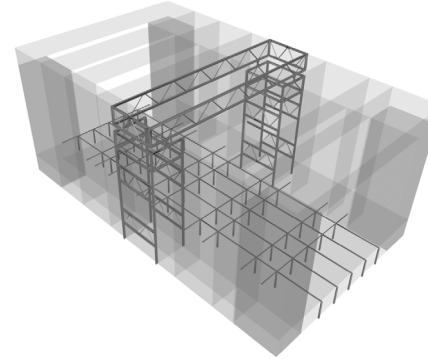
Four concrete cores contain the fire stairs and stabilize the structure.



A regular grid of columns and trusses make the structural rhythm of the construction.

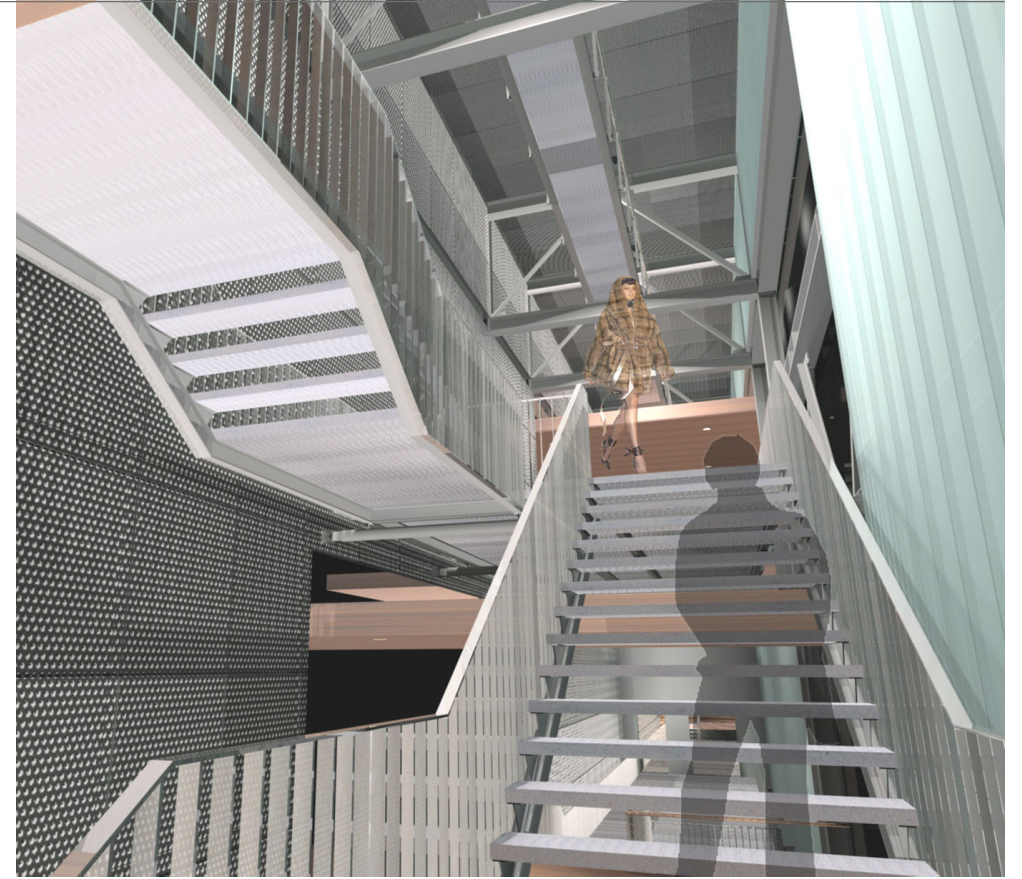
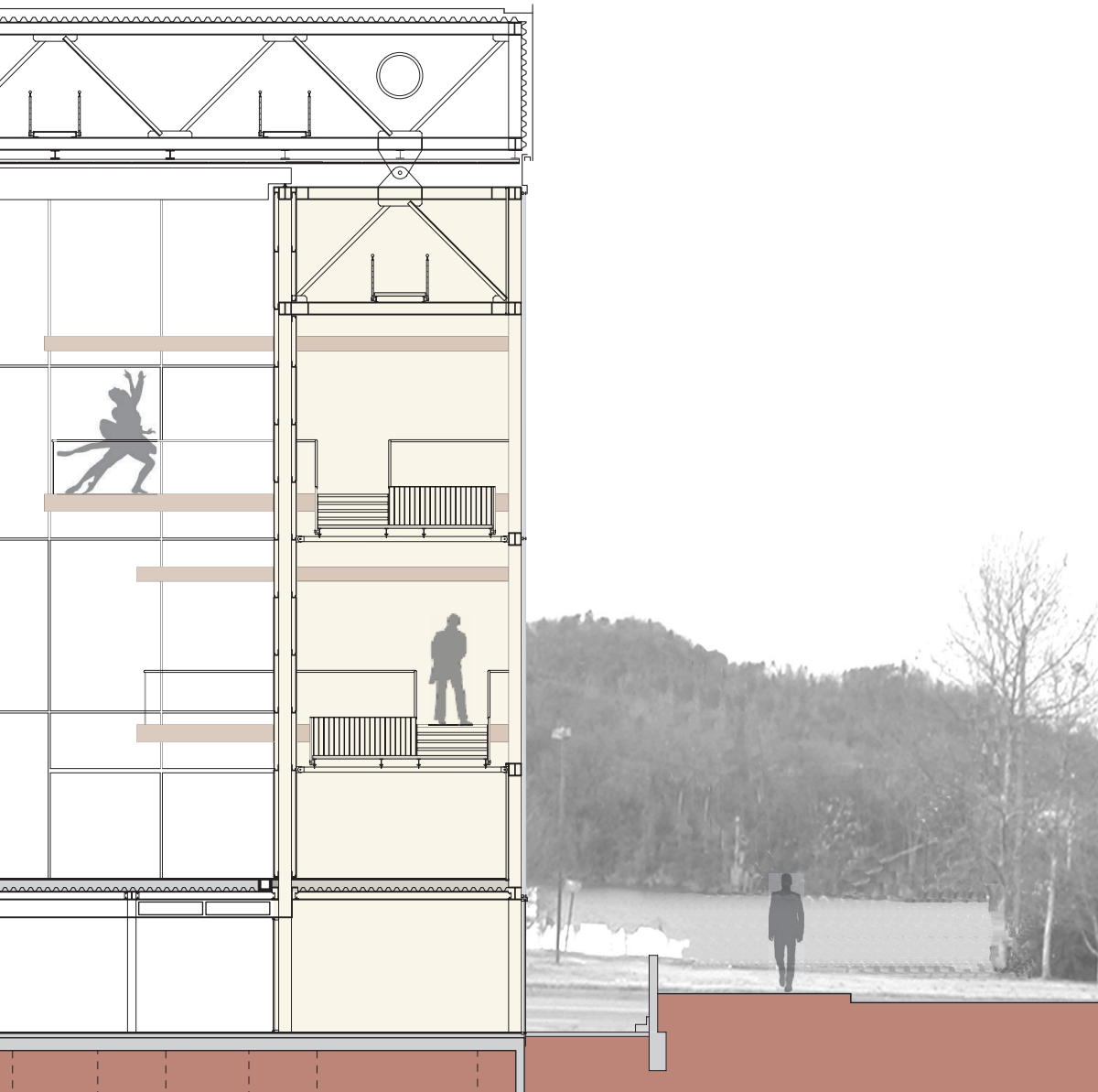


The seven meter wide axis is connected by trusses that provide the structure for cantilevering platforms.



The structure for the roof is a 2.5 meter deep truss.

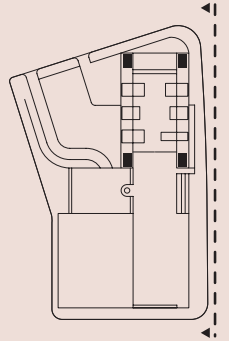
Service Walls



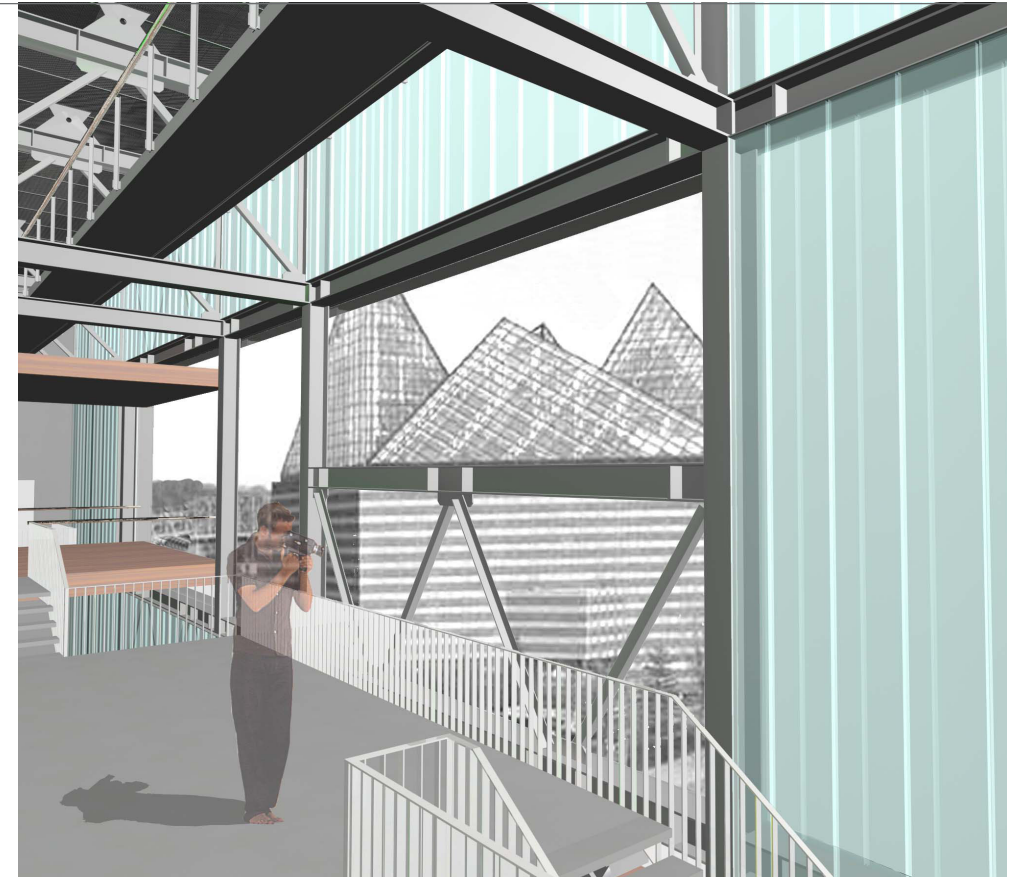
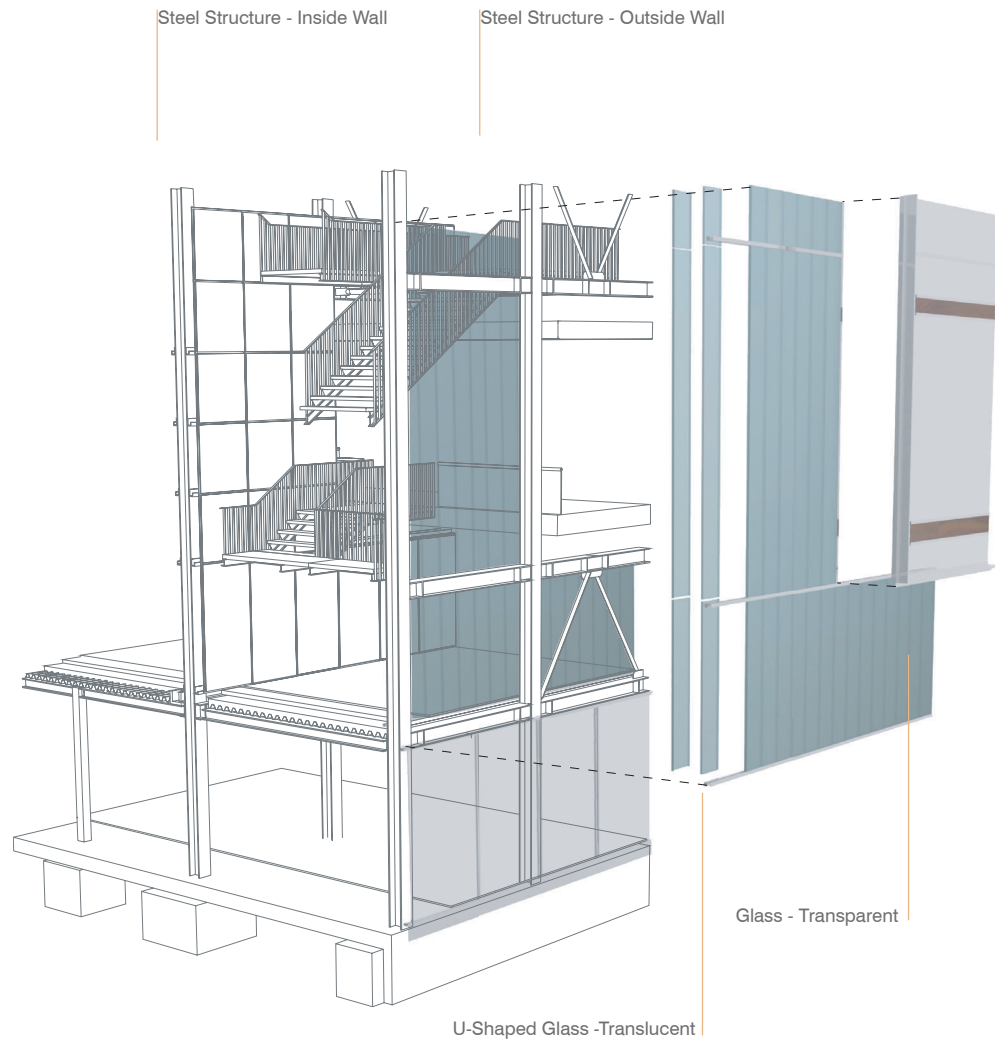
The service walls are double walls, which define the main theatre space to the west and east.

They provide the structure for the cantilevering planes as well as the space for stairs, elevators and mechanical systems. The steel construction acts as one wall, but the different surfaces react to the different needs of the adjacent spaces.

Elevation East



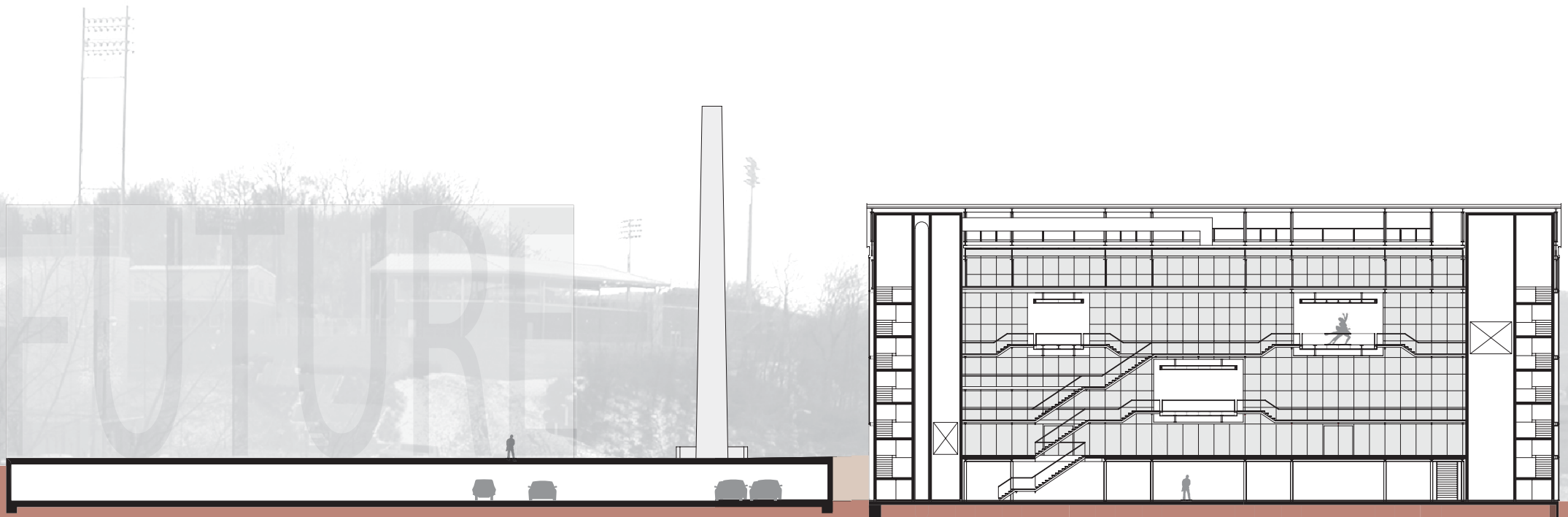
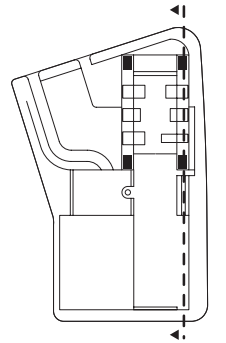
Outside Wall



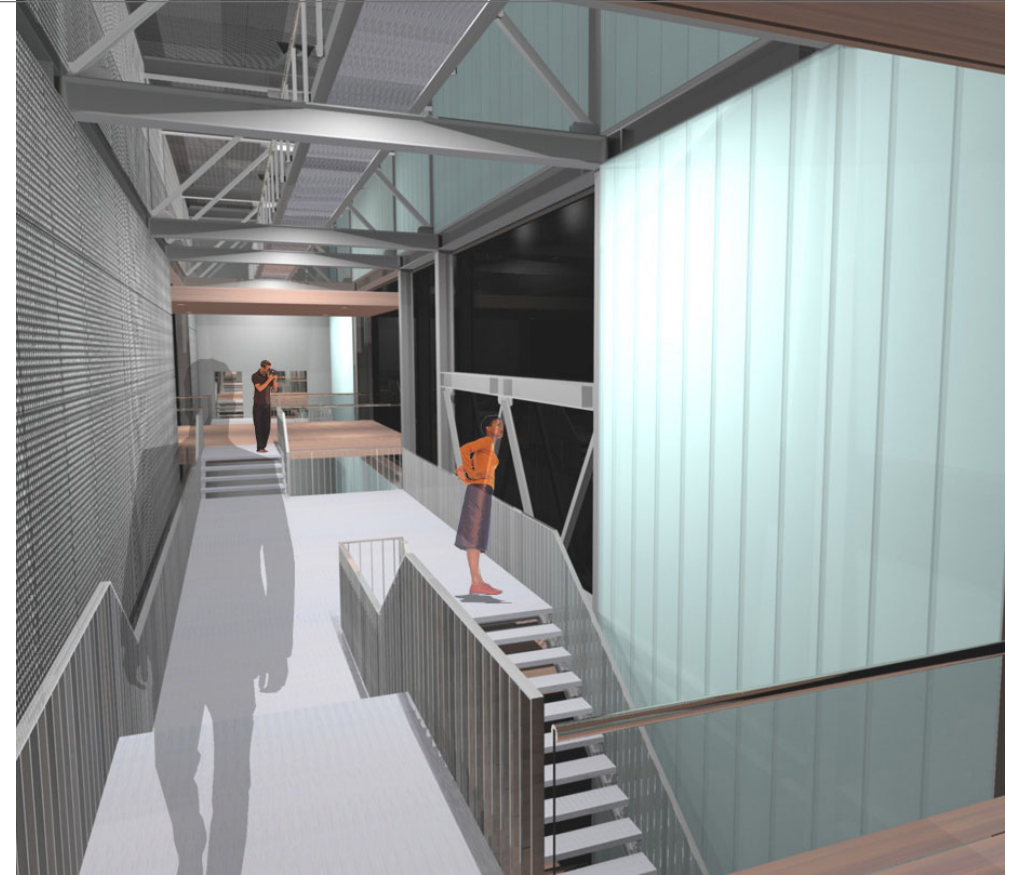
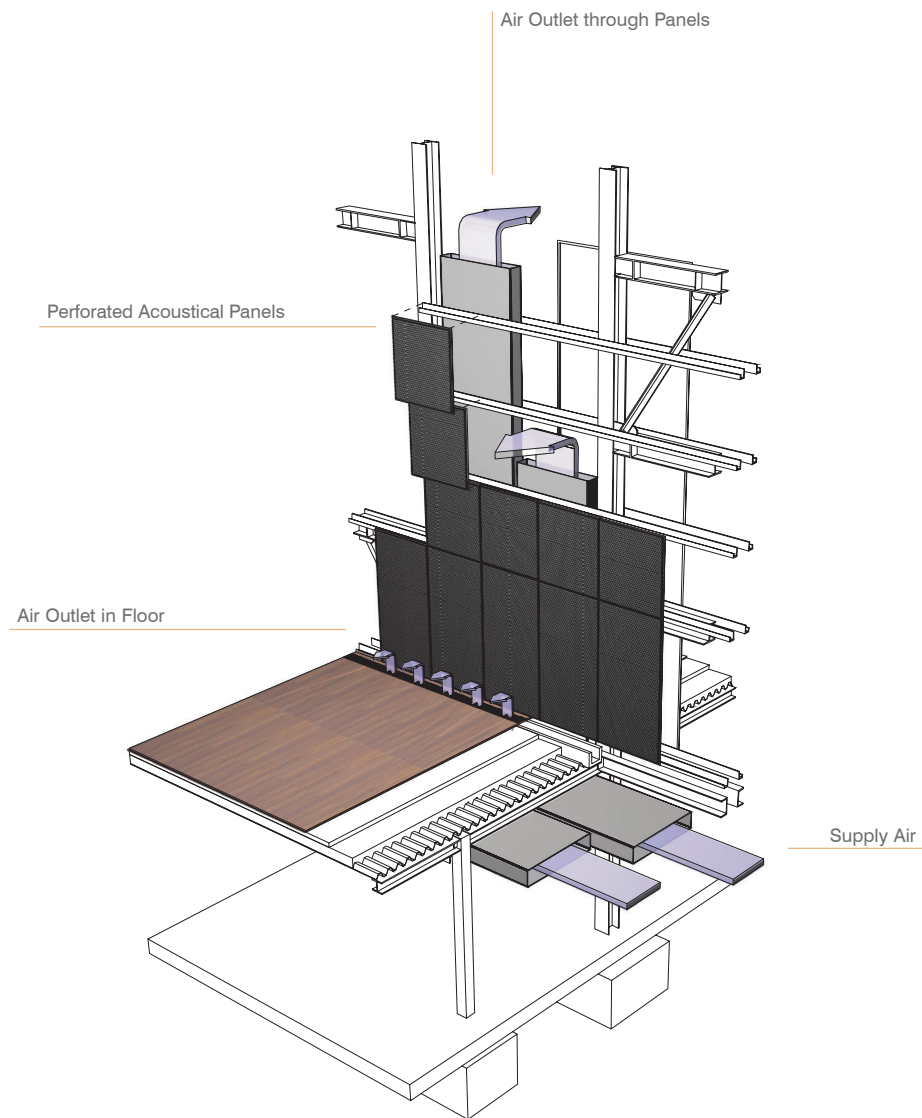
The outside wall divides the theatre world from the city. It is covered with a translucent u-shaped profile glass. During daytime, the glass creates a homogenous surface. During a play at nighttime the facade changes its character. Lit from inside, the shadows of people moving in the service walls, the massive concrete towers that contain the emergency stairs and the steel structure gives an

idea of the activity happening in the inside. Transparent parts in the facade create framed views of the city and make a more direct contact between the people inside, whether they are actors playing on the platforms, or the audience that is following a performance from the planes.

Section through Service Wall

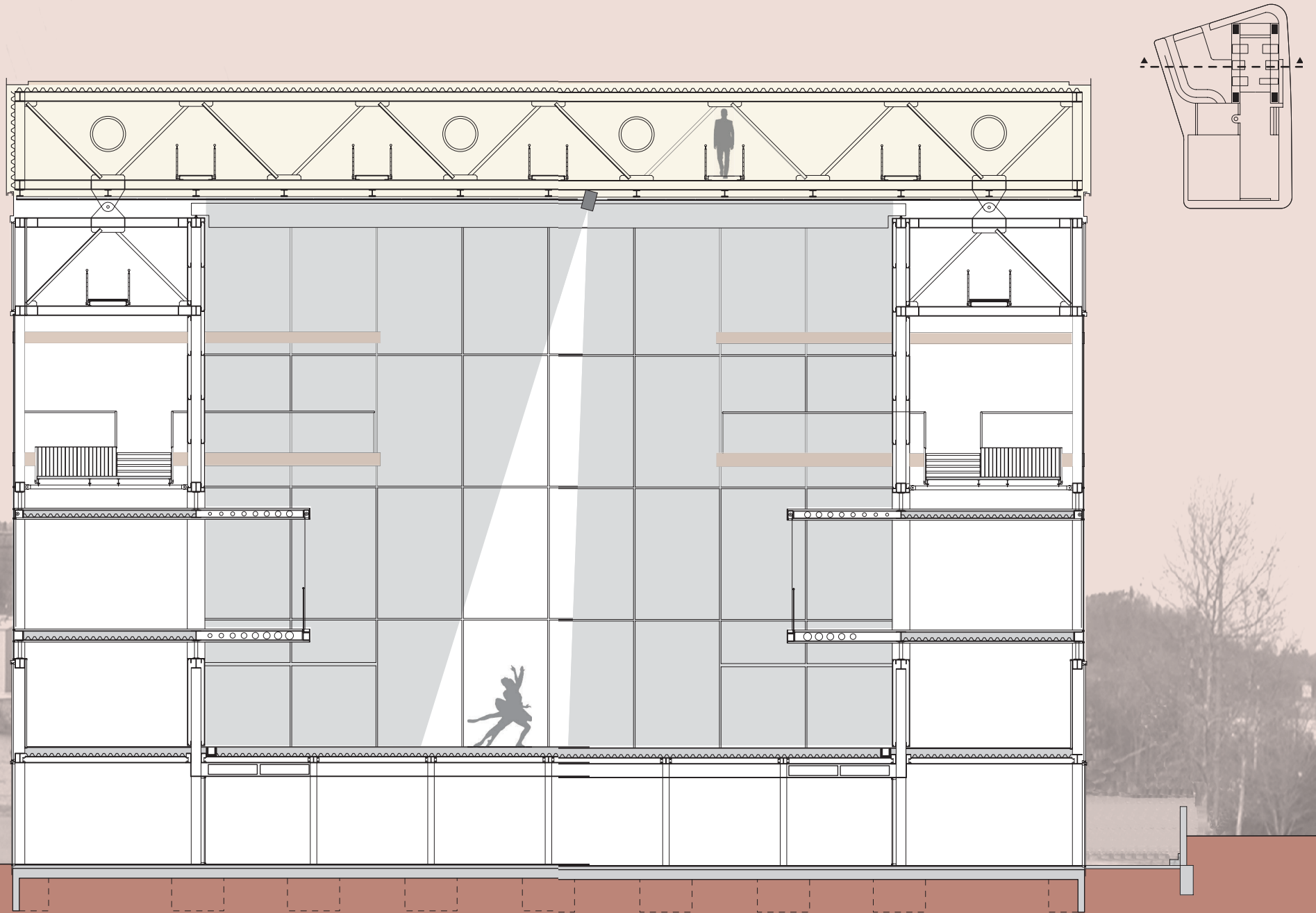


Inside Wall



The inside wall divides the main space from the service space. The wall is covered with opaque perforated metal panels. This cladding creates an acoustical buffer as well as the outlets for the mechanical system. It provides the main space and the spaces in the service wall with heat and fresh air.

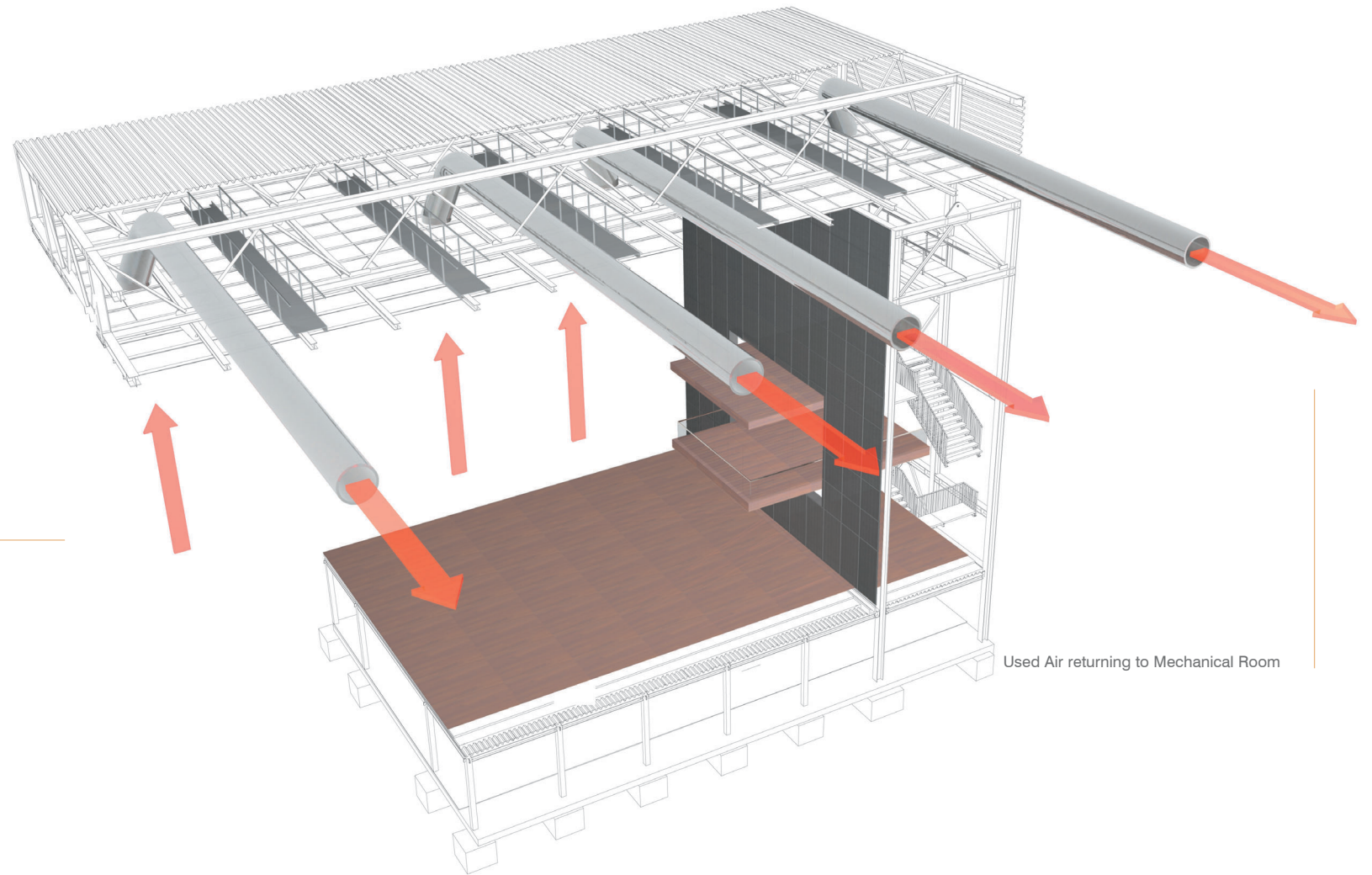
Cross Section



Steel Truss System

Used Air from Theater Space

Used Air returning to Mechanical Room

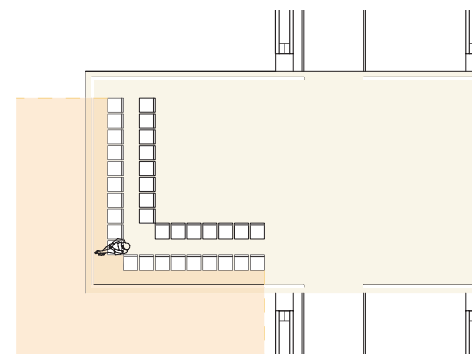
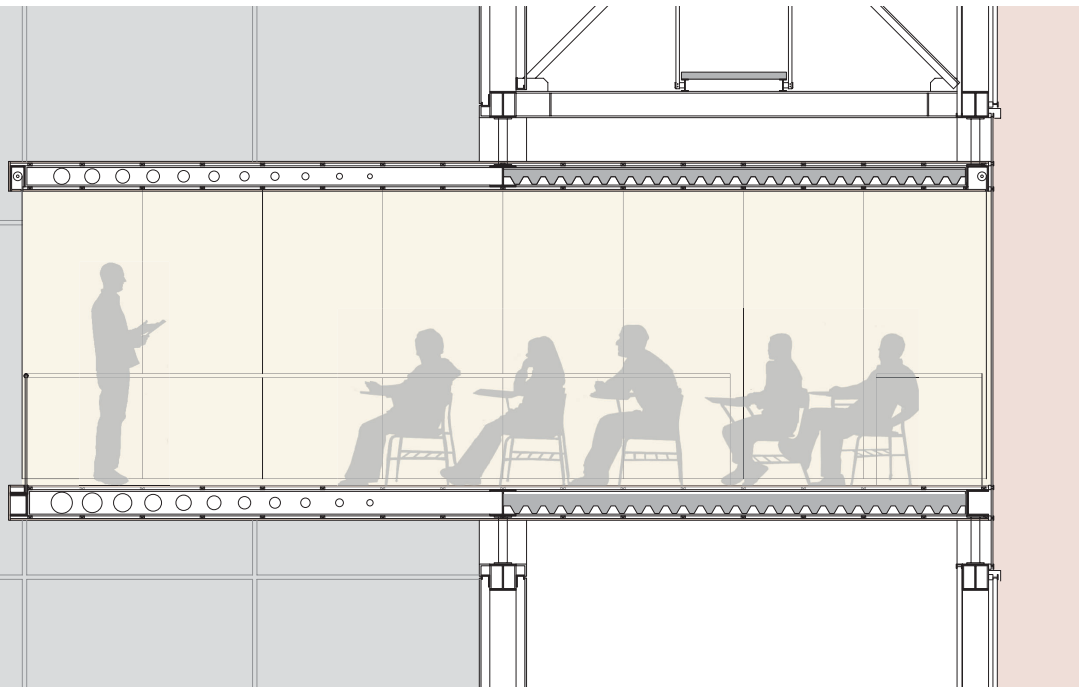


As in the walls, the roof contains service elements for the main space. In between the truss runs a system of catwalks, from which spotlights can be placed to light the theater plays. The truss also creates space for air conditioning ducts that take the used air from inside the theater and return it to the mechanical room.

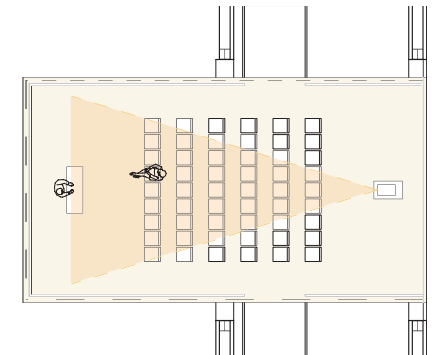


Cantilevers

A series of platforms held by the service walls protrude into the main space to create a unique room, which allows different plays to happen. These platforms have multiple functions. They could be used as a place for performances, a place from where the audience can see a play happening in the main space as well as a room for educational uses. These elements define the space and turn the simple box into a place, which should inspire new theatre plays.

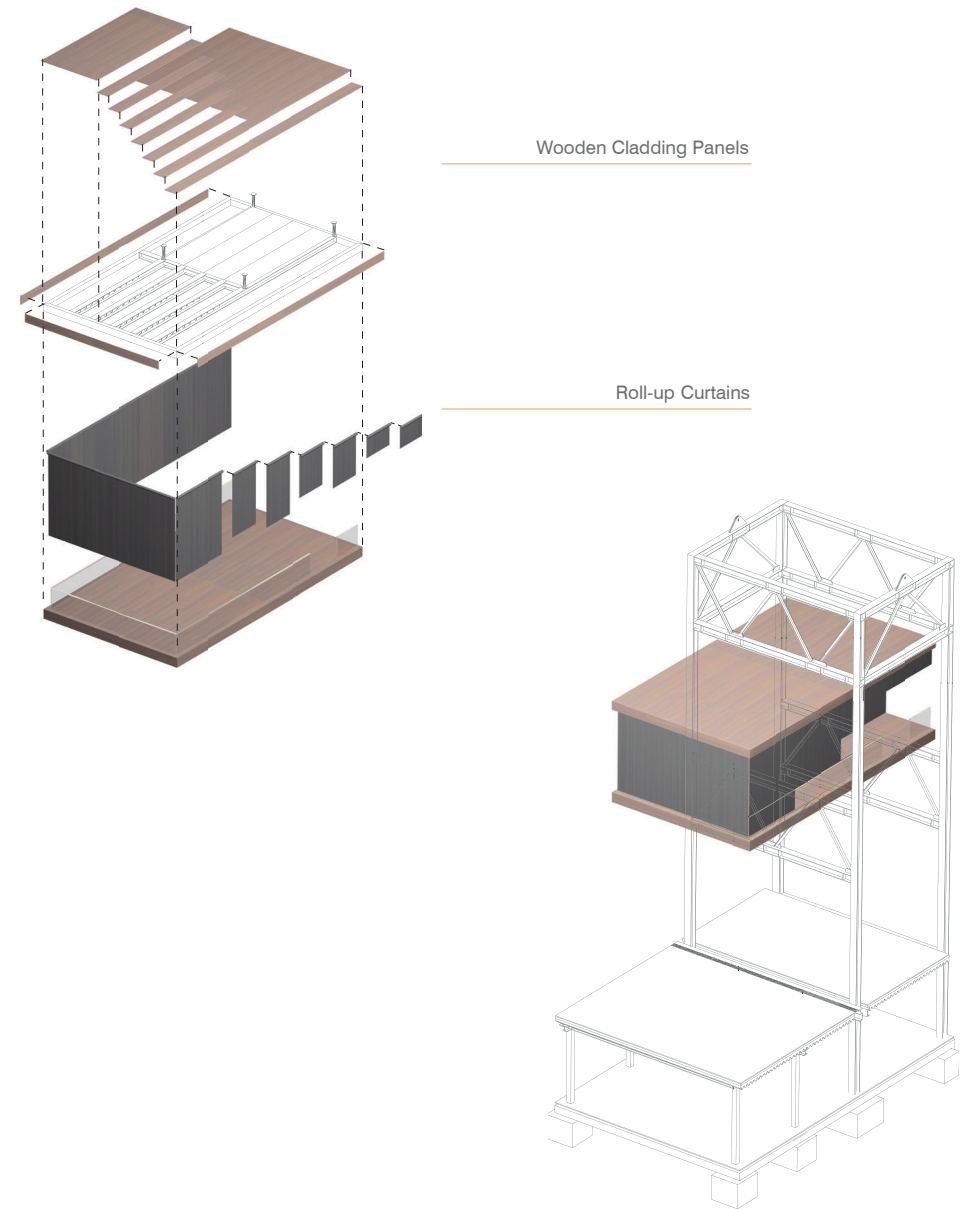
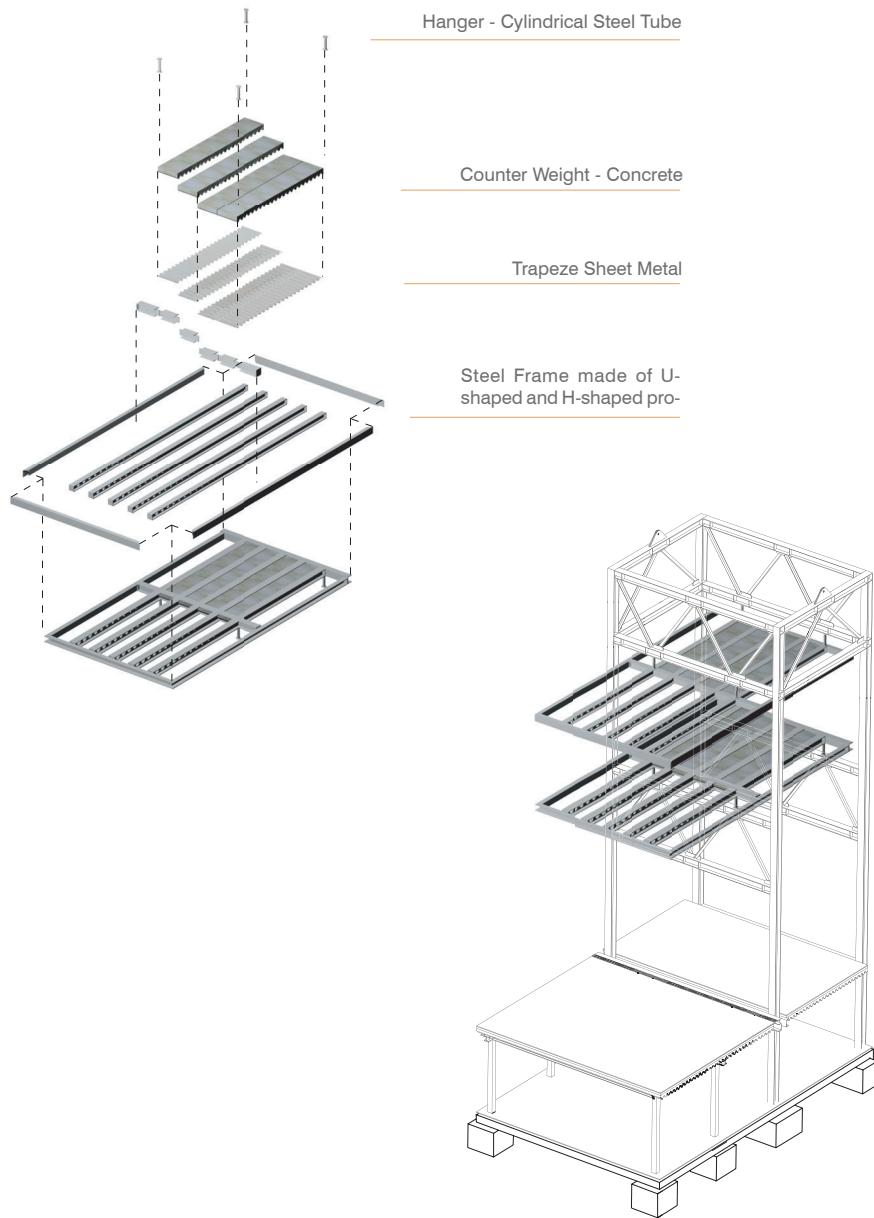


Chair arrangement for theater play

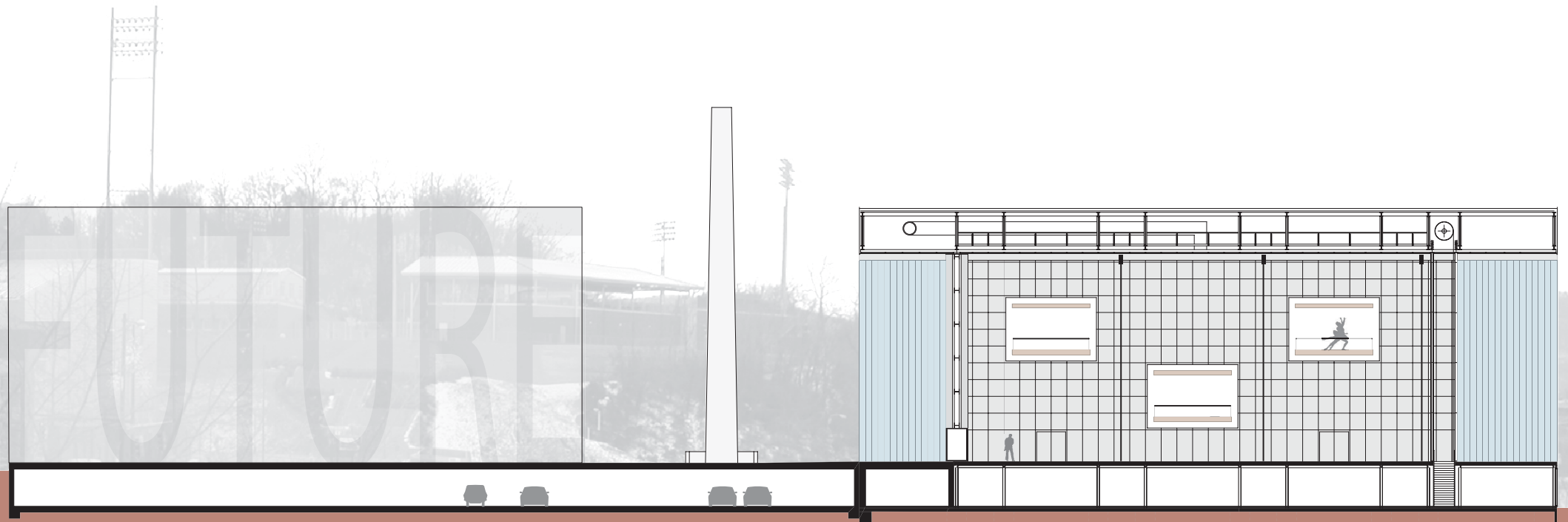
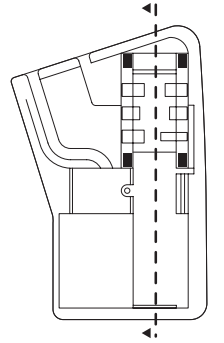


Chair arrangement for lecture / class

Construction of Cantilever

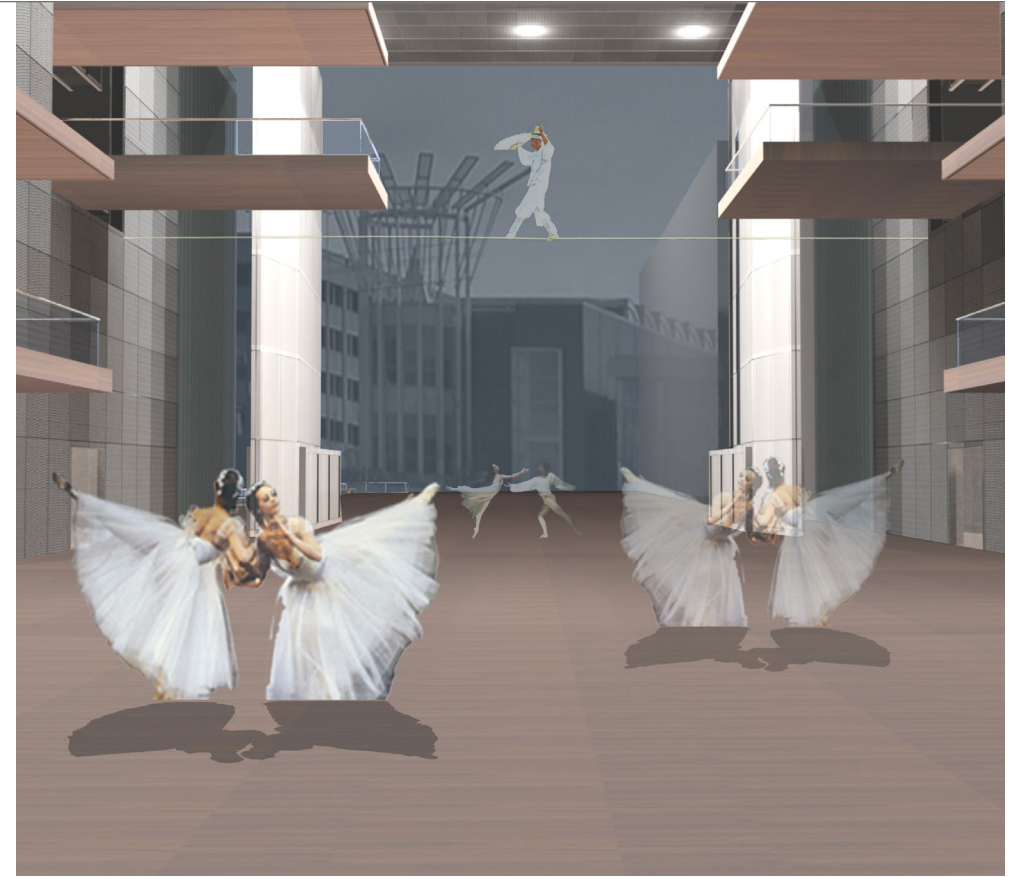
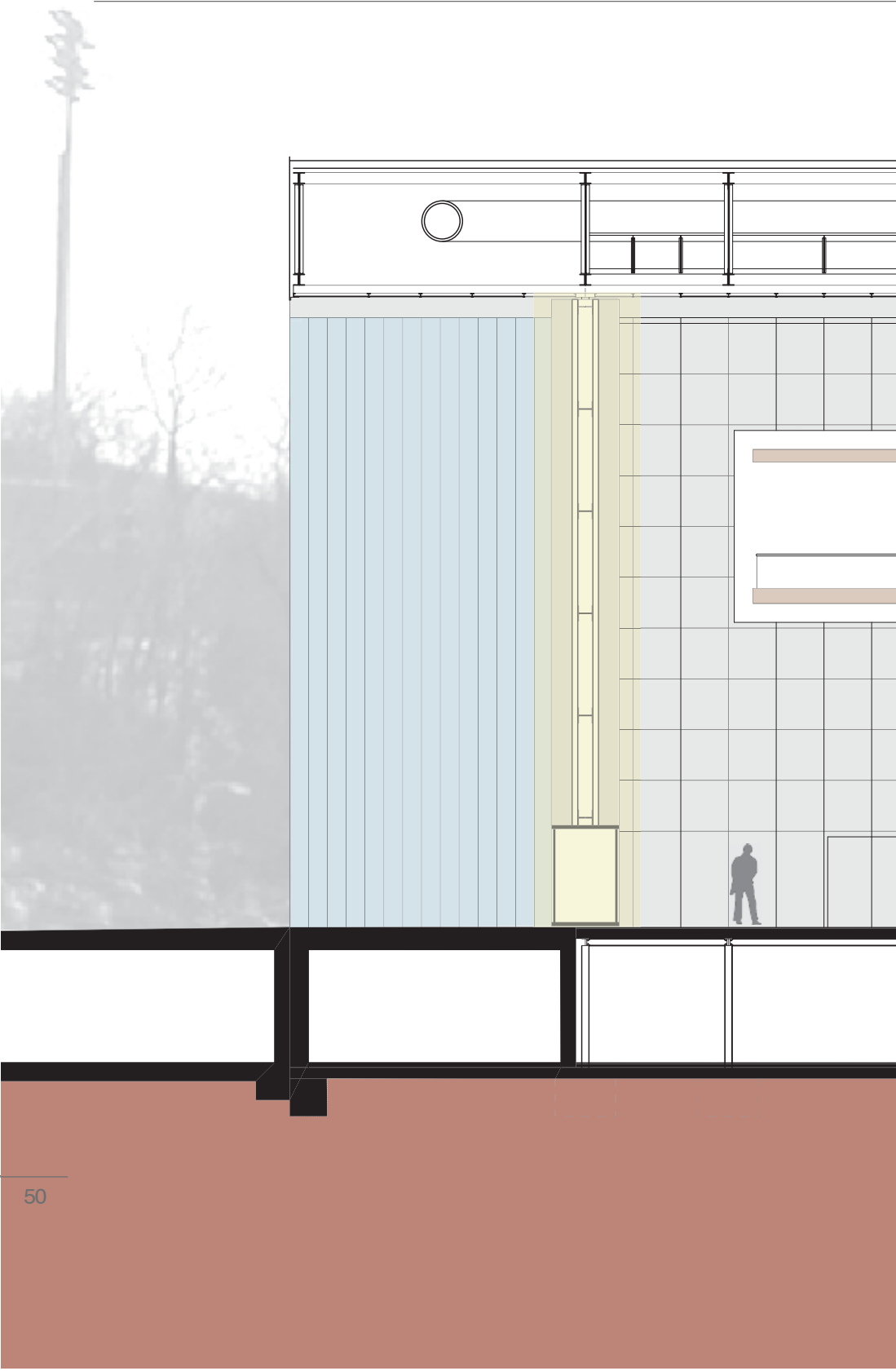


Section through Main Space





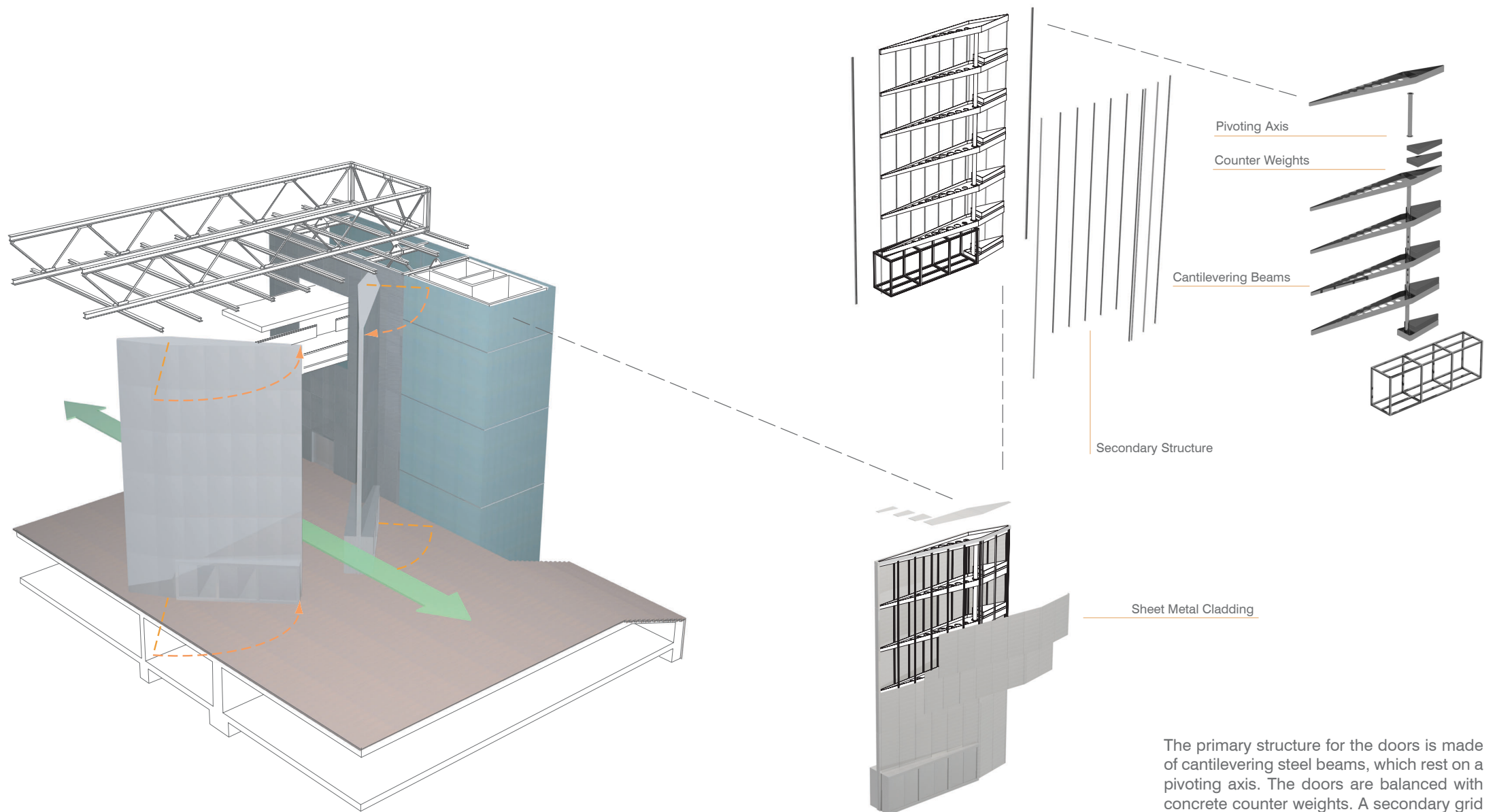
Doors



The door is the separating element between the inside and the outside, the urban space and the theater world. The entry of the theater is the border between the real world and the world of fantasy and illusion.

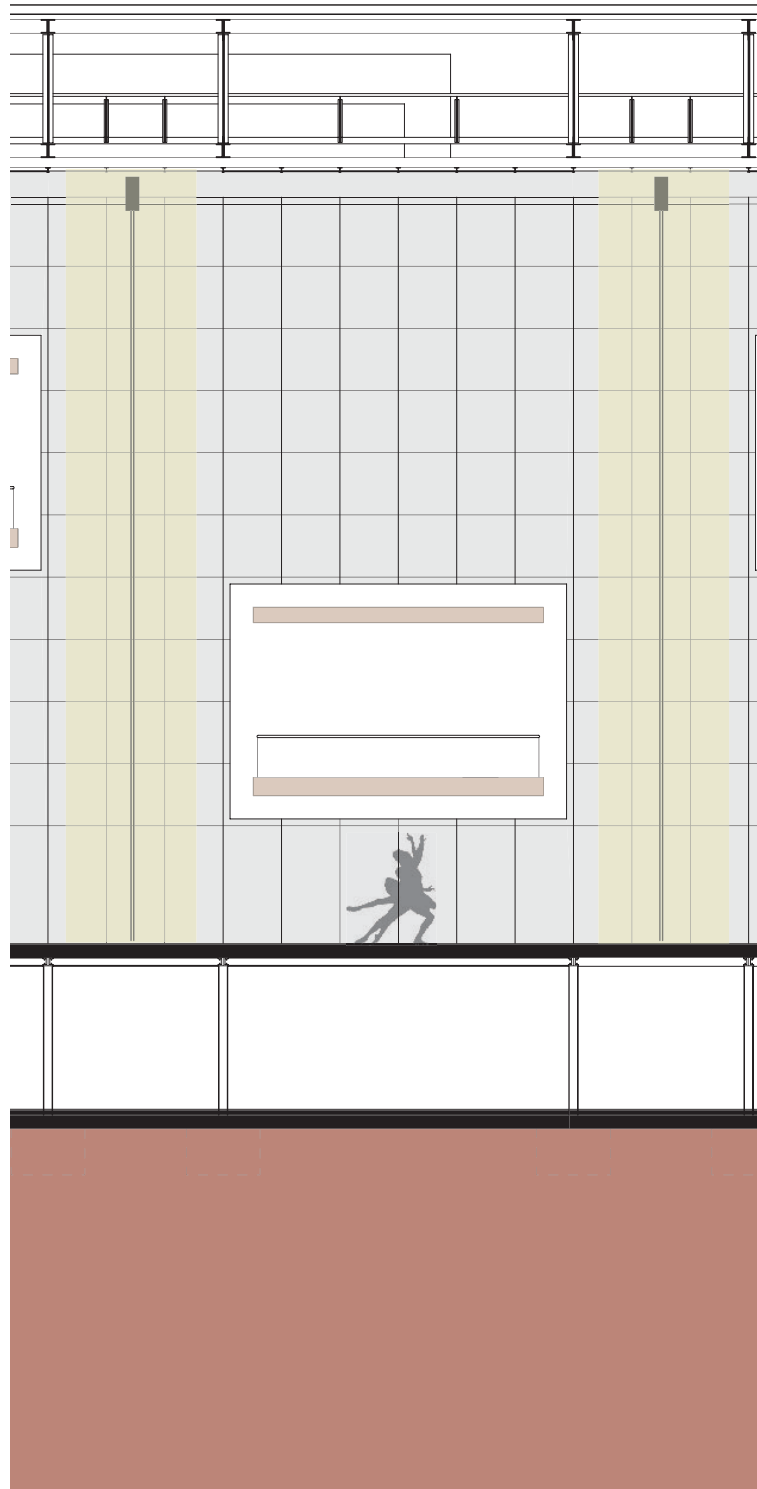
Two pivoting walls make this separation and can be opened to eliminate these borders and let the theater play happen in the public space of the city. The act of opening becomes a celebration and offers the possibility to be integrated in a play.

Construction of the Doors

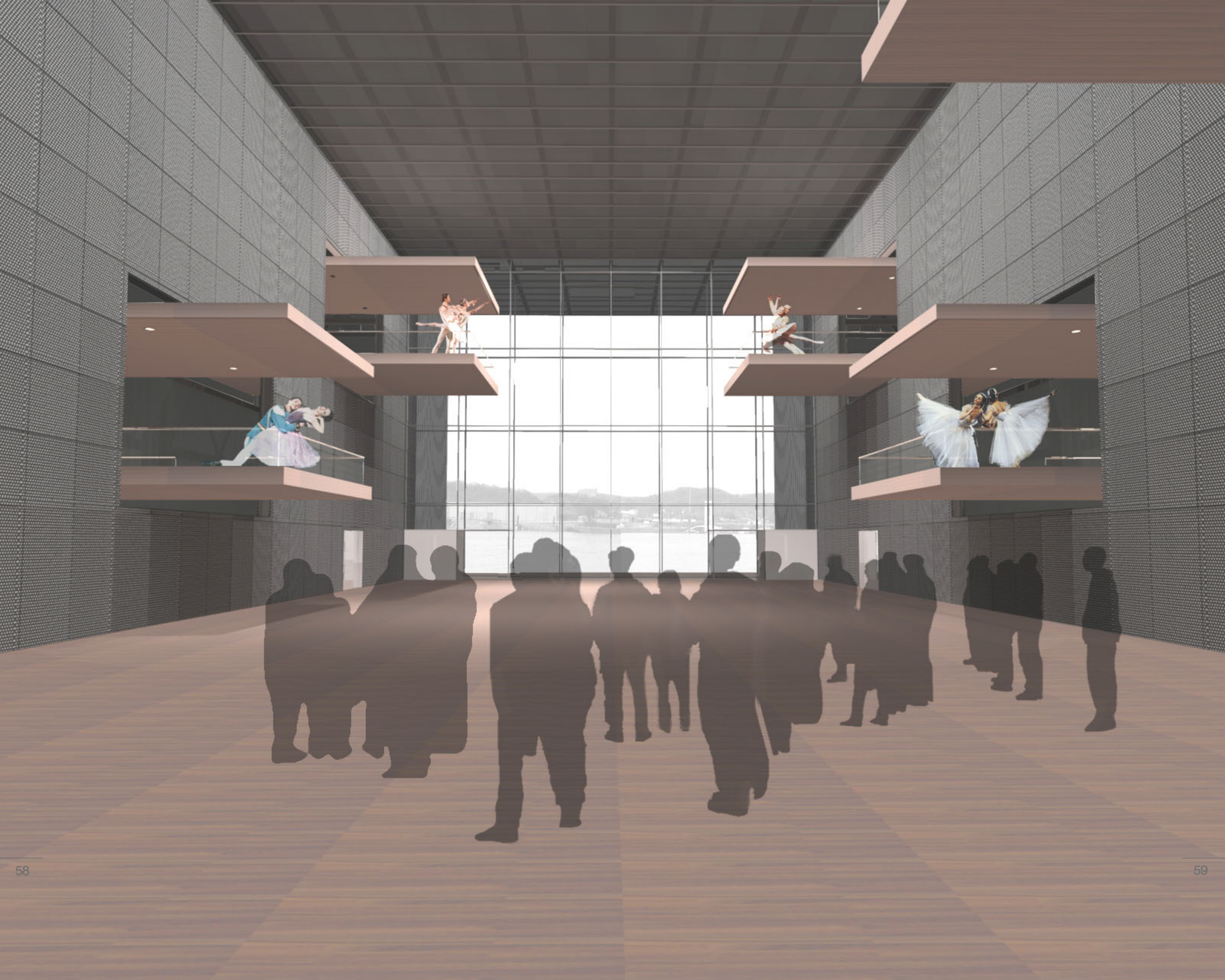


The primary structure for the doors is made of cantilevering steel beams, which rest on a pivoting axis. The doors are balanced with concrete counter weights. A secondary grid of steel beams holds the sheet metal skin.

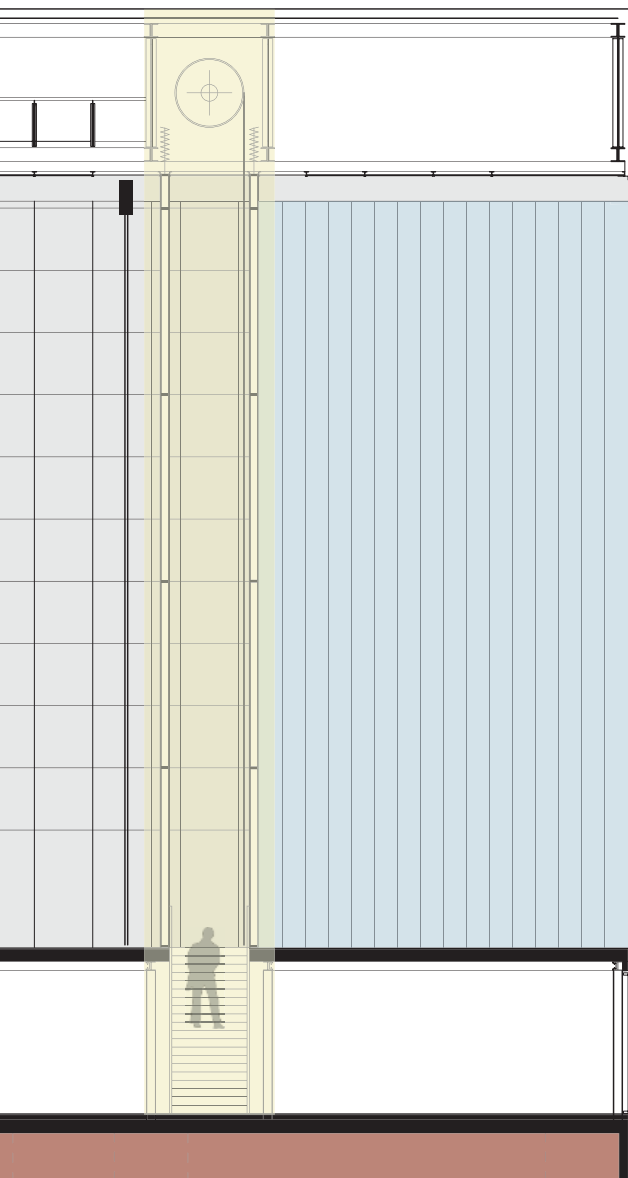




In the classical theater the curtain is the divider between the acting area and the area of the audience. It hides the props before the play and when it opens the show begins. Three movable cranes run below the ceiling of the main space from which curtains can be hung. The curtains are not only the opaque dividers, they can layer the main space in multiple ambiguous theatrical zones, which could be revealed one by one during a play.



Windows



The north wall of the theater space is transparent essentially. Two layers of glass form a connecting walkway for the actors to the changing rooms on the lower level of the theater.

The glass facade can be darkened with a curtain if the play doesn't allow a contact to the world outside the theater. By rolling up the curtain, the theater space extends visually to the outside and the river becomes the backdrop.



Chattanooga

The name “Chattanooga” comes from the Creek Indian word for “rock coming to a point”. This refers to Lookout Mountain, which begins in Chattanooga and stretches 88 miles through Alabama and Georgia.

The city itself started out with 2 different names: Ross’s Landing and Lookout City. John Ross, Chief of the Cherokee Indians, established Ross’s Landing in 1816.

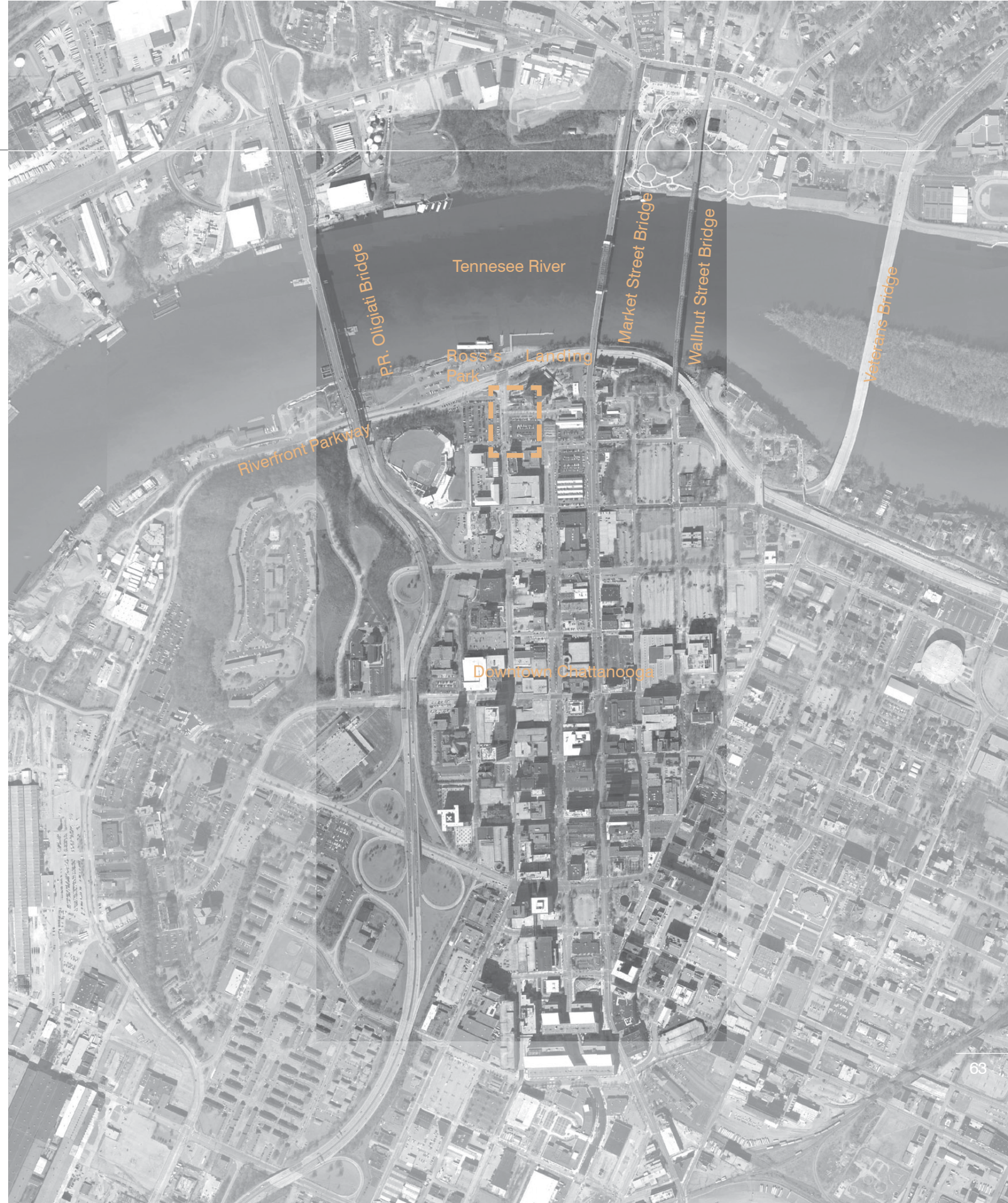
This area consisted of a ferry, warehouse, and landing. With the organization of Hamilton County in 1818, Ross’s Landing served not only the Cherokee trade but also as a convenient business center for the county. In 1838, the city officially took the name of “Chattanooga”. That same year, Cherokee parties left from Ross’s landing for the West on what became known as the Trail of Tears.

In 1863 during the “Campaign for Chattanooga”, the banks of the Tennessee River and the surrounding mountains became the places for heavy battles between the North and the South.

Large iron manufacturing industry established at the end of the 19th century, which turned Chattanooga into the “Pittsburgh of the South”.

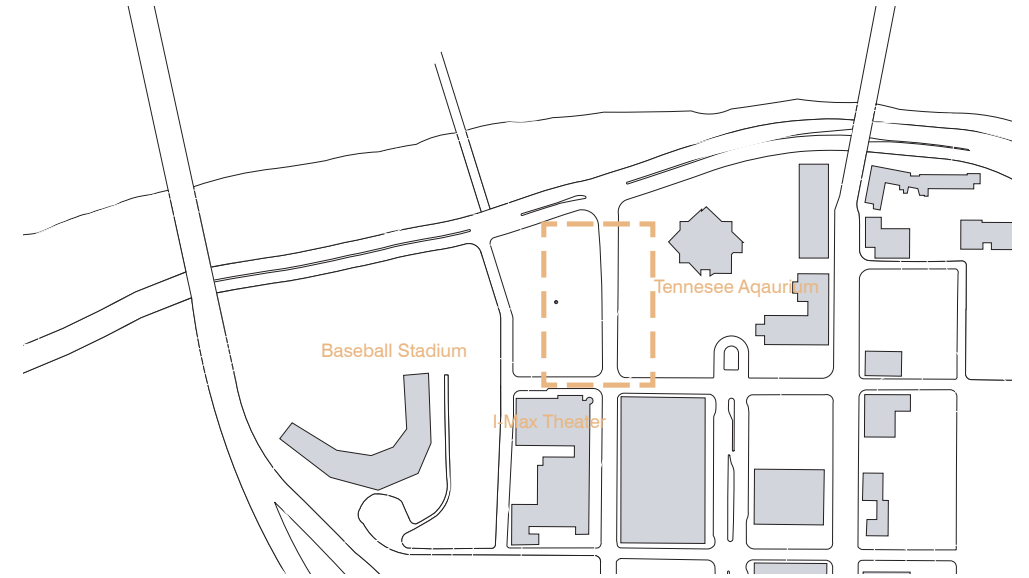
Built in 1891, the Walnut Street Bridge served for many decades as the only way crossing the Tennessee River and is now the World’s longest pedestrian bridge.

Due to the heavy industrialization in the 1970’s of the last century, Chattanooga got the reputation to be the America’s dirtiest City.



Urban Context

Currently a parking lot, the site for the performing arts center is located at the waterfront in downtown Chattanooga. The Tennessee Aquarium, and the I-Max Theater both in the neighborhood of the site, are the keystone buildings in the attempt to revitalize the city and to connect the downtown with the city.



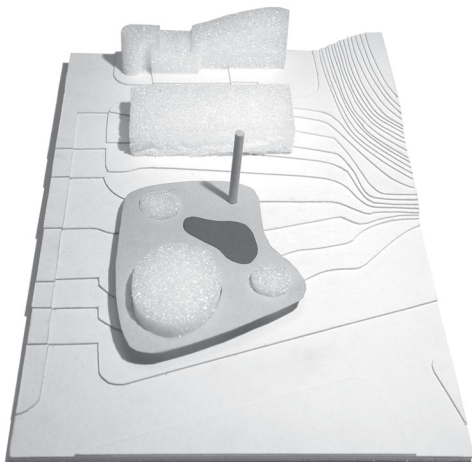
Market Street Bridge

Factory Stack

Tennessee Aquarium

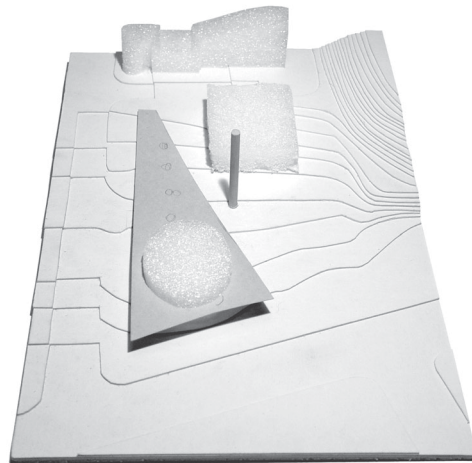
I-Max Theater





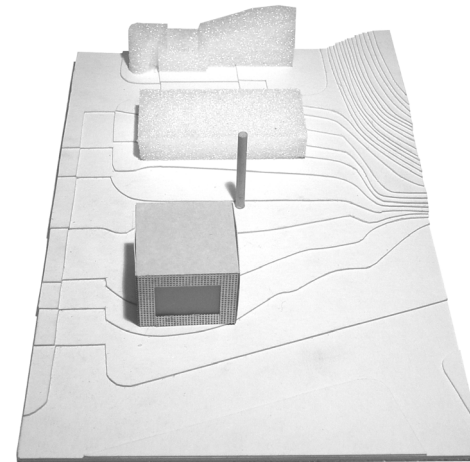
Concept 1

An elevated, organic shaped plaza connects five elements, the main theater space, the workshops, the classrooms, an open-air theater space and the existing chimney. The plaza rises from street level up to three meters and makes space below for all the utility/serving rooms.



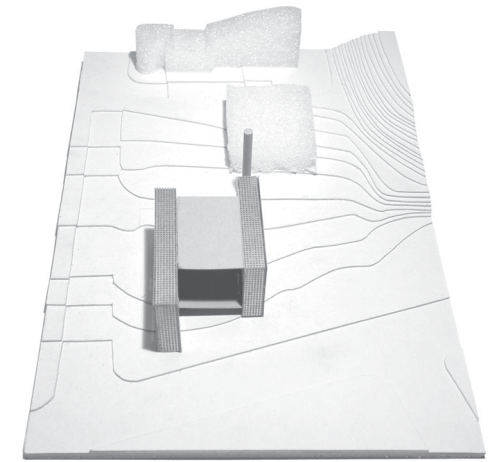
Concept 2

There is only one major oval element sitting in an elevated triangular shaped plaza.



Concept 3

The theater is a box. The building marks the north east corner of the site. A huge window makes a viewing connection to the river. All supporting spaces are in the first floor the walls and the roof.



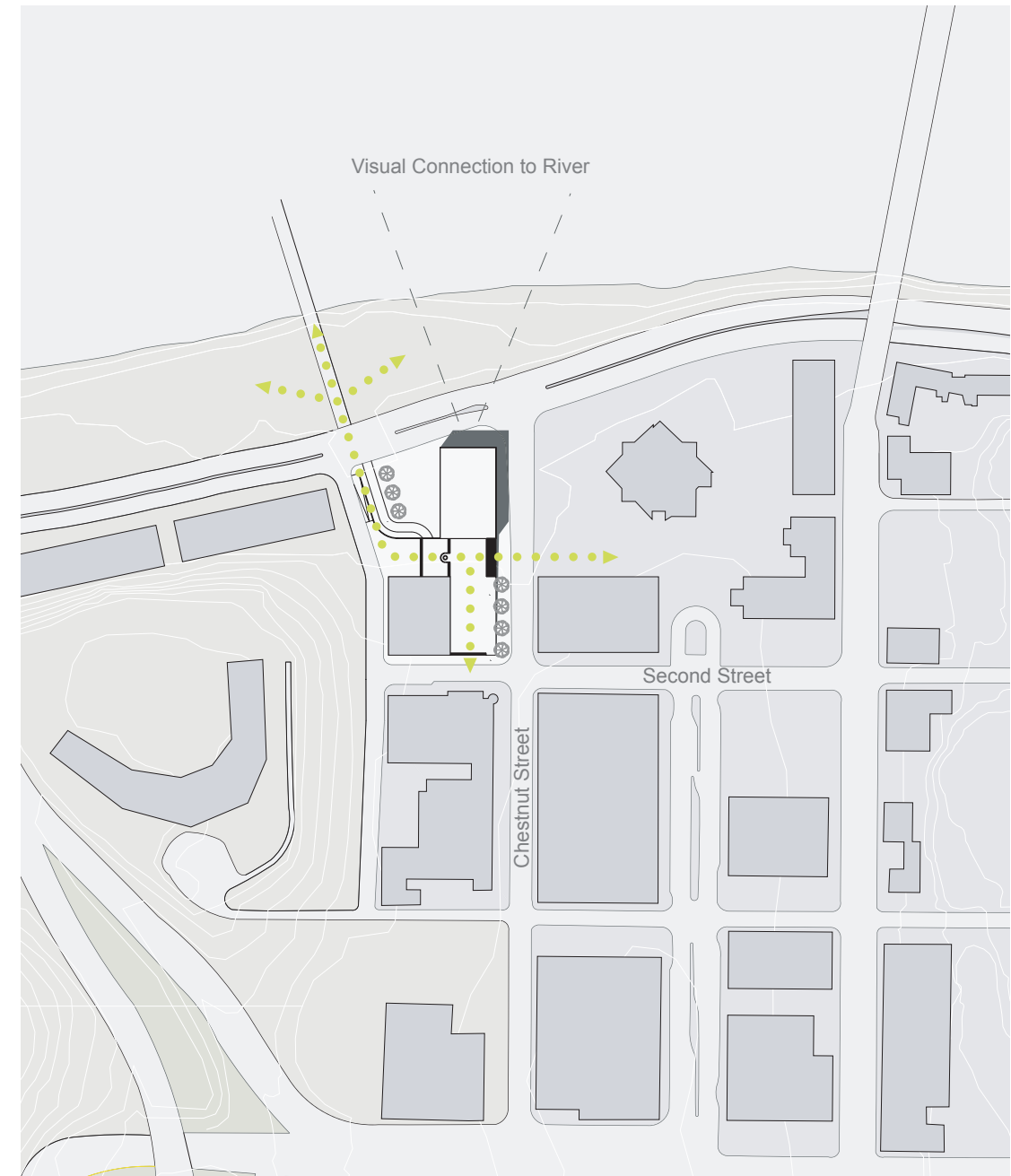
Concept 4

Shift of the serving walls define a line with the factory stack and adjacent building, to form a plaza that leads into the building on the southwest corner.

Site

The diagram below shows an urban design concept for revitalizing the Chattanooga Waterfront. The key ideas are to add new commercial and housing developments to increase the density of the downtown and to create a walking connection from the Tennessee Aquarium to the Waterfront.

In order to activate the urban environment, I proposed an elevated plaza at the corner of Chestnut Street and Second Street. Placed on a very prominent spot, this plaza is the mediator between the city and the Theater. It acts as an urban threshold or outside stage that offers the possibility to extent theater plays into the city and at the same time use the city as a backdrop.



Conclusion

Cities change constantly and with it the use and program of the buildings that make a city. In order to survive these changes, buildings should be able to host diverse functions during their life time.

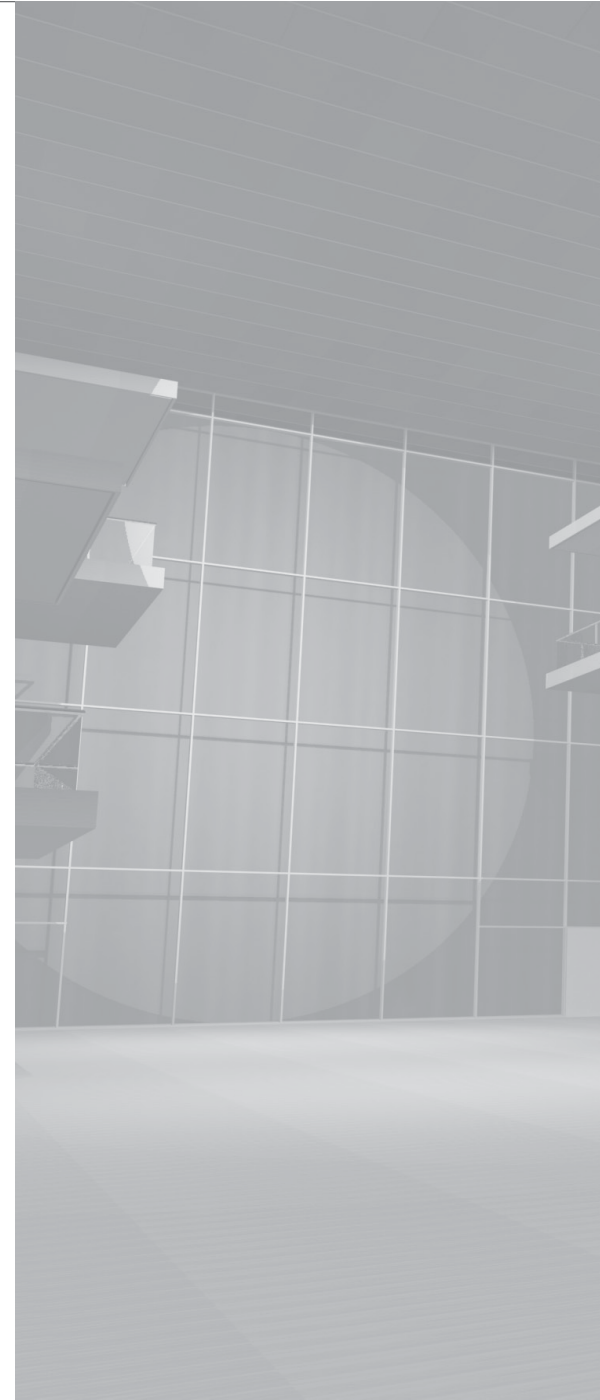
Today the word “multifunction” and “flexible” stands for spaces that claim to host multiple uses and can be changed easily for one purpose or another. The built result often ends in simple structures, which I would call “low level multifunctional spaces”, made of floor plates and columns lacking spatial quality and identity.

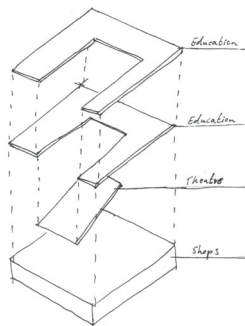
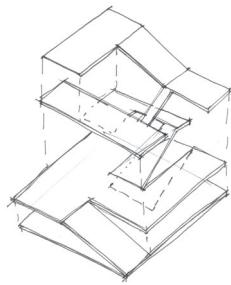
I explored in my thesis the addition of a few architectural elements to a square volume in order to give character to a space, which suggests various kinds of performances. Doors, windows and platforms are strategically located and proportioned to become a physical part of the spectacle.

As a future architect I believe that flexibility is the offering of an architectural space that will be adopted for its qualities.

‘We should go about designing in such a way that the result does not refer too outspokenly to an unequivocal goal, but that it still permits interpretation, so that it will take on its identity through usage. What we make must constitute an offer, it must have the capacity to elicit, time and again, specific reactions befitting specific situations; so it must not be merely neutral and flexible – and hence non-specific – but it must possess that wider efficaciousness that we call polyvalence’.

(Hermann Hertzberger: *Lessons for Students in Architecture*)





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My committee members Heiner, Bill and Mike for leading me through the thesis. You have been very patient and supportive to me.

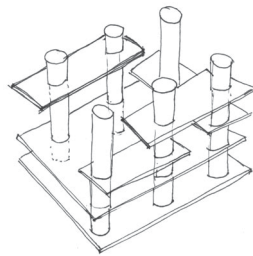
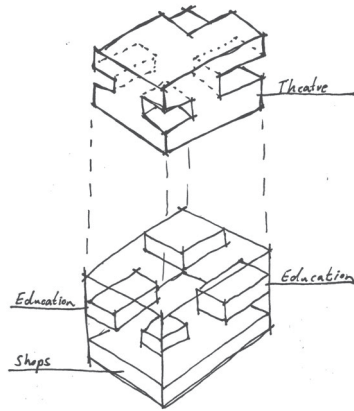
Bill Brown who encouraged me to take a "Road trip".

My parents, my sister and my brother for their love and support of all my steps in life.

The Fulbright Commission in Berlin who gave me the opportunity to study at Virginia Tech.

My friends in Blacksburg. It was an intense year full of work and fun.

My friends in Germany who always had an open ear for my concerns and encouraged me to keep going.



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All Images are created by the author except for:

p.7: Fitch, James Marston. 1960. *Walter Gropius*. Image 58 - 61

p.10 /11: Hertzberger, Herman. *Lessons for Students in Architecture*. p.152 and p.153

p.12: Roose-Evans, James. *Experimental Theatre from Stanislasky to Today*. p.76 and p.77

Quotes:

p. 9: Roose-Evans, James. *Experimental Theatre from Stanislasky to Today*. p.112

p.13: Gadamer, Hans Georg. *Truth and Method*.

p.71: Hertzberger, Herman. *Lessons for Students in Architecture*. p.152



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