PERFORMANCE DRIVEN DESIGN
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This book is for my family and friends.
“Popular MUSIC like ARCHITECTURE is neither static nor standardised, it continuously develops and has multiple strands.”

-Rob Kronenburg
University of Liverpool
Performance Driven Design
The following thesis is solely concerned with live music and refers to such when speaking of “performance.”

With the majority of small-mid scale performance venues being retrofit into an architecture designed for a preexisting program I find that these venues are typically lacking in performance driven design. This is not to say that quality of performance is hindered or lacking. In fact, I contest that the space a performance is held in has little to do with the quality of performance and everything to do with the experiences surrounding it. This thesis is concerned with the experience of the spectator, performer, and most importantly, the intersection of these experiences.

I will explore this subject through research of first and second hand accounts of the ways in which the built environment affect performance and most important, the relationship established between the performer and the spectator. The research conducted will focus on music type, performer and spectator interaction/relationships, the perception of time, and the way elements of the built environment can be utilized in the facilitation of the relationship between the performer and the spectator experiences.

Finally, the following research is utilized in the design of an adaptive and responsive installation focusing on one site but having intended potential of being injected into the familiar small to mid scale performance venue with the functional purpose of creating a dynamic environment with the ability to host numerous music performance types while facilitating desired social interactions and perspective between the performer and the spectator. The purpose of the design is to provide a setting for performance to flourish while offering performance venues the ability to host a plethora of quality performances.
Initial Research
The basis for this thesis is predicated on my experiences through work outside of the realm of architecture working directly with performers of live music. Through this work I have found myself in numerous performance spaces afforded a unique vantage point and interaction with the venue separate from that of the performer and the spectator. As a third party witness of the performance I have been increasingly interested and aware of the way that the built environment facilitates the experience, the interaction, and relationship established between performer and spectator. I began to ask myself what factors of performance and performance architecture are most instrumental in establishing the above described dichotomy of performer/spectator relationships and how architecture can provide adaptive and reactive solutions to promote desired performance quality and characteristics amongst a wide range of performance types and situations. The research conducted represents a rigorous and systematic approach to understanding and implementing architectural elements to facilitate quality performance and preferred performer/spectator relationships and perspectives.
Performance has the unique ability to take place in innumerable settings exhibiting a diversity of atmospheres including but not limited to a range of intimacy, activeness, energy, mood, etc. The live musical performer has a unique and separate relationship and vantage point to the performance venue from the spectator and visa versa. Secondly the balance and existence of relationship and interaction that is established between the performer and spectator is most strongly established through the built environment and its ability to endow hierarchy and perception through visual and physical means. Rod Kronenburg of the school of architecture at the University of Liverpool stated, “Popular music- like architecture- is neither static nor standardized, it continuously develops and has multiple strands.” This acknowledgment of an enhanced sense of diversity amongst popular music can further be applied to the performers, spectators, and manner in which performance is exhibited within modern music. In recent years there has been an emergence of new performances in new environments, such as raves in large modified spaces like a warehouse, that have further provided opportunity for new social interactions and perception of what a live musical performance or performer is, how it is, and who it is. Architecture has the ability to be the driving force in embracing and understanding this diversity and reacting in a way that is itself diverse in its ability to adapt to the range of preference and situation in which live music performances take place within modern twenty-first century society.

In present society many small and mid scale performance spaces have a tendency to ignore or underutilize the embracement of this diversity or performance driven design solutions. In many cases, performance focused spaces have been inserted into preexisting structure that were originally designed to house prior programmatic requirements totally separate from performance. It is often the case that these performance venues institute a tactic of generalized universality or neglect to address, or even include, elements that have major affect on the quality, perception, and reception of a performance. This commodity based insertion and decision making fails to realize the advantages of design that fully understands and embraces the performance experience. This acknowledgment would provide the opportunity for a new performance driven architecture that takes a holistic approach to accommodating the diverse needs and situational preferences with the expectation of an enhanced sense of performance a social interaction in a society that is dominated by social interaction taking place through means of
a non-physical or direct form. Recognizing and analyzing human response and reaction to environmental factors related back to the context of the performance and personas of the performer and spectator provides the framework for which responsive performance driven design can be based off of.

It is clear that there is a strong correlation in the development of music and its spectator throughout history as being reactive to the evolution of the spaces in which it has been performed in. The long noted single keyed choir music that was performed in Gothic cathedrals was appropriate for the high and vast reverberant space as music with key changes and rhythm would have become highly distorted. As music began to be performed in more intimate spaces, both in social interaction and scale, with far less reverberance, there was a new allowance for organ and piano music of higher intricacy and rhythm to be performed. The introduction of opera houses and the active crowd within affected the way music was written and performed as a reaction to the often audible crowd at these social functions. The compact space allowed for multiple instruments and even more intricacy. These early examples support the theory of architecture defining the evolution of music.

As live music becomes more of a mass social event and halls become greater in size with increased reverberance the spectator is expected to take on a role of silent and stagnant bystander. This new spectator norm comes about as a reaction to the ability to hear every detail within the space including distraction from an active spectator such as in Carnegie Hall in New York City. Jazz finds its origins of performance being played on loud compact riverboats and has sense moved into similar spaces in small rooms with audio levels reacting to a highly active audience. As music was written for the audience on river boats, people also began to write music appropriate for the active spaces of discos and clubs with repetitive beats and rhythms appealing to the social interactions taking place within the space. The most apparent case of the live
music performance being an event that was primarily about a social situation and interaction, arena rock, is written primarily as medium speed ballads to accommodate extremely large and poor acoustic spaces. With the intervention of the microphone, digital amplification, recording has provided new opportunities for experiencing music and deliverance including changing the perception of intimacy, directional quality, and origin. While acoustics can be utilized and manipulated through the built environment to suit an “era” or “genre” of music, architecture has the potential to adapt its acoustic properties to reflect or embrace the atmosphere and social interactions found at performances within these diverse spaces. This is an approach to acoustics that focuses more on the perception of space and enforcing social reactions rather than pure acoustic quality that can be primarily provided by a quality audio system. Tactics of absorption, reflection, and diffusion can be used in combination to persuade the auditory experience and social climate of a space.

Outside of acoustics this thesis identifies nine elements of focus of the live performance venue/space. The identified elements that play substantial roles in the quality of performance and defining the social situation take place and have been identified as the following:

ACCESSIBILITY
TIME
CAPACITY
COLOR
LIGHT
GREENROOM
MATERIALITY
PROPORTION
STAGE

The focus and findings of this thesis have been cultivated through existing literature/text and personal studies of small to moderate scale performance venues and spaces both
in size and capacity. Studies include the design and distribution of performer focused surveys who's goal is facilitating a definition of desired performance and spatial characteristics relating to the nine elements of focus described above. Performers surveyed have been asked to define their music type followed by the type of spectator that they are most familiar with. Thirdly, they are asked to define characteristics of the performance and perception of the architectural space is desired. These three questions are what the following exercises are to be answered and based upon. The following exercise defines preferential characteristics pertaining to the stage and spatial characteristics along with performer/spectator proximity. Lastly, the performer is asked to rationalize a hierarchy between the nine proposed elements and their impact as related to the importance throughout the performance (pre, during, post) and to their overall importance to the experience of the performance in its entirety. The survey serves as a tool to help establish a way of thinking about performance and the experiences surrounding the performance directly from vantage point of numerous performers. While the survey serves as a strong tool it was not used as much for defining design decisions directly as in establishing a thought process early in the thesis.
9 Elements
Outside of acoustics this thesis identifies nine elements of focus of the live performance venue/space. The identified elements that play substantial roles in the experience of a live performance and defining the social situation take place and have been identified as the following: Acoustics is not included because these spaces are most often acoustically controlled with the intervention of the sound board and tech making the issue of acoustics as related to the quality of performance a moot subject.
TIME

CAPACITY / DENSITY

LIGHT

GREENROOM

PROPORTION / CIRCULATION

STAGE

Performance Driven Design
The accessibility between the spectator and performer that can be established both by physical and visual means can play a great role in the culmination of the hierarchical standard that is experienced between the two. Denying physical access to the performer prior to the performance creates an environment that holds the performer and spectator as two entities of differing importance. Alternatively, if the spectator and performer are allowed high accessibility to one another, the relationship established between the two types of inhabitants is far more that of a humanistic or eye-to-eye relationship.
The concern for time is that of the perception of actual and passing of time as well as the experience of a performance as related to the general time line of pre, during, and post performance with notable events within these zones. A strong connection to the actual passing of time connects the user to a consistent quality of nature whereas being cut off from this acknowledgment of time may have affects of the slowing down or stoppage of time within a disconnected space. Thinking about performance in terms of a general time line provides opportunities for a space to adaptively respond to performance as a changing process through time.
Thirdly, the capacity of a space is key in the relationship that is established between performer and spectator. Not only is there a question of actual capacity in terms of scale, but a greater concern for the way architecture can influence the perception of capacity or density. Capacity can be addressed by way of promoting levels of proximity, density, activeness, etc. through a changing architecture.
This thesis is concerned with the humanistic and spatial effects color may have within the performance setting. Appropriate use of color can affect the perception of depth, size of space, an evoking of emotions and moods, and demands other human response amongst performer and spectator and can be better discussed alongside the next elemental focus of light.
Approaches to lighting with a focus on color and saturation/brightness to accomplish these atmospheric reactions. Uniform lighting placed on a normal perspective with brightness receding with each light towards the back creates and reinforces a strong sense of depth of space. A loss of depth or closeness of space can be achieved with the reversal of this practice. Yellow lighting is associated with evoking emotions of cheerfulness and high spirits. Red and orange light behave similarly creating stimulating, energetic, and social reactions. Blue stimulates a calming affect while green is associated with refreshing and rejuvenation. High contrast and active lighting has been proven to create a kinetic physical reaction.\textsuperscript{10} Lighting can also be used to establish a connection with a recognizable or real environment.
The greenroom, backstage, or separation and segregation of performer and spectator facilities plays a major role in the performer's experience of the space and performance. This is often a major factor in creating the dynamic of accessibility between performer and spectator. The existence of a greenroom or separated facilities provides a space for the performer to find rest, reflect, and separation from the activity within the adjacent, often extremely active and congested environment. On the other hand, omitting the greenroom or sense of backstage has the ability to break down the hierarchy between performer and spectator in a revealing fashion.
Materiality can be used to develop a space in terms of aesthetics, acoustic performance, programmatic usage, to accent, etc. The perceived warmth or coolness of a space can often be found through the expression of its materiality. Contrasting materials demands more focus of detail, whereas the use of a universal depiction of material (such as painting everything black) may make spatial detail and definition recede into a less clearly defined space.
The spatial proportion and circulation characteristics of a performance venue have a dramatic affect on the experience of the space in terms of compression, intimacy, vastness, and in providing means of establishing a desired hierarchy between performer and spectator. The way the performer and spectator enter, traverse, exit the space, and the interaction that is established can be drastically different depending on whether they are one in the same or if they are separated and to what extent they are separated. This is once again commenting on the range of hierarchy that can be established through and architectural means. Beyond this is the need for the performer to have the ability to move from the interior to the exterior and about the entire space more freely than the spectator often does prior and post performance. Adjustments in width, depth, and height, have affects on the assemblage of the crowd and the perception of depth or vastness in vertical and lateral directions.
The stage plays the biggest role during the performance. Things like size, shape, orientation, elevation, etc. have the most noticeable role in establishing the relationship between spectator and performer through physical means. A small stage in plan, while providing an intimacy, restricts physical activeness amongst performers facilitating a more stagnant performance and affecting the spectator experience. A larger stage in contrast provides more space for active performance but may lose intimacy. The same can be said for finding a comparison within stage height and the degree of closeness that can be achieved between the performer and spectator. A change in stage heights can be used to affect elements of performance or create moments of perceived intimacy within a stage that may otherwise be highly separated from the spectator.
Supplemental Studies
Instituting different color and lighting techniques within a space can have a profound affect on the users experience. Because typical performances or held within a dark space, the way that light and color is used is even more integral in the defining of the sense of that space.

Light and color can be harnessed and used to evoke predictable human response within a space. The graphics below illustrate some of the ways that a space can be defined using these techniques. If light is emitted at regular intervals at a normal perspective within a room with right angle walls, a perceived depth or shallowness of space can be established in a room that in reality is much deeper or shallow. If a brighter light is positioned in the front with each light less bright than the one in front of it depth is created. If the opposite is done, a shallowness/flatness is expressed. The same technique can be utilized in creating a sense of vertical height.²

Hue and saturation of light can be used to promote a desired human response or reaction within a space. Below are some of the colors that have definitive human response or emotion attached to them.
PERFORMER SURVEY

60+ administered

24 received
INTRODUCTION + OVERVIEW

Thank you for taking the time to complete and reflect upon this survey investigating the performer and spectator relationship that takes place within a venue during a musical live performance. The purpose of this survey is to facilitate a better understanding of qualities of space and time that promote relationships between the performer and spectator. Through identification of music type, transient qualities, tactile qualities, and preferential relationships developed prior, during, and post performance, I hope to find a greater understanding of how the built environment can facilitate optimal performer/spectator relationships resulting in an enhanced sense of performance for both the performer and spectator. To further strengthen the results of the survey, it is hoped that each participant will take time to reflect, rationalize, and further describe personal reasoning for answers to questions including but not limited to qualities of space and time. There will be space included within the survey to add additional thoughts related to the affects of the venue on performance with a focus of soliciting the performer/spectator relationship. The data collected from this survey will aid in the design of an adaptable transitory live performance venue with the purpose of creating an environment that promotes desired social interactions and perspective between the performer and spectator resulting in a heightened sense of quality of performance shared by both parties.

NAME (PRINT)________________________________________

SIGNATURE________________________________________

PHONE(Optional)_________________________________

INSTRUMENT______________________________________
MUSIC TYPE

Please indicate the primary music type that you perform by CIRCLING the appropriate type. If multiple types are applicable indicate and describe your reasoning. Use the space allocated below to further describe and reflect.

<table>
<thead>
<tr>
<th>Country</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>COUNTRY</td>
<td>R + B</td>
</tr>
<tr>
<td>HIP HOP</td>
<td>OPERA</td>
</tr>
<tr>
<td>SOUL</td>
<td>INDIE</td>
</tr>
<tr>
<td>ALTERNATIVE</td>
<td>CLASSICAL</td>
</tr>
<tr>
<td>RAP</td>
<td>EXPERIMENTAL</td>
</tr>
<tr>
<td>POP</td>
<td>ROCK</td>
</tr>
<tr>
<td>ELECTRONIC</td>
<td>PUNK</td>
</tr>
<tr>
<td>DANCE</td>
<td>REGGAE</td>
</tr>
<tr>
<td>INSTRUMENTAL</td>
<td>JAZZ</td>
</tr>
<tr>
<td>BLUES</td>
<td>OTHER ________</td>
</tr>
</tbody>
</table>

NOTES:
PERFORMANCE / SPECTATOR TYPE

Please indicate the type of performance/spectator interaction that you are most familiar with by CIRCLING an image below. The following questions will be answered based upon this selection. Further describe your choice below.

NOTES:

PERFORMANCE DRIVEN DESIGN
**SENSE OF SPACE / INTERACTION**

As related to the previously indicated performance/spectator type, choose and **CIRCLE 4** of the listed characteristics/senses that you feel are most important in a successful performance, sense of space, and the relationship between the performer and spectator. Explain your reasoning below.

<table>
<thead>
<tr>
<th>INTIMATE</th>
<th>EXCITED/MELLOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRIENDLY</td>
<td>BRIGHT/DARK</td>
</tr>
<tr>
<td>FAMILIAR/NEW</td>
<td>IMPORTANT</td>
</tr>
<tr>
<td>COMFORTING</td>
<td>LIVELY/LONELY</td>
</tr>
<tr>
<td>SECURITY</td>
<td>REAL/FAKE</td>
</tr>
<tr>
<td>ENERGETIC</td>
<td>TOUGH</td>
</tr>
<tr>
<td>KINETIC/STILL</td>
<td>WILD</td>
</tr>
<tr>
<td>CHANGING/EVOLVING</td>
<td>SOCIABLE</td>
</tr>
<tr>
<td>MYSTERIOUS/KNOWN</td>
<td>DEAFENING/FAINT</td>
</tr>
</tbody>
</table>

**NOTES:**

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*Performer Survey*

*Performance Driven Design*
PERFORMER + SPECTATOR + STAGE

Indicate by DRAWING ON THE IMAGE ON THE RIGHT the relative stage characteristics that help facilitate the sense of performance and performer/spectator relationship chosen earlier in the survey. Keep in mind the affects stage height and spectator proximity has on the perception of hierarchy (system of authority ranking) between spectator and performer. Feel free to make additions to the drawing that you relevant. Explain your decisions below.
VENUE ELEMENT FOCUS

Observe the 9 venue elements listed and described below. Further reflect on experiences with these elements and how they affect perception of space and influence the performer/spectator relationship. The provided stickers will be used within the survey/exercise to facilitate and record further exploration of their influences pertaining to the performer/spectator relationship.

ACCESSIBILITY
The ability, or the sensibility, of the level of access between the performer + the spectator. [Mentally. Visually. Physically. Etc.]

TIME
The perception or awareness of time in terms such as duration, time of day, and how the built environment changes through or as reaction to time.

CAPACITY

COLOR

GREENROOM/FACILITIES
The effects of separation of performer and spectator facilities. [Backstage. Greenroom. Etc.]

LIGHT

MATERIALITY

SPATIAL PROPORTION
Differing proportions of the venue and their affects. Tall space. Short space. Wide Space. Etc.

STAGE CHARACTERISTICS
TIME | PRE + DURING + POST

Observe and investigate the proposed performance time line below illustrating notable moments of importance pre, during, and post performance that may have an affect on the relationship established between performer and spectator. On the following page indicate on the time line using the supplied stickers what characteristics play the largest role in establishing a performance/spectator relationship throughout the experience of the venue. You are encouraged to note and add notable moments of experience as you see relevant. Explain how the chosen characteristics play their role in enhancing or deterring quality experience and relationships.

NOTES:
PERFORMER - SPECTATOR RELATIONSHIP SURVEY

TIME

PRE + DURING + POST

PERFORMANCE DRIVEN DESIGN

arrival @ venue

sound check

beginning of show

climax

load / socialize

unload + load in

down time

break in set

end of show

NOTES:

Performing Survey
VENUE ELEMENT IMPORTANCE

As related to the previously indicated performance/spectator type, choose the four most important venue elements in promoting the performer/spectator relationship. **USE THE PROVIDED STICKERS** to further indicate each of the four as being important, more important, very important, and most important. Further explain and describe your four decisions below.
Precedents
The Protestant Church in Hesse and Nassau (EKHN) presents itself with the first mobile-plexy glass church in the world. This church is an edifice that is not bound to any particular place. With changing sites of setup it gets different implications. On the other hand, it transforms the different locations into new places. Through an interplay of light and shadow in the daytime and at night through the beams colorful illumination of the Church of Light invites people to explore the mysteries of contemporary spirituality.

-Lichtkirche Info Flyer
Performance Driven Design
// Modular + mobile

// Utilizes light and color to define experience.

/// Small scale
575-seat “multi-form” theater with the ability to transform between proscenium, thrust, arena, traverse, studio, and flat floor configurations with only a small crew in a few hours; and to open the performance space to its urban surroundings.

-REX website
575 adaptable theatre space.

Utilizes urban context in design.

Gracefully mechanized + and functional.

Unique backstage incorporation.
Venue Study + Selection
1 band

16 venues

<100 - 40,000 spectators
<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Gate</td>
<td>Sprawled strip mall type building with masonry and brick facade with bright yellow accents. There is a high level of accessibility between the performer and spectator due to stage scale, layout, and circulation paths. Access is restricted by the DJ's table when in use.</td>
</tr>
<tr>
<td>Brush Street (next to Ford Field)</td>
<td>Impermanent venue located on the street in the heart of Detroit's sports + entertainment district. The brisk stadium serve as a backdrop. Metal gates directly impede ad direct spectator circulation prohibiting access to the space directly behind the stage. The exterior condition provides high levels of accessibility otherwise.</td>
</tr>
<tr>
<td>The Pike Room</td>
<td>Located on the second level in a historical light colored masonry building on the corner of an intersection in downtown Pontiac. Accessibility to the performer while on stage is very high while at times of pre and post performance the performer is far less accessible due to separation of performer + spectator space.</td>
</tr>
<tr>
<td>Honky Tonk Central</td>
<td>Three level brick building housing three stages with numerous large openings connecting the exterior with the interior. Accessibility is very high. The entire space is shared and occupied by spectator and performer pre, during, and post performance.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>Lighting techniques vary between performance types. This space hosts rock and house music which is typically performed by a single DJ. The DJ lights emit from behind in the form of a gabled roof.</td>
</tr>
<tr>
<td></td>
<td>There is no artificial lighting leaving natural light as the only source evenly lighting the entire space except where shadows are present. The majority of shadow lies over the back of stage and performer parking space creating a visual barrier.</td>
</tr>
<tr>
<td></td>
<td>There are multiple spaces on the same level of the performance space that are utilized as greenroom/backstage including exterior and interior spaces. This tends to disperse performers within a group.</td>
</tr>
<tr>
<td></td>
<td>Performance space is lit from above. There is also white festoon lighting throughout the space. The abundance of light from the exterior of the building serves as backlighting.</td>
</tr>
<tr>
<td></td>
<td>Stage is located on the most active corner of the outside environment. Entrance to the space is located in the furthest location from the stage possible to help stop sound from reaching the performances taking place on each of the lower levels. Bar is in the center splitting circulation paths.</td>
</tr>
<tr>
<td></td>
<td>Primary materials are brick, wood, drywall, and black leather...</td>
</tr>
</tbody>
</table>
Arts + Beats + Eats
Royal Oak, MI
Held in a sectioned portion of a city with stages located periodically within its streets.

Rubbles
Mt. Pleasant, MI
A brick exterior building sandwiched between other buildings with similar facades with a narrow alley flanking one side.

PJ's Lager House
Detroit, MI
Small brick building painted white and a cool turquoise on a busy street and far separated from surrounding buildings.

Eric Church Concert
Lansing, MI
Large outdoor open space adapted and centralized by a large stage and backed and enclosed by supportive programmatic elements.

The height of the stage, use of barricades, and system of identifying performer and spectator detours from high physical accessibility while visual accessibility is evident throughout the stages of performance.

The outdoor venue is strongly connected to actual time and is transformed with the passing of time. The connection to time is blurred as artificial lighting replaces natural with the arrival of dusk.

The predominant colors of the space are found in the environment of the city setting (trees, buildings, etc.) and the changing colors of the sky.

The compressed space creates a high sense of accessibility during the performance while the greenroom provides a separation limiting accessibility pre and post performance.

Relation to the exterior environment and passing of actual time is cut off potentially slowing the perception of time.

The space is overwhelmingly black with a white ceiling and muted reds from the brick walls.

The small space and close proximity enforce accessibility while an entire level is closed off for performer use only and the height of the stage compared to the size of the space degrade accessibility.

Intermittent glimpses of the exterior environment allow for a subtle relationship to the passing of time.

The interior color is reflective of the exterior with a cool turquoise paint. The walls directly flanking the stage are contrasted with the rest of the space with the use of collaging concert posters.

Accessibility is openly clear use of barriers. Being allowed to see the barriers in place and glimpses beyond further enforces the intended limiting of access between spectator and performer.

The exterior space and performance transition together further enforcing the progression of a performance from beginning to end. Day to night.

The color of the space is defined by the metallics, black, and blue that comprises the stage and the natural environment including the distant buildings, trees, and the changing sky.
<table>
<thead>
<tr>
<th>Natural light is utilized until darkness falls when numerous changing colors of artificial lights are used to light the stage from the front.</th>
<th>The impermanent structure is constructed of aluminum truss, PVC tenting, and black resilient stage flooring.</th>
<th>The space is defined by the form of the city and its streets resulting in a narrow space compared to its depth. Main circulation of the space is shared by both performer and spectator with express and segregated access for performers.</th>
<th>The stage is approximately 40’ wide by 15’ deep and elevated to shoulder height. The size of the stage is good for kinetic performances and may fail in providing an intimate performance setting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The greenroom space is directly adjacent to the stage. It is not climate controlled, does not provide seating, and leads to the narrow alley on the exterior of the building.</td>
<td>During performance almost all light is cut off except for the lighting of the stage which is lit from the back and one side.</td>
<td>The space utilizes brick, painted wood, and white tiles comprising the ceiling.</td>
<td>Small rectangular space compressed by low white ceilings with modes of performer and spectator circulation/entrance and exit at opposite end of the venue.</td>
</tr>
<tr>
<td>The greenroom is located in a lower level that is white washed. Access to and from the space is located at the center side of the spectator space.</td>
<td>The performance space is lit by non changing yellow artificial light from the front of the stage promoting a normalistic and consistent portrayal of the performer.</td>
<td>Contrast in material (brick, wood, cement) is lost due to most of the space being painted the same color.</td>
<td>Small stage constructed of wood approximately 12’ wide by 7’ deep elevated about 1.5’ leaving less than three feet head room for the performer.</td>
</tr>
<tr>
<td>The greenroom. Backstage area is vast and contains many programmatic areas including a large catering tent and multiple spaces for intimate relaxation within close proximity to a massive crowd.</td>
<td>The lighting of the performance space is heavily lit from behind receding depth and portraying the performer and the space as being pushed forward to the massive crowd.</td>
<td>The large structure is primarily constructed of a web of aluminum truss facilitating an experience of a play between opaqueness and transparency.</td>
<td>The stage is about 15’ wide and less than 10’ deep. The small stage is elevated approximately 4’ reinforcing an intimate space with a sense of hierarchy.</td>
</tr>
<tr>
<td>Within the vast space there is a clear divide between spectator and performer space. Circulation of spectators is pushed to the edges of the space due to the mass of the crowd.</td>
<td>By far the largest stage studied approximately 80’ wide and 30’ deep leaving a vast amount of space for the performer. At the front center is a narrow pier that projects into the crowd nearly 40’. The stage is elevated to neck level.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Venue</th>
<th>Location</th>
<th>Observations</th>
<th>Average Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rick's American Cafe</td>
<td>Lansing, MI</td>
<td>There is no separation of performer + spectator facilities or existence of a greenhouse type space.</td>
<td>130</td>
</tr>
<tr>
<td>The Rusty Spur</td>
<td>Fort Wayne, IN</td>
<td>A separation of some of the circulation of spectator and performer instills a slight sense of hierarchy through limitation of physical accessibility.</td>
<td>250</td>
</tr>
<tr>
<td>Hard Rock Cafe</td>
<td>Detroit, MI</td>
<td>There is some limitation of accessibility through programming and circulation paths but in general, the accessibility between performer and spectator is very high. Performers often mingle pre and post show with spectators.</td>
<td>150</td>
</tr>
<tr>
<td>Common Grounds</td>
<td>Lansing, MI</td>
<td>A music festival comprised of a number of impermanent stages.</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The impermanent venue is primarily open on all sides and is fully immersed within its environment.</td>
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</tr>
</tbody>
</table>

The few sources of color in the predominantly black space are hints of wood, promotional flyers/posters, and an assortment of colors of light emanating from the near proximity of the stage, bar, and distant utilitarian hallways.

The primary colors that are used within the space are black for the ceiling, brown, and contrasting natural colors from the extensive use of wood.

The space utilizes colors that are associated with a cheerfulness and energy (red, yellow) in contrast with cream, as well as metallics and natural tones from the use of wood.

Almost the entire enclosure is washed with white. The grass acting as the floor is green and the area of performance is black with hints of metallics (both the stage and backdrop).
The space isvoid of light except for the light focused specifically on the performer + stage from the front. High contrast + bright lighting is utilized. There is also light that comes from the bar and light hallways.

The venue is constructed primarily of wood elements including wood flooring. Sense of materiality is lost in almost everything having been painted black. The dark space recedes creating a sense of depth/vastness of a relatively small space.

The performance space is open + rectangle in plan with side access with an emphasis of depth rather than width of spectator space. The ceiling is about 14' throughout with exposed equipment + maintains a compressed feeling of space.

The stage is approximately 20' wide and 13' deep elevated approx. 3' with a knee wall creating a stronger division between the spectator + performer. The stage provides adequate but not abundant space for high stage activity. Heavily worn.

The greenroom/backstage area is a small unheated annex accessed from the rear side of the stage and leads to the side parking lot. It is directly adjacent to this space that performer transportation and trailer are parked. Poor acoustic barrier.

The space perimeter is lit with blue LEDs. Blue lit elements are known to recede in space. The performer is lit with contrasting colors from the front and back.

The vast majority of the space is comprised of different types of wood and utilizes past and beam details. The ceiling tiles are removed exposing painted duct systems.

The space is vast with low ceilings. The view of site is uninterrupted by dividing walls taller than the abdo men. Means of entrance and exit are separated.

The green room is a separated room detached from the performance space across a vast main lobby to the entire building. The entrance to the room is glazed and put the performer on display in what is normally a private space. Good acoustic barrier to performance space.

Glowing ambient and natural light. Performances are held throughout the evening and night transitioning the time of day. A wide range of bright colors are used to directly light the performer from the front with red glow from behind immediately attracting the eye to the stage upon entrance.

The primary materials used are brick, metal, glass, and wood in an industrial esque fashion. Ceiling panels act as acoustic baffles and compress the performance space. The change in material and color further pronounces activity from the direction they emanate.

The space is compressed with low ceilings and close proximity. The transition from greenroom to performance space is one of compression, extreme release within the lobby, and back to compres sion. The front of the stage is populated with closely spaced tables for sitting and eating. Almost the entire space is populated by seating ranging in height.

The stage is approximately 60' wide and 20' deep and elevated just bellow chest height. There is a permanent 10x10 platform raised 1.5' located at the rear center of the stage. Solid wood stage with high gloss finish.

Detached climate controlled greenroom separated from hot exterior. This is the only space that is fully enclosed and provides a good acoustic barrier. The space is carpeted and furnished with hard and soft seating and the walls are white like the performance space.

Natural light plays a major role in the luminosity of the space with colored lighting focused on the stage from the front. The stage light play a more significant role in the performance as time passes and day recedes into

The structure of the space is comprised of steel poles and beams which are primarily painted white. The structure is clad in a white PVC membrane. These materials their modular qualities, and impermanent connections contribute to a sense of impermanence and mobility. Metal gates and railing are abundantly used to direct and segregate circulation.

The performance space is rectangular in plan with the back opening to an open outdoor space defined by high opaque dividers guarded by security. Inside this space is the greenroom. Performers have two entrances and exits completely separate from the spectator. The structure is open air with a gabled ceiling approximately 25' high at its peak.

The stage is constructed of modular sections. The footprint of the stage is approximately 40' x 24'. The sense of the size of the stage is diminished by the population of instruments of earlier and later performers in order to shorten dead time between acts. The stage is elevated 3' with the gate separating the performer and spectator by 9'.
<table>
<thead>
<tr>
<th>Location</th>
<th>Observation</th>
<th>Details</th>
</tr>
</thead>
</table>
| The Machine Shop Flint, MI | Spectators are able to come be right next to the stage allowing a closeness between spectator and performer. Otherwise, the spectator and performer are separated completely by backstage and the use of tall chain fencing. Contact can be completely restricted pre and post show. | Outside light is primarily cut off from the interior of the space.  
- The consistent darkness may contribute to a sense of being late in the evening.  
- Time may also seem to slow or stand still. |
| The National Underground Nashville, TN | There is a high sense of accessibility within the space. This can be attributed to the small scale, low ceilings, stage, and shared circulation paths between the spectator and performer. | The performance space is primarily black in high contrast to the green room which is bright red. Metallic and natural colors are expressed through choice of material. Red yellow and blue are utilized in wall paintings that incorporate flames.  
- Natural wood colors are primary and promote a warm calm space. Darker tones are used for the stage and performance area. Cream, black, and red from brick comprise the exterior. |
| Comerica Park concourse Detroit, MI | Accessibility to the performer immediately before, during, and after the performance. Pre performance, the performer is amongst the event crowd or at the far removed and private backstage area. | The open air structure is completely lit by natural lighting. This creates an uninhibited sense or contact with real time.  
- Primary colors used include green, red brick, cream, and black. Numerous colors are easily visible provided by the clothing of all the spectators. |
| Whiskey Barrel Lansing, MI | Accessibility through circulation can be completely restricted if desired. Attributes of the stage further create a greater sense of hierarchy between the spectator and performer. | Outside light is primarily cut off from the interior of the space.  
- The consistent darkness may contribute to a sense of being late in the evening.  
- Time may also seem to slow or stand still.  
- An abundance of impermanent color is introduce through lighting while consistent color is found in the abundance of wood and accenting corrugated metal. Other warm colors are used. |
<table>
<thead>
<tr>
<th>The greenroom is compact and promotes activeness. Painted red with accents of wood and mirrors. The intermittent space between green room and stage is black with color introduced from pictures of bands within the space itself acting somewhat as a time line.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performers are lit from the front and back. The rear of the space is lit with blue lights which helps create a depth of space. The spectator in rear proximity to the stage is often lit with white light creating a visual connection between the close spectator and performer. Walls are lit with red and blue.</td>
</tr>
<tr>
<td>Materials used are primarily wood, metalics, and masonry. Most sense of materiality is lost as almost everything is painted black. Metallic materials such as diamond plate are used for accent and creating focal points.</td>
</tr>
<tr>
<td>Circulation of space has the capacity to be completely segregated. The space is primarily square in plan and symmetrical and reads as a relatively clear space. Ceiling heights are approximately 18’. Performer and spectator enter and exit the space from opposite ends. The space is primarily standing room with sitting areas in the back.</td>
</tr>
<tr>
<td>The stage is approximately 30’ x 15’ with a 5’ radius arc at the center front. It is elevated waist high with a pipe and chain barrier directly in front that is chest high creating a heightened hierarchy between the spectator and performer within a close proximity. There is a drum platform raised</td>
</tr>
<tr>
<td>Much of the spaces light relies on exterior light both from natural and the light from the bustling city just outside the door. Interior lighting is primarily white ambient or task lighting. Rope lighting defines the shape of the stage while the performer is lit from the front with white light and back light by glowing colored light.</td>
</tr>
<tr>
<td>Materials used are primarily wood, metalics, and masonry. Most sense of materiality is lost as almost everything is painted black. Metallic materials such as diamond plate are used for accent and creating focal points.</td>
</tr>
<tr>
<td>The space is small and compact with two entrances. Proximity to the street and its surroundings create a very tight space with next to no room for a back stage or gear to be stored out of site. Relatively low ceilings and small plan are accentuated by their contrast to the exterior that is strongly connected with the interior.</td>
</tr>
<tr>
<td>The stage is low and compact clad in dark wood. The size and height of the stage forces a intimacy between performers through close proximity. These tend to the tendency of performances to be relatively low in activeness and intensity.</td>
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<tr>
<td>The back stage area is a section of street bordered by chain link. The perimeter is further solidified by lines of tour vans and buses. Spectators are afforded glimpses of performers as they arrive at the venue.</td>
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<tr>
<td>The space is entirely by natural light. The placement of the stage underneath the tiered seating of the stadium provides contrast between the stage and the spectator space that is well lit by the sun.</td>
</tr>
<tr>
<td>The stadium is constructed using cement, steel beams and girders, masonry, brick, and metal. The materials of the space create sense of being in an exterior place while still being sheltered and protected.</td>
</tr>
<tr>
<td>The impermanent venue utilizes tiered seating to create a concert shell. A vastness of space is realized in all directions further blurring the lines of interior and exterior. The vastness of space parallel to the stage allows for the decompression and scattering of the spectator.</td>
</tr>
<tr>
<td>A compact and low impermanent stage provides an intimate relationship with the spectator. The stage does not express permanence or stability. Spectators are able to come in direct contact with the stage only being physically removed from the performer is the stage itself.</td>
</tr>
<tr>
<td>Many colors of light are introduced and focused both on the performer and spectator. The use of revolving defectors helps create a dynamic environment. The light is controlled and applied to different types of area within the venue.</td>
</tr>
<tr>
<td>An Abundance of wood and corrugated metal is used. The metal is used as a backdrop for the stage reflecting light and appearing brighter that most of the other materials in the space.</td>
</tr>
<tr>
<td>The venue has clearly defined spaces by hard lines and corners. Barriers and circulation paths enforce separation between performer and spectator in a physical manner. Multiple programs distract from the performance as the main focus.</td>
</tr>
<tr>
<td>The stage is approximately 25’ x 12’ deep. It is elevated knee height and includes a barrier at the front and sides of the stage raising the height of the stage to chest height. The backdrop and fence barrier contribute the most to the access between the performer and spectator during the performance.</td>
</tr>
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</table>
Rick's American Cafe
Lansing, MI
A brick exterior building sandwiched within a modern commercial street front.

Common Grounds
Lansing, MI
A music festival comprised of a number of impermanent stages.

Rubbles
Mt. Pleasant, MI
A brick exterior building sandwiched between other buildings with similar facades with a narrow alley flanking one side.

The Machine Shop
Flint, MI
Detached white masonry building with red, yellow, and silver accents. Tall single story.
The Pike Room  
Pontiac, MI

Located on the second level in a historical light colored masonry building on the corner of an intersection in downtown Pontiac.

PJ’s Lager House  
Detroit, MI

Small brick building painted white and a cool turquoise on a busy street and far separated from surrounding buildings.

Of the 16 venues originally analyzed it was determined that it was important to choose a site to provide parameters for the architectural system and potential layouts of the system could be designed around. The 16 were narrowed to six that I felt fit the conditions of the site that was appropriate. From the six one was chosen

AGENDA FOR SELECTION

- Typical / normal space and conditions
- Small-mid scale performance space
- Would benefit from architectural intervention
- Familiarity / forgettable space
- Potential for multiple performance types
The Pike Room in Pontiac, MI was chosen from the 16 analyzed venues for a number of reasons. I have experience within this space as a performer, spectator, and support. Most importantly, this space is a typical condition found in numerous small-mid scale venues. While still having some unique characteristics including a loosely connected backstage area, a bar, and being a second story space with access from a stairway leading directly outside to the street.
Design Conditions
The Next step was to define 3 music performance types with vastly different experiences associated with them to provide parameters for 3 potential layouts of the system to be designed for. I settled on a high energy performance, an intimate or private performance, and a raw performance. These 3 types could be associated with rock, jazz/blues, and acoustic respectively.
Defining the characteristics of these three performances provided a base for a template or guideline for the design of the proposed system and 3 potential layouts. From this, each of the three performance types was broken down and analyzed based on the 9 elements defined at the beginning of the process. This information was utilized in directly defining design decisions.
KEY POINTS

// Installed performance driven architecture.

// Adaptable multi-use system responding to the research of the “9 elements.”

/// Flexibility to support numerous music based performance types.
The proposed design of the system consists of a simple moveable panel system on tracks that can serve as walls, ceilings, stage, seating, tables, etc. These panels have exchangeable faces that can be used to react differently to its use and the experience within the space. Lighting and color are essential players in defining the performance experience. Inside the panels are LED lights emitted from the side and behind the removable faces. In my design I have provided three types of faces; natural wood, frosted acrylic, and acoustic panel. Because these faces are removable, the design allows for further introduction of different faces allowing for an extremely adaptive system.
The following models and renderings depict the three proposed layouts for the pre-defined performance experiences. Decisions made in the articulation of the panels including the location and orientation of the stage are derived directly from the systematic research of the 9 elements and resulting guideline. Coupling the research with the characteristics of the existing space defined each design solution.
Prototype
References


Precedent Image Sources:
AT&T Performing Arts Center photos by: Iwan Baan


