ABSTRACT

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What concepts about movement & the body can architects learn from the discipline of dance? By analyzing architecture through the lens of dance, much is to be learned from the way bodies move through and interact with space. I believe dancers are more in-tune with their bodies and context. Through a series of dance and movement related exercises, I will demonstrate how analyzing choreography in architecture can lead to a better understanding of human-spatial relationships. These findings will influence design in order to heighten architectural experiences. This thesis serves as a model for cross-disciplinary work in the dance and architecture fields; it uses architecture as a tool to improve the well-being of the body.
ARCHITECTURE THROUGH DANCE; THE MOVEMENT EXPERIENCE

By

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Preface

As an amateur dancer/choreographer for fifteen years, I have found an immense joy, frustration, and release through dance. Trained in the genres of ballet, lyrical, jazz, and debkee (the traditional folk line dance of the Middle East), my exposure to different styles has shaped how I practice dance. While pursuing an academic architectural career at Pennsylvania State University, I developed a concentration in modern dance. As my knowledge matured in both fields, the connection between the two became increasingly undeniable. The ways in which we discussed movement through space, form making, human/spatial relationships in both dance and architecture were evocative of one another for me. It was after seeing the New York City Ballet’s Architecture of Dance festival at Lincoln Center that I saw the two art forms meet in a tangible way. Since that time, I have been eager to explore these two passions of mine in a concrete manner and am excited to bring these topics full circle and link them at the culmination of my academic career.
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Chapter 1: Introduction

*Exploring the Question*

**What concepts about movement & the body can we as architects learn from the discipline of dance?**

The exploration of this thesis lies in the relationship I see between dance and architecture and their overlapping spatial implications. I am not looking for a solution for architectural design. Rather, through the creative process, I am seeking what can be learned from dance and how it can influence built form. The way famous modern dancer and choreographer Merce Cunningham describes the creative process speaks to me as a spatial designer. (Weinstein)

> “An art process is not essentially a natural process; it is an invented one. It can take actions of organization from the way nature functions, but essentially [w]oman[s] invent the process. And from or for that process he derives a discipline to make and keep the process functioning. That discipline too is not a natural process. It is unnatural in its demands on all the sources of energy. But the final synthesis can be a natural one, natural in the sense that the mind, body and spirit function as one.”
> (Merce Cunningham)

*Importance*

Why is this important? I believe that architects can learn about spatial harmony and spatial awareness from dancers and choreographers. I introduce concepts of body motion early on in the design phase to more carefully craft and choreograph the path of travel within the building. I believe circulation or movement
through building should not be a means to an end, but a dynamic experience holding and conveying meaning to be remembered. Also, I believe that buildings are not static; they live, breathe, wear, deteriorate just as humans do. For this reason, I will design architecture that responds to human phenomena, as well as its context and site conditions.

**Methodology**

My process and methodology for this thesis is three-fold. First, I will research and analyze performance, architectural precedents, and theories that promote movement. Much is to be learned from the way set-design is incorporated in a dance performance. I will discuss several works as examples of interconnected choreography and built form. I sought insights from dancers/ choreographers whose theories about movement lie in spatial influence: Martha Graham, William Forsythe, Rudolph Laban.

The second area of research lies in Rudolph Laban’s notion of the kinesphere, or the space the body occupies. This spatial artist and movement theorist contributed many ideas to the field of dance. The movement based exercises I demonstrated prove Laban’s theory in practice.

In the last stage of the research, I experiment with self-choreographed works in different spatial typologies. The use of self-choreography provides authorship to the working experiments. By using the tool Laban Movement Analysis, a common dance notation system, we can better understand the motions qualitatively.
Conclusions

I explain and illustrate my discoveries on how movement and choreography that influences architectural design. By learning how to better understand human-spatial relationships, architects can design spaces that are more reflective of the body and its efforts.

Impact

These findings have influenced my design in order to heighten architectural experiences. I have used architecture as a means to celebrate movement but also as a tool to “tune” the body. From my perspective as a trained dancer, I argue that when the body is “well-tuned”, spatial perception is elevated and heightened. Also, looking at the body exhibits how the wellness and well-being impact the way we perceive space.

This thesis also serves as a model for cross-disciplinary work between architects and choreographers. Both professions design space with different mediums, the body and building. An architect spatially designs by prescribing a space or path for a person. This work can lead to a richer, more meaningful design process.
Chapter 2: Why Choreographed Dance?

Dance

Dance provides an aesthetic quality to human movement. Similarly, architecture provides aesthetic quality for human habitation. Dance is a physical, psychological, cultural, and social behavior that has been a vital part of human existence since the earliest forms of documentation. It has been used as a form of communication and story telling and has evolved into artistic performance, careers paths, and a means to physical wellness. What is so compelling about dance is its broad use. (Bronet) Formal definitions of dance also range in purpose and interpretation, but literally from Merriam Webster’s dictionary it is described as “a successive group of rhythmical steps or bodily motions, usually executed to music.” The definition does not distinguish skill level, audience type, culture, or style. My view of this rudimentary definition, for my purposes with this thesis, focuses on the rhythmic, poetic movement through space over time. In this sense, we all have the capacity to become dancers in the way we engage with the built environment.

Choreography

Definition

To narrow the potentially broad scope of the exploration, I will look to self and precedent choreographed dance works. Choreography is defined as “the sequence of steps and movements; the art or practice of designing sequences”
Etymology of Choreography

Discovering that the etymology of the word ‘choreography’ has spatial implications was very significant. Ancient Greek etymology refers back to the combination of χορεία + -γραφία, or dancing + writing, according to Oxford dictionary. After delving deeper into the etymology and evolution of the word, I discovered it was derived from, Khôra (Ancient Greek: χώρα), meaning a land territory outside ancient Greek polis. Philosophers such as Plato have described the word as a “receptacle or space.” The theorist, Heidegger associates the word with a “clearing” where “beings happen or take place.” Khôra has been alluded to a form that gives space.

Connection

I have always felt a comparable relationship between architects and choreographers; both professions design space with different mediums. Architect Steven Holl suggests, “The body moving through space in time is a central experience of both architecture and dance.” A choreographer prescribes the space in which the body creates; a dance. This prescribed dance however, is shaped by the dancer’s skill, style, narrative influence; our personal interpretations further add diversity. It does not look the same for every dancer. (Foster) An architect designs space and also predicts the choreography of a person’s path through space. However, many people experience the same space differently because of one’s instinct and intrigue.
Chapter 3: Context and Choreography

Introduction

Many of our most celebrated dancers, choreographers, and architects have experimented with the body and its relationship to surroundings. This chapter highlights the relationship between choreographers, set designers, and architects. The catalyst for my interest sparked when I attended the New York City Ballet’s Architecture of Dance festival at Lincoln Center in 2009. I was fascinated by the kinetic piece morphing and responding to the dancers motions. I later found that world-renowned architect, Santiago Calatrava, designed that set piece.

Set Design Precedents

‘Mirage’

I have looked to many of Santiago Calatrava’s work in the past; I admire him for his conceptual designs and delicate structural systems. Calatrava (1951-) is a Spanish architect, structural designer, painter, and sculptor. Nature and forms of the human body influence much of his work. His sketchbook is filled with drawings of the dancing body. He alludes to the concept that a dancer’s gravity-defying gestures capture the shape of change; this mimics the world in flux. At his lecture at the Massachusetts Institute of Technology (1997), he discusses his design for the Stadelhofen railway station in Zurich (Kausel).
“I began to experiment with the ideas of the body and anatomy. I thought about gesture. I started with my hand and the idea of the open hand... From the open hand tuned palm-side-down, I chose the area between the thumb and index finger as the shape of the column, which you then see repeated several times throughout the project.”

(Santiago Calatrava)

In his set design for the New York City Ballet, *Mirage* expands, contracts, evolves in sync with dancers movements. It demonstrates the interconnected notion of choreography and enclosure. Because the changes are slow, subtle, and in perfect harmony with the dancers’ bodies, the audience only gradually realizes that the set has completely changed.

**Figure 1:** Santiago Calatrava’s *Mirage* changes with the dancers’ bodies
‘Trajetorie’

Trajetorie is a traveling work designed by Diavolo (1992), a Los Angeles based dance company that specializes in choreographing with moving set pieces. These kinetic structures add another dimension to the dancers’ performance. Diavolo is a unique union of many different motion vocabularies such as everyday movement, contemporary, acrobatics, and gymnastics. Artistic director and founder Jacques Heim describes his interests and goals for Diavolo. (Heim)

“I am interested in the architecture of space and how we inhabit it. I am fascinated by the relationship and interaction of humans with their architectural environment – how it is affecting us, not just socially but physically and emotionally. I call myself more of an architect of motion than a choreographer.” (Jacques Heim)

The Trajectorie set design piece is a traveling work that was designed and built by Daniel Wheeler in 1999. The dance is carefully choreographed to respond to the set design but rapidly changes based on the dancers. Because of the high levels of physical endurance needed for its performance, this piece’s typical run time is thirty minutes. It is meant to embody an emotional journey through the ebb and flow of human experience. The dancers struggle to find their inner balance, physically and emotionally, on a passage of destiny and destination. (Heim)
Figure 2: Trajectorie; Sense of “place” and “taking place” are synonymous

Figure 3: Trajectorie; Body and place are in equilibrium
In the performance, we see the body in perfect harmony with built environment. One is co-dependent on the other; body and place are in constant equilibrium and one cannot exist without the other. If the body is not employed to oscillate the Trajectorie, it remains at rest. Similarly, if the Trajectorie is still, the body has no need to move back and forth across it to find its balance. The sense of “place” and “taking place” are synonymous; an architectural principle which I am interested in exploring for the design.

‘Tesseracts of Time’

On November 6, 2015, architect Stephen Holl and choreographer Jessica Lang released their piece, ‘Tesseracts of Time’ in Chicago. The piece responds to the four seasons, using light to depict the change. The dance is inspired by four conditions of architecture: under, over, in, and on, (Steven Holl Architects). This cross-disciplinary piece is a remarkable example of how two fields coming together can produce great works of art. Jessica Lang states,

“Collaboration is an essential part of making great art. Having the opportunity to work intensely with architect Steven Holl on Tesseracts of Time has been a valuable process that will inform my work well beyond the creation of this piece. Together, we have pushed the boundaries of dance and architecture and the result will awaken the human imagination.”
Most fascinating about this collaboration is the use of technology to design the dance in its context. Lang employed the use of green screen technology to film her dancers. Then, the footage was super-imposed onto renders and animations of Holl’s proposed set designs.

**Figure 4: Holl + Lang Creative Design Process**
Conclusion

All of these set designers, choreographers, and architects recognize the importance of the role of the body in spatial design. The harmonious connection between the body and built form is the central theme of these precedents. There exists a dynamic, responsive relationship and a synonymous relationship between the dancer and built environment. The scenic pieces are effected and dependent on the movement of the body. Also, architects can benefit from cross-disciplinary work by learning to employ nontraditional technologies; these modes of representation can often better depict the design.
Chapter 4: Dance Theory Embodied through Architecture

*Introduction*

This chapter touches upon dance related theories and practices. Many of the most celebrated dancers, choreographers, and architects have experimented with the body and its relationship to surroundings. William Forsythe, Lawrence Halprin, Martha Graham, and Isodora Duncan all have contributed to similar thinking about the body in space. Spatial theorist and choreographer, Rudolph Laban however, provides the most sophisticated ideas about the body and the area it occupies.

*Martha Graham*

Martha Graham (1894-1991), famous modern dancer and choreographer, is widely known for her engagement of space. She resisted common dance notion that space is typically thought of as the absence or a void in which movement occupies; reversely, the body should create the space. Also, she strayed away from ballet because to her, it was not indicative of natural human movement; it was stiff and unnatural. (Yudell)

“*Martha Graham regularly based a set of exercises on the haptic experience of space; her students were asked to hold, push, pull, and touch pieces of space and places in space.*” (Martha Graham)
The outcome of this practice is to sensitize the body to articulately feel an interaction with the “positive stuff of space.” The dancer and the space animate one another as partners. (Yudell) This creates an elevated sensory perception of the environment and a better understanding of the body in space.

Isodora Duncan

Isodora Duncan (1877-1927), also an American born dancer and choreographer, found much inspiration in the work of Greek art and architecture. The ancient Greeks were a tactile-minded culture; they produced a metrical approach to building geometry. Tactile-muscular intuition is the basic philosophical principle of building design. (Rosenburg)

“Feeling with the hands and moving the body; tactile-muscular sense succeeds where the visual sense falls short of understanding the size, shape, and texture of objects at the human scale...People who work with their hands are sensitized to a different understanding of objects and space than people who engage with space using the whole body.” (Isodora Duncan)

In her essay, “The Dance of the Future,” she writes…

“I make an example of each pose and gesture in the thousands of figures we have left to us on the Greek vases and bas-reliefs; there is not one which in its movement does not presuppose another movement”
Duncan rebels from the restraints of classical ballet and finds inspiration in the flowing, harmonious Greek art. She claims the structure of ballet imposes arbitrary aesthetic, unnatural and alienating to the natural female body. (Rosenburg) Her work stylistically reflects this concept.

William Forsythe

American born dancer and choreographer William Forsythe (1949-), is not only renown for his classical training and style, but also for his work with computational technology to aid in a dancer’s technical and spatial improvement. He feels passionately about cross-disciplinary collaboration and has worked with architects in the past, such as Daniel Libeskind. (Spier)

In this visual took kit, Improvisational Technologies (1999), Forsythe helps the dancer see the space he/she is creating by motion tracking on video. This work was technologically advanced for its time and provided a new dimensionality for how dancers and choreographers track and analyze movement. The domain of the real

Figure 5: Forsythe demonstrates the body creating space
body is represented in domain of the virtual body and space. Forsythe uses two and three-dimensional, geometric drawings, overlaid on the body, to help us understand what spaces the body is creating. These spaces are derived from point, line, plane, and shape, which are very architectural in nature. (Forsythe) Forsythe is essentially sketching with the body in space.

*Rudolph Laban*

Rudolph Laban (1879-1958) was a Hungarian dance artist and movement theorist. Much of his research laid foundations in the early part of the 1900s. He is most famous for his idea of Space Harmony, the patterns of man and nature as a part of universal design. Specifically interested in the natural sequence of movements, he analyzed everyday movement patterns and abstracted the essence of these into the ‘art of movement’. He was able to spatialize human movement by recognizing the platonic solids within these patterns. Laban visualized the different spaces around the body that differed depending on the motion. (Laban)

![Figure 6: Platonic Solids forming the kinesphere](image)
The platonic shape that surrounds the body is the twenty-sided icosahedron. It is derived from the formation of three planes that dissect the body: sagittal, vertical, and horizontal. The icosahedron suggests space around the body. This concept manifested in the term, “Kinesphere”. The term, defined by Laban, can be more easily defined as the space that can be reached by extending the limbs. In order to improve and enlarge spatial awareness, open up the body in space, and balance the body spatially, Laban would have his dancers move through exercises within their personal kinesphere. (Laban)

Theory in practice

In order to test this theory in practice, I mapping own kinesphere to better understand my body’s periphery. Using famous choreographer, William Forsyth’s technique of Improvisational Technologies, I traced my body’s movements. The result was form-finding image that I super imposed on Laban’s icosahedron. I was able to better understand my body’s periphery movements in the kinesphere.

Figure 7: Mapping the kinesphere
Conclusions

Rudolph Laban’s theory of the kinesphere can shape the way architect’s design for the body. Architecture can be used to test and challenge the body’s kinesphere. This would theoretically mean a more human scale of a seven-foot dimension would have to be apparent in the architecture. This unit of measure would promote spatial awareness.
Chapter 5: Movement Notation and the Built Environment

Introduction

Both architecture and dance have developed distinctive notation systems to abbreviate, distill, and interpret otherwise more complex and detailed expressions. (Lorenzo-Schmidt) Architects tend to predict circulation or movement through their designs by diagramming. However, do architects actually know how a person will move through the space? This chapter introduces a choreographic visual language as a way to interpret human movement in different contexts.

Motations

Description

In architecture, the closest documentation of human movement that I have discovered to date derives from Lawrence Halprin. Halprin was a landscape designer who valued and explored rich urban experience, most notably in the 1960’s and 1970’s. He is recognized for tracking and choreographing human experience through his meticulously designed parks. His wife, Anna Halprin, an avant-garde dancer and choreographer, influenced much of his work in this way. (Gragg) More specifically, his concept of ‘Motations’ speaks to the relationship of human movement though space. (Hirsh)
‘Motations’, a term used by Lawrence Halprin, is a used for recording mobility and also for designing mobility. It is rooted in film making and editing and refers to the use of key frames that when assembled together and projected, read as movement. Twenty-six symbols suggest static surroundings such as a hill, tree, overpass, etc. The key to these elements is crucial in understanding the Motations. The person is symbolized as a dot; the dot’s position in each key frame is apparent and it changes based on speed and position. The horizontal and vertical tracks are meant to be read together. (Jean)

Figure 8: Halprin’s Motations through an outside landscape
In figure 8, the horizontal track breaks down the paths of travel in the keys frames while the vertical track to the right is abstracted to be a normal visual horizon, (what the pedestrian sees ahead of him or her.) The sequence of dots on the right side suggests the person’s pace, which in this case, is steady as the dots are spaces equally apart. (Halprin)
While I commend Halprin for advocating for a widely used motion-notation system, I do not consider this type of representation to be entirely successful. In theory, I agree with much of his views on choreographing travel paths, while having the subjective pedestrian experience. However, the key frame style of the walking score seems disconnected and static, notions he was trying to avoid. The suggested paths show little interaction with the site, but more so suggest landmarks along the way. Even the notation for the body as a dot suggests little to how one turns, walks, feels in the sequence. To express movement through a space or landscape, I have developed a more spatially harmonious, fluid diagram that attempts to capture the essence of a fluid, choreographed path of travel. The role of my reflective imagination of movement will play a role in this expression.
Theory in Practice

My response to Halprin’s attempt at a hybrid ‘architectural/movement’ notation system was to create my own. I have choreographed a short dance piece, or travel sequence, that emphasizes movement through space over time, (similar to Halprin’s movement of promenade). These brief sequences are typically used for preliminary exercise or for piecing segments of a dance together. This serves as my story of personal, meaningful movement through space as promenade.

The basis for the dance is everyday human movements. I have categorized some of these motions below. After distilling these movements into a figure ground relationship, I architecturalized each by abstract diagramming. The diagrams are based on dancer’s center of gravity, angles of foot or arm motion, and repetitive steps, represented loosely in elevation. The dark wash, or solid, suggests spaces created by the body, white space is the existence of the body in space.

The elevations are then collaged into what would be a plan of the path of movement of the dancer. In essence, they are indicative of the chronological sequence of the movements, organized spatially by the where the dancer occupies the space.
Figure 9: Construction of dance and notation system
Architects can learn from dancers by the way they analyze the body in space. By adopting these movement analysis tools, understanding the body’s relationship to space can and should influence design. I consider movement not only as a result, but also as an intentional aim for my design.

*Labanotation*

Having contributed to the theory of spatial implications of the body, Rudolph Laban also developed a movement representation technique widely used by dancers and choreographers. Labanotation has become the most common notation system for dance sequences. Labanotation has been developing and evolving since the 1930’s when Rudolf Laban collaborated to contrive a notation system that describes motion in terms of spatial concepts and context. Not only does it record human movement, but also it can be utilized as an analytical and synthetic tool with new advances and applications in computational programming. (Legg)

The basis of the system lies in the direction and level of movement, duration of movement, part of body performing the motion, and quality of the movement. In the development of Labanotation, the broader spatial concepts of the body are derived from weight, time, and flow. (Celichowska) There are nine directional symbols which are categorized by high, medium, and low levels, (black shading is low, no shade with dot is medium, and diagonal line shading is high). Figure 10 shows a short sequence combining position, movement, body type, and quality to be read by a dancer or choreographer. (Legg)
Figure 10: Labanotation diagram
Labanotation leaves no hint as to its stylistic approaches to the choreography. It is meant for anyone who is proficient in reading the score to be able to perform the predetermined movements on command, comparable to a music score. Literary dance critics such as Marcia Siegel censure Labanotation because it negates stylistic qualities. This view stands on the basis that a choreographer’s style is a fundamental aspect of a compiling a repertoire; it should encapsulate and embody the choreographer’s signature and should identify the work as his or her own. (Siegel)

From a dancer’s perspective, I find this argument most valid. As a spatial designer, I see this as a tremendous opportunity. If a designer, similar to a choreographer, can suggest a promenade without mandating feeling, style, or reaction, the subjectivity of the individual creates a rich experience that is unique and special. The physical path of travel is identical to everyone, similar to the Labanotation score, but the emotional, psychological experience is very different, similar to the style of the dancer. The need to consider the idea of the subjective, or first person understanding of a place, therefore relates to this concept.

*Laban Movement Analysis (LMA)*

**Description**

As opposed to Labanotation, Laban Movement Analysis notates the *qualitative* aspects of a dance; it provides stylistic information about the human subject. Also developed by Rudolf Laban, it describes visualizes, interprets, and
documents all varieties of human movement, not limited to dance. It takes the form of a motif; a short succession of notes producing a single impression, a brief melodic or rhythmic formula out of which longer passages are developed. It is commonly used by Certified Movement Analysists and Dance Movement Therapists. LMA is categorized into four components: body, space, shape, and space. (Guest)

When describing the body, the basic physical movements are notated. It documents which body parts are moving, how movements connect, and more general notes regarding the overall movement. Awareness of body sequencing, patterns, and organization are addressed. (Guest)

Effort, refers to the subtle body characteristics in terms of inner intention. The Effort Graph best describes this notion. More simply, attention to strength, direction, and control are added with this notation as “modifiers” to the base diagram of movement. (Guest)

Shape refers to the form the body takes during movement. Terms such as “wall-like”, “ball-like”, and “pin-like” are used. Shape flow speaks to the body’s relationship to itself. Directional refers to the body’s interaction with the environment, specifically when it is being directed at something. Carving describes when the body is actively engaging with its environment, such as painting a picture. (Guest)

Lastly, space describes the connection with the surrounding environment, more specifically, paths, patterns, and lines of spatial tension. Rudolph Laban is most
widely known for his theories of space. He believed in moving through space in specific harmonious patterns. Space Harmony is practiced for poetic, aesthetic, and conceptual interactions with the environment. (Guest)

Theory in Practice

I found LMA to capture the essence and overall idea of movement. I have used this motif as an experiment to analyze the essence of my own choreographed work in different spatial typologies. To explore this further, I choreographed a short travel sequence that was performed in three different settings. The choreography was developed independently of these settings; I had not chosen the locations before designing, leaving the choreograph non-site specific.

The first location was an enclosed wide hallway, the Linear Gallery in the University of Maryland School of Architecture. The second space was an open field. The third, a narrow ledge with a one foot drop off one side, a four foot drop off on the other, (essentially a wider balance beam). The camera was oriented the same way for each short performance. In more simplistic terms, the short dance sequence was comprised of two lunges to either side, a twisting jump in the air where the body changes direction (torjete), followed by a smaller hop, a spin the knees bent and the feet flat on the ground, finished by a roll on the ground.
In the case of the ledge, the body is highly conscious of the environment, especially the narrow ground plane. The sequence is slower and more carefully executed. We can see with the modifiers the body is more bound and direct.

The performance in the Linear Gallery is the most technically appealing. The body senses enclosure; it reaches the most verticality here because it attempts to touch the horizontal ceiling plane. It is limited laterally by the walls and shows a more careful horizontality.

Figure 11: Same dance in three different spatial typologies
In the field, the body is free and indirect. It extends openly and widely, as there are no limitations laterally. However, because the sense of “sky” is limitless, it cannot sense tangibility in the z direction. The jumps are limited in the way because there is nothing with which to compare. Reading the same dance motif using LMA brings to light the highly different reactions of the body to its environment. The modifiers on the right hand side of the motif show the body’s change in direct, weight, and flow.

Figure 12: LMA analysis of differing spatial typologies, by Karen Bradley

To further test this theory in practice, I spent the summer choreographing another short travel sequence and tested it more diverse spatial typologies. (https://www.youtube.com/watch?v=JxuDNHaPgX0&feature=youtu.be) Here, my specific goal was to find how rhythm of architecture affects the body.
Figure 13: LMA Matrix
Conclusions

- Most challenging for balance and coordination
- Much slower, careful movements
- Very spatially aware
- Freer and loser motions, loses technique
- Dancer pays close attentions to ground and heights of stones before proceeding
- Stability is challenged and compromised

- Motions are jolted, disjointed due to imbalance
- Feelings of anticipation and discomfort lead dancer to quickly move through sequence
- Descending, proceeding downward seem to draw the path
- Attempts to pair the sequence with the number of stairs with difficulty
- Attempts to find rhythmic qualities to move with the stairs

- Dancer moves across single stair, length is undefined
- No indication of physical beginning or end, sequence span is unlimited
- Slower, careful attention to balance
- Slippery ground material adds to careful motion

- Raised at slightly higher level than street, conscious that falling is likely
- Very tight, directional linear path
- Motions are stunted by constraints
- Dancer conscious of where feet land almost the whole time, even for simple moves
- Fell many times before knowing the space and completing the sequence on the elevated path
- Still the body barely moves past the edge of the barricade, even though there is no physical boundary

Figure 14: LMA Matrix
Conclusion

By studying the way people move through a dancer’s lens, architects can better understand spatial implications of their designs. The LMA motif changed drastically as the dancer performed in the different spatial typologies. These motifs are a visual manifestation of tracking how the body changes in different setting. Context significantly affects the way we move through space, perhaps more than architects are aware. More specifically, I found that when rhythm was introduced, the body tended to be more attentive to its motions. By employing rhythm in architecture, designers can promote spatial and internal awareness.
Chapter 6: Well-Being

Introduction

This chapter highlights the benefits of having a healthy body, mind, and spirit. Theories in both dance and architecture support this idea. The following examples are written based on first-hand experiences.

Theory of Well-Being in Dance

Dance/ Movement Therapy

The healing art of Dance Movement Therapy targets the well-being of the body, mind, and spirit; it is based on the empirical premise that the body, mind and spirit are interconnected. The psychotherapeutic use of movement furthers the emotional, cognitive, physical and social integration of the individual. DMT focuses on movement behavior as it emerges in the therapeutic relationship. Body movement, as core component of dance, simultaneously provides the means of assessment and the mode of intervention for dance/movement therapy. (ADTA)

DMT was derived from modern dancer Marian Chace and her exploration of emotion and expression in dance, rather than the mechanics and technique of dance. Feelings of well-being after mentally unburdened through dance became widely known and researched. In 1950, Chace began providing dance therapy at St.
Elizabeth’s hospital in Washington D.C. As mental and physical effects of movement therapy became apparent and documented, the subject became one of serious study. Today, dance/movement Therapy is performed with individuals who have developmental, medical, social, physical and psychological impairments. However, it is commonly used for personal well-being and development. (ADTA)

Chace, as the first president, led the formation of the American Dance Therapy Association in 1966. The ADTA is a professional organization dedicated to the profession of dance/movement therapy. It promotes education, outreach, and practice in the field along with certifying therapists. Beginning with just seventy-three members, the ADTA has expanded into 955 professional and 255 nonprofessional members in 2000, along with venues for international certification. (ADTA)

As stated earlier, Laban Movement Analysis is used by to analyze qualitative aspects of dance, capturing the essence of a dancer. Certified Movement Analysts have adopted this language for measuring success of participants in Dance/Movement Therapy. The motif is used to document a patient’s movement progress, reflect on his/her nature of movement, comparable to a medical record. One’s physical growth development can be tracked and reflected upon over time.
Ethnographic Support

In an interview with Emily Hall Ray, the 2015 Co-President of ADTA in MD, DC, VA, she describes dance in a therapeutic sense; “[The] focus is not about refining technique or skill; it is process oriented. It is about gaining an awareness of your own reactions, feelings, and moments.” She explains there is much more room for personal expression tied to life experiences and emotions. Dance Movement Therapy, according to Ms. Ray, is a way to notice in your body where you hold your emotions, move through them symbolically in your life, and improve. She advocated for LMA as viable as an assessment tool; looking at someone’s movement patterns, capability, use of space as well as notating one’s emotion is key. (May 15, 2015)

Another CMA, Nalini Prakash received her certification at the University of Maryland under Karen Bradley, the CMA who has been working closely with me on this thesis. She specifically studied architectural structures and spatial harmony. While attending the University of Maryland, she investigated how to better understand spatial harmony, in Laban’s terms, through buildings on the campus. She described each building to have different energies and flows with which the body is either more or less in tune to. For example, the rhythms of the stacks in the library provide a sinuous experience. Above all, she strongly believes that “dance has kept [her] mind and body together; a healthy body = healthy mind.” (May 19 2015)
Junko Araki is an active professional member of the ADTA. She earned an M.A. in Somatic Counseling Psychology with concentration in DMT from Naropa University. She highly advocates for yoga and DMT saying asserting that both can be beneficial for any populations whether or not they have medical and/or mental health diagnoses. She further explains her experience…

“Principles of DMT lie in the idea that the mind and body are interrelated, thus, our mental experience and physical experience are correlated. Some of our goals in clients/patients can be to improve their body-awareness and spatial awareness and to expand their movement repertoire (i.e. how/where they use their bodies, space, energy) in order to foster their mind-body integration for their wellbeing. In this sense, I, as a dance/movement therapist, pay attention to my clients'/patients' movements and their use of space. I often witness and celebrate their changes, but depending on their cognitive functioning and level of insight, they may or may not be able to verbalize or cognitively aware of those changes.” (Junko Araki, May 10, 2015)

Conclusion

These women have proven that moving and exerting the body is crucial to a healthy mind. They have witnessed their clients become more spatially aware through the practice of dance. In addition to observing spatial improvement, they suggest that the emotional and psychological benefits are undeniable. Architecture that facilitate this kind of movement and attempt to achieve spatial harmony with the body should be celebrated.
Theory of Well-Being in Architecture

Precedent Analysis

To discuss the role of therapeutics in architecture, concepts of choices, sequences, and experiences are significant. In the example of spas, spatial design promotes psychotherapeutics, which develops from a very personal, subjective experience with and through space. Spas structure social gathering, are rooted in a deep culturally histories, encourage human movement, and foster physical and mental health. Ancient rituals of bathing are celebrated, and rejuvenation and cleansing of the body provides an overall spiritual, transformative experience. The primary programmatic function is rooted in the needs for the human body.

Figure 15: Cathartic experience of the baths
Therme Vals is a thermal spa nestled in the mountain in Vals, Switzerland, specifically the Swiss Canton of Graubünden. Vals is a small, quaint, hill town with vernacular architecture of dark timber homes. Upon visiting, I was struck by the context of such an internationally renowned building; Vals is breathtaking in the most simplistic, humble way.

A Swiss architect, Peter Zumthor, claiming to use phenomenological theory, designed the bath complex to be nestled into the topography and the history. Zumthor’s attempts to appeal to the senses, specifically through his attention to materiality, is highly admirable. The haptic sense is introduced early on in his designs.

The baths are situated next to an existing hotel, 7132, which is named after the Vals zip code. Having a close connection to the mountain, the structure is built with the local stone, gneiss. The mineral water fills the baths directly from the mountain. These baths allow for the body to float weightlessly without the grounding of gravity. In this way, everyone’s bodies become dance-like, poetically floating and gracefully moving slowly and carefully through the water. The absence of gravity allows for the body to heal, reducing bodily tensions and alleviating pains.

One enters the baths through the existing hotel; the idea is to descend and emerge from mountain. The changing rooms serve as threshold and open up into the vast, main space housing the indoor bath. Zumthor chose to cut the ceiling slabs into piece, pulling them away from each other ever so slightly, to allow in slivers of light. Spawning off from the main pool are blocks of stone that house other smaller pools
such as the beautifully scented flower bath, the hidden spring grotto, and the stifling hot bath. The most incredibly sensory experience, in this author’s opinion, occurs in the outdoor bath.

The guest descends into the bath from the interior, and transitions through an open threshold to the outdoors. At approximately 96 degrees Fahrenheit in the winter, the water temperature is almost perfectly in tune with the body’s internal temperature. In March, Vals mountains are snow covered and the air temperature ranges from 30-40 degrees Fahrenheit. The juxtaposition of the cold air against the body and the water is indescribable. One’s body is not overwhelming hot, like a sauna effect, but rather in perfect temperature equilibrium. The completely sensory experience of the framed views of the mountains, the steam rising from the water, and the sound of the fountains pumping fresh mineral water creates an ethereal, soothing, unworldly environment.

Although this architectural precedent was not derived from dance specifically, ideas of the health of the body and movement are important to architectural precepts. There is much to be learned from the way Peter Zumthor has meticulously choreographed the visitor’s travel sequence through the complex. The continuous void of the spa is the circulation path, where the solids serve as points of destination, the baths. The change in water temperatures provides for options and sequences of movement. It physically compels one to retreat and move throughout the complex by triggering haptic sensory feelings of warmth or cold. Water as therapy but also a building material is an important concept that will further influence my design.
Sensory Experience: Phenomenology

In regard to Zumthor’s use of phenomenology in this precedent, it is important to describe the theory in relevance. Phenomenology is described as the study of structures of consciousness as experienced from the first person, point of view; the subjective. The fundamental structure of the experience is directed toward something, as it is an experience of or about some object. The German philosopher Edmund Husserl philosophically developed the theory of phenomenology in the early 20th century. Husserl studied the essence of consciousness through the subjective experience of a person. (Phenomenology)

Phenomenology in architecture speaks to the subjective understanding of a place that is triggered by sensory experiences. The idea of employing phenomenology in architecture was brought forth by Martin Heidegger shortly after the theory came into being. The way in which we experience architecture with all of our senses is ongoing, dynamic, and ever changing. (Phenomenology)

In this architectural example, mind and body wellness are celebrated similarly with movement through thermal baths. The body’s spatial awareness is heightened due to the bath typologies, temperature, and use of light. The program of Therme Vals also lends itself to becoming more in tune with movement because the body becomes rejuvenated, thus fostering revitalizing the mind and body relationship.
Conclusion

The notion of “well-being” will be used as a programmatic driver for the design. Architecture can be used as a tool to awaken, fine-tune, and test the body for self-actualization. When one’s body is aligned and in good shape, the experience of his/her surroundings is heightened.
Chapter 7: Concept and Program

Considerations

The program will focus on movement behavior as it emerges in a therapeutic relationship. Body movement, as a core component of dance, simultaneously provides the means of assessment. In this case, dance is used as a lens to analyze movement in space; therefore, the program does not lend itself to a performing arts center, or dance studio. The wellness center incorporates exercise, meditation, rejuvenation, and self-actualization.

Goals

The goal of this building is to promote and celebrate movement in order to improve the human body. Dancers have mastered the graceful art of movement. I propose that if non-dancers attempted to tune their bodies to move elegantly, they would have an enhanced, more poetic experience with architecture. Rudolph Laban’s idea of spatial harmony drives the goal of the wellness center. He analyzed patterns of human actions and abstracted the essence into what he deemed the “art of movement.” Enhancing and testing the non-dancer’s movements can foster agility, balance, coordination, and grace. I hypothesize that upon this mastery of movement, spatial harmony with the built environment will be achieved.

The building should also reflect the change and transformation of the body. Flexible, transformative spaces promote the ability to adapt to the needs of the users. Kinetic elements of the building will enhance sensory experiences.
Programmatic Concepts

The following verbs lend themselves to overarching programmatic concepts.

Prepare

To prepare the body for physical activity has widely different meanings; for the purposes of this design, I interpret it to mean becoming ready and able. Emotional, physical, and spiritual preparation often precede human exertion. I envision the preparation spaces as thresholds or transitions from the chaotic city, into a place of rejuvenation and rebirth. Verbs that come to mind are stretch, meditate, expose, and test.

Exert

Exercise and strenuous movement occur in the exertion spaces. These spaces are receptacles for kinespheric extensions. They should redesign themselves based on a number of factors, including use, age group, and time of day. Exertion spaces become more like scenic design where the performers and set pieces are interdependent.

Decompress

Before returning to the urban environment, people have the need for relaxation. Here, participants can meditate, reflect, and rest. These spatial typologies will reflect the kinesphere at rest.
Rejuvenate

After the body has challenged itself, the revival process occurs. Bathe, detox, sweat, restore are verbs that I associate with revival. The body is not only restored but is improved.

Program Tabulation

Prepare:
Entry vestibule
Changing areas
Stretching/meditation studio

Exert:
Motion tracking studios
Pile Chamber
Rain Chamber
Fountain Chamber

Decompress:
Massage rooms
Steam rooms

Rejuvenate:
Soak Pool

Utilitarian:
Bathroom
Mechanical
Storage
Figure 16: Programmatic concepts derived showing earlier choreographic relation
Chapter 8: Site

Site Selection

In choosing a site, my chief criteria was a location that expressed ephemeral qualities of movement and rhythms. I have always been drawn to the flows of water and tides in a therapeutic sense. The importance of this condition narrowed my site selection to land/water edge conditions. An oasis or place of refuge for a wellness center lends itself to a remote area, withdrawn from the life’s stresses. Interestingly, the etymology of the “choreography” dates back to the ancient Greek word Khora, meaning a land territory set away from the ancient Greek polis. As stated earlier, Heidegger associates the etymology with a “clearing”. With the program of a wellness center, I envisioned the site as a place with easy accessibility.

Figure 17: Pier 26, removed the dense city
Pier 26, resting on the Hudson River in Manhattan, fits the desired site criteria. While standing on the pier, one feels removed from the crowded chaos of the urban environment of Manhattan. The sound of water is soothing. The feeling of the wind uninhibited by tall buildings is refreshing. The sights of the unobstructed views up and down the river are stunning.

**Context**

Located in the southwest end of Manhattan, NYC, Pier 26 is situated within the newly built segment of the riverfront park owned by the Hudson River Park Trust. The Hudson River Park Act of 1998 is the largest open-space project to undergo construction in Manhattan since completion of Central Park. This 550-acre linear park along the Hudson serves as buffer between the piers and hectic city. (Hudson River Park Trust)

Between Hudson Yards and Battery Park, there are sixteen actively used piers, most of which were repurposed for recreational activity. There is a history of reuse of these piers, similar to the nearby reuse of the elevated rail commonly known as the Highline. (Hudson River Park Trust) Mixed in with these piers are the remnants of destroyed piers in the form of pile fields. Not only do they serve as memories of historic trade and travel, but also they are beautiful indicators of time and tide. At high tide or after a heavy rain, the piles are almost completely immersed. Reversely, at low tide, they are prominently project out of the Hudson River as substantially visible landmarks down the river.
Figure 18: Pile fields as tidal marker
Pier 26 is located at North Moore Street and the West Side Highway, which is considered part of Tribeca, a neighborhood in Lower Manhattan shortened for “Triangle Below Canal Street.” In the late 1990’s, the New York City Preservation Commission designated much of the neighborhood as “Historic Landmark” for its Belgium block streets, cast-iron storefronts, and industrial and mercantile palaces. Tribeca is largely a high-end residential neighborhood with mixed-use office and restaurants. (Historic District Council)

Heading west past Tribeca is the West Side Highway, one of New York City’s most heavily used roads. This road also serves as a separation between the Lower Manhattan and the piers. It is a four-lane road with traffic flowing in both directions.

Figure 19: Approach from Tribeca
Current State

The pier holds many cultural events including fashion shows, concerts, and markets. The Hudson River Land Trust operates the rental of the pier. Based on aerial photos, the pier was reconstructed approximately ten years ago. The pier’s total square footage is 112,850 square feet. A restaurant/boathouse occupies 33,500 square feet of the eastern portion of the site. For the purpose of this thesis, I have designed on the 79,350 square feet of unbuilt property. The narrow, western portion of the pier is 115 feet wide and the length of the buildable area is 690 feet. There is a small launch dock for kayaks on the northern end of the pier, which juxtaposes the Timber and Yokohama fendering (docking) supports on the south end. The fendering systems can support two 100-foot vessels or one 200-foot vessel. (Hudson River Park Trust, Request)

Figure 20: Pier 26, commonly used for cultural events
When it was rebuilt, it was loaded for 350 pounds per square foot for the anticipation of a one-two story building proposal. The Hudson River Park Land Trust released a Request for Interest for an Estuarium in April of 2014 but no plans to implement this design have been furthered. There are also a pump-out pit and electrical hookups available on the pier. (Hudson River Park Trust, *Request*)
Figure 21 shows the site as a palimpsest, having successive layers apparent beneath the surface. Concrete transfer beams and columns support a six-foot unfinished concrete deck. The old wooden piles remain under the newly constructed pier.

Figure 22: Layers of the site
As I uncovered the layers of the site, I found the piles to be spaced approximately seven feet apart. This is a nice alignment with Laban’s unit of measure from the kinesphere.

**Figure 23:** Old wooden piles remain under newly constructed pier

**Figure 24:** Pile spacing in line with Laban’s seven foot Kinesphere
Analysis

Flow

This diagram shows the land flows around the site. In my analysis, I found that vehicular traffic generally flows from the East until it reaches the West Side highway, in which case it flows perpendicular to the site. Pedestrian and bicycle flows approach the site from North and South on the pathways in the riverfront park. Water transportation ferries arrive from the West while subway traffic runs perpendicular to the site.

Figure 25: Hierarchy of Flows
Landmarks

Within a quarter mile-walking radius is Battery Park City, a popular area for its parks, marina, restaurants, and entertainment venues. The site is in close proximity to New York City’s most significant landmark. Within a half mile is the world trade center memorial, which has attracted more than 21 million visitors since 2011.

Figure 26: Landmarks are in close proximity
Accessibility

The pier is easily accessible via different modes of transportation. It is in close proximity to two transportation hubs for New Jersey, the underground Path train and the ferry terminal in Battery Park. Cross-town bus stops are across the West Side Highway and subway stations are within four blocks. Also, the aforementioned fendering systems allows for boat access directly on-site.

Figure 27: Transportation around the site
Green Space

The diagram below highlights the linear buffer of the park on the West. The site is part of this larger promenade. The pier is a missed opportunity because it does not currently engage with the park. In my efforts to activate this pier, I have designed it to become more engaged with the existing promenade.

**Figure 28:** Pier 26 located on the green promenade
**Ephemeral Conditions**

Light

The presence of light on the site is quite dramatic at different times of the day. In the morning hours, from sunrise until nine AM, most of the site is completely shaded. The adjacent building to the East is a prominent forty stories. For the rest of the day until dusk, the site is completely exposed to direct sunlight. The contrast between these two conditions is apparent immediately as the sun peaks out from behind the forty-story Citi Group skyscraper.

![Image of Pier 26 from the north](image)

**Figure 29:** Pier 26 from the north
Wind

For sixty percent of the year, (October-April), the wind passes over the site from the northwest direction. As seen in the wind roses below, the majority of the wind speeds are approximately five miles/hour – eleven miles/hour. As categorized by the Beaufort wind scale, the winds on the site range from a category 2-3, light breeze – gentle breeze. The effects on the water can be seen by medium size wavelets and scattered white caps. This classification of wind can be felt by the face and body, and is comparable to wind that extends a flag. It passes through the site at a diagonal angle of about 120 degrees.

Figure 30: Wind directions over the Hudson River in Lower Manhattan
The pier is located on the Hudson River, which is a 315-mile river in length. It flows from Henderson Lake in upstate New York, through New York State, and down to Manhattan where separates New Jersey and New York; it culminates into the Atlantic Ocean. The lower part of the Hudson River, near Manhattan and up to Troy, NY, is a tidal estuary that flows in two directions. (Hudson River Park Trust)

Native tribes called it the Mahicantuck, meaning "great waters in constant motion" or "river that flows two ways." It highlights the fact that this estuary is the arm of the sea where salty ocean water meets fresh water running off the land. The tide generally occurs every six hours; there are two high tides and two low tides in a twenty-four hour period. Generally, the largest daily tide is approximately six feet and lowest is one - two feet above the mean water line. With the changing of the tide comes the changing of the water’s flow. (Hudson River Park Trust)

Figure 31: Water line on piles showing tidal change
Chapter 9: Design Application

Approach

The building is integrated into the promenade of the linear park. One is funneled through the southern end of the end, past the existing boat house/restaurant, through a bosque of trees. The public roof design is reflective of the organic, meandering linear park. The fendering system for docking boats is preserved, emphasizing the connectivity between land and water.

Figure 32: Site Plan
One enters the building on the ground floor and walks up the grand stair to the piano nobile, where most of the activity occurs. To prepare for a day of exertion, one moves through the changing rooms. A visitor is presented with a view out to the water before entering the building body. The stretching studio serves as an adaptable atrium; one can stretch, meditate, and prepare the body.

The pile chamber is encountered next in the spatial sequence and is where ‘exertion’ begins. The kinetic piles serve as an interactive, focal, installation promoting kinesthetic awareness. Here, the path of travel splits. One can proceed to the north end of the building, towards the motion tracking studios, to take a class. Reversely, to the south, one can proceed through a water sequence of rain chambers and fountain chambers. The warm, southern end of the building is a highly interactive, open space where users engage with the moving water.

The center, more privatized area is the ‘decompressive’ zone. It houses the massage and steam rooms. The user culminates at the end of the pier into a ‘rejuvenative’ soak pool. The sense of floating over the moving tide is soothing and calming.
Figure 33: Plans
Figure 34: Grid as solid/void
Figure 35: Longitudinal Section

Figure 36: Section Perspective
Figure 37: Exterior perspective, under side of deck

Figure 38: Interior perspective, sauna
By studying set design and choreography, I hypothesize that spatial harmony can be achieved by a *symbiotic, responsive, dynamic* relationship between a body and its context. To demonstrate this concept, spaces should be designed adaptably and respond to human use and movement. Figure 39 illustrates a person removing columns from the wall and screwing them into receptacles in the ground. Then, semi-transparent fabric is stretched and hooked between. This creates a flexible space, based on user experience.
Figure 40: Stretching studio connection detail
Figure 41: Stretching studio adaptable configurations
The Laban Movement Analysis motifs prove that context significantly affects the way people move through space, perhaps more than architects are aware. More specifically, when rhythm is introduced, the body tends to be more attentive to its motions. Introducing kinetic, rhythmic objects promotes spatial and internal awareness. The user can interact with and weave through the moving piles in the pile chamber. The piles are vernacular to the site and are harvested from the Hudson River.

Figure 42: Pile Chamber
Rudolph Laban’s seven-foot kinespheric measurement is employed as a grid throughout the building. This module provides a dimension at a more human scale in order to promote spatial awareness. Figure 43 demonstrates people moving through the motion tracking studios. The in-floor sensors, spaced seven feet apart, record a person’s motions. The dynamism of context is emphasizes as the water reflects through a series of mirrors, bouncing down to the floor. The person has the illusion of moving over water.
The idea that the body should be in harmony with the built environment is executed by a dynamic façade that responds to human movement. The building is dependent on the users in the motion-tracking studio. These movements are reflected on the outside of the building as a visual manifestation of human space making.

Figure 44: Movement tracking façade, day

Figure 45: Movement tracking façade, night
Figure 46: Movement tracking façade, wall section
Figure 45 details a wall section of the movement tracking façade. Because this site is one hundred percent exposed to the sun for eight percent of the day, this presented an opportunity for a solar harvesting southern façade. The skin is made glass panels with solar pads. This allows for the LEDs to shine through the glass skin, illuminating the façade. A rigid hss (hallow structural steel) scaffold houses the electrical conduits for the lights and also resists lateral loads. The scaffolding is supported by trusses, which are connected to the roof and floor slabs.

The section also illustrates the rain chamber. The water is drained under teak decking and trickles out of the building through rain chains. The concrete deck is pierced where these chains dangle in the water. Visitors can watch the water move down the rain chains, into the Hudson River, where the old wooden piles are exposed.
**Representation**

Architects typically depict movement and circulation in the forms of diagramming. Yet, these common forms of representation are static drawings. It is *imperative* that architects learn to document and understand human movement as it interacts with the built environment.

As seen in *Tesseracts of Time*, a common technique of choreographers and set designers is to utilize a green screen to predict and film movement and then superimpose the footage on a prototype model. I too have used this technology and methodology as a tool for predicting human-spatial relationships. The following animations demonstrate the hypotheses regarding how people will through the architecture and how the architecture will respond.

![Figure 47: Creation of Steven Holl and Jessica Lang’s *Tesseracts of Time*](image)
Animations:

Dynamic Relationship | Stretching Studio:  
https://www.youtube.com/watch?v=enrTy-L6bXo&feature=youtu.be

Spatial Awareness | Pile Chamber:  
https://www.youtube.com/watch?v=5O0_Azc_Mrw&feature=youtu.be

Kinepshere as Measurement | Motion Tracking Studio:  
https://www.youtube.com/watch?v=fplzjFzxGaM&feature=youtu.be

Responsive Relationship | Movement Tracking Façade  
https://www.youtube.com/watch?v=kBbNG3xM3mQ&feature=youtu.be

Figure 48: Creation of animations
Conclusion

This thesis questions, what concepts about movement & the body can we as architects learn from the discipline of dance? Studying set design and choreography has influenced the design by demonstrating a dynamic, responsive relationship with the body and its context. Dancers, choreographers, and set designers have shed light on new modes of representation for architects. Architects can also learn from Rudolph Laban and his theories regarding the kinesphere, employing them as a unit of measure. Lastly, Laban Movement Analysis provides qualitative data for analyzing the way people move through the built environment. This choreographic tool facilitates a better understanding of human-spatial implications.

Architects should take advantage of cross-disciplinary works, such as dance and choreography, to heighten user experience in design. Through the lens of dance, I have illustrated my hypotheses regarding how people interact with and move through designed environments. Architecture is employed as a tool to awaken, fine-tune, and test the body for self-actualization and to improve the body’s spatial perception.
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