A SCHOOL FOR THE PERCUSSIVE ARTS
Austin, Texas

by

Matthew Douglas English

A THESIS
IN
ARCHITECTURE

Submitted to the Architecture Faculty
of the College of Architecture of Texas Tech University
in Partial Fulfillment for the Degree of

BACHELOR OF ARCHITECTURE

Chairman of the Committee

Programming Instructor (ARCH 4395): Prof. M. Peters
Design Critic (ARCH 4692): Prof. Dudley A.. Thompson

Accepted

Dean, College of Architecture

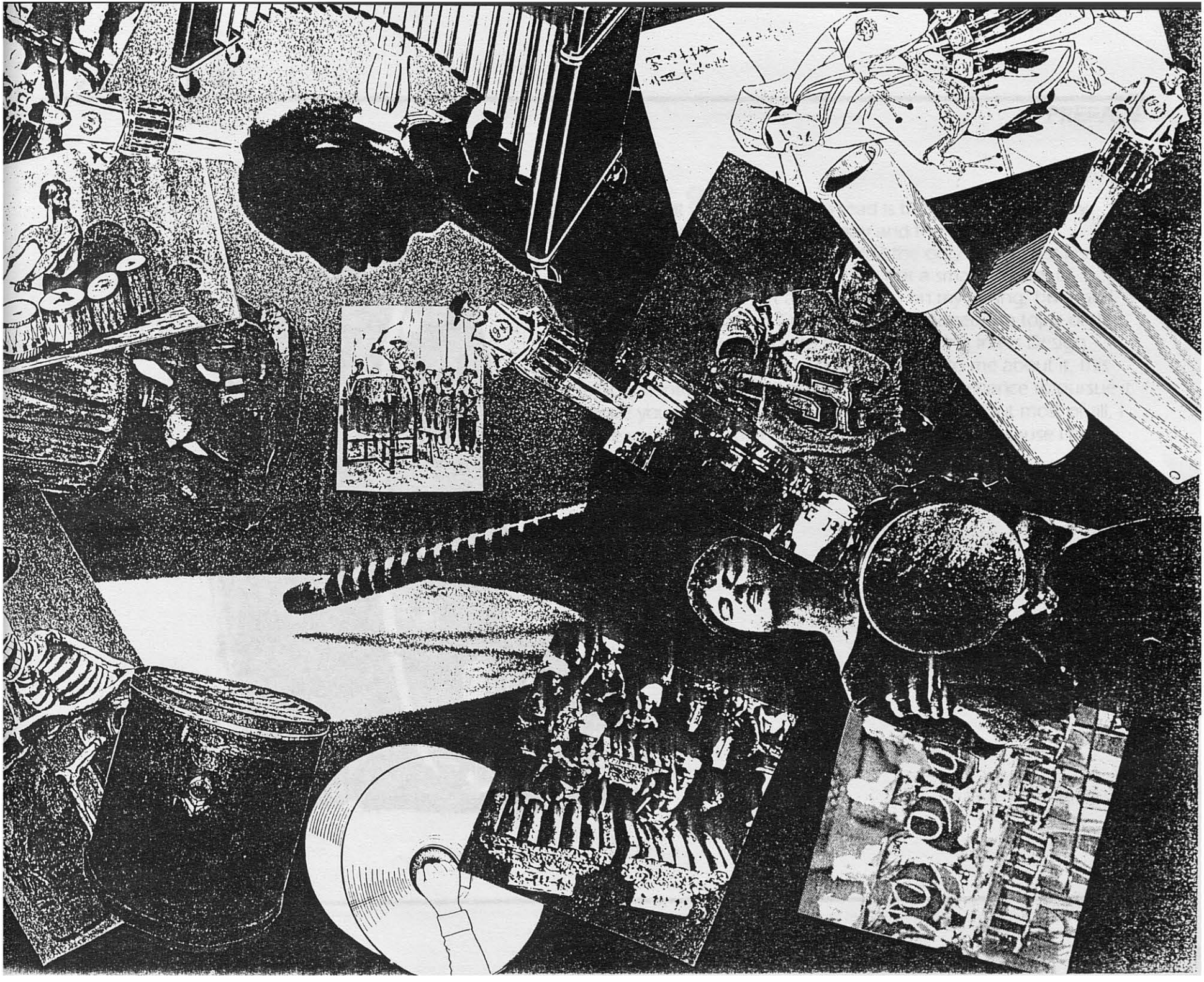
May, 1996

To my mother and father, who have stood by me physically, mentally, and financially throughout my entire life and, most especially, my five years here at Texas Tech University.

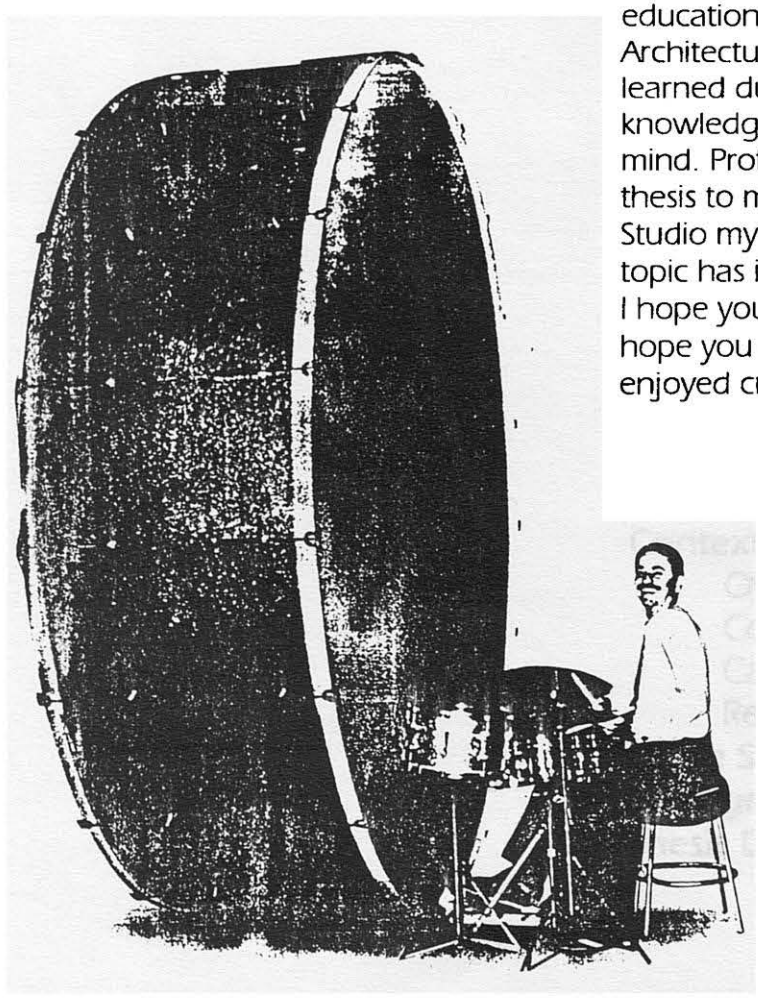
To Kim, my loving fiancé, who has supported me and kept me going when times were rough.

To my brother, Ryan, who has helped me out when I needed him most.

To my friends, all of whom have given me a swift kick in the butt when it was required.



PREFACE



What you are about to read is the culmination of my education at Texas Tech University and the College of Architecture. Granted, these are not the only things that I have learned during my stay in Lubbock, but a small amount of knowledge that has left an impression on my young, but aged mind. Professor Robert Coombs first mentioned the topic of this thesis to me when I had the privilege of being in his Design Studio my Junior year. Ever since he talked to me about it, this topic has interested me, and now, I have the chance to pursue it. I hope you find this thesis as interesting as I do, but most of all, I hope you enjoy reading the enclosed material, because I have enjoyed creating it.

TABLE OF CONTENTS

ABSTRACT

Thesis Statement

A dialogue between form and void can be created when openings in architectural expression are varied to express rhythm, movement, repetition, and transformation.

Facility Type

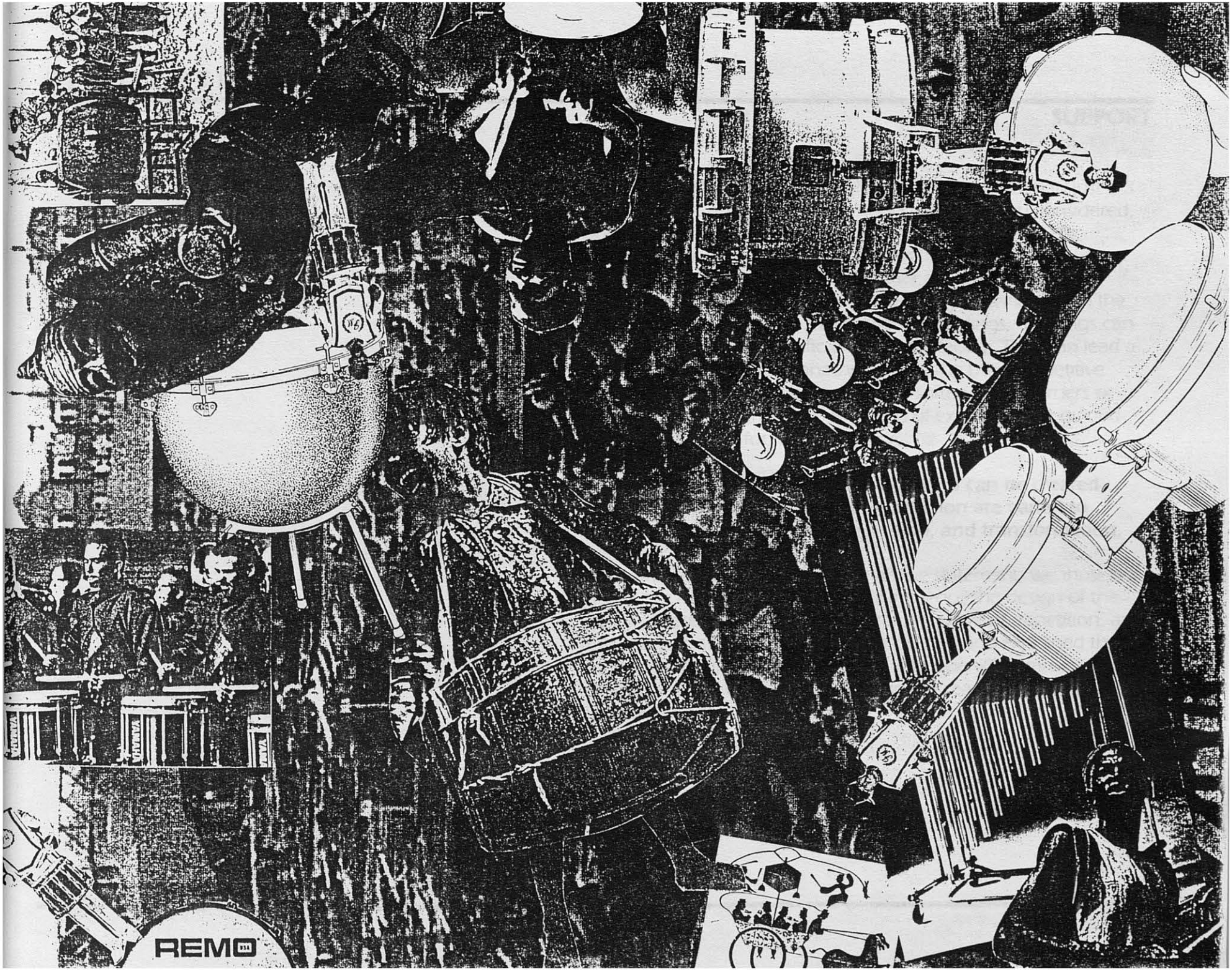
The vehicle for this thesis will be a School for the Percussive Arts, which will provide an arena for the performance, education, and enlightenment for all who are interested in the field of percussion.

Scope of Project

The school will be approximately 70,000 square feet and will provide spaces for an auditorium, rehearsal hall, practice rooms, classrooms, and all other spaces needed to help educate those interested in pursuing an education in percussion music.

Context Statement

The site for this school will be in Austin, Texas, the state's capitol. It is a park located downtown and is bordered by the streets of Red River to the East, Trinity to the West, 15th to the North, and 12th on the South. The diversity and dynamic nature of the nearly 500,000 inhabitants will greatly impact the design of this facility.

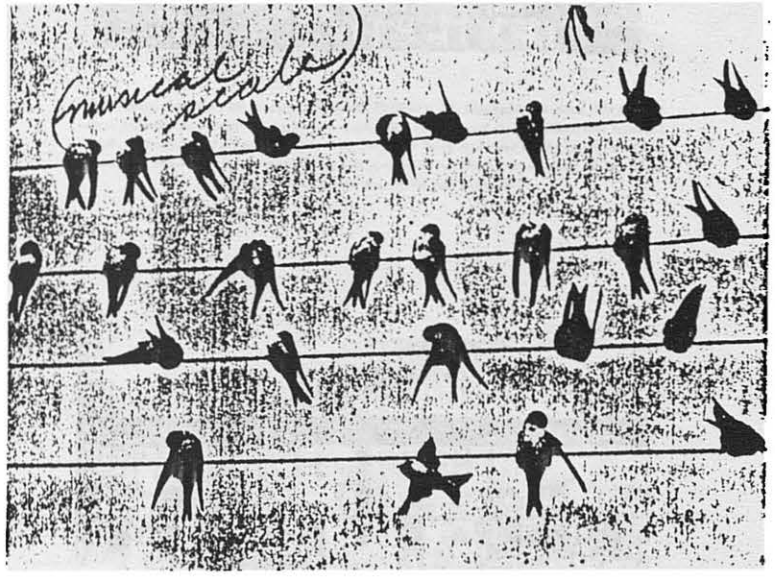

REMO

SUPPORT

Openings in architectural form can be more than just a 3 foot by 5 foot hole punched through a wall. When considered, openings can express such things as emotion, movement, direction, transformation, relationships, rhythm, framing, repetition. Openings can give the user a sense of scale and proportion. Openings are also more than just windows an the exterior of a building. On the interior of buildings, openings can associate the user to specific areas of the facility. They can lead a person from one area to another just by the use of repetitive shapes. Openings can also be used to soften sharp corners or lighten dark ones. These are the kinds of examples that guided me to the premise for my thesis, which is:

A dialogue between form and void can be created when openings in architectural expression are varied to express rhythm, movement, repetition, and transformation.

In order to understand the above statement, we must first look at the major elements that will influence the design of the facility. These are the words: rhythm, movement, repetition, and transformation. Only after we have defined and explained the close relationship these words have with openings, music, and architecture can we really understand the reasoning behind both the topic and facility type.



RHYTHM

1) Regularity in the repetition in time or space of an action, process, feature, opposing or different conditions, events, etc.

2) Periodic or cyclical change or movement.

3) (MUS) The systematic grouping of musical sounds, principally according to duration and periodical stress; an instance of this, a specific arrangement of such groupings; the feeling for this.

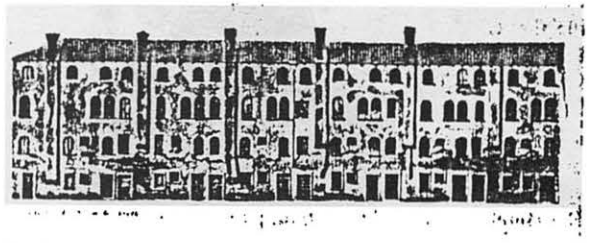
4) A rhythm instrument, musician, or section

5) (ART & ARCHIT.)The harmonious sequence or correlation of colors, elements, or masses.

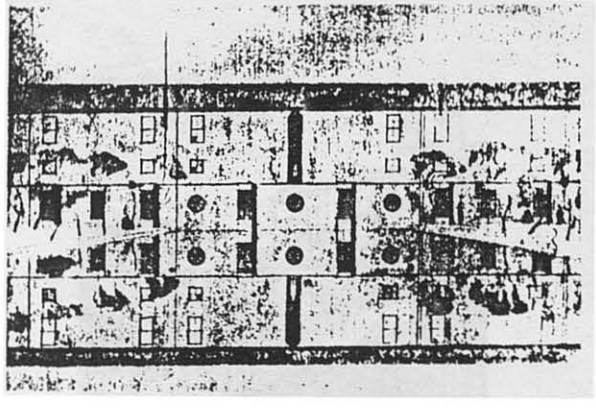
*The above definitions come from the Oxford English Dictionary (OED) and only pertain to this thesis.

Rhythm is evident in all things. The photograph to the left shows a number of birds perched on some power lines. Now we know the birds did not plan to sit in this arrangement on the wires, but this random dispersal leaves us with a strong image. The visual aspect of the birds, combined with the wires, gives the impression of notes on a musical scale. The tail feathers help add to the impression by giving the "notes" duration (eighth, quarter, whole, etc.) in time.

Rhythm in openings can be created just as easily. In some of the older buildings, a rhythm can be seen between alternating small and larger windows. This undulation of sizes gives the larger windows a greater importance than the smaller. A rhythm



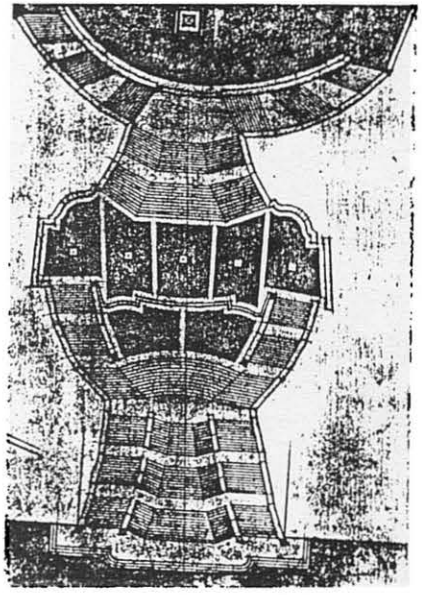
Row-houses from the 15th century in Calle dei Preti near Via Garibaldi in Venice. The façades were probably more uniform originally. Each story had its own rhythm which was repeated with strict regularity across the entire row, the houses being separated by the regularly placed chimneys. Each flat was in two storys, one street-door leading to the dwelling on the lower floors, the other to the one on the two upper floors



of **one**, two, **one**, two can be interpolated from this. Not just the size of the openings can stress one over another, but the shape can influence the rhythm as well. If we use a waltz rhythm, such as **one**, two, three, **one**, two, three, we can stress the first beat with a different shape, such as a circle or triangle amidst squares. Other rhythms exist in openings, but one must look and be aware of the various kinds of rhythms to find them. The usual way of seeing these rhythms is usually just the expression of the windows on the exterior of a building. This seems to be a fault with architects today. If rhythms are continued on the inside, they can "play" with the user by leading him from one space to another, much like that of a game.

Rhythm, though subtly present in openings, is easily recognizable in music. The rhythm in music is the underlying beat that keeps the piece moving ever forward. "The term rhythm is borrowed from other arts involving a time element and based on movement, such as rhythm and dancing."[1] Before architecture began to use words such as rhythm as expression on buildings, the term was employed in music. This is what gave the notes the dimension of time. The word made a whole note four counts, a half note two counts, a quarter note one count, etc. and from this came the basic time measurement of music. Without a rhythm line behind it, music becomes an abstraction that is free in form and seemingly endless. Rhythm, however, provides the direction for all music, giving a definite beginning and end.

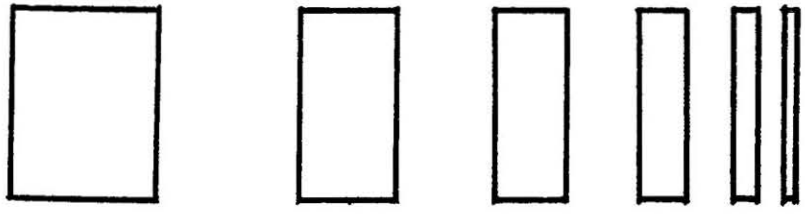
Architecture itself has rhythm. Herb Greene, author of Mind & Image: An Essay on Art and Architecture, said that, "if a combination of rhythms can be harmonized in an image, the result is like a dialogue or conversation in which one rhythm



informs, supports, or offers contrasts to the other."[2] Architecture becomes the image in which dialogues are created. Art has a two dimensional surface upon which rhythm is created by use of shaping, massing, and color. Architecture, on the other hand, is given the benefit of an added dimension, depth, upon which to create. This is where a certain variation in materials can create rhythms, or where shade and shadow, play a rhythmic game with light thereby creating a dialogue that some can see and others just feel. Using this premise of the layering of rhythms, architecture can not only emphasize one rhythm on the outside, but can actually contrast with that of another melody of rhythms on the interior. This variation of rhythms can create a virtual (or visual) harmony of rhythms making the architecture itself into its own visual composition. The Spanish Steps of Rome were created to connect the low-lying Piazza di Spagna to the lofty Piazza del Trinita. Instead of just making a straight flight of stairs from the bottom to the top, the architect created stairs with bends and turns based on a ceremonial dance - the Polonaise:

> ...the dancers advance four by four in a straight line and then separate, two going to the right and two to the left, they turn, turn again, curtsy, meet again on the large landing, advance together, separate once more to left and right, and finally meet again at the topmost terrace...[3]

The effect of this rhythmic progression to the top makes the endeavor of climbing such a distance less strenuous because instead of noticing the travel, one notices the ease of movement from one level to another.



MOVEMENT

1.) The action or process of moving; change of place, position, or posture; passage from one place or situation to another; activity.

2.) The impression of motion in a work of art; harmonious variety in the lines and ornamentation of a building.

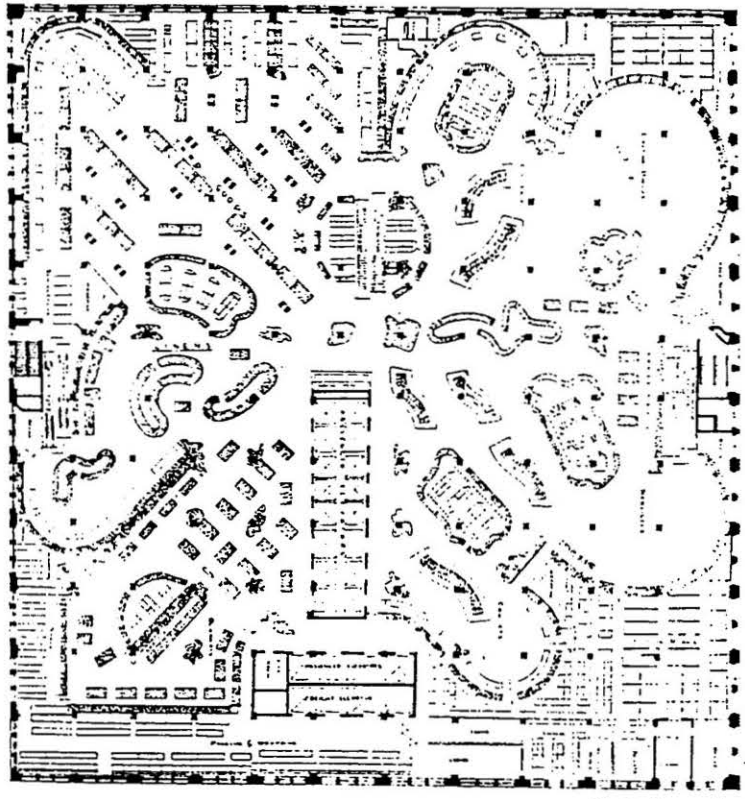
3.) The manner of transition from note to note or passage to passage in a piece of music; the manner of melodic progression, tempo; rhythmical or accentual character in music or prosody

4.) A principal division of a longer musical work having a distinctive structure of its own and usually ending with the players ceasing to play.

*The above definitions come from the Oxford English Dictionary (OED) and only pertain to this thesis.

Movement is one thing that we cannot stop. A person eventually moves from one place to another, whether that is from one room in a building to another, from the couch to the bed, or from one place in town to another. The only thing to stop a person's natural inclination to move is death. We all move until we die.

Openings can create this sense of movement when used correctly. Take, for instance, a long wall. When you walk along side it, you feel nothing until you reach the end and only then, when the wall is gone, do you realize the experience is over. If the wall were perforated with openings starting out as the sketch



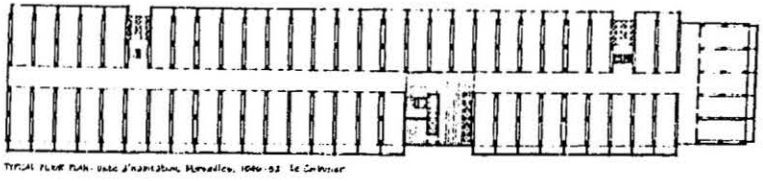
Sixth floor plan,
Kaufmann Department Store,
Pittsburgh, Pa.

to the left, even though you are walking at the same rate, the smaller width of the opening gives the impression of an accelerated rate of speed. The same feeling is experienced when you would fly on a plane. At night, if you watch the runway lights outside the window, the faster the plane accelerates to takeoff speed, the faster the lights pass by. This is the same illusion demonstrated above. If you were to make the openings just the opposite from before, the experience would be completely different. You would feel as though you were slowing down even though you were not. These types of games can be used to an architect's advantage.

Music also employs this concept of movement. The fourth definition on the previous page talks about the most known of all musical definitions for music - the divisions of a whole musical score. Aside from this, music uses movement from one section of a piece to another, not just by the rhythm of the piece, but from the melodies as well. One notices the progression from one theme to another until, at last, the whole theme comes together in the final movement signaling the end of the composition.

Architecture is one thing that cannot stop movement. Users of a facility are always moving from one space or experience to another. Paul Grillo, author of Form, Function, & Design, says that, "Dead end walls and one-way trips are only the fate of prisoners and slaves."[4] We all have choices on where we are going next. In order to accomplish this in architecture, one creates a building with open circulation patterns. Department stores are arranged in a way so as to make sure that people can get from one department to another, but have to walk around many display cases, thus keeping them in the store longer and

giving them more inclination to buy something. This is why you will rarely ever find a straight way out of a department store. Architects can use the concept of movement to rush you through a building by making straight, direct circulation paths, or slow you down with meandering courses that wind their way through space after space after space.



REPETITION

1) The action of repeating something that has already been said or written, esp. in order to retain it in the memory, or as a literary device; an instance of this.

2) (Mus.) The repeating of a passage or note.

3) (Mus.) The ability of an instrument to repeat a note quickly.

*The above definitions come from the Oxford English Dictionary (OED) and only pertain to this thesis.

Repetition can take many shapes. They can be apartment building floor plans, with one basic plan flipped and repeated, over and over, to create a long rectangle of living spaces. It can also be seen in the structural bays of buildings. Each member repeating itself in a linear fashion to create a storage warehouse. Repetition can be soothing in the fact that when we see something over and over again, we become accustomed to it eventually to the point of where we might not even notice it anymore. This, however, is the fault behind repetition. When we repeat things to that kind of an extent, it becomes boring. Every now and then, another element is needed to break up the monotony of the repetitive ones.

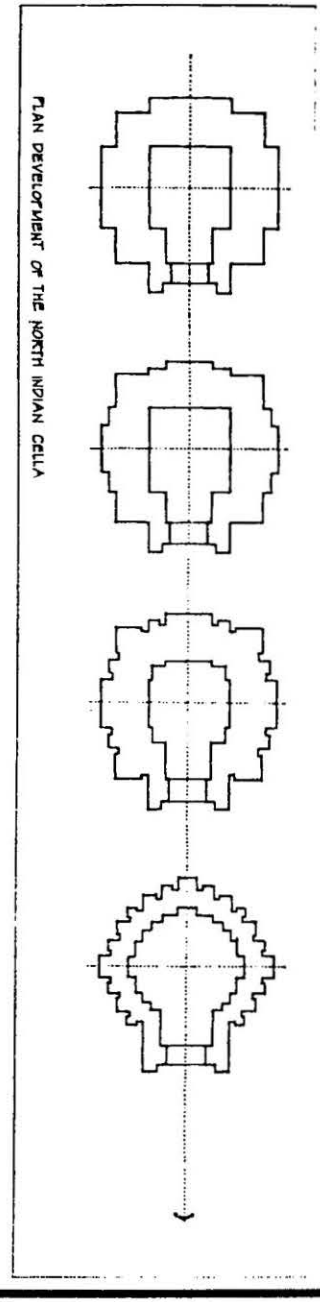
Openings are the most obvious form of architectural repetition. Windows are the first thing that comes to mind with repetition. The most common form for this comes from "building block" architecture where you have a cube-shaped office

building. The windows on the "box" are rectangles, and many of them, repeated over and over, floor after floor. Chicago-style architecture as the most prevalent style to utilize these types of openings. The uniformity created by the regularly-sized and shaped openings is what took this style to the top. The construction behind the building provided stability and looked powerful, but the overuse of this became its downfall. Eventually, all buildings took on this form, taking the style into the abyss of monotony.

Music has this element of repetition, but is more subtle because of the layering of other instruments over the repetitive one. The most obvious example of repetition within a musical piece is Maurice Ravel's "Bolero." The percussion starts the piece of with a phrase of **one**-triplet-**one**-triplet-triplet-triplet and back to **one**-triplet-etc....which is repeated throughout the entire composition, never changing. The brass section plays the same rhythm as does some other sections, and the flute comes in with the melody. This is repeated over and over, only switching who plays the melody after every complete run of the melody. As the piece progresses, the intensity grows and grows, until sections switch off playing the melody and the percussion section grows ever louder. The piece begins to pick up speed and eventually climaxes. There are other examples of repetitive phrasing in music, but this one is the most noted. Besides rhythms, melodies and themes are repeated over and over in music to create the whole composition.

Repetition in architecture is made up of elements, whether it is a floor plan, certain masses, decorative elements, and so on. Like music, architecture has certain themes that are repeated

throughout a work. Richard Meier's Canal+ Headquarters is a good example of this. Window treatments, aluminum paneling, and particular masses are repeated throughout the geometric form of the building. Buildings with dissimilar floor plans, but similar exterior elements (such as domes, spires, etc.) can make an entire scene seem as though it was carefully planned to be that way. The picture to the left is an example of this. The scattered nature of the city of lost in the repetitive regularity of domes. Apartment complexes are well known for their regular flipping of floor plans to create a simple rectangular building. This is quite cost-efficient, but like most repetitive elements, when used to the extreme, become commonplace. We don't even recognize they're there anymore.



TRANSFORMATION

1) The action of changing in form, shape, or appearance, metamorphosis.

*The above definitions come from the Oxford English Dictionary (OED) and only pertain to this thesis.

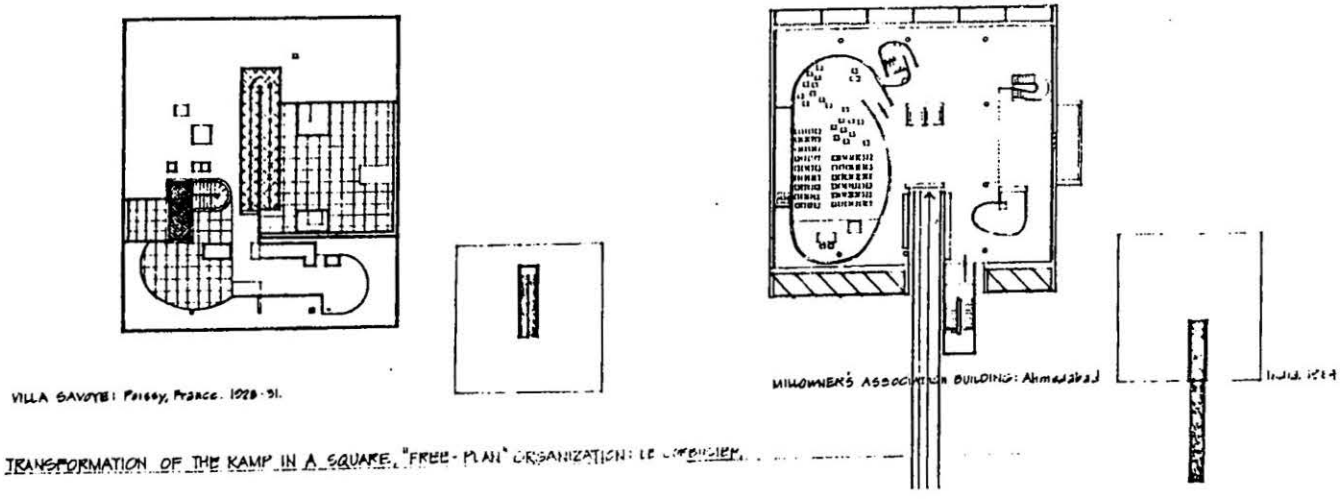
Transformation is a subtle way of taking a base form and pulling, adding, and subtracting pieces here and there and eventually changing the earlier shape into something that might look more complex, but actually is not. Usually, the end result provides us with an extremely interesting visual form

Transformation in openings take the effect of changing shape though a series of key points, such as a square changing into a circle. After adding vertexes to the sides of a square, a more rounded shape is presented, and after repeating this cycle "X" number of times, eventually, a perfect circle is the end result. This can be the case with most transformations. Another example of the transformation of an opening can be a vertical slit opening becoming a horizontal one, but not by rotating the opening ninety degrees.

Music also has transformations of its own. Just like the repetitive theme in a piece, sometimes, from one movement to the next, the theme is varied just a little and by the end of the composition, the final melody cries out to be heard. Ottorino Respighi's "Metamorphoseon" is a good example of this. The piece starts of with "Theme" and then "Modus I" begins the

transformation of the theme. This continues, each mode containing the theme, but altered more and more each time until, at "Modus XII" the theme is changed into something completely different. Other composers take their shot at transformation of themes, usually titled something like "Variations on a Theme" some successful and others not.

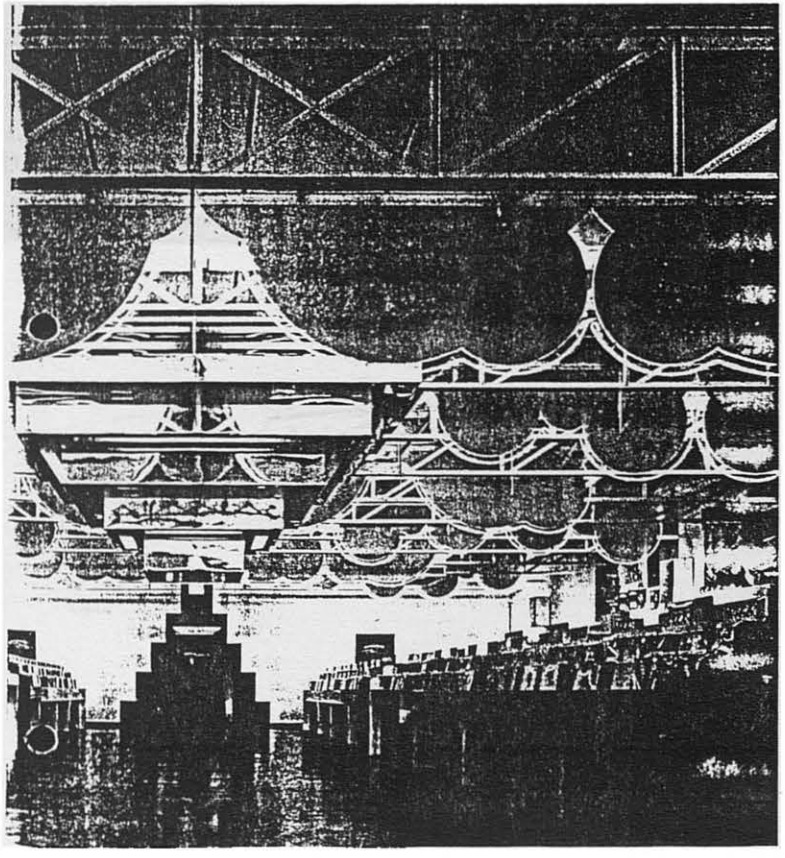
In architecture, transformations start out the same way as musical themes. To the left are some examples of how the transformation process takes place. Here we see that there is little difference between the mass at the beginning of the process and the mass at the end of the process. What we do notice, however, is that the level of detail in the plan has been greatly upgraded. This is usually the case in "transformational architecture." A basic "kit of parts" is assembled to be the form generator, and then after the basic form is established, the addition and removal of pieces takes over until, at the designer's prerogative, the process is over.



VILLA SAVOYE: Poissy, France. 1928-31.

MILLOWNER'S ASSOCIATION BUILDING: Ahmedabad

TRANSFORMATION OF THE KAMP IN A SQUARE, "FREE-PLAN" ORGANIZATION: LE CORBUSIER.



PROJECT:

Record Store
Coral Gables, Florida

ARCHITECT:

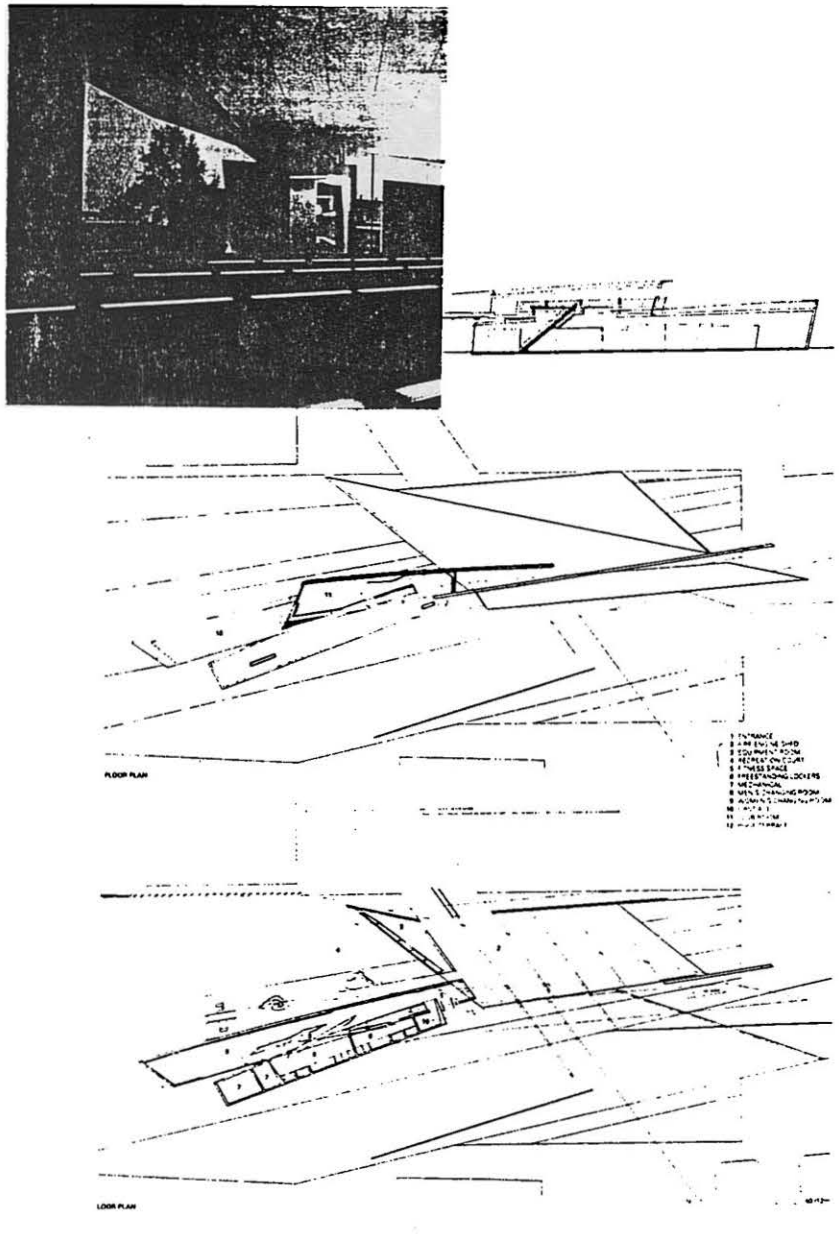
Charles Sieger, AIA

DESCRIPTION:

Previously a restaurant, the 5,800 sq. ft. space was completely gutted and remodeled into a record store for the city of Coral Gables, Florida. Upon taking down the three levels of suspended ceiling, open web trusses were found. From these trusses, cloud-like formations were suspended. Sieger "flipped the forms back and forth and varied their placement, and act he likens to musical variations on a theme." The combination of a highly-reflective floor material, neon-outlined clouds hanging from the ceiling, and cloud-like forms repeated in the shelves are said by the architect "to create a stage set just waiting for John Travolta.

CRITIQUE:

I believe that the architect is making a very shallow attempt at creating rhythm. The cloud elements seem more repetitive than rhythmic - you need to do more than just flip patterns back and forth to create a feeling of rhythm. If the architect, maybe, had more than just two (it seems) forms for clouds and arranged them in a way so as to compliment the nature of the shelves, I believe this could have given the clouds a feeling of a light-hearted counter-rhythm superimposed on the bass-like rhythm of the shelves. Unfortunately, it does not seem like the shelves are even arranged in a rhythmic pattern.



PROJECT:

Vitra Fire Station, Vitra factory compound
Weil am Rhein, Germany

ARCHITECT:

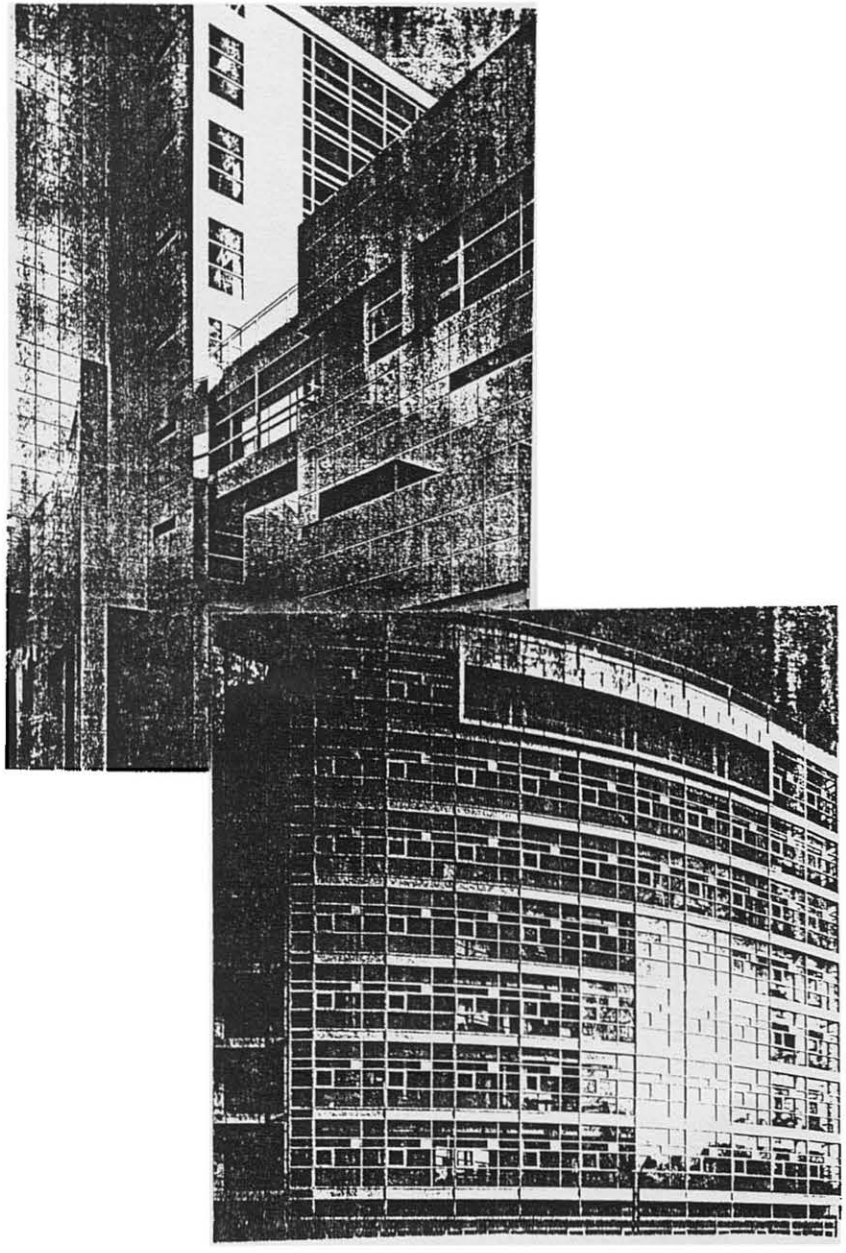
Zaha M. Hadid

DESCRIPTION:

This is a 9050 sq. ft. fire station that houses five fire engines plus equipment, changing areas and sanitary facilities for 35 firefighters. It also houses spaces for a fitness area, club room, and technical areas. The building is comprised of reinforced concrete walls with reinforced concrete beams and floor slabs. The form for the building was derived from the lines of force created by the sightlines of the site to cause the building to "wrap-around."

CRITIQUE:

Regardless of whether or not the floor plan works, the overall form of the building screams movement. The "sightlines of force" that make up the geometrical constraints of the building thrust out in every direction. It pulls the user down the expanse of the building, drawing the eye of the onlooker from one dramatic plane to another. This "pulling" of the participants, however, is also the building's fault. It seems as though the looker never has a chance to catch up - his eye being "dragged" from point to point. The windows seem to be the only refuge from this visual "tug-of-war." All in all, the building is a great example of form conveying movement. Even the fire truck garage, with its illuminated floor grates, seems to prepare the trucks for a virtual "take-off."



PROJECT:

Canal+ Television Headquarters
Paris, France

ARCHITECT:

Richard Meier & Partners

DESCRIPTION:

This 380,000 sq. ft. building houses the production facilities, studios, auditoriums, and offices for the Canal+ pay-television company. The site is on the Southeast bank of the Seine River and is bounded by the Citroen Factory. The building, made of site-cast concrete and aluminum panels, makes an L-shape around the Northwest and Northeast sides, and the southern area of the site is underground parking with green space above creating an encompassed park.

CRITIQUE:

It is hard to find fault with his design of the Canal+ Headquarters. The articulation between the separate elements of the facility make an impressive composition. The repetitive nature of the windows along the Northwest side create an interesting dialogue not only with the horizontal and square elements of the windows themselves, but also with the usual Meier touch of aluminum panel gridding that make up some of the other elements of the building. The panels, with their twisting and turning around the building, and also with Meier's popping out of some sections of wall are still repetitive, but are given a third-dimension in which to exist.

REFERENCES

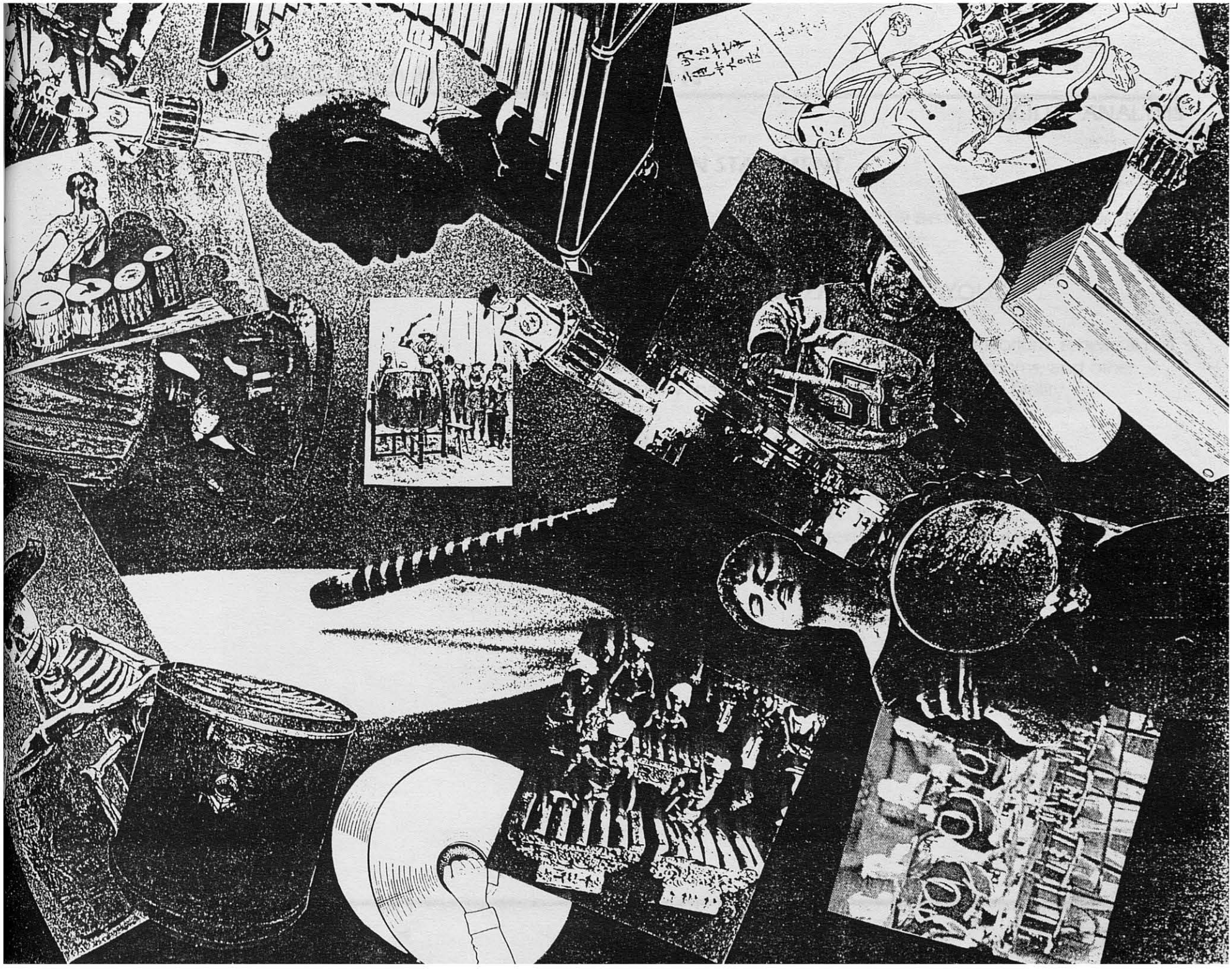
[1]Rasmussen, Steen Eiler. Experiencing Architecture. Massachusetts: MIT Press, 1962, p.133.

[2]Greene, Herb. Mind & Image: An Essay on Art & Architecture. Lexington, Kentucky: University Press of Kentucky, 1976, p.124.

[3]Rasmussen, p.136.

[4]Grillo, Paul Jacques. Form, Function, & Design. New York, NY: Dover Publications, 1960, p.206.

FACILITY PROGRAM DESCRIPTION



MISSION STATEMENT

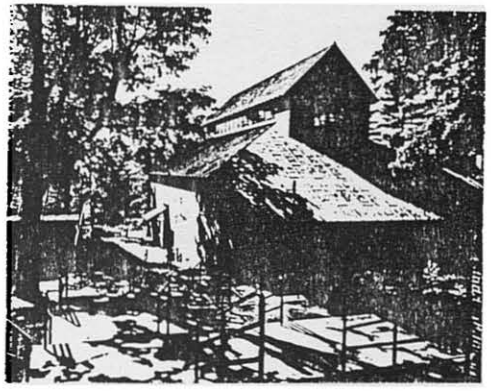
To create a building for the performance and education of those interested in percussion music.

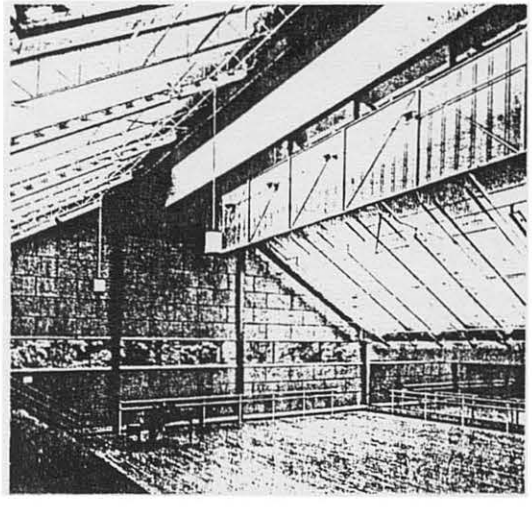
FACILITY ORGANIZATION & LAYOUT

The building will house a formal auditorium, rehearsal hall, offices, lecture rooms, classrooms, practice rooms, and other ancillary spaces needed for the upkeep of the facility.

GOALS & OBJECTIVES

The three major goals that this facility should accomplish are the expression between form and void, close ties to the diverse and dynamic context of the city of Austin, and provide comfortable spaces for the users to work, rehearse and learn.





PROJECT:

Dance Studio and Music Performance Hall
St. Paul's School, Concord, NH

ARCHITECT:

Hardy, Holzman, Pfeiffer Associates

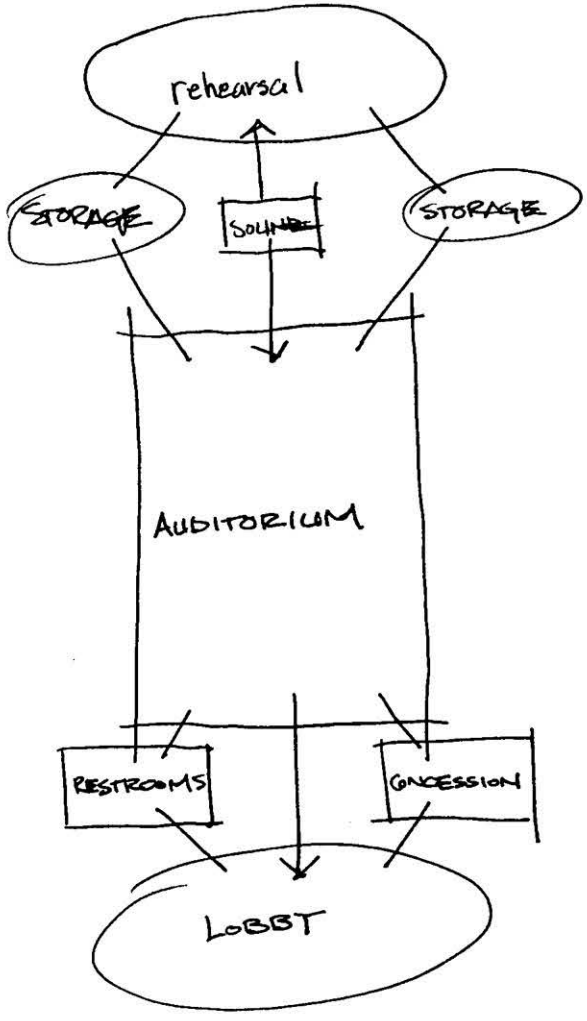
DESCRIPTION:

This is an addition to the St. Paul's School that will be a dance studio and music hall for roughly 200+ students. The 17,024 sq. ft. addition was reduced in scale by splitting up the building into two functions, a 7652 sq. ft. dance hall and a 9328 sq. ft. music building. The building was also sunk into the site and given various roof pitches and heights to help further the scaling down. Brick walls and copper standing-seam metal roofs were employed on the exterior to match the surrounding buildings on the campus. On the interior, exposed structure and wood framing were used to formalize the space.

CRITIQUE:

I agree with the way in which the massive addition was scaled down so as not to overpower the rest of the campus buildings. The underground area of the building is used for most of the classrooms, which is a good idea because it allows for the more important functions, such as the dance and music halls, to be easily accessed by the public on the entry level. Many of the classrooms, however, are not able to receive any natural light because of the sloping nature of the site. The interior spaces, on

the other hand, with their elegant exposure of structure and superb emphasis on natural light, give way to dignified spaces which, I believe, would inspire the users. The architect's use of Gothic-style massing, however, makes the buildings seem more barn-like than the religious, awe-inspiring nature they were meant to be.



AUDITORIUM

Description: A formal space used for the performances of the ensembles at the facility.

Activity: performing, listening

Related Spaces: public restrooms, entry/lobby, ticket booth, concession stand, rehearsal hall

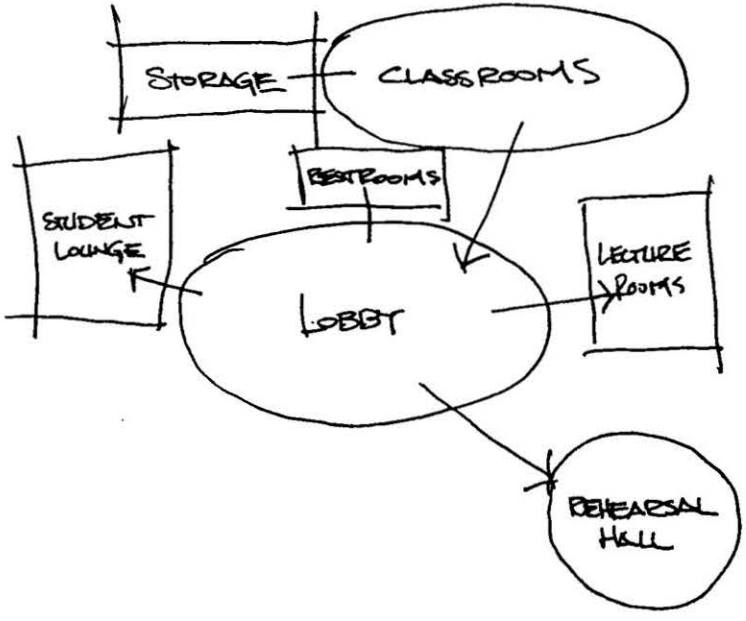
Area: 6000 nsf (1)

Users: faculty, students, performers, spectators

Estimated Number of Users: 1000 - 1200

Performance Requirements: A large open space that can be easily changed to accommodate the various sizes of ensembles to perform. The space should be evenly lit through the use of indirect natural lighting in the daytime and should be brightly lit with artificial lighting for nighttime performances. The finish material should be of high sound absorption quality.

CLASSROOMS



Description: A space in which students will come to learn about various types of percussion music and instruments.

Activity: learning, discussion, teaching

Related Spaces: public restrooms, lecture rooms, entry/lobby, practice rooms, closets, storage

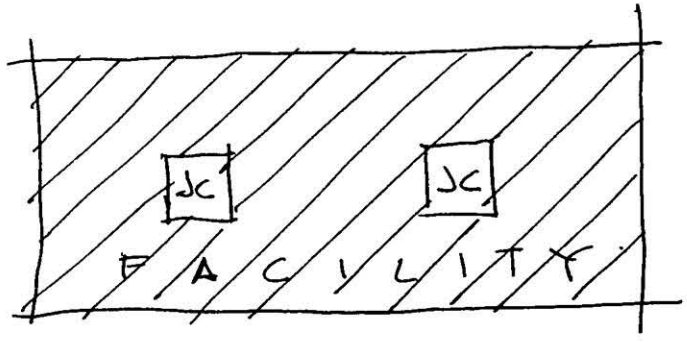
Area: 200 nsf (10)

Users: faculty, students

Estimated Number of Users: 20 - 30 per room

Performance Requirements: This should be an intimate space so as interaction between the faculty and students can be utilized. The space should be naturally lit and provide a large amount of space for larger instruments to be demonstrated. These spaces should also be conveniently located to practice rooms and storage closets.

CLEANING CLOSET (JC)



Description: The cleaning closet is where the staff can retrieve supplies (mops, buckets, etc.) in which to clean the facility.

Activity: storage of cleaning supplies, cleaning of supplies, cleanser preparation

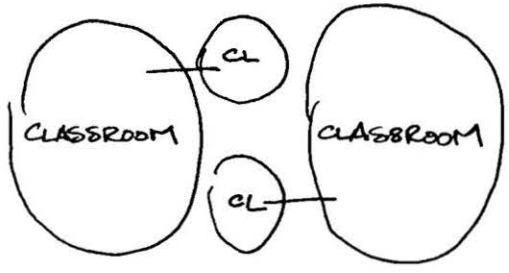
Related Spaces: entire facility

Area: 45 nsf (2)

Users: staff

Estimated Number of Users: 1 - 2 per room

Performance Requirements: The location of these closets should be directly located to the major areas of the facility. It should be large enough to store supplies and provide a sink in which to rinse off the mops and buckets. These spaces should be brightly lit with artificial light.



CLOSET

Description: The closet is a space for the storing of supplies for the various classrooms.

Activity: storing, retrieving

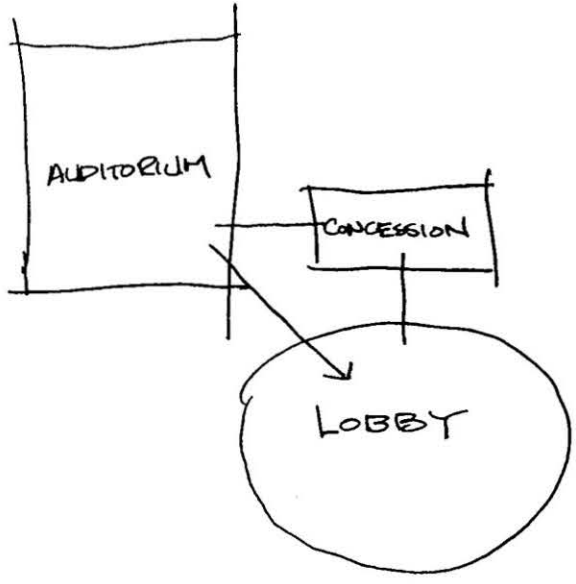
Related Spaces: classrooms

Area: 30 nsf (15)

Users: faculty, students

Estimated Number of Users: 1 - 2 per room

Performance Requirements: These spaces should be large enough to store many supplies without being cramped for space and should allow for the easy removal of needed supplies.



CONCESSION STAND

Description: This is a space for the selling and distributing of concessions (food, drink, items promoting facility functions, etc.).

Activity: selling, distributing, food & drink preparation

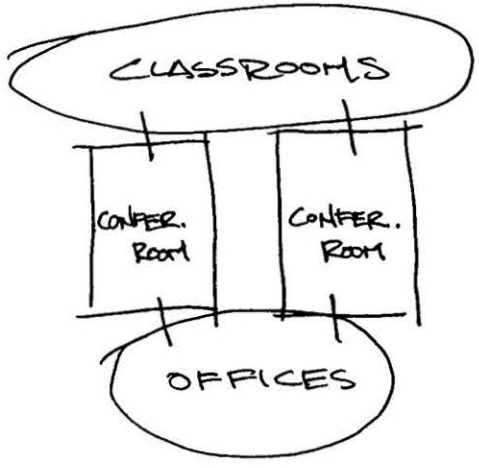
Related Spaces: entry/lobby, auditorium, student lounge, faculty lounge

Area: 100 nsf (2)

Users: anyone scheduled to work in the concession stand (faculty, students, etc.)

Estimated Number of Users: 3 - 5 per room

Performance Requirements: This room should proved space in which vendors can prepare concessions for public consumption. This spaces should have room to store food and drink and other supplies and be brightly lit with artificial light.



CONFERENCE ROOM

Description: This is a space for the faculty, and sometimes students, to use to discuss important matters about the facility.

Activity: discussion, listening, participation

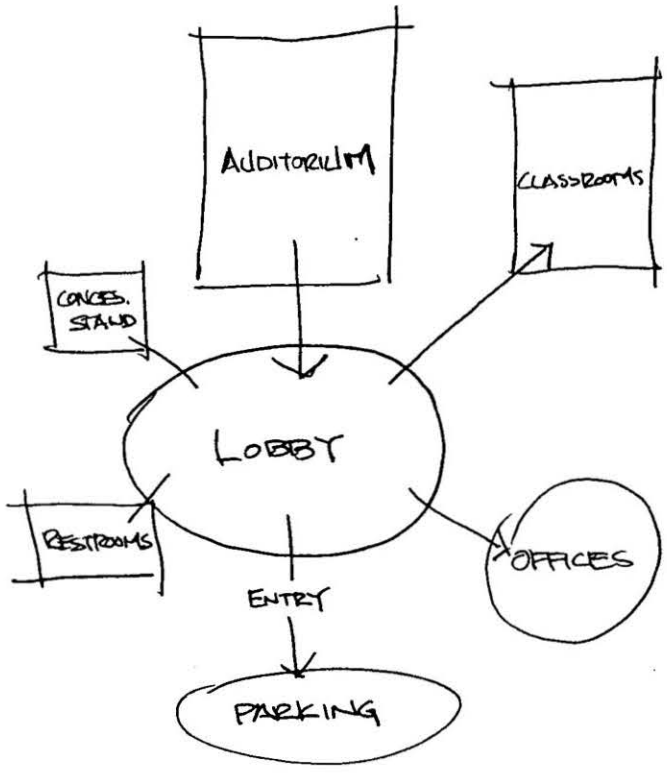
Related Spaces: offices, classrooms

Area: 250 nsf (2)

Users: faculty, students

Estimated Number of Users: 10 - 15 per room

Performance Requirements: This space should provide room for a conference table and seating for 20 (max.) people. There should also be equipment for audio/visual presentations. This space should be indirectly lit with natural light and be located near the offices.



ENTRY/LOBBY

Description: This is a formal space first seen by those entering the facility.

Activity: entering, exiting, interaction with students, faculty, visitors, waiting, eating

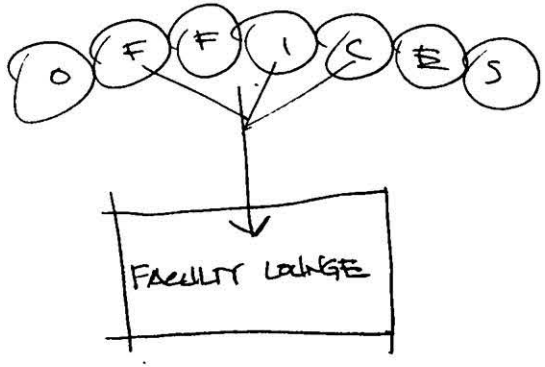
Related Spaces: auditorium, offices, classrooms, lecture rooms, public bathrooms

Area: 1500 nsf (1)

Users: anyone wishing to enter the facility (faculty, students, visitors, staff, etc.)

Estimated Number of Users: 500 - 1500

Performance Requirements: This space, being the first experiences after entering the facility, should be dramatic and covey all thoughts expressed in the thesis statement. There should be easy circulation patterns to other areas of the facility. The room should be brightly and dramatically lit with natural light.



FACULTY LOUNGE

Description: The lounge is a place for the faculty to relax and talk in between classes.

Activity: talking to faculty, relaxing, eating, listening

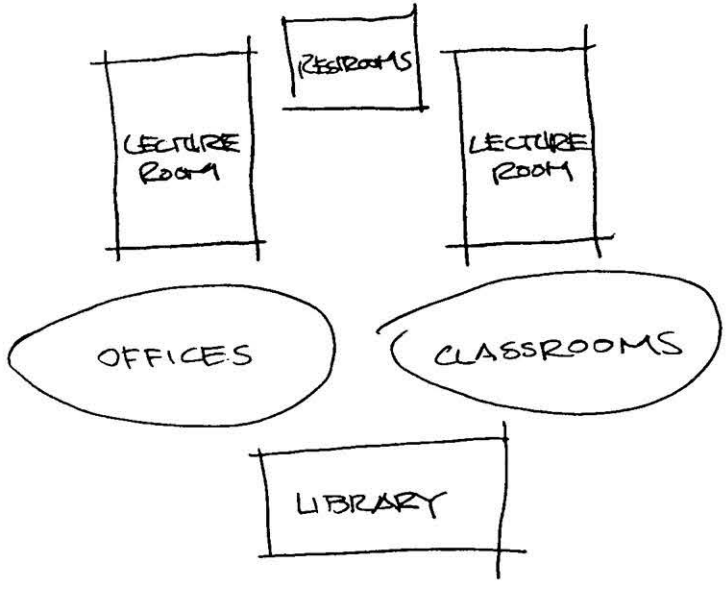
Related Spaces: offices, conference room

Area: 200 nsf (1)

Users: faculty

Estimated Number of Users: 10 - 20

Performance Requirements: This space should provide a comfortable atmosphere in which to relax. The materials should be subtle and intimate, yet also convey a sense of power. The space should be indirectly lit with natural light and should be closely located to the offices.



LECTURE ROOM(S)

Description: This is a large formal space in which lectures will be discussed to the students of the facility.

Activity: lecturing, discussing, interaction, contemplation

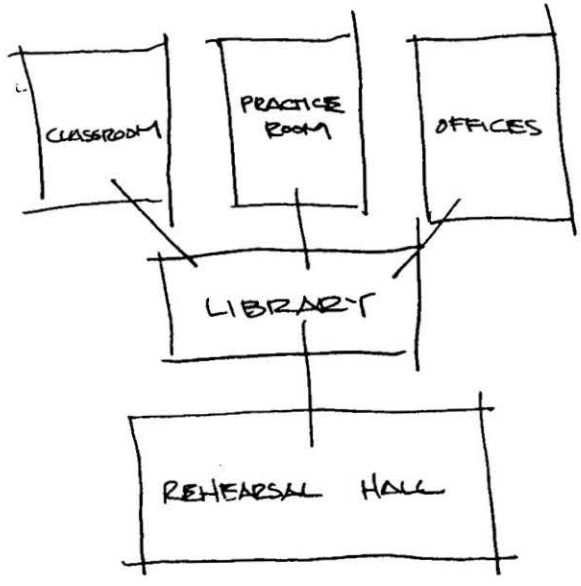
Related Spaces: classrooms, restrooms, practice rooms, offices

Area: 1000 nsf (2)

Users: faculty, students

Estimated Number of Users: 100 - 300 per room

Performance Requirements: This space should accommodate the 300 students that will utilize it and be brightly lit with indirect natural light. The space should be acoustically controlled for the times when demonstrations are taking place. The space should also be provided with audio/visual equipment for special presentations.



LIBRARY

Description: This library is used for those wishing to study audio tapes, video cassettes, or books pertaining to percussion.

Activity: reading, contemplation, discussion, listening, composing

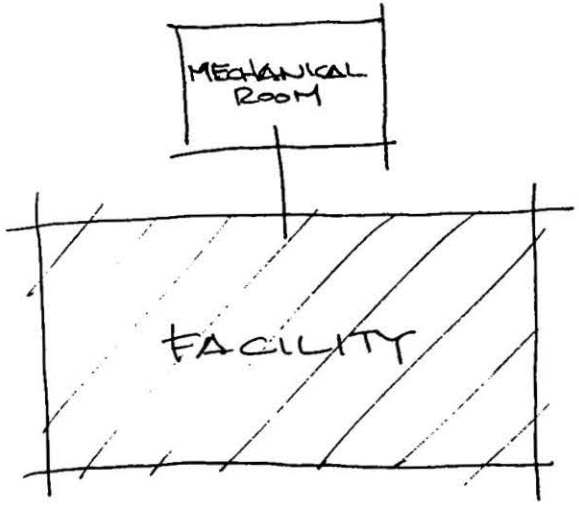
Related Spaces: classrooms, practice rooms, rehearsal hall, offices

Area: 1500 nsf (1)

Users: faculty, students

Estimated Number of Users: 100 - 200

Performance Requirements: This space should be provided with adequate light levels in which to effectively study. It should be brightly lit with indirect natural light. The space should provide enough area for students to sit comfortably and move freely throughout the room. There should be enough storage space to hold all of the books, tapes, videos, and musical scores stored in the library.



MECHANICAL ROOM

Description: This space will house all of the mechanical equipment needed to run the facility.

Activity: working on machinery, repairing machinery

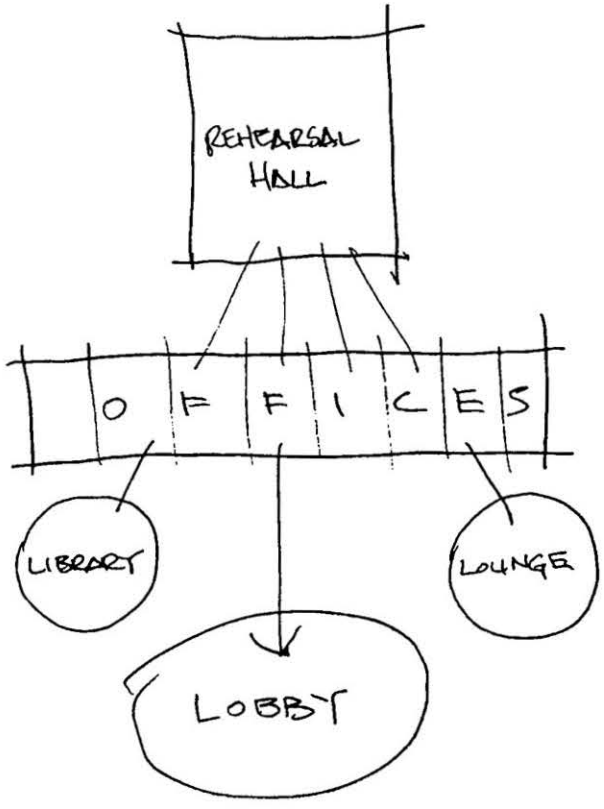
Related Spaces: entire facility

Area: 2500 nsf (1)

Users: staff

Estimated Number of Users: 5 - 10

Performance Requirements: This space requires little or no natural lighting, but can. It should also be provided with appropriate room for equipment and proper ventilation. There should also be direct access to the outside of large equipment needs to be serviced or replaced.



OFFICES

Description: These spaces are provided to the faculty as private workstations.

Activity: grading, talking to students, filing, talking to other faculty members

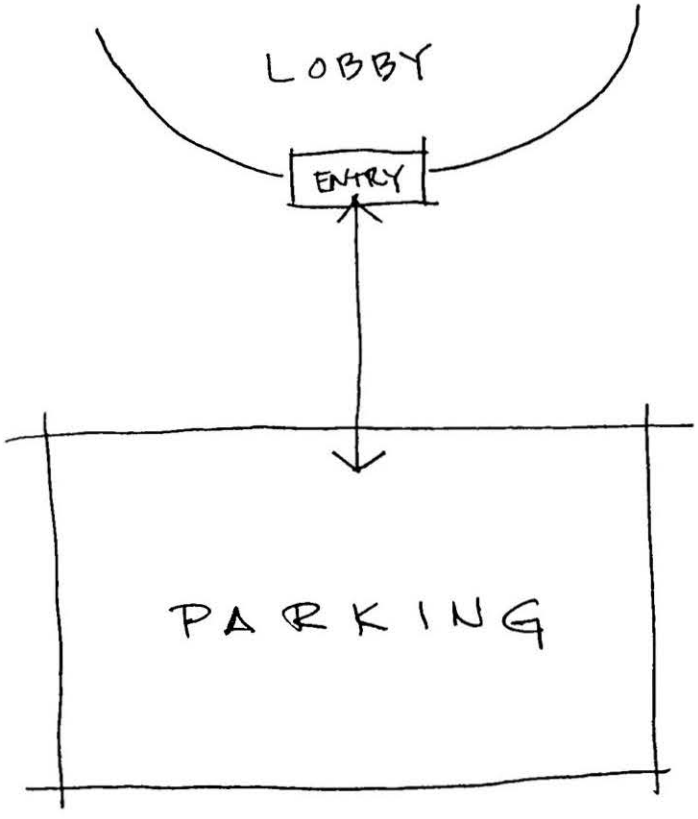
Related Spaces: faculty lounge, classrooms, library, rehearsal hall, lobby, closets

Area: 150 nsf (20)

Users: faculty

Estimated Number of Users: 1 per room

Performance Requirements: These spaces should be softly lit with natural light and provided with small closets for the personal belongings of the occupants. They should not be isolated from the facility because this might keep the faculty - student interaction down.



PARKING

Description: This area is designated for the cars used by the people who visit the facility.

Activity: parking the car, walking to facility, waiting for rides

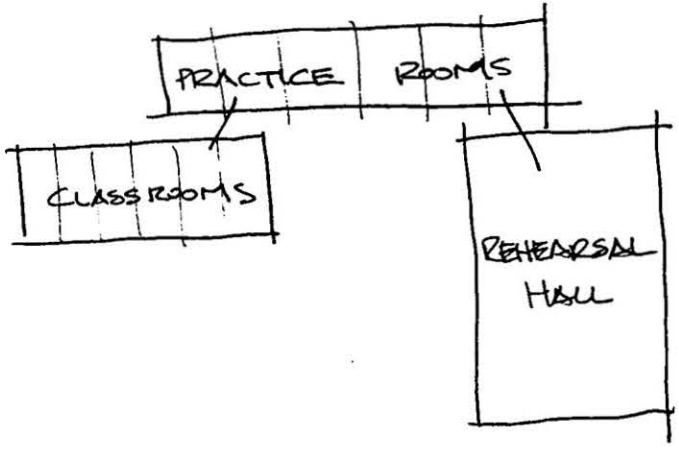
Related Spaces: entry/lobby, auditorium, classrooms

Area: 300 nsf (100)

Users: anyone wishing to park and enter the facility

Estimated Number of Users: 1000 +

Performance Requirements: This area should be well paved with concrete and provide unhindered access to and from the facility. The lot should be well lit at night by large artificial lights.



PRACTICE ROOMS

Description: These rooms are used for the practicing of percussion instruments, whether by one person or a small group.

Activity: rehearsing, composing, interaction

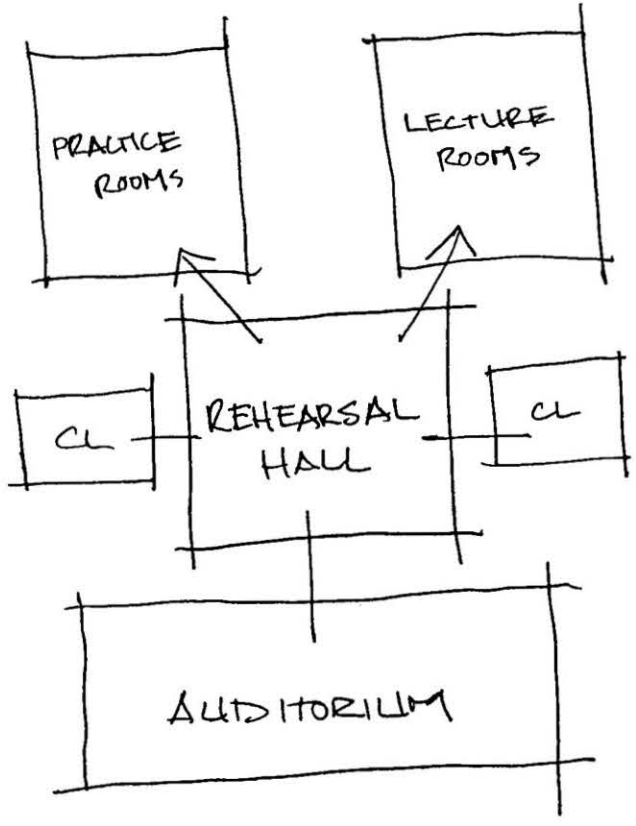
Related Spaces: classrooms, rehearsal hall

Area: 150 nsf (10)

Users: anyone wishing to practice an instrument (faculty, students, visitors, etc.)

Estimated Number of Users: 1 - 10 per room

Performance Requirements: These rooms should be finished with a material that allows for a high absorption of sound. These rooms need also not be naturally lit because of the reverberation aspect of glass. The rooms should provide room for more than one instrument and be close to storage rooms.



REHEARSAL HALL

Description: This large space is used for the rehearsal of programs to be performed at a later formal performance.

Activity: rehearsing, listening, informal performing

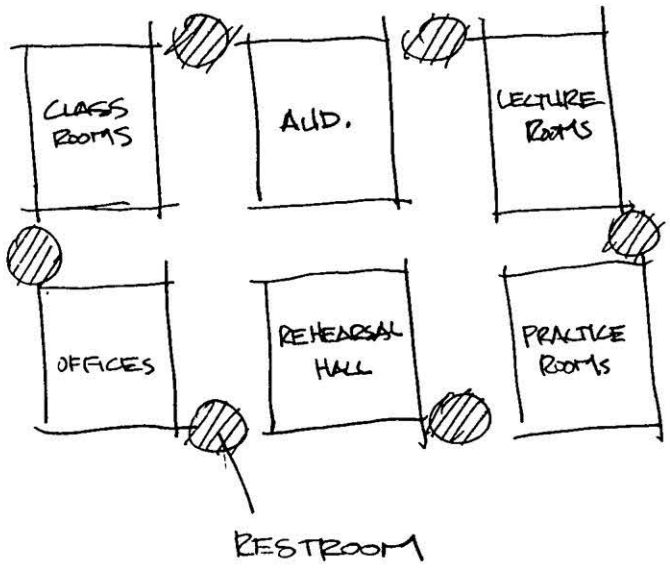
Related Spaces: auditorium, practice rooms, storage closets, restrooms

Area: 4000 nsf (1)

Users: performers (students, faculty, visitors, etc.)

Estimated Number of Users: 15 - 300 (depends on ensemble)

Performance Requirements: This space should be brightly lit by natural light and should be finished with a high sound-absorbing material. The room should be adjacent to both the formal auditorium and storage rooms and have direct access to the outside for the loading and unloading of larger instruments.



RESTROOMS

Description: These spaces will house the lavatories and water closets for the facility.

Activity: cleaning, relieving, washing

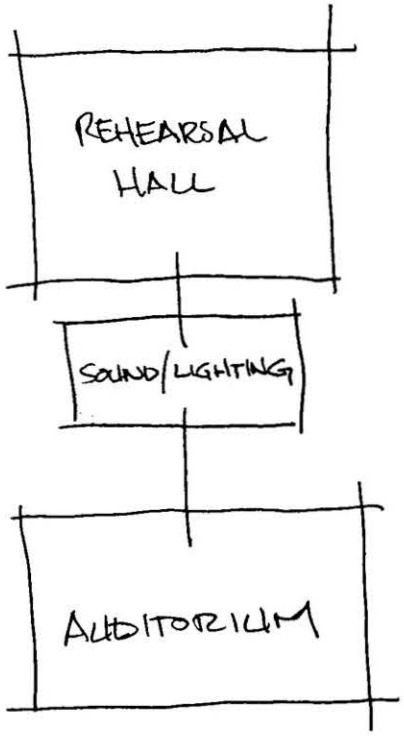
Related Spaces: classrooms, auditorium, offices, lecture rooms, practice rooms, rehearsal hall

Area: 150 nsf (6)

Users: anyone inside the facility (faculty, students, visitors, etc.)

Estimated Number of Users: 5 - 15 per room

Performance Requirements: This space requires no natural lighting, but must provide adequate artificial light in which the users can take care of their business. This space should be well ventilated and be easily accessed from the different areas of the facility.



SOUND/LIGHTING ROOM

Description: This room is used for the mixing of sound and changing of lighting effects for the formal auditorium.

Activity: sound mixing, lighting effect changing, directing, recording, playback of recordings

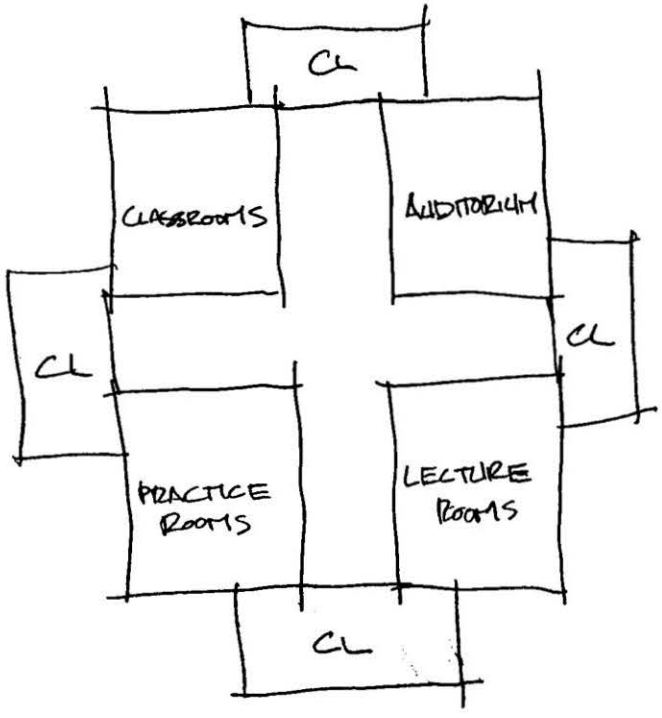
Related Spaces: auditorium and backstage

Area: 150 nsf (1)

Users: anyone with proper sound and lighting training

Estimated Number of Users: 3 - 5

Performance Requirements: This space should be brightly lit with artificial light and have a good view of the entire auditorium. It should be easily accessed by backstage personnel and be audibly secluded from the auditorium.



STORAGE ROOMS

Description: These rooms will be used to store the various instruments used at the facility.

Activity: storing of instruments, retrieving, filing of music

Related Spaces: practice rooms, auditorium, rehearsal hall, lecture rooms

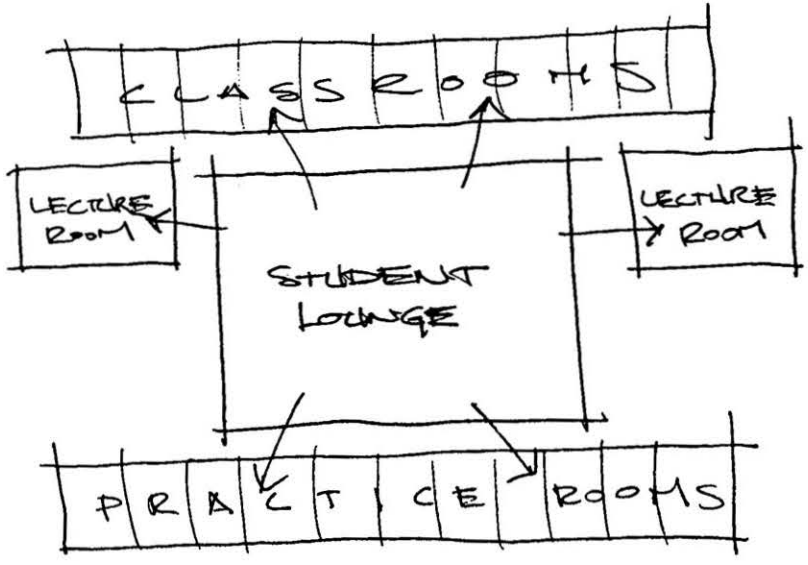
Area: 300 nsf (10)

Users: faculty, students

Estimated Number of Users: 10 - 15 per room

Performance Requirements: The space should provide easy access to and from with even the most massive of percussion instruments. It should be brightly lit by artificial light and climate controlled to ensure proper storage of instruments.

STUDENT LOUNGE



Description: This space is used as a congregational space for the students of the facility.

Activity: relaxing, discussing, interaction,

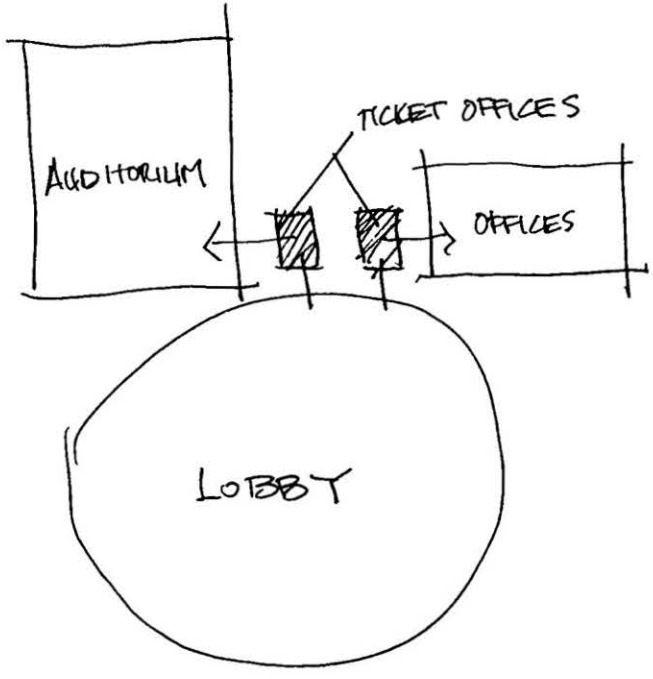
Related Spaces: classrooms, lecture rooms, practice rooms

Area: 1000 nsf (1)

Users: students

Estimated Number of Users: 50 - 100

Performance Requirements: This large space should be brightly lit with natural light and should strongly emphasize the thesis statement. This space should provide students with ample seating area.



TICKET OFFICE

Description: This space will be used for the selling of tickets for performances at the facility.

Activity: selling, distributing, advertising of upcoming events

Related Spaces: entry/lobby, auditorium, offices

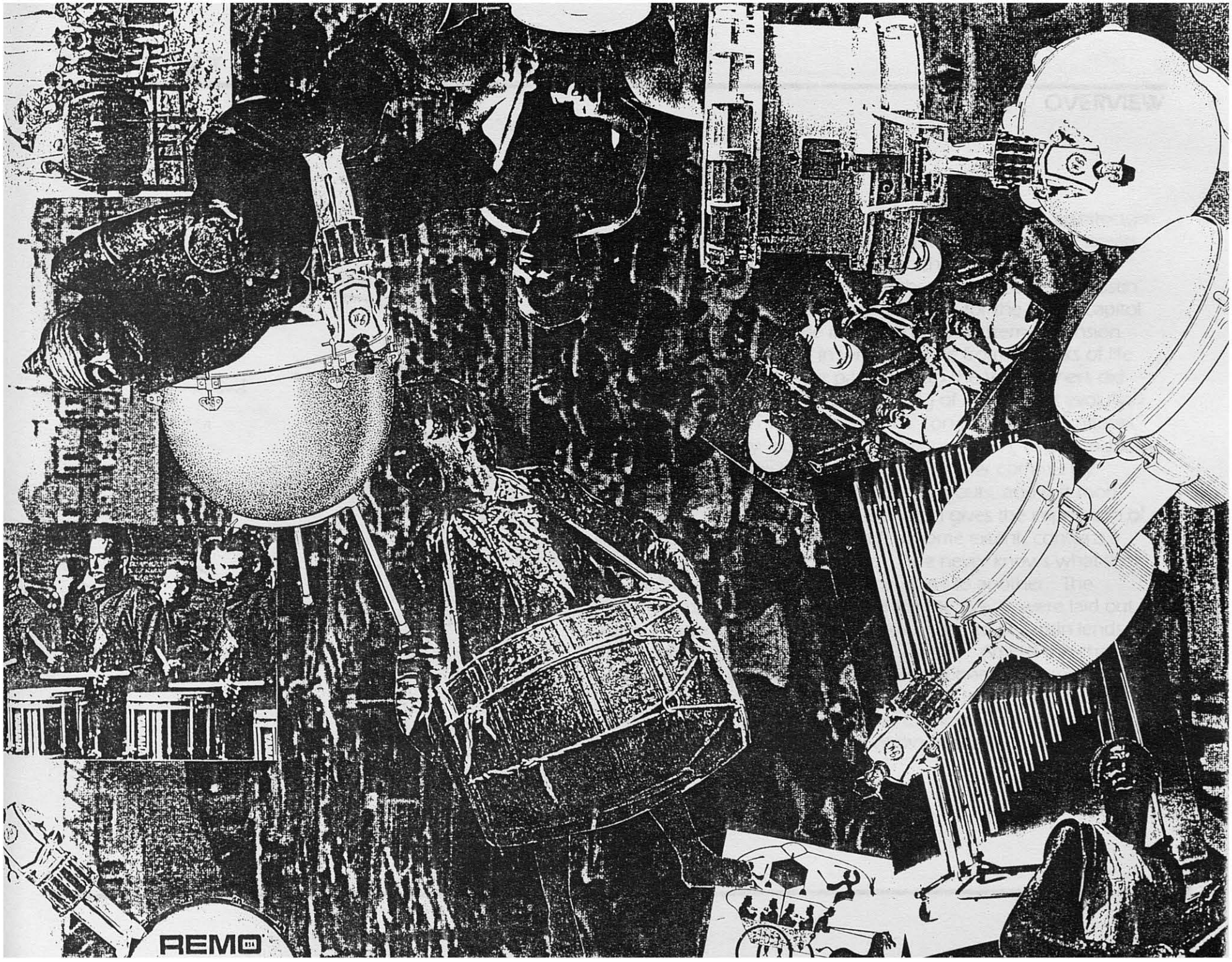
Area: 150 nsf (2)

Users: anyone scheduled to sell tickets to performances (faculty, students, visitors, etc.)

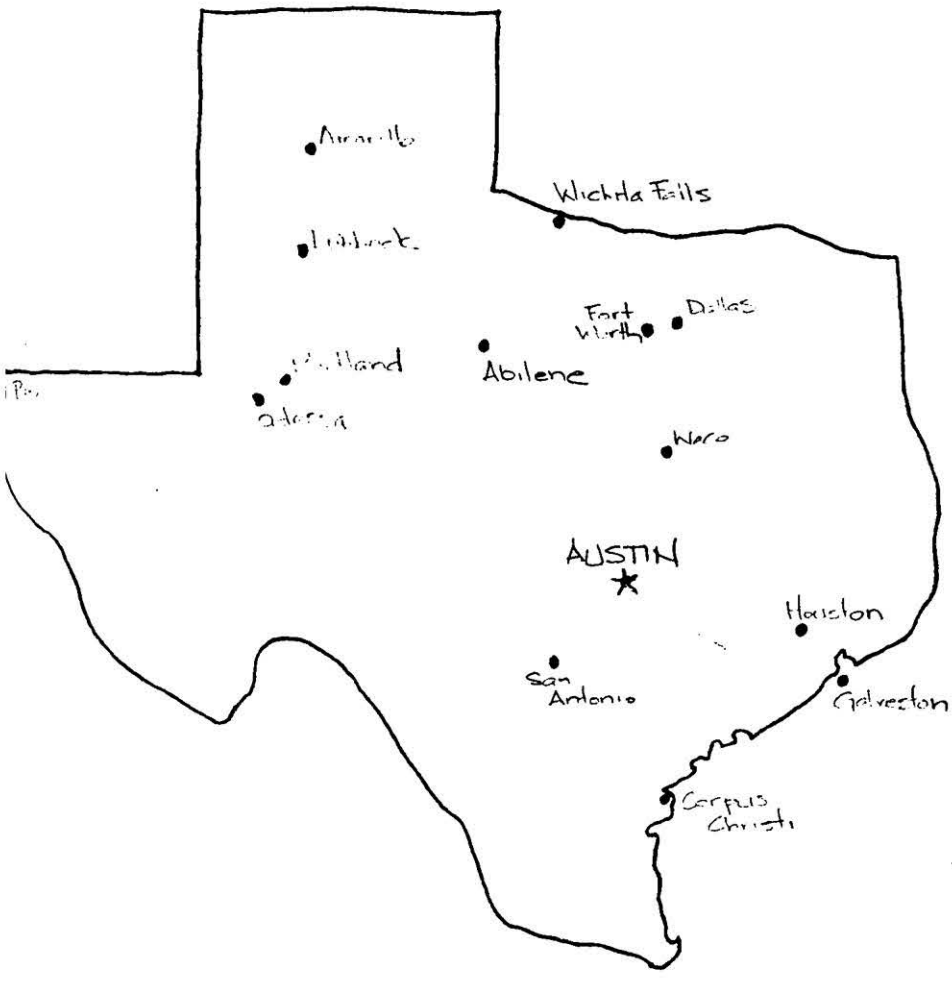
Estimated Number of Users: 3 - 5 per room

Performance Requirements: These rooms will be easily recognized upon entering the facility and will be adjacent to the entry/lobby space. There should be bright levels of artificial and natural light and should be provided with a space to store both money and tickets.

CONTEXTUAL DESCRIPTION


REMO

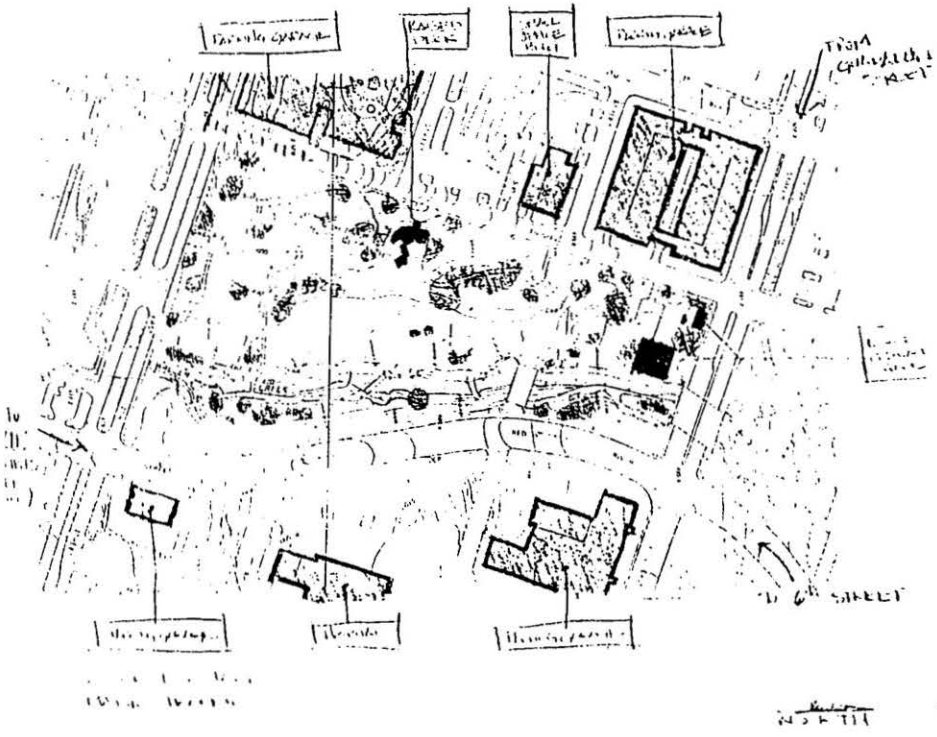
OVERVIEW



AREA PROFILE: Austin, Texas

Austin, Texas, is a city rich in both culture and architecture. Planned as a stopover point on a major trade route, the streets were laid out on a grid beginning on the north side of the Colorado River. This never became the true outcome for Austin. The city, instead, became the major home for the state's capitol and because of this, made itself a "link" to western expansion. This "link" created a place in which people from all walks of life would pass through. Some passed on to the West, others did not. This was, however, the beginning of the cultural evolution of Austin. One can see the effect this congregation of cultures has had on the city. Just passing through Austin, one recognizes its high-rise buildings interspersed with smaller community buildings, shopping centers, college hangouts, and fast food restaurants. This "randomness" to Austin gives the impression of a city which thrives on diversity and, to some extent, contains a schizophrenic element of surprise. One never knows what they will find when they turn down one street to another. The seemingly haphazard nature to which the streets were laid out without regard as to the topographical nature of Austin lends the feeling of a never-ending roller coaster ride. Amidst this chaos, however, one could easily stumble across one of the many parks scattered throughout Austin. Like an oasis in the desert, the parks in Austin become hallowed ground to those who embrace their sanctity among the glass towers of big business.

OVERVIEW



SITE PROFILE: **Waterloo Park**

Location:

The site for this facility is Waterloo Park. The site is bordered by the streets of Red River to the East, East 12th to the South, Trinity to the West, and East 15th to the North.

Natural Environment:

This is one of the 130 parks maintained by the city. The site peaks at the southwest corner of the site at an elevation of 521 feet and falls to 470 feet where the terrain meets Waller Creek along the east side of the park. Scattered foliage along the edges of the park seclude it visually from the surrounding buildings, except on the west side of the site, where the top of the Capitol Building can be seen poking out from the tops of the trees. There are more areas of trees strewn around the site, giving the people who use the park many places in which to escape the heat of the summer sun. Waller Creek, which runs south to the Colorado River, is traversed by several bridges connecting the park to Red River and has several paths along the edge allowing for walkers to hike alongside.

Built Environment:

The built environment consists of a Ronald McDonald House, an elevated deck with restrooms underneath, a Vietnam memorial, and a parking lot.

The Ronald McDonald House, a facility for children without parents, lies on the corner of Trinity and East 15th street. This two story modernist building overlooks Waller Creek and the whole south end of the park. A small parking lot, which accommodates the workers of the building, is accessed from Trinity street and is opened and closed via a card access lock. A playground for the children is on the South side of the building and is only accessible from the building itself.

At the junction of Trinity and East 14th street, an elevated deck overlooks the entire park. Several trees punch through the deck making it an interesting haven from the sun. Underneath, public restrooms and a water fountain are located. Though used by some of the vagrants in Austin, this deck is used for small parties and concerts during the finer days of the year.

From the deck, one can walk up a paved path to a Vietnam memorial. The memorial is a simple granite obelisk with four plaques at the base surrounding it.

The parking lot can be seen from the memorial. This lot is paved with grasscrete, a material that is a latticework of both concrete and grass. The lot holds 20 cars and is accessed from East 12th street.

Every one of the above mentioned sites can be accessed through the park by the various man-made paths that meander their way through the park.

Cultural Environment:

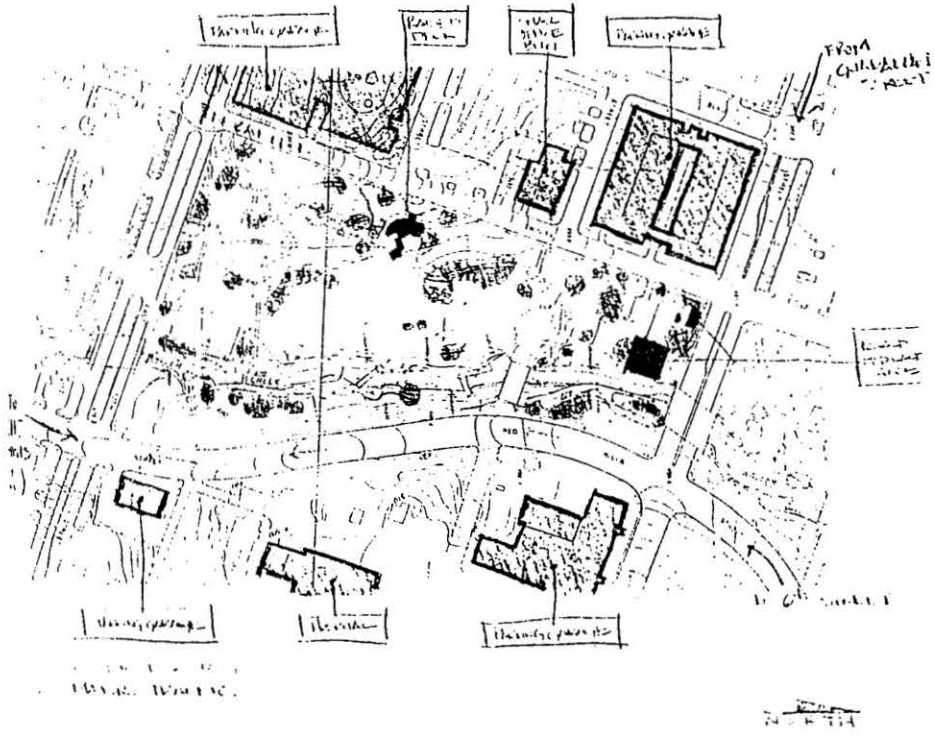
The cultural environment of the site is derived from the city of Austin itself. Austin, culturally, is made up of a wide variety of people such as businessmen, artists, singers, college students, retirees, and an unusually large amount of vagrants. A lot of the people make up the strong governmental business at the Capitol Building. This mixing of over 450,000 people makes Austin a dynamic, passionate, and diverse city.

Psychological Environment:

The psychological environment of the site is derived from the combination of the natural, built, and cultural environments.

Being secluded from the surrounding parking garages and office buildings by the extensive perimeter of trees gives the park a secluded quality. The people who use the park could go there to essentially "get away from it all." This separation of fast-paced business and governmental action from the relaxed and laid-back character of the park help to solidify it as a haven. The element of Waller Creek adds to the peaceful nature of relaxed movement as it slowly moves from north to south towards the Colorado River. The picnic benches scattered along the creek allows us to see the effect of water on the mental state of the users.

CONTEXTUAL ISSUES & RESPONSE



Natural:

Scattered trees
Sloping terrain
Waller Creek influence

A potential design response to these factors is to use the patches of trees as gathering areas for students. This will provide them with a natural shading element in the summer and blockage of wind in the winter months. The design of the building can transform itself as it moves down the site towards the creek. The building's form can also help to emphasize the vocabulary of movement and transformation given by Waller Creek.

Built:

Parking Lot
Memorial
Ronald McDonald House
Deck

A potential response to the built elements on the site is, essentially, to integrate them into the building as extensions of form. The parking lot can be expanded to accommodate the building's needs. This could be in the form of a large parking lot, but most likely into a parking garage with elements expressing the thesis statement. The memorial can make itself into a starting point for entry into the building. The way in which visitors can enter the building, could possibly strengthen the location of the memorial and make it an actual design element. The Ronald

CONTEXTUAL ISSUES & RESPONSE

McDonald House can provide a general area in which to locate the rehearsal hall, thus giving the children the opportunity to experience an enriching form of expression, music. The deck can synthesize itself into an eating area for students or a platform to either perform small concerts or a place to listen to performances.

Cultural:

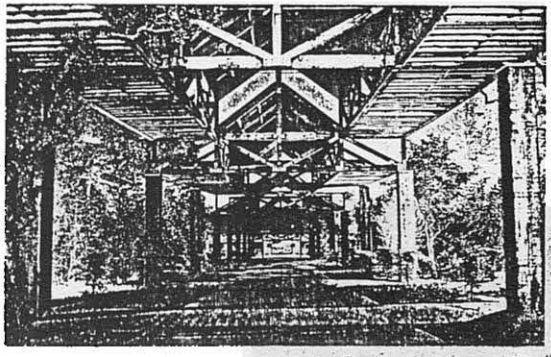
Diverse
Dynamic
Passionate

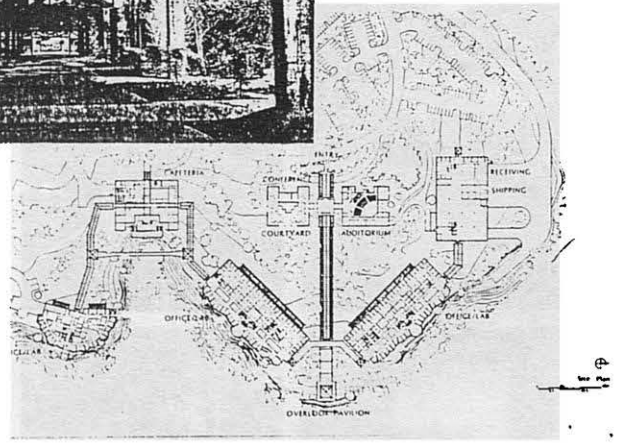
A response to these issues seem to affect the form of the building itself. This could be expressed in the use of varying materials on the exterior to express the diversity of the city, exposed structure to emphasize the dynamic nature of the culture, and elegant interiors to manifest the passionate mentality of the people.

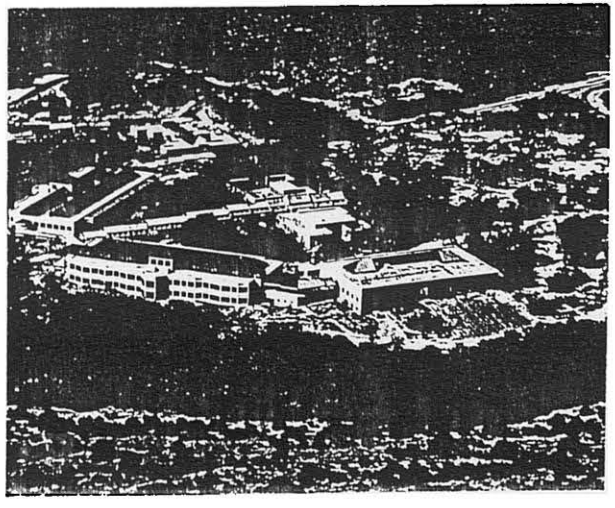
Psychological:

Relaxed
Calming
Laid back

Potential design responses to the psychological factor seem to manifest in the areas surrounding the building, but express the actual premise behind the teaching strategy used at the school. Outdoor seating and, perhaps, practice areas for the students can help make a connection with the outside, thus instigating the mentality of a laid-back atmosphere in which to learn at one's own pace. Reflection areas along Waller Creek can help to support this calming atmosphere.







PROJECT:

Schlumberger Well Services
Austin, Texas

ARCHITECT:

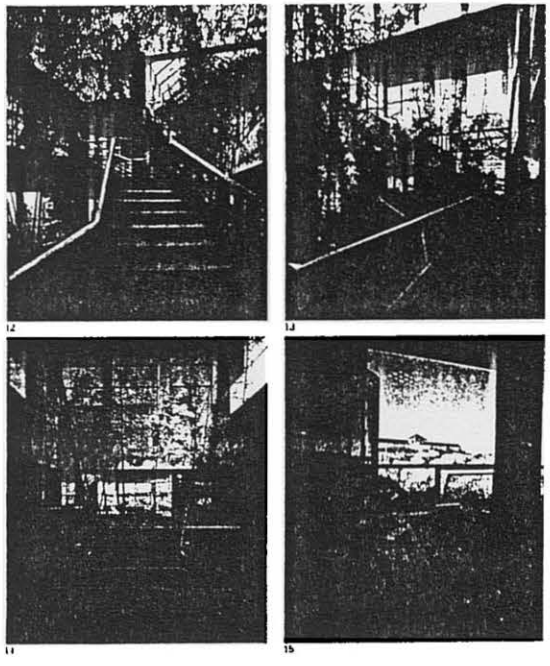
Robert Jackson Architects

DESCRIPTION:

The only way to really describe this facility is to quote the author:

> ... one of the out of town commercial think-tanks which have become a common quasi-academic type in the United States: a group of high-powered scientists or administrators is isolated in some agreeable rural spot and the buildings in which they are housed are designed in such a way as to promote casual social encounters, while ensuring that all members of staff (or at least the most valuable ones) have a personal study in which they can contemplate their subject in the calmest possible way...[1]

This large scale facility makes use of most of the heavily-vegetated site by scattering buildings along the east rim of the canyon and connecting them via covered walkways.



CRITIQUE:

This building makes excellent use of the bush-like landscape and greatly sloping terrain by the way in which the buildings are placed. The main buildings along the rim of the canyon tie back to the other buildings near the center of the site, thus giving the illusion of the buildings "grasping" the vegetation and holding it tight to nurture it, much like a mother with her child. I enjoy the wooden trusses of the covered walkways because of their integration of the path back into nature. This keeps the facility from seeming to alienate itself from the landscape. This, however, does not seem to work. The overall height of the buildings and the materials of which they are made make the building stick out and seem like someone just dropped a building from the sky.

REFERENCES

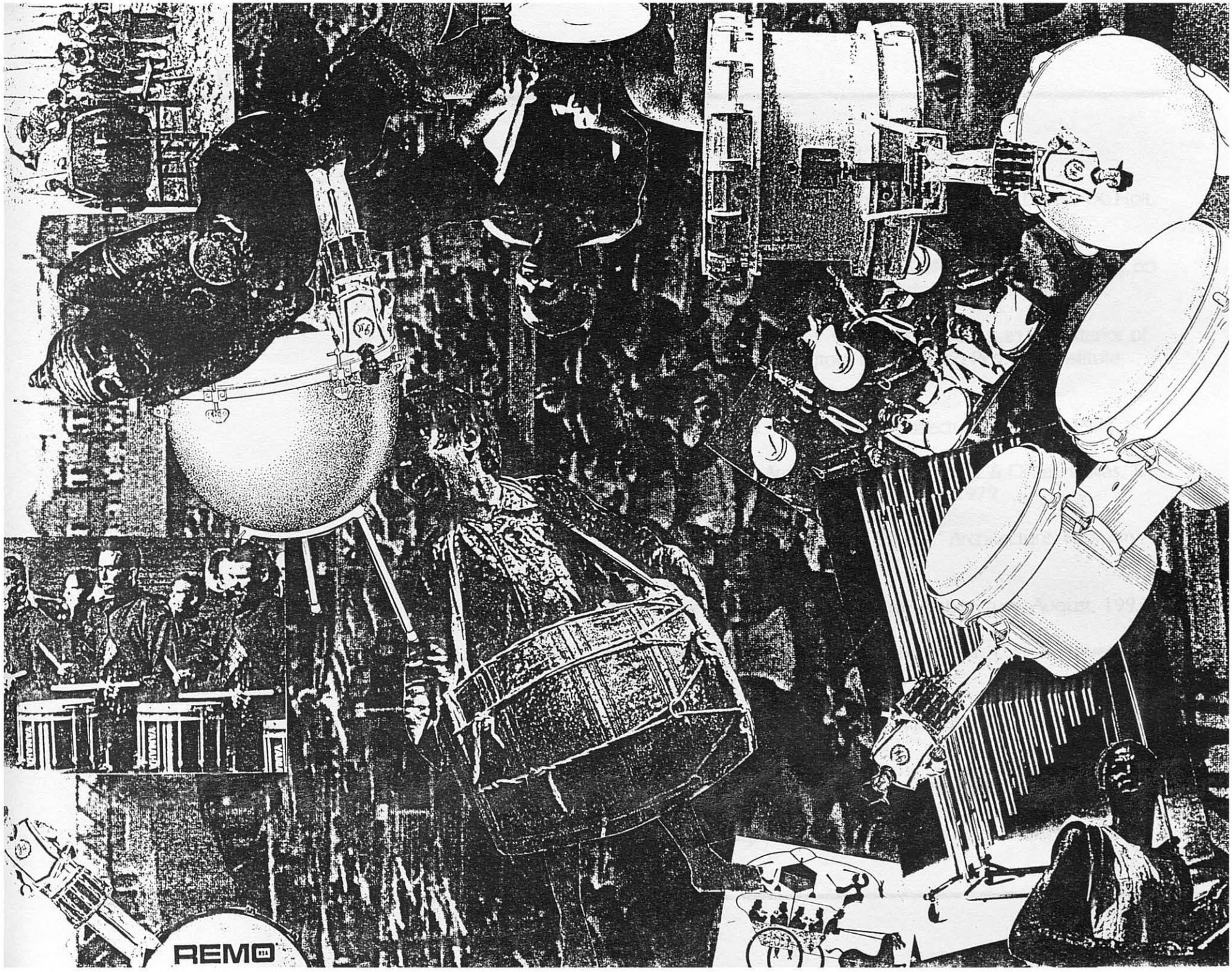
[1]"Texas Nature." Architecture Review. (September, 1992), p.69.

SPACE SUMMARY

SPACE SUMMARY

Space	Square Footage	Number of Spaces	Net Sq. Ft.	Useable Sq. Ft. (Net x 1.3)	Gross Sq. Ft. (Useable X 1.2)
Auditorium	6000	1	6000	7800	9360
Classroom	200	10	2000	2600	3120
Cleaning Closet (JC)	45	2	90	117	140
Closet	30	15	450	585	702
Concession Stand	100	2	200	260	312
Conference Room	250	2	500	650	780
Entry / Lobby	1500	1	1500	1950	2340
Faculty Lounge	200	1	200	260	312
Lecture Room	1000	2	2000	2600	3120
Library	1500	1	1500	1950	2340
Mechanical Room	2500	1	2500	3250	3900
Offices	150	15	2250	2925	3510
Practice Rooms	150	10	1500	1950	2340
Rehearsal Hall	4000	1	4000	5200	6240
Restrooms	150	6	950	1235	1428
Sound / Lighting Room	150	1	150	195	234
Storage Room	300	10	3000	3900	4680
Student Lounge	1000	1	1000	1300	1560
Ticket Office	150	2	300	390	468
		Total:	**30,090 sq. ft.**	**39,117 sq. ft.**	**45,886 sq. ft.**

BIBLIOGRAPHY


REMO

BIBLIOGRAPHY

"Act Two." Architectural Record. April, 1995.

Bevlin, Marjorie Elliot. Design Through Discovery. Dallas, TX: Holt, Reinhart and Winston, 1977.

Brown, Lesley, ed. The New Shorter Oxford English Dictionary on Historical Principals. 2 vols. Oxford: Clarendon, 1993.

Building Research Institute. Windows and Glass in the Exterior of Buildings. Washington, DC: Building Research Institute, 1957.

"Center for the Arts." Progressive Architecture. January, 1993.

Ching, Francis D.K. Architecture: Form, Space & Order. Dallas, TX: Van Nostrand Reinhold Company, 1979.

"Colorful 'Clouds' on a Rhythmic Ceiling." Architecture. February, 1984.

"The Concrete Evidence." Progressive Architecture. August, 1993."

Driver, Ann. Music and Movement. New York: Oxford University Press, 1970.

"For Symphonies Indoors and Out." Progressive Architecture. September, 1994.

Forsyth, Michael. Buildings for Music: The Architect, the Musician, and the Listener from the Seventeenth Century to the Present Day. Cambridge, Massachusetts.: MIT Press, 1985.

BIBLIOGRAPHY

Greene, Herb. Mind & Image: An Essay on Art & Architecture. Lexington, Kentucky: University Press of Kentucky, 1976.

Grillo, Paul Jacques. Form, Function, & Design. New York, NY: Dover Publications, 1960.

Hart, Mickey. Planet Drum: A Celebration of Percussion and Rhythm. San Francisco, CA.: Harper Collins Publishers, 1991.

Holland, James. Percussion. Great Britain: Macdonald and James Publishers Limited, 1978.

"Into the Uncharted." Progressive Architecture. May, 1993.

Itten, Johannes. Design and Form: The Basic Course at the Bauhaus. New York: Reinhold Publishing Corporation, 1963.

Jenks, Charles. Meaning in Architecture. New York: George Braziller, 1969.

Kepes, Gyorgy, ed. Module, Proportion, Symmetry, Rhythm. New York, NY: George Brazillier, Inc., 1966.

Martin, Elizabeth. "Y-Condition," Pamphlet Architecture. Vol. 16, pp. 16-25.

"The Message in the Medium." Progressive Architecture. December, 1992.

"Raising the Roof." Progressive Architecture. February, 1984.

BIBLIOGRAPHY

"Raising Rock's Reliquary." Progressive Architecture. February, 1995.

Rasmussen, Steen Eiler. Experiencing Architecture. Massachusetts: MIT, 1962.

Revesz, G. Introduction to the Psychology of Music. Norman, OK.: University of Oklahoma Press, 1954.

"Speaking Softly." Architectural Record. April, 1995.

"Street Beat." Progressive Architecture. September, 1992.

"Texas Nature." Architectural Review. September, 1989.

"Vive Le Corbusier." Progressive Architecture. August, 1994.

Walton, Alexander. Architecture and Music: A Study in Reciprocal Values. Cambridge, Mass.: W. Heffer & Sons Ltd., 1934.

THESIS DOCUMENTATION

PROCESS DESCRIPTION

When I first began on this at the start of Design Studio in January, I began by analyzing the site in a more abstract manner than the analytical way in which I studied it for my program. I began to look at the site as a musical piece itself. The bridges became the divisions between the movements, the trees became the music itself, and the paths throughout the site became a symbolic representation of the theme which weaves its way throughout the piece. I scrapped this idea when both Thompson and Coombs thought that this description was forced into the site. They suggested that I look at Austin as a whole to see if there was some rhythm behind the city. This led nowhere, but I did notice that there were three distinct grids to the city - a 5 degree, a 12 degree, and a 20 degree. These systems became a starting point to a layout of spaces for the building.

I thought it would be interesting to actually "compose" architecture, when designing this building, so I found some blank sheet music paper, and , by using the major areas of the facility, such as the auditorium, rehearsal hall, offices, classrooms, lecture rooms, and practice rooms, began to layout the building as a piece of music. I arranged the areas, keeping in mind the 5, 12, and 20 degree grids, in such a fashion so as to represent the melody on the treble clef and the chords on the bass clef. I tried this three different times and came up with an interesting result. The negative spaces left over from the placement of the spaces created a type of "courtyard." This courtyard notion intrigued Thompson, Coombs, and I, so I decided that this could end up being a good place for students to sit, listen to music, rehearse, and even perform at times. The thing that I didn't like about the arrangement of the spaces was that they seemed a little disjointed and separated - functionally.

Knowing that there needed to be a little more coherence to the layout of the building I then decided to focus my attention on the auditorium, which we all considered to be the "meat" of the facility. I began with a typical shoebox form for the auditorium and cut through it with a cross-form. By turning this cross into just a framework and not an actual solid form, it turned the framework into a glazed atrium space for the congregation of those who visited the auditorium for performances. The interplay of the structure of the atrium and the walls of the auditorium symbolized the structure of a piece of music and the music itself, with the structure intertwined within the building. By choosing to use different materials on the exterior of the auditorium, such as split-face concrete blocks for five feet and then smooth concrete blocks the rest of the way up, and then attached aluminum panels in a musical fashion, this gave the building the impression of music as well. The different materials being the different tones and sounds of music, the panels emphasizing the music itself, with melodies and chords, and the windows in the walls becoming the rhythm that keeps the music flowing.

After this, the building seemed to flow naturally. The axis running perpendicular from the auditorium, began with the rehearsal hall on one end and terminates with the library on the other end. This axis is made up of a four measure count, subdivided by sixteen, to make major spaces part of a sixteen note count with the four large spaces being count one. The trellis that runs along the courtyard side of this axis reiterates the same interplay of structure as seen in the auditorium. The windows along this side emphasize movement by changing from horizontal to vertical drawing both ones eye and body along it. On the East side of this axis I glazed every wall available and used a long curvy plane to both emphasize the creek and to become a shading device for this side of the building. The library at the end of this North-South axis was designed as a "hinge" for the rest of

the design.

The practice rooms run on an axis relatively perpendicular to the library and connect to the office wing of the facility. The roof for the practice rooms is quite different from that of the rest of the facility. I felt that this is the place where one can truly explore percussion instruments and change themselves and their view of percussion, so I felt that a different dialogue needed to be created with this space. The roof is pulled up from the walls and the window is in-between this gap. The indirect light that enters these rooms is transformed by hitting the structure for the roof and creating shadows on the walls of the practice rooms. The meaning of the word "transformation" is what I hoped to accomplish with this space and those who use it.

The office wing is formed along a swooping curve which runs North-South and starts at the entrance to the facility, runs along the parking lot, and terminates at the entrance to the auditorium. The curve is slanted to allow early morning light to bounce off the wall and into the clerestories of the office opposite the wall. The offices are repetitious in form and the slit windows on the east side create a smaller rhythm among the offices. The spaces on the West side of the curved wall are punctuations to the repetition of the offices opposite them. Again, the trellis structure is seen within this space, making itself seen as both the structure of the building and of the music created there.

The building as a whole can be seen as a musical piece on its own. The paths become cyclical, in a way, such as music. The music has a definite beginning and end, but lives on through us afterwards. I know that I could never explore this type of architectural analogy to the fullest, but I believe that I have done what I could within the allotted time. I can honestly say, that there is a deep relationship between music and architecture that needs to be explored. I have, however, had much fun doing what I have with this project, and have learned quite more than I

had expected to from the beginning. I hope to continue this exploration of music and architecture.

PHOTOS AND DRAWINGS