PERFORMATIVE DESIGN

Lenita Ann Eldhose

Virginia Commonwealth University
PERFORMATIVE DESIGN

A Space to Invent, Innovate and Express Art for the Richmond Dance Community
DESIGN is a way to connect to all material and immaterial things. The process requires being empathetic to where we take from and to whom we give to. Design adapts to the environment and integrates many disciplines to achieve a form that facilitates function. The dance is the mother of the arts. Music and poetry exist in time; painting and architecture in space. But the dance lives at once in space and time.

-Curt Sachs

DESIGN IMPLEMENTATION

CONCEPT WORK

Concept Models
Conceptual Drivers
Labarations

SCHEMATIC DESIGNS

Phase I
Phase II
Phase III

FINAL DESIGNS

Floor Plans
Sections
Perspectives
Final Model

THESIS REFLECTION

ACKNOWLEDGEMENTS

REFERENCES
MOTIVATION
The field of design is one that holds the power to empower, bridge gaps, inform, evolve and revolutionize human thoughts. To gain a higher understanding of the correlation of anthropometrics and ergonomics in an embodied space relative to the discipline of dance connecting one's mind and body. The need for a space that instills a sense of freedom for artists to experience and execute their art and to reside alongside their mentors and travelling artists.

To understand the design processes that are adaptive and engage diverse cultures and to comprehend the mechanisms and methods of implementation of design with respect to the discipline of dance, conducting precedent researches relating to dance theaters, studios, performance spaces and design ideas and concepts behind the construction of such spaces would be one of the methods that this research would include (Campbell, 2007). Another important method would be researching literature reviews on how dance connects communities and can be used as an educational opportunity for both residents and public. To understand the vitality of dance in freedom of expression and helping various dance studios and performance arts centers to understand the functionality of these designs; how dance and design inform empathy; the user's experience in the existing centers, and its connecting them with their mind and body (Harding, 2001).

METHODS
To understand the design processes that are adaptive and engage diverse cultures and to comprehend the mechanisms and methods of implementation of design with respect to the discipline of dance, conducting precedent researches relating to dance theaters, studios, performance spaces and design ideas and concepts behind the construction of such spaces would be one of the methods that this research would include (Campbell, 2007). Another important method would be researching literature reviews on how dance connects communities and can be used as an educational opportunity for both residents and public. To understand the vitality of dance in freedom of expression and helping various dance studios and performance arts centers to understand the functionality of these designs; how dance and design inform empathy; the user's experience in the existing centers, and its connecting them with their mind and body (Harding, 2001).

PRELIMINARY RESULTS
Research and precedent studies imply that: Design and dance are complementary forms of visual communication that have similar principles of rhythm, balance and contrast. Performative design can create higher levels of interaction between artists, students and public. The expressions and movements used in dance can be used to inform and evolve the architectural experience in the space. Interviews with dance professionals and designers; interviewing various dance school faculties, students and dance theatre designers to understand the requirements and shortcomings of their existing spaces and programs.

CONCLUSION
This research will support the design of an artists-in-residence space for the dance community in Richmond that will connect a residential space where the artists can reside amongst faculty, students and travelling artists. Practice rooms where they are at liberty to express, practice, educate and engage amongst other dancers. A performance space where they can execute and showcase their expertise and engage with the public. A public community hall for where there is an opportunity for the diverse cultures and other artist communities to connect through dance. A library and a gallery space that gets integrated into the library that becomes part of the educational opportunity wherein they get a glimpse of the evolution of the various disciplines that dance is a combination of.
Design that urges rightful freedoms of expression, invention, growth and education is of primary importance to the field of art and architecture that possesses the power to bridge gaps, inform, evolve and revolutionize human thoughts.

Design has been compared to various art forms previously, but rarely to dance. Dance and design are both creative and expressive art forms that fill in the space and the stage. The similarities in the principles of dance and design are a source of inspiration to those interested in either forms of visual communication (Yusuf, 2012). The various genres in dance and design aestheics and functionality is described through 3 elements of body, space and time.

Body: The design of a space is most commonly made using materials such as plastic, wood, glass, paper, metal, and so on. When a designer moulds this material into a particular shape and size, the creation is called a product, or a work of design. Depending on the design and the product, it can use materials such as plastic, wood, gold, paper, wool, and so on. When a dancer moulds his material into a particular shape and size, the creation is called a pose or a dance movement. Hence, every designed product has a ‘body’. Depending upon the design of the body, it can be either stationary or, it can be flexible so as to be set in motion. In the discipline of dance, it is the dancer’s body which is given various shapes with the body. This is a common point between the product (body) of a design, and a dancer’s body. When explained through the language of science, both dance and design are nothing but art. Space: ‘Human body is visible, space is invisible.’ Space becomes visible only when objects/ bodies are placed in it. When we stand in a room to look at a space, we see its walls, windows, doors and the objects kept inside the room. Afterwards depending on the empty area available, we would determine if the room is spacious enough or not. In this way invisible space becomes ‘visible’ and makes a meaningful sense because of the presence of various objects placed inside it. In the discipline of design, space is more or less invisible. The empty area that exists around the dancing body is what is called space. When dancers stretch their arms and legs, they recognize the space that can be used for the dance they perform. Even when they move about on the dance-floor, the space used for the dance or any given moment is the space that surrounds them. When it comes to a design and its product, the space has a similar meaning. However, the space used by a designed product has an added aspect to it. Depending on the design and the product, it can use the space not only around it but also inside it.

Time: Time is that which flows continuously. Similar to space, time is invisible too. In dance and in design, the space and time is of great importance. Any movement done by a dancing body or by a designed product needs certain number of sets of time. These units are nothing but the duration of time starting from the begining to the end of a body’s movement in a given space. The impact of dance and its movements on the architecture of a space has the potential to inspire the users of the space and its audience (Bulhankaran, 2016).

Space is not defined until something happens in it. A dance gives shape to a space through the series of movements and gestures. A dancer is given the opportunity to travel through space in various directions and at various levels, high, medium and low. How a dancer utilizes a space affects the way the audience views it (Johnson, 2012). In the foundation years of a designer’s education, one learns how to engage all principles and elements of design in a space. Without careful attention to these principles, relationships are lost within the design. The piece will not feel unified, confusion arises and a connection with the audience cannot be formed. Any dance or design can leave a viewer feeling disconnected, but a thoughtful piece of work will leave them wanting more (Lindner, 2011). The question of how a space affects the experience of an individual who moves through it can be answered when one tries to understand the fundamental relationship between the human body and space (Weinstein, 2008). Dance and architecture share a common interface. Dance is a dynamic sequence of time, related to space, while the materialised space is purely static. So how do we apply the knowledge encoded in movements to the process of architectural design? (Yusuf, 2012). Dance is a culmination of ‘impressive poses and vigorous movements of the human body that happen in a given space and time. A pose or a movement of the body is described as a dance-pose or dance movement only with the element of aesthetics embedded in it. In a dance-pose, the dancer’s body like any other static object occupies certain space but in an aesthetic manner. In a dance-movement, the body not only occupies but also utilizes the space that exists around it. This too does in a certain aesthetic manner. By doing so, a
dancer's moving body makes 'space' visible to viewers, which is otherwise invisible (Sukhatankar, 2016). “Dance is action and shape designed in space and time to express feelings and ideas” — Bill T. Jones

If encounters with art and artists become part of daily life in a community, and if aesthetic experiences are perceived by its residents as part of their daily lives, what kinds of humanistic, cultural, and social change could take place in the community and in the people involved? By artists living together in a residential community, and by showing and sharing the process of art making to other artists and the community, to what extent can aesthetic, cultural, and social issues and concerns expressed by artists be interpreted by the community? The creation of a cultural environment, or more specifically the creation of access to the world of art is important for the community. The need for the local community to provide the community and other artists with aesthetic experiences that could enrich their internal and external worlds is higher than one may even anticipate it to be (Iwano, 2003).

Research shows that there is an increasing demand for art education to support artists who could encounter values different from their own, develop self-confidence, and take pride in the community which had such cultural opportunities. Researchers assumed that art could open people’s minds to the world outside their existing cultural framework, and that it would be valuable to have artists from the outside world as their neighbors and friends. The study conducted in which a group of artists from various disciplines were asked to live together as artists-in-residence to share their experiences, teach the host community and learn from them helped understand how art and culture can empower people. The artistic and aesthetic education provided in the community gradually opened up a dialogue not only between foreign artists as guests and spectators as hosts, but also between art and people, culture and culture, and people and people within the local community through performances, communications and other artistic methods (Jones, 2005). This research shows the importance in the development of community hall and practice spaces in the artist residency program. In an article written on the importance of embedding dance in the education system for the growth of community and workforce, the Miriam Giguere describes how the cultivation of a community environment attracts the creative worker and requires technology, talent and tolerance. The creative worker seeks a community not only with technological resources but also the presence of arts, culture and diversity. The Social Impact of the Arts study conducted by the School of Social Work of the University of Pennsylvania speaks to the character of communities that maintain this cultural diversity; it finds that communities rich in arts organizations are more diverse and likely to remain so. The author also explains how artists-in-residence programs, where professional artists teach their art form in a school for a designated period— anywhere from three days to a month — are an excellent way for dance to find a home in public school curricula. This is a research which shows the importance of artist-in-residence spaces in the artist residency program. The state of Pennsylvania has in place a state sponsored artist-in-residence program through the Pennsylvania Council on the Arts. The artist-in-residence program can also be a resource for faculty by providing in-service workshops for teachers. This creates a mechanism for visiting artists to share ideas on ways in which dance and movement could be integrated into classroom teaching practices. Holding these workshops during required in-service days allows school administrators the chance to show support for an educational agenda that aims to revitalize Pennsylvania through more active involvement in the arts (Giguere, 2005). Richo Florida, an American urban studies theorist says that, “the deep and enduring changes of our age are not technological, but social and cultural. They are harder to see for they result from the gradual accumulation of small incremental changes in our day to day lives.” There is an increased necessity to address this change in the same way, with small incremental changes that will make our communities attractive to today’s creative class. A good way to start this is by introducing art as a part of school’s arts residency program introduces art education for students to develop their interests and ideologies in support of this idea. Not only are schools closely linked to other cultural institutions in our communities, but school children are the creative class of tomorrow (Giguere, 2005). Richard Florida, an American urban studies theorist says that, “the deep and enduring changes of our age are not technological, but social and cultural. They are harder to see for they result from the gradual accumulation of small incremental changes in our day to day lives.” There is an increased necessity to address this change in the same way, with small incremental changes that will make our communities attractive to today’s creative class. A good way to start this is by introducing art as a part of school’s arts residency program introduces art education for students to develop their interests and ideologies in support of this idea. Not only are schools closely linked to other cultural institutions in our communities, but school children are the creative class of tomorrow (Giguere, 2005).
Designer: Hans Scharoun
Location: Berlin, Germany
Year of Completion: 1963

Summary: Hans Scharoun’s Berlin Philharmonie is said to be a physical incarnation of its linked political ideologies, as well as how it both guides and influences the behavior of its visitors. The Philharmonie was an active participant in the creation of democracy, making its inhabitants active participants in the democratic practices of West Germany instilled in the building’s spatial language. Scharoun’s forms and space exhibit both a supple-like, flexible quality and a capacity to unswervingly influence the feelings and behavior of its occupants, an idea seen as a extension of late-19th and early 20th-century theories of empathy (Campbell, H., 2007). The design of the auditorium, as Scharoun intended it to be, is directly contrasted into the form, music at the center with the orchestra and the conductor. He wanted an integration between the instruments and the consumer, unlike a grander idea of a more grandiose and regal ensemble. Scharoun’s forms not only admit to the dramatic, environmental aspect which allowed the audience to rise slowly and casually on the terraces of the auditorium’s gently rising terraces. The multiple levels and routes create a landscape in which concert-goers move up and down stairs, following the changing dynamics. Through the course of the concert, active participants in a ritual, they are also meant to think of themselves as part of, but at the same time, slightly apart from, the collective. Scharoun envisioned that the building would transform its occupants (Campbell, H., 2007).
With the construction of the concert hall that is a hybrid product of the traditional recilinear or circular shaped concert halls of the past, Scharoun made an effort to create a space of social and economic equality. The concert hall in which the audience is seated around the orchestra was worked out in accordance with the law of acoustics.
The incorporation of a center stage in a performance arts space prompts a higher level of interaction between the audience and the performer. The significance of giving both the performer and the viewer equal importance in the space and giving the audience a chance to view performances from all angles takes empathy that as both a designer, dancer and viewer is very valuable.
The concept of ‘Man in the Center’ used by Hans Scharoun in the Berlin Philharmonie is one that is a valuable contribution to a space for dancers. The idea of having no variation/distinction between the type of audiences that enter the space is highly important. Every person present in the space is equally important and is viewing the same performance in the space.

The artists interact with the audience to convey their message through an art form that they connect with. This interaction will be different for each viewer and depth of message conveyed would vary as well. Knowing and understanding that a variety of people enter the space to be seated together is of utmost importance.

Viewers enter the space with an anticipation to see these performances. Using the idea of compression and release and incorporating long travel routes only to release them to an open heart warming spatial experience is an intriguing idea.

Hans Scharoun’s Berlin Philharmonie stands as one of the most significant symphony halls in the world because it introduced a new way of seating arrangement based on the concept of social equality. The asymmetrical shape creates a sense of suspense when one walks through into the building into the concert hall which increases the level of excitement to see the performance. The ideas drawn from this precedent include:

1) Possible use of a center stage that accentuates the relationship between not just the performer and the audience but that of the building to the performance and the audience.

2) Incorporating the concept of having dance in the center that draws together and creates a high level of connection between the audience and the performer present in the space.

3) The idea of using seating arrangements as a method to eliminate separation between all that are present in the space, be it mentors, audience, performer or visiting artists.

4) The concept of using compression and release and narrower travel routes to create an anticipation and excitement to see what the path leads to may intrigue the viewers.

CONCLUSIONS DRAWN FROM BERLIN PHILHARMONIE
The Stevie Eller Dance Theatre provides a brilliant blend of form and function. The firm focused on who the end user was and the purpose of the space. This can be seen in their design of dancing columns that was a result of their inspiration of the dance notation system called the Labanotation and specifically the one for George Balanchine’s serenade. An overlapping grid of the movements for the piece was used to create the dancing columns. The columns support a glass encased second floor dance studio. The theatre is placed at the heart of the dance complex and is called the reserve fan due to non-parallel walls that makes the room one degree wider at the front than at the back with the seating arrangement as though the entire audience can view the same show. The building’s glass is framed with a rusted metal grid that undulating geometric shapes that help shield the interior from the strong southwestern sun (Greaux, 2005).
The picture shows 6 sections that have been cut through the plan. These sections help understand the position and construction of the screen and how it interacts with the exterior of the building and also connecting it to the performance space inside. Sections such as these are great pieces of information for the performance space in the artists residency program where dance movements are given a lot of importance and design of the space is based on it.
Longitudinal Section of the Building

The screen design seen in the performance hall

Scrim facade for sun protection

Portable Box Office
UVA DRAMA CENTER CASE STUDY

RUTH CAPLIN THEATRE
CULBRETH THEATRE
HELMS THEATRE
RUTH CAPLIN THEATRE

Ruth Caplin Theatre is the latest addition to the arts center in the University of Virginia with a capacity of 300 seats and a thrust theatre. The theatre as seen in the picture has an entrance and exit under the seating for any artists that may want to enter through the front and has a backstage as well. The seating is in an oval shape overlooking the stage.

HELMS THEATRE

The Helms Theatre is flexible with a holding capacity of anywhere from 160 seats to 200 seats. This is the smaller of the 3 theatres at the University of Virginia and has no raised stage. The ground is the stage with an entrance from both sides of the theatre. The stackable seats make the theatre flexible for any kind of performance/conference.

CULBRETH THEATRE

Culbreth theatre is the biggest of the 3 theatres with a holding capacity of 520 people. The light and sound room is clearly visible from the stage and the design does not include stairs and riser. The theatre has a proscenium stage where the audience only faces one angle. The no-riser design was a point of interest in the design.
CONCLUSIONS DRAWN FROM THE CASE STUDY

It was informative to see different types of stages in one building holding different capacities of people as it gives a better understanding of what the Artists Residency would demand when there is only one discipline of art being performed in the project. The shape of the building which is like a wave and covered with glass from floor to ceiling helps understand the importance of sunlight for certain performances. The Pumphouse has one wall in the space covered with tall windows if it will be used as a performance space. The building has a reception and a box office separate from each other and a waiting space. It helps determine the spaces that must be considered in the design of a performance space and an Artists Residency itself.
BUILDING INFORMATION

Byrd Park Pump House

The Hydroelectric Plant
"Of all the locks from Lynchburg down, this Three-Mile Locks pleased me most. It is a pretty place, as every one will own on seeing it. It is so clean and green, and white and Delphic-looking. To me it was simply beautiful. I wanted to live there; I ought to have lived there. I was built for a lock-keeper:... What more could the soul want?"

Dr. George W. Eggle
"Canal Realizations"
1879
FLOOR PLANS

TRANSVERSE SECTION

LONGITUDINAL SECTION

EXTERIOR ELEVATIONS

SECTIONS A-A', B-B'
DESCRIPTION OF PICTURES
1) The entrance foyer of the pump house
2) View from the side entrance to the entrance foyer
3) The Pump room on the ground floor
4) Stairs leading to the catwalk and connecting to the first floor
5) Stairs connecting to the first floor
6) Stairs leading from catwalk to the first floor
7) View showing the catwalk looking down to the pump room
8) View showing the storage space below stairs, the catwalk and the pathway on the ground floor
9) View showing the storage space beneath both stairs
10) View showing spiral staircase and part of the water wells.
11) View showing the trusses on the roof of the ground floor and the catwalk
12) View showing the room on the first floor
13) View showing the window detailing on the first floor
14) View showing arches that opens to the south side of the park
15) View showing the entertainment hall on the first floor and the window covered arches facing the north side of the pump house
16) View showing the arched windows facing the entertainment hall
Source: All pictures of both exterior and interior of the pump house in color are self taken
DESCRIPTION OF PICTURES

1) View showing the north facing view of the pump house with the Tuckahoe canal in the front

2) View showing the site surrounding the pump house from the pump house drive

3) View showing existing outside seating on the site.

4) The information about the pump house placed on the south side site

5) Picture showing the area where George Washington was when he visited

6) View showing the railway track from the site

7) View showing the bridge built by Friends of Pump House from the side entrance of the pump house

8) View showing the bridge that connects the north facing view to the pump house drive over the Tuckahoe Canal

9) View showing the space where the Kanawha Canal flows through the pump house

10) View from the entertainment hall showing the hydroelectric plant

11) View showing the bridge leading up to the Tuckahoe canal bridge

12) South facing view showing the main entrance of the pump house
DESCRIPTION OF PICTURES

1) The hydroelectric plant from the south side showing its relationship to the pump house.

2) View from the south side of the hydroelectric plant showing the exit of the building from the basement.

3) View showing the walkway from the pumphouse drive leading to the main floor entrance.
The Richmond Pump House is in the Byrd Park District that gets its name due to the famous Richmond Byrd Park. William Byrd Park, originally known as New Ramseypark, is a municipal park that spans 275 acres of Richmond's Near West End.

Established in 1874, the Richmond, with the help of Wilfred E. Cutshaw, acquired 300 acres of land to establish a reservoir to supplement the city's growing water supply. The area was looked at as an ideal location for a park. The site was chosen for the development of the city's second reservoir that would help supplement the existing Marshall reservoir. The property at the time was cheaper and at a higher elevation as compared to any others. This elevation would aid in the movement of water (Service U.S.-N., 2015).

Current State

The park does not have a set official master plan. It was developed as land, labor and resources became available. The unified park with its various elements that was once largely rural and underdeveloped is now one that is used for recreational purposes, public ceremonies and commemorative purposes (Service U.S.-N., 2015).

Defining Characteristics

- The park consists of open spaces, wooded areas and water features. The northern and central portions are relatively flat and have large open spaces. The southern portion consists of steep terrains that are heavily wooded. Paddle Boat Lane connects the south end of Boulevard with the Beat Lake Drive which encircles the Fountain Lake. The central section of the park that holds some of the highest elevations in the city is defined by the reservoir on the north and the Carillon complex and Dogwood Dell on the south (Service U.S.-N., 2015).

Boundaries/Edges

- The 275 acre park is bounded on the north by the Downtown Expressway and Lakeview Avenue, on the east by South Robinson Street and Hampton Street, on the south by Pump House Road and Maymont Park, and on the west by Rugby Road and Blanton Ave. Residential neighborhoods surround the park on the east and west sides (Service U.S.-N., 2015).

Landmarks

- The Byrd Park District consists of 6 buildings, 14 structures that are contributing and 2 buildings and 4 structures that are non-contributing. The Virginia War Memorial Carillon sits on one of the highest points of elevation in the city. The Carillon area also encompasses the Carillon spring. The Fountain Lake encompasses the concessions pavilion. The southern terminus of Boulevard includes the Christopher Columbus state, 1939 pump station and the Trafford pump station. The east side of the park includes the Women’s Christian Temperance Union Fountain, the Swan and Shield Lakes, the Shields- Robinson Family Cemetery and the Amelia Street Bridge Dam. The northwest corner includes the Sam West Memorial Marker and the American Legion Memorial Flagpole (Service U.S.-N., 2015).

Walkways, pathways and trails

- The Carillon area which is the largest section of the park has the Dogwood Dell bridge and walkways, paved and unpaved walking and biking trails, wood and stone bridges, cobblestone walkways and terraces, concrete and stone steps, paved and unpaved parking areas (Service U.S.-N., 2015).

Nodes

- The discrete areas that is encompassed by the park gives it helps pull it away from the urban setting. The 15-acre portion of the park that is located west of the South Boulevard and east of the South Sheppard Street comprises of amenities built to facilitate recreational activities such as the playing fields, playgrounds, bleachers, and a field house. The Roundhouse or Byrd Park Clubhouse is located at the east of the reservoir that is in the southern terminus of the Boulevard. The Shields Shelter and the cooking hearths are part of the Carillon stretch. The Carillon Shelter and associated stone hearth, the restroom building and the Tot Lot playground also include in the Carillon area (Service U.S.-N., 2015).
Construction When - The Byrd Park Pump House, historically known as The New Pump House located at 1708 Pump House Drive, Richmond, VA 23221, comprises of the original three-part building that was constructed from 1881 to 1883 and had an annex added onto it a few years later in 1905 (Byrd Park Pump House, n.d.).

Why - The Byrd Park Pump house was constructed to house the waterworks for the city of Richmond, Virginia. The historic building that was a significant part of the waterworks history was constructed in order to pump water from the James River and Kanawha Canal into a reservoir in the Byrd Park (Stoddard, 2012). The building was used not just for waterworks but as an entertainment hall as well. The engineer and designer of the New Pump House Colonel Wilfred Emory Cutshaw was inspired to use the location for a design that not just served the growing water requirement for Richmond population but also as a dance hall pavilion for recreational purposes (Service, 2002).

Primary Construction Materials - The original 3-part building was constructed using local granite that was extracted from the site and other local quarries belonging to James Netherwood situated close to the James River. The foundation is made of ashlar and the walls are stonework. The roof is made of slate and is steeply pitched. The roof was lined with cast-iron decorative creting but is presently missing. Each arcade in the pavilion has seven columns made of cast iron and railings of zinc-coated tin which are in a series of Gothic arches. The pavilion was enclosed with glass and wood trim to protect against leakage due to rainwater. The latticework of the arches was covered with yellow and orange stained glass. The spiral staircase at the east end of the building is made of cast iron. The flooring in the ground floor was made of wood but has been replaced with granite stone and earth. The open dance floor and office spaces were supported by wooden trusses that in turn helped support the pine board sheathing and the slate roof (Service, 2002).

Period of construction and its influence - The New Pump House is a great example of Gothic Revival architecture. This style of architecture was popular in Richmond during the 19th and early 20th century. The 3-part building designed and constructed by the so-called ‘architect of the city’ Colonel Wilfred Cutshaw, the engineer, was fond of the this style of architecture as a student. The rusticated granite and pointed arches of the pump house set in a rural location with views of the canal and the James river separates itself from other Gothic Revival constructions in Richmond (Stoddard, 2012). The significance of the space gets accentuated by the style of construction using local granite. The steep pitch of the roof, pointed gables, lancet windows, arrow loops, pointed arches of the doors and pavilion’s arcade along with the Gothic style detailing in the columns, windows and banisters make it a great example. The 1905 annex addition that was constructed using similar materials is a great blend in. Unlike most classical architecture, Gothic revival is not bound to principles of symmetry, which facilitates asymmetrical additions for space expansions as and when required (Service, 2002).
DANCERS PRACTICE STUDIO (LOVE)-
The dancer's studio can be adapted as both personal as well as a communal space. The space must have ample amount of lighting and ventilation for the proposed functionality. The practice studios are for the artists to connect with fellow artists and visiting artists while gaining in-depth knowledge about a variety of dance forms. Studio spaces for artists are their stepping stones to perfection.

PERFORMANCE SPACE/ DANCE HALL (DREAM)-
The space where the artists get to showcase their perfection as a group as well as individually. The hall would may connect into the community hall or be separate with an access into the café and/ or gallery space. The space is expected to host a wide variety of audiences. The hall will have a stage that may or may not be positioned in the center of the space with the seating surrounding so as to encourage a sense of higher audience involvement with the performer and the performance. The space is expected to evolve so as to contribute to the artists intent of performance and their sense of liberty and exposition.

RESIDENCY APARTMENTS (LIVE)-
The residents can vary in number and artists. While veteran mentors may be a permanent resident of the space, travelling artists are welcome to stay for a shorter period. Students would be allowed to reside depending on their course and requirements. The apartments would range from 1 to 2 bedroom spaces. Artists residing together are given the advantage of connecting with each other outside class. This in turn brings in a better sense of community and sharing and belonging.

COMMUNITY HALL (INSPIRE)-
This space is focused towards recreation, entertainment and connectivity. While the project places significance on dancers as artists-in-residence, it is vital for artists of one discipline to be able to interact and stay in touch with artists of other disciplines and educate themselves with the knowledge received from these disciplines. This is a space for dancers to connect with traveling artists, musicians, sculptors and other artists as a form of inspiration and education to further their passion. The Community hall may connect to the café/ dining space and have an entrance into the gallery space.

CAFÉ (REJUVENATE)-
The space is for both residents as well as the public use. The café connects to the community hall and serves as a concessions corner as dancers engage with public and other artists. This place must be accessible at all times regardless of whether a performance happens or not. The community hall stands as a place not just for dancers but for all kinds of artists to come together.

CLASSROOM (EDUCATE)-
Depending on the course requirements, the space may be used for educational purposes for the students as well as conduct workshops and training sessions for mentors. This is an opportunity for the veteran mentors to connect with traveling artists on an educational level and for smaller groups to come together.

LIBRARY AND GALLERY SPACE (REVIVE)-
While dance may seem to be an art form that may not require a library or gallery space, the combined library and gallery space here is dedicated to showcasing the works of precedents, veteran mentors and artists; evolution of various dance forms, accessories and apparel. Books and documents relevant to each dance form including those dedicated to other art forms and collectibles are given a space in this project. This space may connect with the community hall and is open to public. So this along with the café must be situated at an easy access point from the entrances.

DANCE VIDEO VIEWING/ CONFERENCE ROOM (REVISIT)-
The room where the audience as well as the dancers have an opportunity to view an evolution of dance through videos of various genres of dances from history. For mentors and students and visiting artists, this is also an educational opportunity to help students understand as dance as it is an art form that is more visual compared to any other. When the room is not used for educational or social events, it will be available for housing meetings and conferences and for rental purposes.
BUILDING CODE SUMMARY

BYRD PARK PUMP HOUSE BUILDING CODE

- TYPE OF CONSTRUCTION: TYPE III
- TOTAL GROSS AREA: 15,749.77 SFT
  - Gross area for Ground Floor: 9,422.2 SFT
  - Gross area for First Floor: 6,327.57 SFT
- Net Area Total of Building: 9,489.662 SFT
- Net Area of Ground Floor: 5,653.32 SFT
- Net Area of First Floor: 3,796.542 SFT
- Total Net Area of All Spaces: 7,600 SFT
- Overall Occupancy Load: 5980
- Total Number of Occupants: 1447
  - Total Number of Occupants Per Floor: 724
  - Total Number of Occupants Per Gender: 362
- Stairs Required for Egress: 1 per floor
- Plumbing Requirements:
  1) Water Closets - Male: 1 per 125
  2) Water Closets - Female: 1 per 125
  3) Lavatories: 1 per 200
  4) Drinking Fountains: 1 per 500

HYDROELECTRIC PLANT BUILDING CODE

- TYPE OF CONSTRUCTION: TYPE III
- TOTAL GROSS AREA: 13,330.64 SFT
  - Gross area for Sub Basement Floor: 4,604.8 SFT
  - Gross area for Basement Floor: 4,604.8 SFT
  - Gross area for Main Floor: 4,122.24 SFT
- Net Area Total of Building: 7,950.364 SFT
- Net Area of Basement Floor: 2,782.52 SFT
- Net Area of Main Floor: 2,473.24 SFT
- Net Area of Sub Basement Floor: 2,782.52 SFT
- Number of Exits Required: 2
- Total Net Area of All Spaces: 7,997.72 SFT
- Overall Occupancy Load: 5980
- Total Number of Occupants: 1447
  - Total Number of Occupants Per Floor: 724
  - Total Number of Occupants Per Gender: 362
- Stairs Required for Egress: 2
- Plumbing Requirements:
  1) Water Closets - Male: 1 per 125
  2) Water Closets - Female: 1 per 125
  3) Lavatories: 1 per 200
  4) Drinking Fountains: 1 per 500

FOR APARTMENTS:

1) Lavatories: 1 per dwelling unit
2) Baths / Showers: 1 per dwelling unit
3) Auto Clothes Washer Connection: 20 dwelling units
4) Kitchen Sink: 1 per dwelling unit

FOR APARTMENTS:

1) Lavatories: 1 per dwelling unit
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4) Kitchen Sink: 1 per dwelling unit
### PROGRAM EXPANSION

#### IDEAL NUMBER
- **OCCUPANCY**
  - The space must be close and accessible. The space must be accessible from the entrance and should be easily reached from the major program spaces.
  - The space should be connected to the café, library, practice rooms and the community hall.
  - The space will be used by veteran mentors and travelling officials, students, artists and the general public. The space would be used by mentors as professors, reference and additions.
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space will be used by the public, residents as well as general public for visitors and audiences.

- **ACCESSIBILITY**
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space should be accessible from the café, library and gallery spaces.
  - The space should be accessible to all faculty, students, customers who require access to library, classroom, practice rooms and the community hall.

- **ACOUSTIC**
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space should be used by the public, residents as well as general public for visitors and audiences.

- **VISUAL PRIVACY**
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space should be used by the public, residents as well as general public for visitors and audiences.

- **PHYSICAL PRIVACY**
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space should be used by the public, residents as well as general public for visitors and audiences.

- **CONSIDERATION**
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space should be used by the public, residents as well as general public for visitors and audiences.

- **ADJACENCIES**
  - The space should be used by the public, residents as well as general public for visitors and audiences.
  - The space should be used by the public, residents as well as general public for visitors and audiences.

#### SPACE USE
- **TIME OF USAGE**
  - The space will be used by: the library, classroom, practice rooms and the community hall.
  - The space will be used by: the library, classroom, practice rooms and the community hall.
  - The space will be used by: the library, classroom, practice rooms and the community hall.
  - The space will be used by: the library, classroom, practice rooms and the community hall.
  - The space will be used by: the library, classroom, practice rooms and the community hall.

- **PURPOSE**
  - The space is dedicated to the dancers learn and teach from one another to display the dancers’ talents to audiences and their mentors. The space would be used by: veteran mentors and travelling officials, students, artists of other disciplines as well as general public for visitors and audiences.
  - The space is dedicated to the dancers learn and teach from one another to display the dancers’ talents to audiences and their mentors. The space would be used by: veteran mentors and travelling officials, students, artists of other disciplines as well as general public for visitors and audiences.

- **DESCRIPTION**
  - The space is dedicated to the dancers learn and teach from one another to display the dancers’ talents to audiences and their mentors. The space would be used by: veteran mentors and travelling officials, students, artists of other disciplines as well as general public for visitors and audiences.
  - The space is dedicated to the dancers learn and teach from one another to display the dancers’ talents to audiences and their mentors. The space would be used by: veteran mentors and travelling officials, students, artists of other disciplines as well as general public for visitors and audiences.

#### FF&E
- **MINIMUM AMOUNT OF SEATING**
  - Seating for audience, fixtures and equipment required for lectures.
  - Seating for audience, fixtures and equipment required for lectures.
  - Seating for audience, fixtures and equipment required for lectures.

- **VEHICLES**
  - The space would be used by: veteran mentors who teach and help students, artists of other disciplines as well as general public for visitors and audiences.
  - The space would be used by: veteran mentors who teach and help students, artists of other disciplines as well as general public for visitors and audiences.
  - The space would be used by: veteran mentors who teach and help students, artists of other disciplines as well as general public for visitors and audiences.

- **PET**
  - The space would be used by: veteran mentors who teach and help students, artists of other disciplines as well as general public for visitors and audiences.
  - The space would be used by: veteran mentors who teach and help students, artists of other disciplines as well as general public for visitors and audiences.
  - The space would be used by: veteran mentors who teach and help students, artists of other disciplines as well as general public for visitors and audiences.

#### NET AREA
- **FOR 100 SFT**
  - Standing Stages- 300 SFT
  - Eating 300 SFT
  - Gallery 480 SFT

- **FOR 200 SFT**
  - Living room- 200 SFT
  - Kitchen- 200 SFT
  - Bedroom- 200 SFT

- **FOR 300 SFT**
  - Study desk and seating, Office furniture and systems furniture
  - Reading desks and seating, Office furniture and systems furniture
  - Conference seating, including desks and seating & conference seating, including desks and seating & conference seating, including desks and seating

#### PROGRAM DANCERS PRACTICE STUDIO PERFORMANCE SPACE RESIDENCY APARTMENTS    COMMUNITY HALL   CAFÉ/ DINING SPACE          CLASSROOM      LIBRARY/ GALLERY OFFICE SPACES

- **GROUP A1**
  - The purpose is to connect artists and create spaces to interact with artists and perform in a short period of time.

- **GROUP A2**
  - The purpose is to connect artists and create spaces to interact with artists and perform in a short period of time.

- **GROUP A3**
  - The purpose is to connect artists and create spaces to interact with artists and perform in a short period of time.

- **GROUP A**
  - The purpose is to connect artists and create spaces to interact with artists and perform in a short period of time.

- **GROUP R**
  - The purpose is to connect artists and create spaces to interact with artists and perform in a short period of time.

### NOTES
- **PROGRAM STANDARDS**
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.

- **STORAGE**
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.

- **KITCHEN**
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.

- **LIBRARY**
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.

- **CLASSROOM**
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.

- **LIBRARY/ GALLERY OFFICE SPACES**
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.
  - The space should be used by: the library, classroom, practice rooms and the community hall.

- **GROUPS**
  - The purpose is to connect artists and create spaces to interact with artists and perform in a short period of time.
<table>
<thead>
<tr>
<th>FF&amp;E</th>
<th>PLUMBING</th>
<th>PRIVACY</th>
<th>PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>storage, fixtures and equipment, bars, minimum seating</td>
<td>yes, for water fountains</td>
<td>SEMI-PRIVATE</td>
<td>DANCERS PRACTICE STUDIO</td>
</tr>
<tr>
<td>fixed seats for audience, props fixtures for dancers, portable seating</td>
<td></td>
<td>PUBLIC</td>
<td>PERFORMANCE SPACE</td>
</tr>
<tr>
<td>beds, wardrobe, study desk, storage, fixtures for bathroom</td>
<td>yes, for bathrooms</td>
<td>PRIVATE</td>
<td>RESIDENCY APARTMENTS</td>
</tr>
<tr>
<td>tables and chairs, discussion booths, couches</td>
<td>yes, for water fountains/toilets</td>
<td>PUBLIC</td>
<td>COMMUNITY HALL</td>
</tr>
<tr>
<td>tables and seating for 2, 4 and bigger groups</td>
<td>yes, for sink faucet</td>
<td>PUBLIC</td>
<td>CAFE/ DINING SPACE</td>
</tr>
<tr>
<td>desks and chairs for students, projector, table and chair for teacher</td>
<td></td>
<td>SEMI-PRIVATE</td>
<td>CLASSROOM SPACE</td>
</tr>
<tr>
<td>study tables and seating for small groups, couches, computer desks</td>
<td></td>
<td>PUBLIC</td>
<td>LIBRARY/ GALLERY SPACE</td>
</tr>
</tbody>
</table>

**ADJACENCY MATRIX**

- **DIRECTLY ADJACENT**
- **NEARBY**

**ACCESSIBILITY**
The thesis strives to understand how an Artists Residency for dancers can help in comprehending a dancer’s freedom of expression in an artists community whilst co-existing amongst these artists of various disciplines.
The concept models are a series of explorations made with the intention of identifying how BASTE—which is Body, Action, Space, Time and Action—are the core elements of dance and how they dictate each movement in dance and how a body connects with the space around it.
Exploring the relationship between dance and music using lightweight, more flexible materials that represent fluidity. The models help understand the relationship of dance as an organic art form to that of the building that is very rectilinear and the impact of engaging fluidity in such a space while directly connecting to its landscape and site which almost naturally correlates to the fluidity.
The parti diagrams that analyze the structural elements that include the trusses which are part of the ceiling of every space in the pump house help understand that these, either left exposed or covered would be a major part in the design decisions that are made for the space.

The parti diagrams that analyze the window grid of the building. The windows dominate the structure and follow a symmetrical grid that allows a lot of sunlight into the space from all directions and various times of the day which is important for the program.
CONCEPTUAL DRIVERS

FOUR MAJOR CONSTITUENCIES IN DESIGNING:
- BUILDING
- PROGRAM
- USER
- DESIGNER

DRIVERS THAT CONNECT THE CONSTITUENCES:
- EMPATHY
- FUNCTIONAL AESTHETICS
- SUSTAINABILITY
- ADAPTABILITY
- INTEGRATION

If you can create architecture that makes you aware of where you are, and through that makes you wonder what you are, you have created something great.

- Aaron Betsky
LABANOTATION

Celebrating the spirit of each space with a dance sequence, the thesis uses labanotation to notate these movements which then translate into space planning guidelines for each of these spaces.

Labanotation is a system that records human movements. Developed by dance theorist Rudolph Laban, labanotation is a system that should be based on the universal laws of kinetics rather than a particular style/genre. The analysis of movement is based on anatomical, spatial and dynamic principles such as what a body can do, how it does it, how it relates to space and how the quality of movement affects the function and communication.

The vertical staff represents the body of the performer. The center line divides the staff into right and left sides representing the left and right sides of the body. The notations are read from bottom of the staff to the top.

- The shape of the symbol = Direction of movement
- The shading of the symbol = Level of movement
- The length of the symbol = Timing of movement
The schematic phase helps understand the relationship of the major program spaces with each other and their placement in the building according to the square footage it requires. In the explorations, the performance space encompasses the largest amount of space while the practice studio is placed in the existing entertainment hall with maximum amount of sunlight. The focus of the project is to make the space from a dancer’s point of view giving more importance to what a dancer needs and wants would be. The studio is where the dancer experiences mistakes, learns from it, gathers confidence and develops everything that they know before they go in to give their final performance at the performance space.
FIRST FLOOR PLAN
- Classroom
- Restrooms
- Practice Studio
- Offices space

GROUND FLOOR PLAN
- Performance space
- Reception/ Lobby
- Library/ Gallery space
- Performance space
ENLARGED PERFORMANCE SPACE FLOOR PLAN

NOTATION FOR PERFORMANCE SPACE PLANNING

PERFORMANCE SPACE FLOOR PLAN SHOWING BALCONY DESIGN

TRANSVERSE SECTION
LONGITUDINAL SECTION SHOWING PERFORMANCE SPACE

- Seating
- Seating (group)
- Circulation
- Book shelf
- Stackable chairs
- Conference table
- Cafe counter

ENLARGED PRACTICE STUDIO FLOOR PLAN

ENLARGED COMMUNITY HALL, CAFE AND DANCE VIDEO VIEWING ROOM FLOOR PLAN
FINAL DESIGNS
Translating conceptual ideas into final designs using mixed media

The final designs are a result of various trial and errors done through the schematics phase. Using drafting as a method to communicate the authenticity and movement strategy of the project, the idea was further explored using watercolor rendering of the perspectives. Marker renderings were used to communicate intensity of movements. The notations connect each space initiating from the wall of the library all the way to the performance space. Each space has its own sequence of dance and the notations denoting these movements decide the number of strips that are in such space. The performance space holds the most in the ground floor. The primary users, the dancers, have the liberty to use every space in both the buildings. There is a circulation space in each of the major spaces that can be used by the dancer to stand up and dance/practice as and when they would like to. The buildings have been designed for the dancer.
The reception of the space in the context of dance is the opening for the rest of the show. From this space the viewers have access to the library and the performance space. From a dancer's point of view, he/she welcomes every individual who walks in through the door to experience their talent. The FF&E in the space was selected with the intention of resonating the beauty and importance of balance in dance. The bulk of the body is supported by sleek yet sturdy legs of the body complementing the notations running through the basic forms that hold up the building. Hues of teal and peach are chosen for the furniture, stained concrete flooring, granite walls and cherry veneer on the notations. The dancers and the movements are emphasized through materials.

While dance may seem to be an art form that may not require a library or gallery space, the combined library and gallery space here is dedicated to showcasing the works of precedents, veteran mentors and artists; evolution of various dance forms, accessories and apparel. Books and documents relevant to each dance form including those dedicated to other art forms and collectibles are given a space in this project. This space may connect with the community hall and is open to public. So this along with the café must be situated at an easy access point from the entrances. The notations support the shelves for the books on the lower level while the mezzanine floor has the gallery that has a passageway into the mezzanine of the entrance.
The space where the artists get to showcase their perfection as a group as well as individually. The hall would may connect into the community hall or be separate with an access into the café and/ or gallery space. The space is expected to host a wide variety of audiences. The hall has a stage that is positioned in the center of the space with the seating surrounded so as to encourage a sense of higher audience involvement with the performer and the performance. The space is expected to evolve so as to contribute to the artist intent of performance and their sense of liberty and expression. The incorporation of a center stage in a performance arts space prompts higher level of interaction between the audience and the performer. The significance of giving both the performer and the viewer equal importance in the space and giving the audience a chance to view performances from all angles induces empathy that as both a designer, dancer and viewer is very valuable. The notations in the performance space has a connection to the notations in the entrance space which carries on the balcony sound absorption felt cubes are placed in between each notation strip to help with acoustics and to contribute to the vibrancy of the art form in the space.
View from the stage to the main entry from reception
View from the balcony of the performance space

Hush Blocks Acoustic Solutions by 3form

Quattro Collection Designer series by Hussey Seating

Quattro Collection stacking chairs by Hussey Seating

Brimfield upholstery by Carnegie

Privacy Plus Carpet underlay for sound absorption

Light grey stained concrete

Carpet Tile by Tandus Centiva - Wild Oats/Permission

Cherry Veneer over microlam
PERSONAL REFLECTION

The Artists Residency for Dancers was no doubt the most challenging process in terms of both research and design work. Over the course of the semester, the project demanded attention over the concept work that would form the framework for schematics and subsequently final designs. The concept of *labanotation* required a complete understanding and learning how to notate dance movements.

This project is a tribute to my dad and my family who supported and encouraged me to take the path of design and never let me give up on dance while pursuing design. The thesis topic was the aftermath of a dream of one of the sweetest memories of my childhood and subsequent message from my dad that stated that he missed watching me dance.

Dance is and has been a passion since childhood. Having a person connection with the project was the greatest motivation to work through the process. And so being able to design for a discipline of art that I am immensely passionate about was a driving factor in this project. This project has given me insights into the parts and details about design that did not seem relevant before. Great designs are made from being nit picky about one’s design. The more specific major program spaces like the performance space, the library and the practice studio demanded the correction of small details in this case. Lastly, understanding that design always has room for improvement is a fact every designer has to live with. Designers are perfectionists and this can slow the process down at times but this process has taught me that arriving at decisions and staying firm with your concept and ideas is important.

DEFENSE PANEL AND COLLEAGUES

During the defense, the panel was supportive of the personal connection with the project and being a dancer helps understand how a dancer would view the space. The use of the *labanotation* concept was criticized due to the intensity of and its connection in the space was hard to find. The strips of wood used to notate the concept in the space, as the panel suggested, has the potential to do more than just be attached to walls and ceilings. The design of the library where all the main parts such as the shelves and the library walls were formed from the notations was appreciated. The panel suggested customization of furniture and seating in the performance space instead of simply finding existing furniture that goes with the idea. This would further amplify the authenticity of the space which was the primary intention. One of the main intentions with the project was to have a space in every room where the dancer could dance. The panel suggested that more attention be paid to the amount of space assigned for that idea. The panel had great suggestions and ideas on how to improve the project and ask more of how it can be a dancer’s space. I hope to work on the project in the future and fully develop these ideas.
ACKNOWLEDGEMENTS

FRIENDS AND FAMILY
To my parents without whose love, faith, support and motivation, I would not be where I am.
To my sister, Evita Liz Eldhose, the reason why this thesis is happening.
To my best friends Suhail, Ashadh, Vishakha, Sree, you give me the strength through ups and downs to move forward everyday.
Goutham Krishna Babu, for being my mentor and supporting me through college.
To everybody else who supported me; Nandu, Paro, all my friends from India and Saudi Arabia, I am greatly thankful for all you have done.
To my classmates who have been the best people I could have shared a class with and spent the past 2 years with. The most motivating class ever.

VCU SCHOOL OF ARTS AND FACULTY
A big thank you to Virginia Commonwealth University and all of our Interior Design Department and faculty for making sure my journey was the best I could have asked for. Camden Whitehead, Emily Smith, Roberto Ventura, Sara Reed, Annie Frankfurt, Bob Smith, Christine Lafazani have been the most amazing faculty.

BUILDING ACCESS AND ALL THE DOCUMENTATION
Camden Whitehead, Roberto Ventura
Nathan Burrill, Manager of POPH
Friends of Pump House Organization for being so kind and cooperative through the process
Joseph Costello, for providing me with all the information I need for the Pump House
Ryan Davis, for his contribution and advice during design development
Library of Virginia, for building documentation
Leah Embrey, for building documentation
Agecroft Hall committee


The Byrd Park Pump House, historically known as The New Pump House, was constructed to house the waterworks for the city of Richmond. The building was used not just for waterworks but also for recreational purposes (Service, 2002). The property at the time was cheaper and at a higher elevation as compared to any others. This elevation would aid in the movement of water (Service U. S.-N., 2015). The property was acquired by the Richmond, with the help of Wilfred E. Cutshaw, in 1912. Cutshaw was a prominent Richmond resident and a major figure in the development of Byrd Park. The property, which spans 275 acres of Richmond’s Near West End, was established in 1874 as William Byrd Park, named due to the famous Richmond Byrd Park. William Byrd Park, a former slave owner, bequeathed the land to the Richmond city government in 1868 with the condition that the land would be used for “a public park with a fitness path.” Byrd Park has since become a popular destination for visitors and residents alike, offering a variety of recreational activities and cultural events. The park is a testament to the importance of public spaces in urban planning and the impact of community design on the lives of its residents.