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## Building as an Instrument

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*Virginia Commonwealth University*

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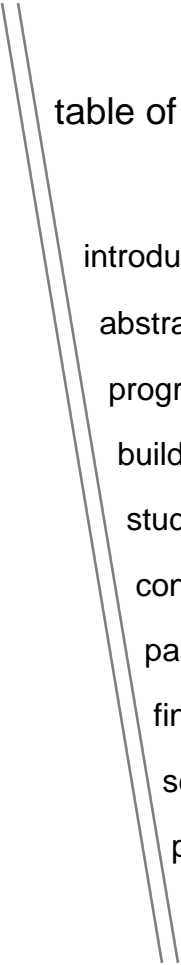
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building as an instrument:  
exploring the relationship between music and the built space



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The epidemic of stress plagues our society in many ways. Increased demands, crime, trauma, and the aggression of our fast-paced world lead to a growing rate of social anxiety, stress, and depression. This results in an increase of substance abuse, alcohol abuse, and prescription drug use in order to cope. Not only does this affect our mental state as a society but also the physical health of many people.

Communication among people within the community is impaired by a general lack of trust or fear of traumatic experience. Along with the many emotional and social disorders we suffer from today, people with neurological disorders such as Autism, Alzheimer's, and Parkinson's have a difficult time communicating with others in this stressful world.

Music can be instrumental in helping us cope with these pressures of our modern world. Music therapy, classes, and musical performances can increase health, education, and quality of life for many people.

Music therapy can be beneficial to people with Autism, Alzheimer's disease, Parkinson's disease, anxiety, depression, stress, alcohol abuse, substance abuse, physical disabilities, learning or developmental disabilities, injuries, and acute or chronic pain.

Active music therapy is used for people with Autism, Alzheimer's, Parkinson's, and physical disabilities. Lower functioning autistic people will seem as though they are in another world, have outbursts, and not be able to communicate with others. They seem to get fixed on rhythms, motions, or objects. They respond well to repetitive motions and many have a natural talent for musical rhythm, tone, or sound. Music therapy can be greatly beneficial to people with autism. Elderly people and people with Alzheimer's are stimulated intellectually and physically by music. People with Parkinson's can increase coordination through playing instruments.

## introduction

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During passive music therapy patients breathing and heart rate can be controlled with calming music. Vibrations of tones can help the body maintain balance for healing. This method can be used for people coping with stress, anxiety, or pain.

Group music therapy encourages interaction and communication among people who may suffer from social anxieties, depression, or stress. This can help explore feelings and encourage self-expression.

Learning to play an instrument helps increase coordination and stimulates brain activity that can be applied to other areas. Students who learn to play an instrument tend to excel in other subjects in school also. Learning to play an instrument can be challenging and teaches discipline. It can relieve stress and give a person a sense of achievement. It strengthens the ability to problem solve or understand complex organizational systems.

Musical performances can bring the community together, providing outlets for entertainment, relaxation, and education. Additionally, the performers have a heightened sense of accomplishment and self-expression. For many, performing can be a spiritual outlet.

## abstract of design project

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The proposal of this thesis project is an exploration of the relationship between music and the built space. The space chosen for design is the first two floors of the Lady Byrd Hat factory located at 140 Virginia St. in the Shockoe Slip area of Richmond, VA. This project proposes the design of the building for the purposes of a music center that will benefit the community by providing music therapy, music and vocal classes, a performance space, and a café. It is to be used as an instrument for communication, health, and education. The main users of the space are music educators, music therapists, music ensembles, students, patients, and audience members of performances.

I began by studying the history of the building, evaluating the site, and studying the architecture of the building. I conducted a series of conditional studies based on the architecture of the building to analyze the form. I evaluated the structure, symmetry/ balance, geometry, entrances, levels, stairs, ramps, angles, and circulation of the building. Then I studied the building according to light/ dark, public/ private, loud/ quiet, warm/ cool, large space/ small space.

## abstract of design project

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Creating a series of concept models helped me to understand the building with its strong dissection of columns, circulation, usable areas, rhythm, and repetition. The development of a program for users' needs, square footage, and special design considerations for each area led to a series of floor plans. I then began arranging the usable areas within the building according to each areas design needs.

After a study of musical instruments, I began conceptual drawings of the space. The design of the space evokes imagery of the built forms of instruments and the details they hold.



Entry/Reception:

This is a public area that patrons will see upon entry. It will visually represent the intention of the space. There will be a need for seating and work space for one to two people along with an area for collection of fees. It must be located near the entrance with access to the office. Soft but adequate lighting will be desired.

Music Therapy:

This area is semi-private. It needs the control of light and sound. It is broken up into public and private spaces within the room. There will be a need for adaptability, private storage, and a private individual therapy area.

Classrooms:

This area is semi-public and used by teachers, students, and visitors. There is a need for tables and chairs, desks, writing board, and supply closet. It should be well lit, comfortable, and sound proof.

Practice rooms:

These are small rooms with enough space to fit one to two people for practicing. They should be soundproof and have a chair and table.

Instrument storage:

Shelving for storage of instruments should be built-in. Low lighting is required and security is a consideration.

Performance area:

This is the largest space of the building. It seats over 150 people. The stage accommodates up to 25 people for ensembles. The lighting is dimmer controlled. The room is soundproof to other areas of the space. Steps and hand railings will comply to ADA standards. Seating is comfortable. This space will visually represent the intentions of the space.

Backstage:

This is a private area to accommodate up to 30 people. Group practice areas are required. A private restroom is desirable. It is a well-lit space with tables and chairs. There is an area for refreshments, changing, and freshening up.

Café:

This area will provide food and drinks to patrons and employees. This is a public area and private area for workers only. There will be a need for a kitchen with refrigerator, sink, oven, microwave, grill, coffee machine and soda machine. There should be seating for at least 25 people inside and 15 people outside. The workstation should hold two to four employees. It will visually represent the intention of the space. The area should have task lighting and adequate lighting for workers but lower lighting for patrons. It has direct access to the balcony overlooking the canal.

Offices:

The office must accommodate one to two people with work space, reference storage, filing, computers, and printers. There must be extra space for copy machines, fax machines, and extra tables and chairs for meeting with others. There should be sufficient lighting along with task lighting. This is a private area for workers only.

Restrooms:

Restrooms are for public use and located near the café. It should be close easily located, well-lit and ADA accessible. Adequate sinks, hand dryers, and trash cans are required. An extra area for seating may be desired.

Storage:

Separate storage is needed for LAN closet, office supplies, instruments, café food and equipment. Square footage varies among specific needs.

Exterior Balconies:

Balconies are accessible from the main areas of the building: the café and performance space. They overlook the canal and the top balcony wraps around the west side of the building and is accessible from the parking lot. The lower balcony extends 12 ft. and the upper balcony extends 14 ft. from the building.

## building evaluation



### The Lady Byrd Hat Factory

Built in 1896, The Lady Byrd Hat Factory received the name from the Byrd area of Richmond and was originally a factory for making women's hats. It later became the Virginia Paper Company. The exterior of this building is brick and masonry which has been recently renovated.



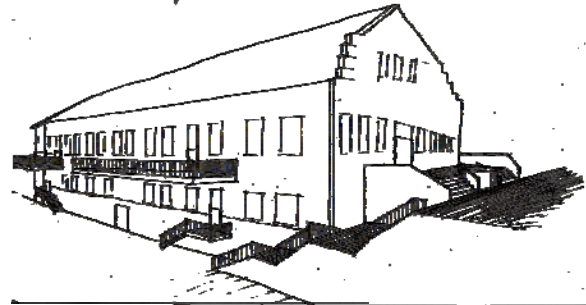
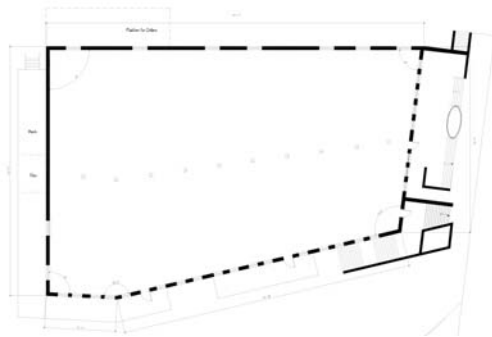
## building evaluation

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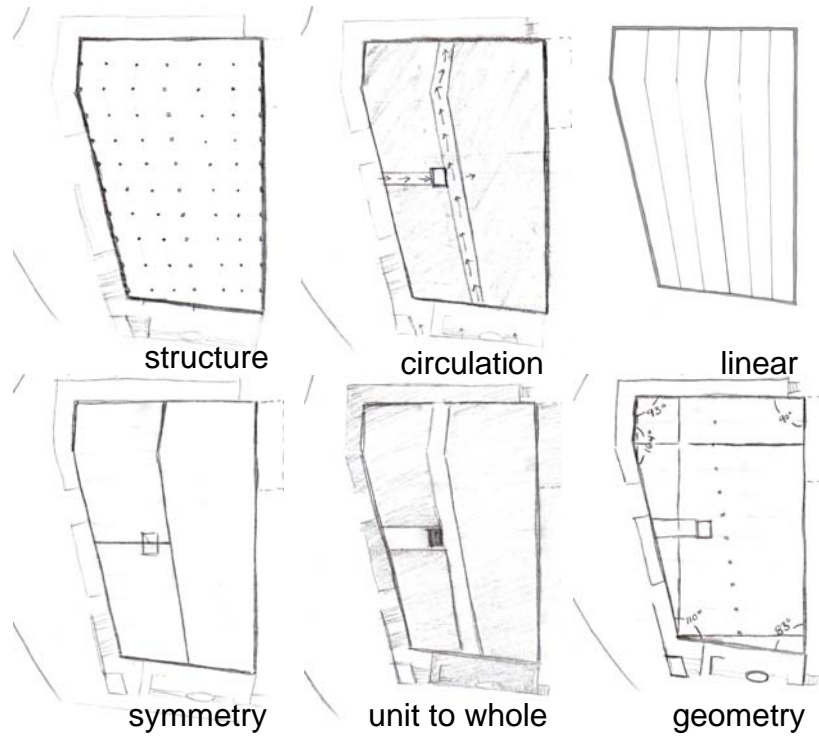
A series of large windows and an elevator have been added. The interior is supported by the original rustic wood columns. The building is 48,000 sq. ft. and three stories tall. The south wall faces the Kanawha Canal. There was a time when boats would dock at this part of the canal. The building's longest walls face north and south. The building receives the majority of light from the south side.

## building evaluation



Electrical and mechanical systems are located at the eastern most side of the building under the upper balcony. The building site is on a slope creating many levels, the lowest being the canal level. Due to the angles of the building, the floor plan resembles the shape of a harpsichord.

## studies of building



Steel beams reinforce each floor from one king stud to the next on the opposite end running north to south. This allows for the removal of the smaller columns leaving a central row of larger columns dissecting the space from east to west. The elevator cannot be moved and seems to create a hub for the building. There is only one 90° angle in this building. The interior will need to have a relationship with the other angles.

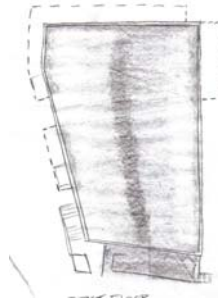
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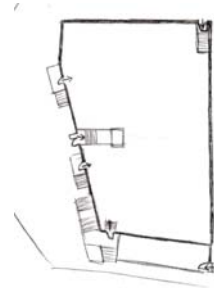
## studies of building



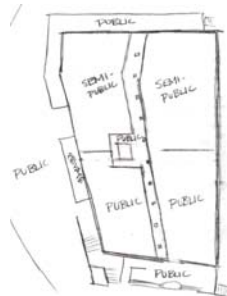
public to private floor 1



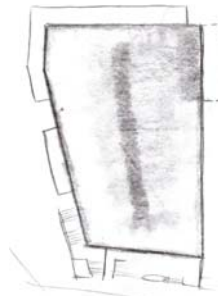
light to dark floor 1



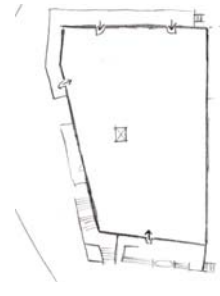
entrances floor 1



public to private floor 2



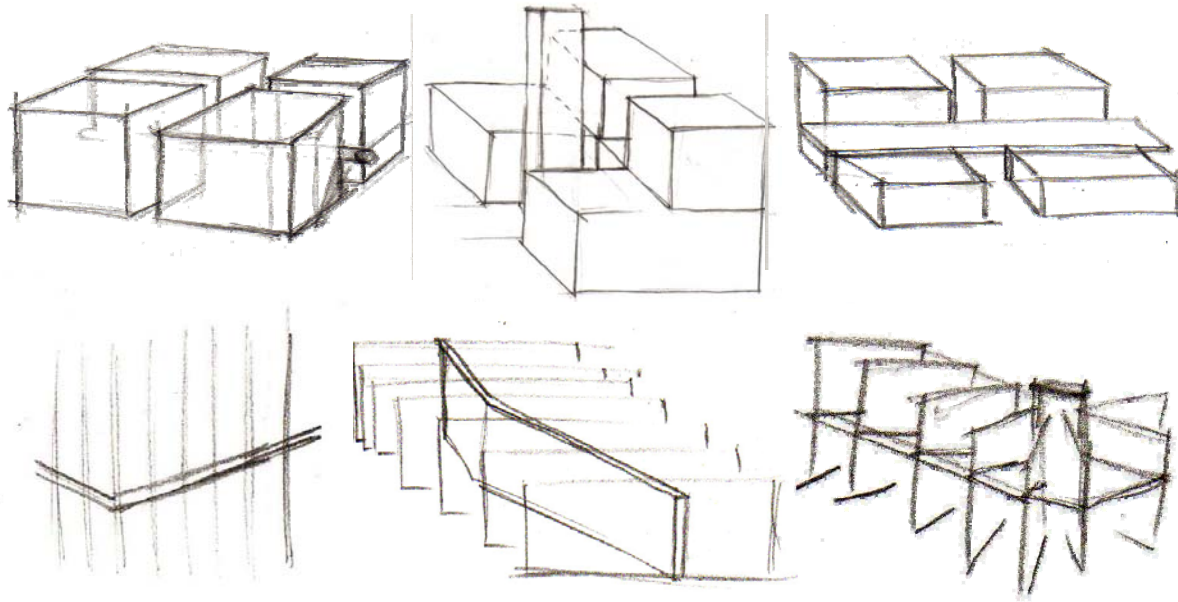
light to dark floor 2



entrances floor 2

## concept models

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a series of concept model drawings

## concept models

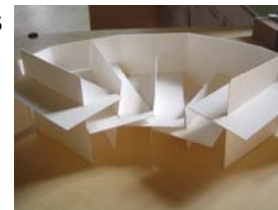


usable space vs. circulation

angles



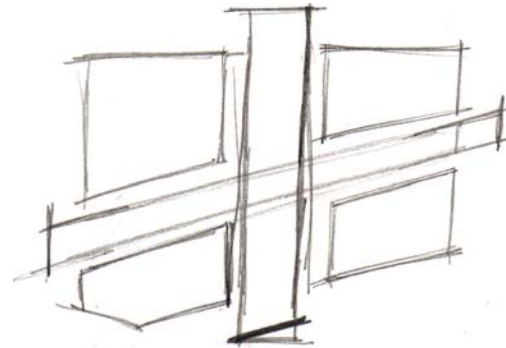
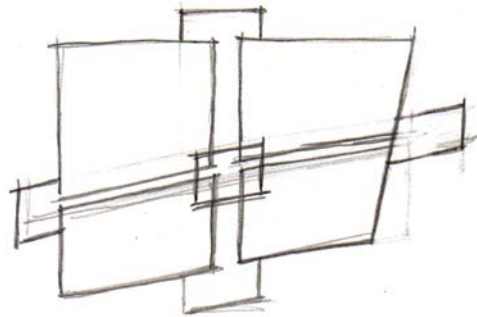
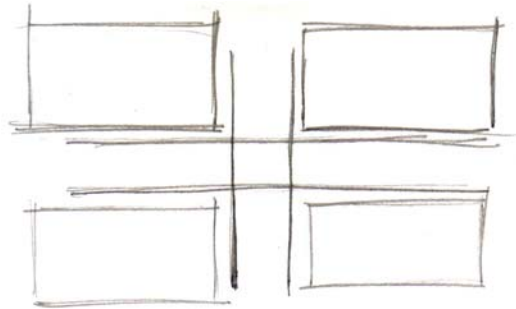
levels



division

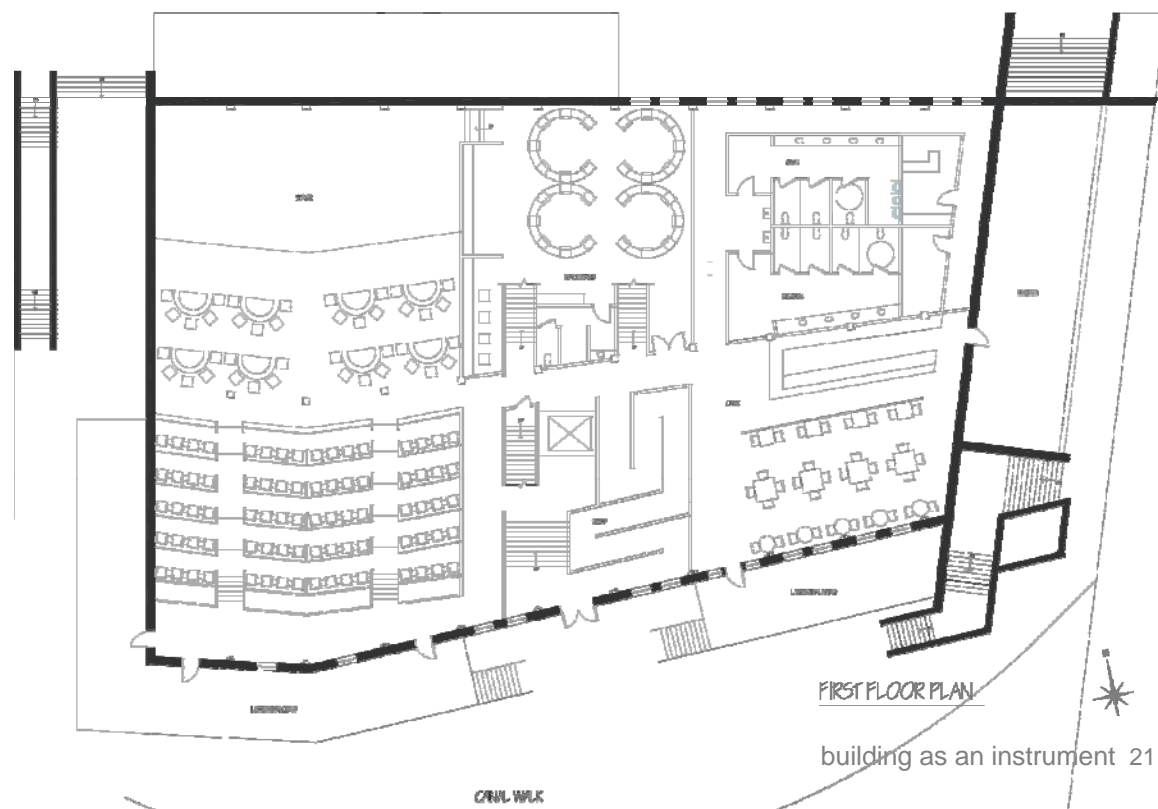


parti

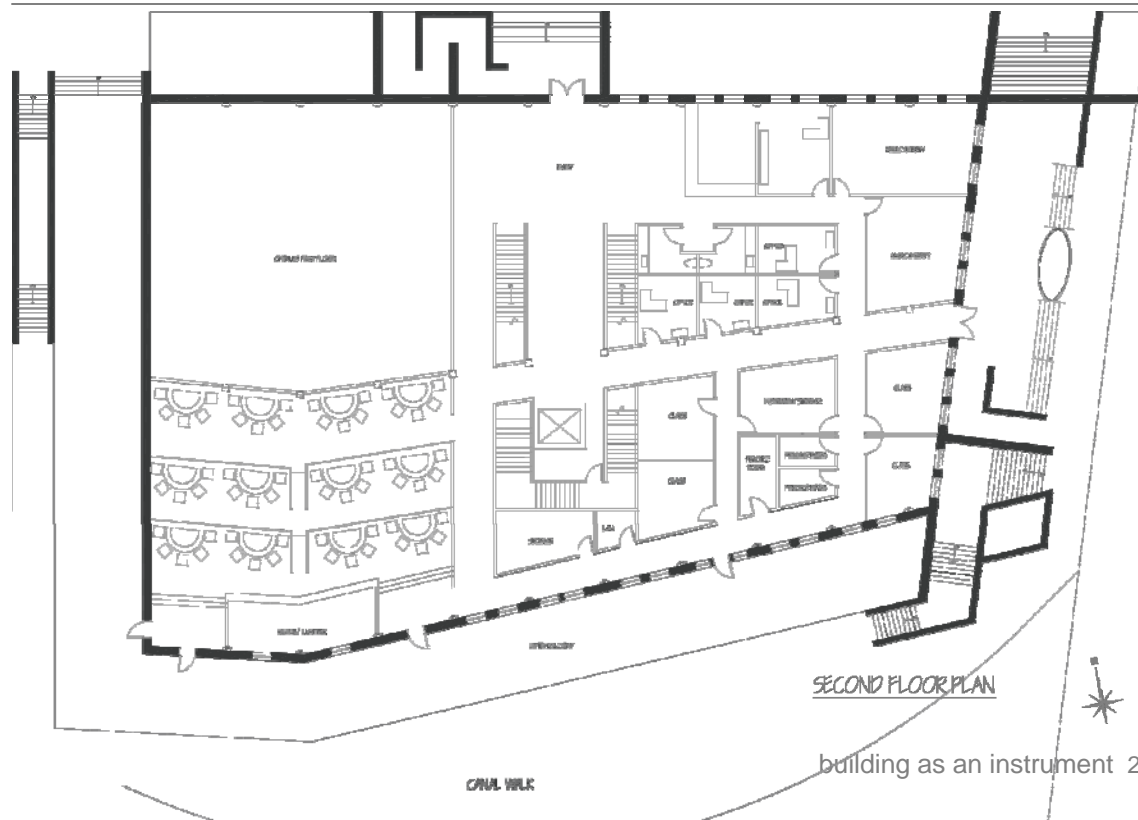


discovering a parti of a strong  
dissection of space with elevator  
being the intersection

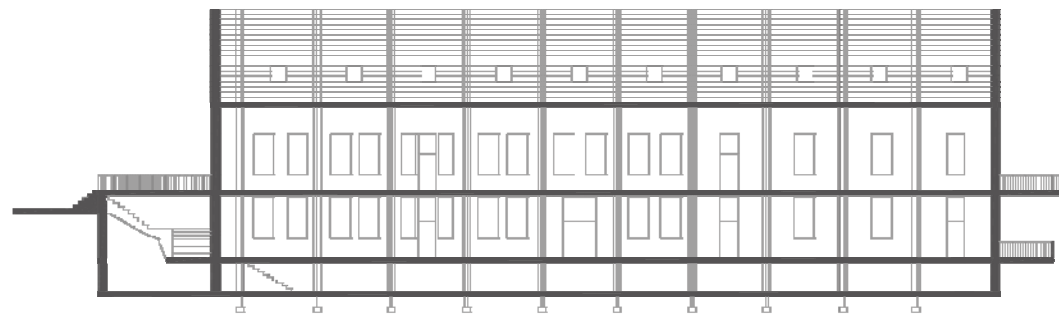
final plan



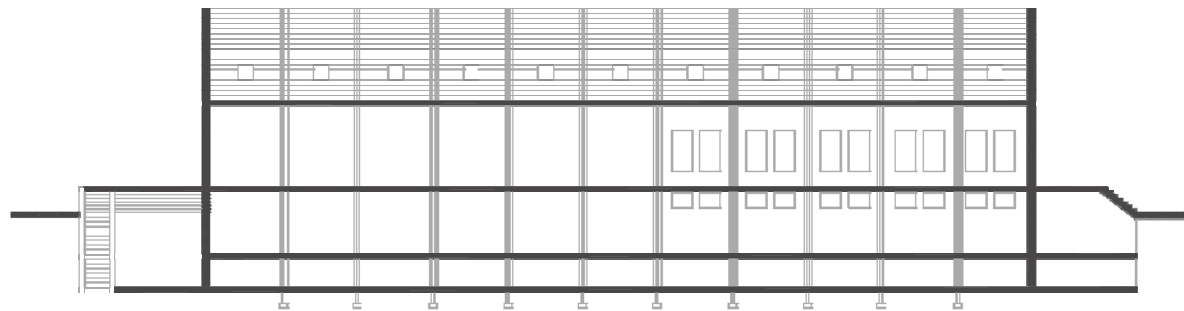
final plan



## sections



SOUTH SECTION

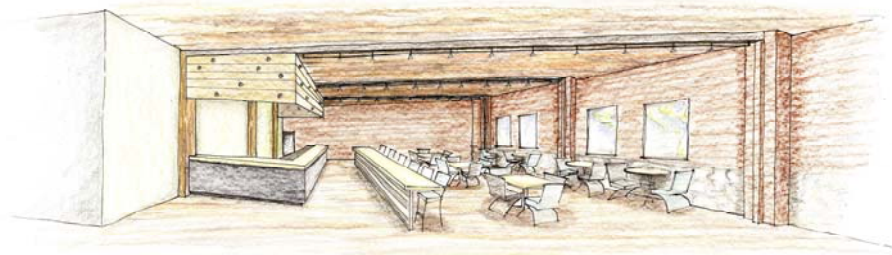


NORTH SECTION

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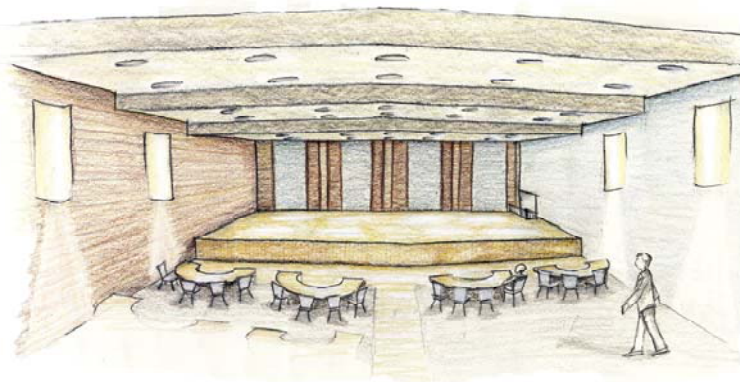
## perspectives

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café

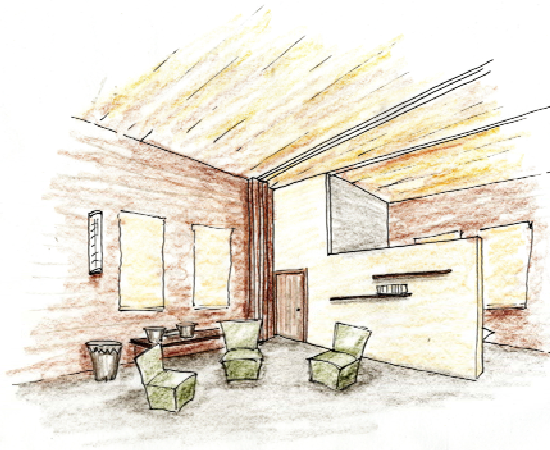
performance area



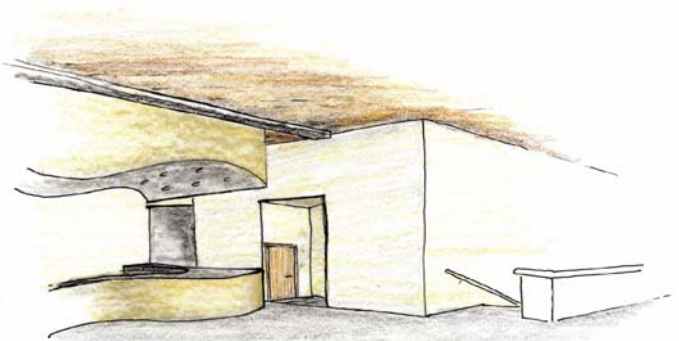


## perspectives

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music therapy room



main entry/ reception

Musical Instruments An Illustrated History. Remnant, Mary. Amadeus Press, Portland, OR. 1989.

The Physics of Music and Musical Instruments. Lapp, David. Wright Fellow, 2002-2003.

This is Your Brain on Music. Levitin, Daniel J. New York: Dutton, 2006.