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ENVISIONING A NEW PUBLIC SPACE

A Thesis Presented

by

KATHRYN J. WETHERBEE

Submitted to the Graduate School of the University of Massachusetts Amherst in partial fulfillment of the requirements for the degree of

MASTER OF ARCHITECTURE

May 2013

Department of Art, Architecture and Art History

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Approved as to style and content by:	
Kathleen Lugosch, Chair	
Max Page, Member	
	William T. Oedel, Department Chair

Art, Architecture and Art History

DEDICATION

For my family. Your love, support, and inspiration is in every page.

ACKNOWLEDGMENTS

I would like to thank my friends and family for their unwavering support and endless optimism. I want to thank my colleagues whom I have shared countless hours in studio with, who I have learned from, and who I have had the pleasure of spending the last three years with.

I would like to thank Kathleen Lugosch for her support and guidance. Thank you for igniting and embracing my passion throughout this thesis. You never lost sight of my initial enthusiasm for fashion and architecture and for that I am grateful.

Lastly, I would like to thank Max Page. You have inspired not only this thesis, but me as a student. You have encouraged me to use architecture as a way of understanding, challenging, and interacting with the world culturally, politically, and socially. I feel truly lucky and grateful for your support and guidance.

ABSTRACT

ENVISIONING A NEW PUBLIC SPACE

MAY 2013

KATHRYN J. WETHERBEE, B.S., UNIVERSITY OF MAINE M.ARCH., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Kathleen Lugosch

This thesis challenges the way we design and inhabit urban public space. This architectural thesis project envisions a new public space. A framework for expression: a place where people physically create the spaces around them through architectural manipulation and expression of ideas, art and performance. The framework is inspired by translating the principles of garment design into architectural strategies: joinery, materiality, structure, response, and adjustability. As the architecture changes, so do the programs and ways of expressing. The site of this exploration is on the coast of Maine, in the city of Portland; acting as a gateway into the city from the ocean, as well as a connector, bridging the Downtown and East End districts. The concept is explored by creating architecture for an urban public space through architectural strategies that respond to the people, site, and city that promotes expression, gathering, and becomes a physical connection to the city. By implementing a framework for expression in a urban public setting, people will be able to communicate through architecture by changing the physical spaces that surround them. Individual expression spurs the connection of people. The connection of people spurs the connection of a city. And, ultimately a city with meaningful connections, both physical and otherwise, will develop a more socially engaged society.

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CHAPTER 1

EXPRESSION OF THE CITY

1.1 Introduction

Expression is what defines people. Walk though a small downtown or a large city and you will see people expressing themselves. In the town of Amherst, you find a steel drum player in front of the coffee shop, in the subways of Boston you find a cappella groups on the trains, in New York you find protesters in a Park, and in Portland local artists and artisans line the cobblestone streets. Expression develops spontaneously and in organized ways, it is promoted by individuals and the collective. People express themselves through art, performance, speaking, gathering, clothes, music, writing, and silence. Expression is all around us.

Cities create a canvas for expression. Cities are places that are constantly changing and moving; and cities are places where the traces of history remain in the physical and social design of a city. Who owns this canvas, a city? Who makes changes to the urban fabric? Who keeps the city moving? Who is responsible for the history of the city, the fragments and connection of the urban fabric? These are not new questions, they have been explored and answered by authors, planners, government agencies, and individuals all with different outcomes. Looking back on the development of American cities there seems to be a reoccurring and destructive pattern of the city being altered by powers divorced from the everyday life of the city, Jane Jacobs writes:

"Cities are an immense laboratory of trial and error, failure and success, in city building and city design. This is the laboratory in which city panning should have been learning and forming and testing its theories. Instead the practitioners and teacher of the discipline (if such it can be called) have ignored the study of success and failure in real life, have been incurious about the reasons for unexpected success, and are guided instead by principles derived from behavior and appearance of towns, suburbs, tuberculosis sanatoria, fairs, and imaginary dream cities - from anything but cities themselves".

This thesis intends to create a framework for expression: a public place within the city where people physically create the spaces and programs around them through architectural manipulation which promotes the expression of ideas, art, and performance. A place where questions can be asked, answered, where the collective and individuals of the city have a voice.

1.2 **Expression and Fashion Design**

When beginning to think about a new type of space and architecture that is manipulated by people, I derived inspiration from fashion and clothing. Fashion design has always been a means of expression for me; sketching, sewing, looking at materials and joinery of clothing. This lead me to ask the question of how garment design can inspire architecture.

Clothing is designed in a way that a person can easily control and change what they are wearing depending on many factors such as weather, body type, activity, and expression. Architecture should be the same. In a society where people spend 90% of their time indoors², our built environment should reflect the same qualities of flexibility

EPA. Buildings and their Impact on the Environment: A Statistical Study. April 22, 2009

¹ Jacobs, Jane. The Death and Life of Great American Cities. New York: Random House, 1961.

² This reference refers to a study of the United States Population.

and individual choice that our clothing does. As a society we demand more of our clothing; for it to be adjustable, for it to be appealing, to protect us, to reflect who we are, where we are, and how we are feeling. Beyond that we demand variety and choice; walk into any clothing store and you will find different styles, sizes, textures and colors for something as simple as a t-shirt. People have different wants, needs, personalities, and preferences; our clothing reflects this, why not our spaces? This thesis proposes that we start to demand those same things from our buildings and spaces where we live and interact with one another. For clarification, this thesis does not propose that there be completely individualized environments for every user. Instead it is a conversation about how architectural strategies can be enhanced when learning from garment design, and how these strategies can be applied to a public urban space to enhance expression and allow people to connect with each other and the city, and interact with the built environment. Ultimately, whether through the lens of fashion or architecture, this thesis ends and begins in the same place: challenging and envisioning a new type of public space that is shaped by the expression of people. This paper explores the process, concepts, and designs which developed into a new type of public space that allows people to shape their built environment through interacting with architecture. As the architecture changes, so do the programs and ways of expressing.

CHAPTER 2

BACKGROUND RESEACH

In the early stages of this thesis many avenues were explored to gain a deeper understanding of the influences that have simultaneously shaped the design of clothing and architecture. This chapter is a representation of the research and explorations.

2.1 Historical Parallels

Museum curator Brook Hodge summarizes the historical relationship between garment design and architecture by writing: "When viewed as part of a historical continuum, both garments and buildings are invaluable anthropological artifacts that mark important cultural and economic conditions, stylistic preferences, and new developments in technology and materials". The parallels between clothing and architecture have been explored in various ways by designers throughout history, and these intersections continue to inform new ways of thinking about clothing and architecture. The past and present day reveal countless examples where garment design and architecture have intersected. These intersections are shaped by major influences that have impacted the design and construction of clothing and architecture; the human body, developing technology, and changing culture. It is important to understand the history and background of these intersections and major influences so that we can better understand the conversation between garment design and architecture, and where it exists today.

³ Hodge, Brooke, and Patricia Mears. *Skin + Bones: Parallel Practices in Fashion and Architecture*. Los Angeles: Museum of Contemporary Art, 2006, p. 12.

Ancient Greece was a culture that placed high value on having a deep understanding of the human figure in regards to art, design, and creative expression; these connections translated to their clothing and the architecture. The chiton was a typical fashion of the period, the distinct draping of the chiton influenced the folded and draped appearance of the architectural columns. Figure 1 shows a typical chiton: with the long vertical draping from the feet to the bust and the bust producing a more dynamic draping. This aesthetic is mimicked in the ornamentation of the column: the cylindrical flute having long vertical drapes, and the top of the columns representing the bust of the chiton. As the clothing influenced architecture, the architecture then influenced clothing, with different chiton styles being names for the Doric and Ionic architectural orders.⁴

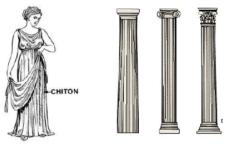


Figure 1: Sketches of Greek Chiton and Columns (Google Images)

The ninetieth century introduced machine technology to architecture and garment design, changing the design and production of both. By mid-century steel was transforming the built environment; the Crystal Palace, designed by architect Joseph Paxton, opened in 1851 as one of the first examples to use steel technology on a large scale. Steel allowed designers to make long spanning structures that opened up and

⁴ Hodge, Brooke, and Patricia Mears. *Skin + Bones: Parallel Practices in Fashion and Architecture*. Los Angeles: Museum of Contemporary Art, 2006, p. 12.

⁵ Kinney, Leila W. "Fashion and Fabrication in Modern Architecture." *The Journal of the Society of Architectural Historians*. 58.3, 1999, p. 472.

freed architecture of traditional brick. The nineteenth century also brought the invention of the sewing machine. The sewing machine developed a world of garment design that had never been explored, forever changing the way garments were designed and produced. One of the first innovations in fashion was the 1850's hoop skirt that used a rigid frame (similar concept as the Crystal Palace) in order to free the garment of the abundant layers of fabric while still giving the full look which was desired. The emerging technologies of the 19th century were a primary influence on the evolving designs of clothing and buildings.

Our buildings and our clothing are representations of our culture, and live on as historical and present cultural artifacts. This is an important reality to be aware of as architects; we should be questioning what our current buildings and designs say about our culture. The Modern Movement was a time where both architects and fashion designers were highly aware about what their designs were saying; the designs were representing a changing culture.



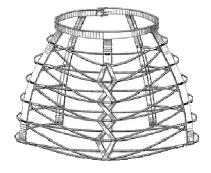


Figure 2: (Left) Crystal Palace (Google Images) Figure 3: (Right) Hoop Skirt (Google Images)

The Modern Movement is a unique period because it was a time when architects were writing about buildings and fashion as one entity, as one movement. Architects of

the Modern Movement were concerned with creating a Modern style, which encompassed the entire designed environment. ⁶ The Modern style was to be one of uniformity, the machine aesthetic, stripped of ornamentation; the goal was to reform everything in domestic culture which included garment design and architecture.

Throughout the Modern Movement architects were taking an active and purposeful role in the conversation about garment design and dress reform. They saw fashion as a way to communicate the ultimate goal of a modern style, "The point is not that dress reform is something that architects happened also to undertake; rather, reform clothing was on the frontier of arguments for the modern, making it possible to see form as it might eventually be articulated in architecture". Architects of this time saw garment design as an opportunity to influence a style; that the guiding design principles for clothing could be the same principles used to design a building.

Many of the architects of the Modern Movement focused, in the beginning, primarily on the male suit, because to them women's fashion was too costume like. There is an entire subject on gender roles and how they played a part throughout the Modern era, but for the sake of simplicity I will just acknowlegde that architects such as Le Corbusier, Aldof Loos, and Bruno Taunt were very active in the dress-reform conversation, relating clothing to architecture, reform, and feminism, all with varying attitudes. Adolf Loos wrote extensively about his opposition to decoration and this attitude showed in his buildings and clothing designs. He argued that the best type of

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⁷ ibid (Kinney p. 475)

⁶ Kinney, Leila W. "Fashion and Fabrication in Modern Architecture." *The Journal of the Society of Architectural Historians*. 58.3, 1999, p. 473.

men's fashion is to be, "dressed in such a way that one stands out the least". Architect Bruno Taut took on a slightly different opinion of men's fashion; after the extreme change in women's fashion by the 1920's. He began to examine why this change occurred only in women's fashion. He argued that the slow change in men's fashion was not relating with the domestic architecture, therefore, hindering the Modernist Movement. Figure 4 shows Taut's sketches of the history and transformation of women's clothing. Le Corbusier often explored architecture within the realm of the human body, he also, towards the end of the 1920's, began to explore women's fashion. He drew sketches for what he believed to be the ideal women's clothing. Figure 5 shows Le Corbusier's sketches which he submitted to Bazaar magazine, and the publisher rejected. By the end of the 1920's women's fashion was now dominating the conversation over men's clothing and becoming the model for the Modernist Style. Le Corbusier recognized this and wrote: "Woman has got there before us. She has brought about the reform of her dress. [...] (the ways) woman has revolutionized her dress are a miracle of modern times". While the male architects were writing about fashion, a young woman was leading the Modernist Movement by way of garment design, Coco Chanel.

Chanel was a Parisian fashion designer who is credited with starting trends such as "the little black dress". Through garment design she challenged the traditional clothing and roles of women in the nineteenth century by using different materials,

⁸ McLeod, Mary. "Undressing Architecture: Fashion, Gender, and Modernity". In Deborah Fausch et al., eds., *Architecture in Fashion*. New York: Princeton Architecture Press, 1994. p. 57.

⁹ Kinney, Leila W. "Fashion and Fabrication in Modern Architecture." *The Journal of the Society of Architectural Historians*. 58.3, 1999, pp. 474 – 475.

¹⁰ McLeod, Mary. "Undressing Architecture: Fashion, Gender, and Modernity". In Deborah Fausch et al., eds., *Architecture in Fashion*. New York: Princeton Architecture Press, 1994. p. 83.

designs, and introducing, at times, a more masculine feel to her clothing. ¹¹ Chanel created an identity for her brand, woman, and Modernism that still holds true over a century later. Chanel was known, and the brand is still known, for using primarily black and white for her colors, Figure 6 shows one of her signature style dresses from January 1927 published in Paris Vogue.



Abb. 28 Frauenkleidung vom alten Ägypten bis heute. Nach dem Hausfrauenkalender der Franckbschen Verlagshandlung, Stuttgart.

Figure 4: Bruno Taut, Bauen: Der neue Wohnbau. Evolution of women's clothing (1927)



Figure 5: (Left) Le Corbusier, *Clothes [costumes] for the women of today.* (1952) Figure 6: (Right) Chanel, *Little Black Dress.* Published in Paris Vogue. (January 1927)

The Modern Movement ignited the conversation between fashion and architecture which continues today. Exhibitions exploring the parallels between clothing and

¹¹ ibid. McLeod, pp. 82-92.

architecture have been critical points throughout the conversation and have also had significant influence on the development of this thesis.

Are Clothes Modern?- In 1944 Bernard Rudofsky organized an exhibition at the Museum of Modern Art in New York City titled, Are Clothes Modern? The exhibition used clothing as a critique to the International Style of architecture. Through clothing, the exhibition showed a reality in what architecture was promoting: excessive rationalization, the disregard for typical habits, and the routine of domestic living. Author Leila Kinney, comments on this exhibition: "Because Rudofsky viewed architecture itself as a formalization of habitation and routine behavior, changing clothing's relationship to the body would entail a change in the spaces that people inhabit". This exhibition used clothing as the connecting factor between how people were living, and how to design better spaces. At the time of the exhibition in 1944 author Felicity Scott stated, "A change in dress from irrational to rational will bring about a parallel change in our surroundings and will permit better ways of living". The exhibition represents the idea of turning towards clothing to inform architecture, a primary proposal of this thesis.



Figure 7: Images from "Are Clothes Modern?": showcasing Rudofsky questioning the design of footwear and the actual shape of feet (1944 MoMA Archive)

¹² Kinney, Leila W. "Fashion and Fabrication in Modern Architecture." *The Journal of the Society of Architectural Historians*. 58.3, 1999, pp. 478 – 479.

¹³ ibid. (Kinney, p. 478.)

Intimate Architecture - Intimate Architecture is an exhibit that focused on garment design from an architectural standpoint. The exhibition was organized by curator Susan Sidlaukas in 1982 and held at the Massachusetts Institute of Technology. The work of eight clothing designers were chosen to be showcased; their garments all having the similar theme of using dominant forms and geometry that incorporated the human body. The clothing presented in this exhibition was not the clothing of everyday, it represented the avant-garde. ¹⁴





Figure 8: (Left) Poster for MIT's Intimate Architecture: Contemporary Clothing Design Exhibition, featuring Designer Yeohlee Teng's Button Coat. (1982)

Figure 9: (Right) Installation at Hayden Gallery, MIT, Cambridge (1982)

Skin and Bones - In 2006 an exhibition at the Museum of Contemporary Art (MOCA) in Los Angeles continued with the conceptual threads of *Intimate Architecture*, to present a museum exhibition dedicated to the design of fashion and architecture from 1980 to 2006. This exhibition explored the relationship between what is often thought of as two different approaches to design: fashion and architecture. The exhibition featured 46 international designers, of both architecture and fashion, whose work exhibits the

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¹⁴ Intimate Architecture: Contemporary Clothing Design. Cambridge, Mass: MIT Institute, 1982.

intertwining relationship between clothing design and building design. While keeping the timeframe and scope of the exhibition limited, curator Brooke Hodge was able to present, in detail, work of contemporary architects and clothing designers, and in some cases people working as both. Hodge explains the reason for this limited time span by writing, "Over the past twenty-five years, fashion and architecture have followed ever more similar aesthetic directions due in part to an increasing cross-disciplinary dialogue between the two fields". ¹⁵ The exhibition was organized in a way that for every piece of clothing presented, there was a piece of architecture presented that displayed the same design themes. Figure 10 shows a page from the exhibit guide books showing a piece of architecture and clothing and describing the relationship between the two. The parallels between the two are striking and abundant. Apart from the tectonic strategies presented, Hodge recognizes the human form and the how the body is the ultimate parallel between garment design and architecture, "Regardless of scale, however, the point of origin for both practices is the body. Both protect and shelter, while providing a means to express identity – whether personal, political, religious, or cultural". ¹⁶ This statement from Hodge gave significant insight to this thesis; however, the statement lacked the question. Knowing that these are the parallels between the two, knowing that they are so significant, is only the beginning; we have too look at these intersections on a conceptual level and then translate them into tectonic strategies to be applied to the built environment.

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¹⁵ Hodge, Brooke, and Patricia Mears. *Skin + Bones: Parallel Practices in Fashion and Architecture*. Los Angeles: Museum of Contemporary Art, 2006, p. 14.

¹⁶ ibid. (Hodge, p. 11.)

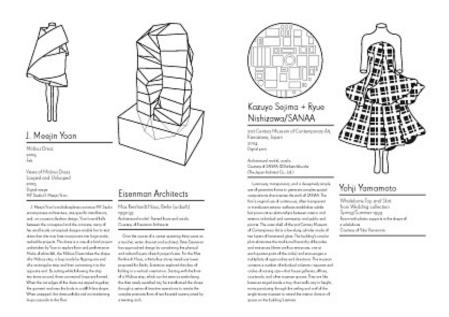


Figure 10: Page spread from the Skin + Bones exhibit guidebook (MOCA 2006)





Figure 11: Photographs showing the exhibit (MOCA 2006)

2.2 Conceptual Foundations

This thesis explores the fundamental principles of garment design, as opposed to fashion. Although I have used the term fashion, and fashion does play a role in the discussion, I am more concerned with the overarching theme of clothing and garment design, rather than a fleeting style which fashion tends to refer to. Author Val Warke

comments, "A fashion dies when if becomes completely accepted and stereotyped". ¹⁷ I agree with this statement and would further comment by arguing that the fundamental principles of garment design remain the same, independent of fashion. I have identified three conceptual principles of garment design that parallel architecture:

- Garment design interacts with human body
- Garment design implements layers of protection
- Garment design is a method of expression

Looking at these major principles the question becomes: How can architects learn from the fundamentals principles of garment design, and translate them into architecture to improve people's relationship with the built environment and promote expressive space?

Protection- What makes us feel more protected: clothing or buildings? "once we strip the aesthetics away from fashion and architecture one is left with two much simpler equivalents: clothing and shelter. The common denominator between these two is protection. Each protects our bodies from the elements of nature and society". ¹⁸ Feeling protected is a key element to the success of garment design and architecture.

One of the most basic forms of protection is skin - skin of our bodies and skin of our buildings. Skin is a primary concern in garment design; garments are often lined with soft or warm material that has direct contact with our body. This lining, although not seen from the exterior, usually compliments the garment in material, style, and color. Clothes are designed by thinking about the concept of layers, having an exterior layer and an

¹⁸ Crewe, Louise. "Wear:where? the Convergent Geographies of Architecture and Fashion." *Environment & Planning a.* 42.9, 2010, p. 2105.

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¹⁷ Fausch, Deborah. Architecture, in Fashion. New York: Princeton Architectural Press, 1994, p. 140.

Designing the built environment should involve thinking about layers of environment, city, neighborhood, public place, community, programs, and people.

When first exploring the concept of skin, I began to sketch what skin means to a human body and what skin means to a building (Figure 12). To add a layer of clothing to a body makes us feel more sheltered, it is how we present ourselves in public. By separating our bodies from the exterior environment we feel more comfortable to be in a public setting. In a private setting we can wear fewer clothes and expose our bodies more. The addition of skin to garment design is public; the subtraction of skin is private. Now looking at buildings the exact opposite happens. A closed off area with walls becomes a private place, whereas a more open space with many views becomes public. The addition of skin in architecture is private; the subtraction of skin is public. This is a relationship shows that although the idea of shelter, private, and public belong to both garment design and architecture, the way to design for them can be very different.

One of the most basic ways we as human protect ourselves is by layering. We put layers between ourselves and the environment to create shelter; "both buildings and clothes are a mediating layer between the body, the environment and others. They protect us". ¹⁹ Typically, by adding more layers of shelter, the further away from the body a layer becomes, the less personal identity is expressed. The challenge becomes translating the successes of garment design into the larger scale of layers of building and city.

 $^{^{19}}$ Crewe, Louise. "Wear:where? the Convergent Geographies of Architecture and Fashion." *Environment & Planning a.* 42.9, 2010, p. 2094.

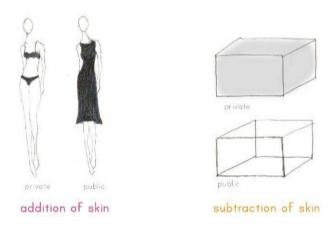


Figure 12: Diagrams of addition and subtraction of skin

Body- Perhaps the most significant challenge in translating the principles of garment design to architecture is recognizing the scale in which they are designed for. Clothing is designed for the individual and the scale of a human body; architecture is designed for the collective and the scale of multiple bodies. Author Louise Crewe describes this relationship: "Buildings and clothes touch our senses; they are the mediating layer between our bodies and the world, we feel, smell, and see them as they form a membrane between self and world, enveloping us, touching us". ²⁰

I have diagramed a conceptual way to look at how both garment design and architecture related to the five senses: touch, sound, visual, taste, and smell. I am arguing that architecture actually relates to more of the senses than garment design, however, garment design does relate with the human body in regards to touch and visual better than architecture, so this is where I will focus. Overall, buildings do not have as close of a connection with the human body when compared to clothing; clothing is designed specifically and solely for the human body. Author Juhani Pallasmaa argues that:

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²⁰ Crewe, Louise. "Wear:where? the Convergent Geographies of Architecture and Fashion." *Environment & Planning a.* 42.9, 2010, p. 2097.

"As buildings lose their plasticity and their connection with the language and wisdom of the body, they become isolated in the cool and distant realm of vision. With the loss of tactility and measures and details crafted for the human body – and particularly for the hand – architectural structures become repulsively flat, sharp-edged, immaterial and unreal." ²¹

Architecture should be designed in a way that encourages engagement with the human body. Like a piece of clothing interacts with the body, so should buildings. Garment design uses material, scale, and flexibility to engage the body and these principles can be used in architecture as well. Visually a building can be appealing, however, it needs to engage the sense of touch to be successful; "all of the senses, including vision, can be regarded as extensions of the sense of touch; the senses are specializations of the skin. The senses define the interface between the skin and the world". ²²

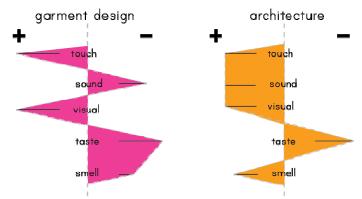


Figure 13: Conceptual diagram comparing the senses in garment design and architecture

Expression - Expression is the driving force of fashion; the fashion of clothing and of architecture. A garment that satisfies our need for protection and relates to our body is only successful if it expresses the ideas and identity we want to portray. The

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²¹ Pallasmaa, Juhani. *The Eyes of the Skin: Architecture and the Senses*. Chichester: Wiley-Academy, 2005. ²² ibid (Pallasmaa, p. 29.)

same can be said for architecture, once it protects and engages us, it still needs to be able to have an identity of its own and of the users. One of the factors that allows for garment design to express identity is flexibility. Clothes present us with numerous choices in order to express identity: size, color, material, and layering; these can all be translated into architecture. Author Amos Rapoport writes about the importance of choice in the built environment, through his studies of cultural behavior he has found that people prefer choice in their environments and if it is not found they will create it. An environment that is too constraining and does not allow for flexibility is not one that will attract people, "One size does *not* fit everyone as the modern movement thought and most designers still assume implicitly. That means that if there is a choice, i.e. constraints do not dominate, different environments are preferred or would be preferred". ²³

I am not suggesting that architecture is entirely individualized for a specific user, like clothing design. Instead, I am promoting that architecture allows for choice and flexibility, inherently allowing for the expression of an individual, group, or city. The way to accomplish this to design for culture, environment, and response. These three principles are laid our by Rapoport as ways to design for the built environment. Culture is defined as a group of people who are using the spaces, "social manifestations of culture which are potentially observable". Environment is the physical space of interaction; this can range from all the systems in which people interact: small rooms, to buildings, to neighborhoods and cities. Lastly, is the need to design for the response; architects should understand how people are reacting to spaces and how the spaces are supporting their

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²³ Rapoport, Amos. Culture, Architecture, and Design. Chicago: Locke Science Pub. Co, 2005, p. 52.

²⁴ Rapoport, Amos. "On the Cultural Responsiveness of Architecture." *Journal of Architectural Education*. Vol. 41, No.1 1987, p. 11.

needs. Choice, flexibility, and interaction are key strategies in satisfying these three elements, "There is strong evidence that environments which are chosen are inherently supportive and hence responsive, as opposed to identical environments which are imposed. The fact of having been chosen may be as important as what is chosen". Garment design and the fashion industry recognize this need for choice, interaction and expression through our clothing.

Building on the conceptual foundations between garment design and architecture will allow architectural strategies to emerge than can be applied to design. Historical patterns in culture, exhibits that began a conversation, and current precedents all outline the parallels between garment design and architecture that can be translated into an expressive architecture of a public urban setting.

²⁵ Rapoport, Amos. "On the Cultural Responsiveness of Architecture." *Journal of Architectural Education*. Vol. 41, No.1 1987, p. 13.

CHAPTER 3

PRECEDENT STUDIES

Precedent studies of architecture and garment were explored throughout this thesis. Precedents of fashion that express materiality, joinery, and connection.

Architectural precedents that envisioned public spaces in a unique way and buildings that were manipulated to express identities. The question of, how can we as designers learn from garment design, can only be answered if we understand both the design principles of clothing and buildings that exemplify these principles.

The following questions are asked for each precedent study:

- Why was this project chosen?
- What is the project expressing?
- How does this project relate to the city/site or the individual?
- What type of materials are used?
- What other aspect of the project are significant?
- How does this relate to the thesis question?

3.1 Boxpark, East London England

This project was chosen to inform this thesis because of the semi-permanent nature of the design, the innovative materials used, and the flexibility of the design. Boxpark is a semi-permanent project that represents urban and cultural intervention through the mode of retail and public space. It has been described by designer Roger Wade as "the first popup mall", however, it is not as temporary as most pop-up projects are categorized.



Figure 14: Boxpark View of lower and upper level (BOXPARK Shoreditch)

Description- Boxpark is a two level mall, leisure and gallery space that is built out of 61 large recycled shipping containers.²⁶ The concept of Boxpark was conceived of by fashion and brand designer Roger Wade who wanted to create a space that gives, "innovative retailers space at affordable rates – and on unbeatably flexible terms".²⁷ The design was brought to fruition by Waugh Thistleton Architects.²⁸ There are 41 containers located on the ground level which house retail spaces, and 20 containers on the tops which house other mixed-use shops, that is less about retail and more about people interacting within the urban environment.²⁹

²⁷ "Boxpark Shoreditch Pop-Up Mall." *Boxpark.* 2012. Access 23 September 2012. <www.boxpark.co.uk> ²⁸ Gosling, Emily. "News Analysis - the Boxpark Retail Development." *Design Week Online*. (2011).

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²⁶ "Boxpark - Pop Up Mall." *Marketing Week Online*. (2011).

²⁹ Meinhold, Bridgette. "Boxpark Pop-Up Shipping Container Mall Set to Open this Summer." <u>Inhabit.</u> Ed. Jill Fehrenbacher. 18 May 2011. Inhabit LLC. Accessed 23 September 2012. http://inhabitat.com

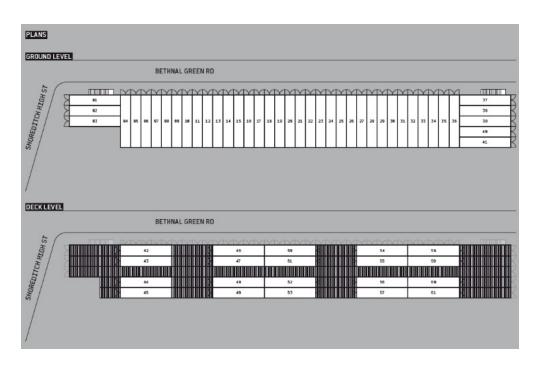


Figure 15: Plan Layout of Shipping Containers (BOXPARK Shoreditch)

Site- Boxpark is located on the East of London, near the high end shopping district Shoreditch. Near a metro station the area before Boxpark was already characterized as a creative district; however, because of long term and expensive leases small bands could not afford to participate. Boxpark is located in a previously vacant site that is earmarked for development in 2016, therefore, the lifespan of Boxpark is set to be five years. Boxpark offers lower cost rent and short term leases in this area of London which spurred the involvement of small local brands.

Expression- The Boxpark develops a framework, a template, for small develoing retailers (independent brands) to express their unique brand to a larger audience. The leases for the boxes range from one to five years, therefore, it is low risk investment. The larger vision for Boxpark is that there will be multiple locations, so a brand could literally

³⁰ Meinhold, Bridgette. "Boxpark Pop-Up Shipping Container Mall Set to Open this Summer." <u>Inhabit.</u> Ed.

Jill Fehrenbacher. 18 May 2011. Inhabit LLC. Accessed 23 September 2012. http://inhabitat.com

"pack up shop" and move their box to a new location. The true expression of the project comes from the individual "containers". Each one is the same size, yet each is branded in its own unique way; author Emily Gosling describes the limited amount of space that each brand has to work with as "impressive" and says that the, "individual brand's innovation takes on retail design that become the heroes of the space". The most important observation Gosling makes is that because of this opportunity for individualized expression "each space becomes it's own, rather than simply a piece of the Boxpark jigsaw". ³¹

Relationship to the Urban Fabric- Boxpark developed a vacant lot into a location for independent business owners to promote and sell their brands with affordability and flexibility being two main priorities. The project capitalizes on the already retail driven location and expands the success of this market to other mixed use and smaller markets. The industrial and temporary feel of the box containers give individuals a sense of change, and temporality; designer Timothy Everst states, "I think the idea of recycled shipping containers is a really good one. The fact that it is a space that is constantly changing [is] appealing. I think for people now, fashion is very very fast, they want to see things that are new, they want to go to places that are changing and evolving".

Materials- Boxpark took the opportunity to reuse shipping containers to create the framework of this project. The containers are each 40 feet by 8 feet with a height of 8

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feet, giving a square footage of approximately 320 square feet. A typical layout for a

³¹ Gosling, Emily. "Review of Shoreditch's Boxpark Mall." *Design Week Online*. (2011). Print.

³² Cooper, Daniel. "Boxpark Pop-Up Mall." <u>The Pop-Up City</u>. Ed. Jeroen Beekmans & Joop de Boer. 27 July 2011. Accessed: 23 September 2012. http://popupcity.net/2011/07/boxpark-pop-up-mall/

clothes retailer is shown in Figure 16.³³ The success of this project comes from the simplicity of the materials used and the flexibly offered for customization.

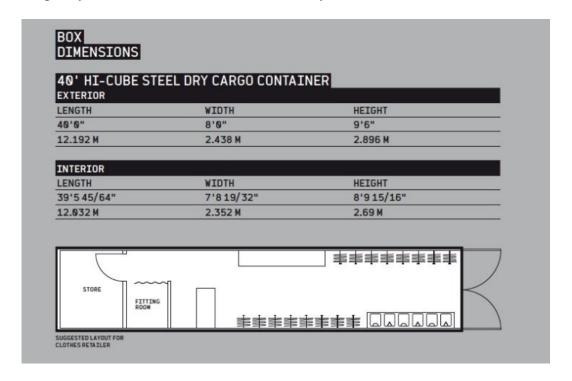


Figure 16: Typical Layout for Clothes Retail (BOXPARK Shoreditch)

Thesis- Boxpark used simple materials to create a framework for individual expression. This framework is flexible, yet permanent enough for individual retailers to commit to at least a year. Since opening, Boxpark has added new opportunities to the urban fabric of the city and given people a place to gather, socialize, shop, eat, that is an alternative to the more commercialized Shoreditch street. Boxpark took a vacant site and transformed it into a mixed-use gathering space that brings a new type of commercial population to the city.

³³ Meinhold, Bridgette. "Boxpark Pop-Up Shipping Container Mall Set to Open this Summer." <u>Inhabit.</u> Ed. Jill Fehrenbacher. 18 May 2011. Inhabit LLC. Accessed 23 September 2012. <inhabitat.com/boxpark-popup-shipping-container-mall-nurtures-the-community-and-small-brands/>

3.2 Olympic Basketball Stadium, London

The Olympic Basketball Stadium was chosen as a precedent to inform this thesis because of the use of materials, the exterior fabric skin, and how light was used as expression through this skin. The Olympic Basketball Stadium built for the 2012 Summer Olympics in London represents one of the universal themes for the architecture of the 2012 games: embrace the temporary. One third of the venues were designed to be part of the Olympic games and then taken down after, and additionally other, more permanent venues, were designed to downsize after the games.³⁴



Figure 17: Olympic Basketball Stadium (Designboom.com)

Description- The Olympic Basketball Stadium was designed by Wilkinson Eyre Architects who describe the project as a challenge to design a temporary building which would be simple to construct and sustainable in terms of being reused and recycled after the games are over. The result was a temporary building that seats 12,000, houses large sporting events for the Olympics, and two-thirds of the materials and elements within the building can be reused and recycled at the completion of the games.³⁵

³⁴ Hawthorne, Christopher. "From London Olympics to Pasadena, Temporary Architecture takes Hold". Los Angeles Time Online. Ed. Davan Maharaj. 28 July 2012.

35 "London 2012 Olympic Basketball Arena". Wilkinson Eyre Portfolio. 2012. Accessed: 24 September

2012. <www.wilkinsoneyre.com/projects/london-2012-basketball-arena.aspx?category=sport-and-leisure/>

Site- Located in London's East End, a goal of the Olympic Park master plan was to revitalize this area of London through the summer games. The arena itself is located near the north end of the master plan, on high ground, so that it is visible at many different vantage points throughout Olympic Park. The arena itself is located near the north end of the master plan, on high ground, so that it is visible at many different vantage points throughout Olympic Park.

Materials + Expression- With a focus on the temporary, there was also a focus on using sustainable materials. The materials had to be easily dismantled, durable, and reusable; over two thirds of the materials and components used in the project were identified for reuse or recycle. The building is made out of fabric wrapped steel components that were then assembled together (Figure 18). Each component is made of a lightweight steel frame that is then wrapped in lightweight phthalate-free and recycle PVC fabric material. This tension wrapped fabric over the steel frame creates the pattern of the facade. The fabric material is translucent so that natural light can filter in during the day, and artificial colored light can be seen at night. Specific light installations were designed to be seen at night to create "dynamic illumination which, at night, transforms the white surface into a variety of saturated colors and strong silhouettes of the sub-structure, creating the biggest light installation on the Olympic park". (Figure 19)

Thesis- The thoughtful use of materials, lighting, and structure informed the design of this thesis. The Olympic Basketball Stadium was a place for activity, a medium of expression, and a beacon for the London games.

³⁶ Hawthorne, Christopher. "From London Olympics to Pasadena, Temporary Architecture takes Hold". <u>Los Angeles Time Online</u>. Ed. Davan Maharaj. 28 July 2012.

³⁷ Alarcon, Jonathan. "London 2012 Basketball Arena / Wilkinson Eyre Architects" 22 Jul 2012. <u>ArchDaily.</u> Accessed 25 Sep 2012. <www.archdaily.com/255557>

³⁸ ibid. (Alarcon, Jonathan)

³⁹ ibid. (Alarcon, Jonathan)

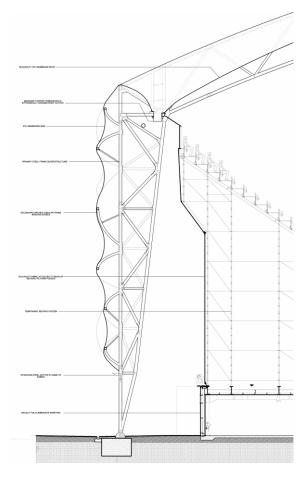


Figure 18: Section of Steel Frame and Fabric Component (ArchDaily)



Figure 19: Light Installation of Facade (www.wilkinsoneyre.com)

3.3 The Highline Park, New York City

The Highline in New York City was chosen as a precedent for this thesis because this project envisions a new way of designing and inhabiting public urban space. It is an elevated urban public park and walkway, designed by architects Diller Scofido + Renfro.



Figure 20: Aerial views of the Highline Park (Baan 2011)

Description: The Highline was designed and built on an existing urban framework from the 1930's which consisted of an elevated train track, that lifted freight trains 30 feet above street level. Freight traffic ceased in the 1980's, leaving behind the industrial framework and structure of a piece of city history. In 1999, grassroots efforts emerged to save this area of New York urban fabric and re-envisioned its use, which led to the 2009 design and construction of the elevated city park. The entire park opened to the public in two phases; the first part in 2009, and the remainder of the park in 2011. 40

Site: The Highline is located in New York City in the neighborhood of Chelsea, running from Gansevoort Street to West 34th Street on Manhattan's West Side. The park is 1.45 miles, with walking paths, seating, and gathering areas. 41

⁴⁰ The Highline. "The official Web site of the High Line and Friends of the High Line". 2013. Date of Access: 10 March 2013. < www.thehighline.org>
⁴¹ ibid. (The Highline)

Public Space: The Highline is programmed such that users define their own experiences. There are opportunities to, socialize, walk, observe the city, and rest, which are all made possible by the architecture. The seating is fully integrated into the circulation of the park. There are also theaters, or viewing places, that change elevation and act as an outlook into the city. ⁴² (Figure 21)

Thesis: The Highline challenges the way public space is designed, and redefines public space in New York City. The Highline derives inspiration and design solutions from the rail history and urban connections of the site.



Figure 21: View of Theater outlook (www.thehighline.org)



Figure 22: Walking and Sitting on the Highline (Baan 2009)

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⁴² The Highline. "The official Web site of the High Line and Friends of the High Line". 2013. Date of Access: 10 March 2013. < www.thehighline.org>

3.4 Coventry University Hub, Coventry England

This precedent study was chosen to inform this thesis because of the use of materials and color as a way finding tool for various programs and circulation throughout the building. This building also demonstrates unique and innovative techniques used to allow flexibility and choice among the users. The scale of the human body is constantly referenced and designed for and the spatial needs of the occupant are taken into account.

Description- The University of Coventry was commissioned as new "Student Enterprise Building" in 2008, architects, Hawkins/Brown, designed this 96,337 square foot building as the first step in a larger campus master plan. ⁴³ It gained the nickname "The Hub" because it is essentially just that, a hub in the middle of campus for students and faculty alike to gather, study, work, and play.

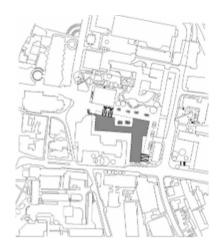




Figure 23: (Right) The Hub: Site Plan (ARThitectural, 2012)
Figure 24: (Left) The Hub: Photo in Site Context (World Architecture News, 2012)

Site- The Hub is located centrally in the campus plan and connects the campus and the local community. The angles of the building footprint mirror the streets of the campus and the surrounding community as seen in Figure 23. The building also responds to the

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⁴³ Hawkins & Brown. "Hawkins/Brown | Coventry University Hub." *ARThitectural*. 6 February 2012. Web. 5 April 2012. <www.arthitectural.com>

site by incorporating the vernacular of the surrounding and existing buildings. An important feature to highlight and incorporate was the historic cathedral. The gothic style cathedral of St. Michaels is also known as "The Old Cathedral". The present day structure originated in the 1300's to the 1400's. However, much of the structure is in ruin due to an air raid during WWII. The University of Coventry was built up and around the cathedral, the church always being a significant part of the campus and surrounding community. ⁴⁴ To incorporate the style of the vernacular, the building used decorative glass on the curtain wall; "the glass frit pattern is used on the exterior curtain wall, bridging the aesthetics of the past and the present". ⁴⁵ This use of glass and awareness of the entire campus also helps develop a strong identity for The Hub and the university.





Figure 25: The Hub: Curtain Wall and St. Michael's Cathedral (Hooper, 2012) Figure 26: The Hub: Yellow color way-finding, circulation (Hooper, 2012)

Expression- The use of color, materials and mixed-use program allows the building to express various identities throughout the day. The programs of the building change throughout the day and night; the building and study areas are continuously open, at night working offices are shut down and various bars, club spaces, a cinema, and a performing

44 Orland, Rob. "St Michael's – The Old Cathedral". *Historic Coventry*. Ed. Rob Orland. 2011. Date of

Environments with the Hub at Coventry University." *Contract.* 53.2. 2012.

Access. 4 April 2012. http://www.historiccoventry.co.uk Hooper, Emily. "Coventry University Hub: Hawkins\Brown Addresses the Changing Face of Learning

art venue open. Being kept open all hours and changing programs allows for the building to have more users continuously. According to Jane Jacobs, this idea of constantly having eyes on the building and the city, increases the users sense of security and therefore the areas around it never becomes on of fear or unease. 46 This idea of mixed use programs being flexible to day and night is one that is incorporated into designs.

Materials- The use of materiality for the Hub is crucial to the design of the building. The use of color in the building materials and interior design is used as a way-finding tool for users of the building. Each program has a different color pallet that enhances the feel and the use of the each area of the building. ⁴⁷

- Yellow for circulation, learning and studying
- Red for entertainment and to indicate that alcohol may be consumed
- Purple for medical offices and services
- Blue for faith offices and services

The colors and materiality are so incorporated within the design that even the mechanical systems and exposed ducts adhere to the program color protocol. The floor plan of the building is separated into private, public, formal, and informal areas. All these types of areas are open and easy to access, allowing people to choose the way in which they feel most comfortable for studying, socializing, and working.

The study areas of The Hub were designed with materials that reflect and incorporate the human body, much like clothing does. The architects took into account

<www.arthitectural.com>

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 ⁴⁶ Jacobs, Jane. *The Death and Life of Great American Cities*. New York: Random House, 1961.
 ⁴⁷ "Hawkins/Brown | Coventry University Hub." *ARThitectural*. 6 February 2012. Web. 5 April 2012.

the way students like to study and allowed for an impressive amount of flexibility and choice. Much like a student changes their outfit for the day, they can quickly move through the spaces of The Hub to choose the right fit for studying. There are pods which have a private feel to them, while still having ample views so students do not feel confined. There are large circular pods with oversized pillows so students can study and socialize in a comfortable way. There are desks and tables where students can choose to study in a more traditional way as well. These interior elements are scaled proportionally to an individual using the space, as well as the collective.





Figure 27: (Left) Red represents entertainment and alcohol (World Architecture News, 2012)

Figure 28: (Right) Blue represents spirituality and faith services (Coventry University, 2012)



Figure 29: Yellow "pod" learning spaces (Hooper, 2012)

Thesis- This building combines garment design and architecture to make a building that focuses on the identity of the site and the users, the human body while allowing choice,

flexibility, and protection. As in garment design, the use of materials and color plays a critical role in the affect of this building; without the carefully attention to color and materials this building would not have the same success. Flexibility and the scale of the human body are introduced in an innovative way with modular pods. With this building the architects redefined what it means to study and socialize in an institutional environment. This building is anything but institutional and boring, it is vibrant, exciting and ever changing, much like the college students whom it was built for.

3.5 Precedent Study – ICA and the Work of Diller Scofido + Renfro

The Institute for Contemporary Art (ICA) was chosen as a precedent study because of the architects thoughtful designing and understanding of the skin as a representation of the site and the interior as a place for expression of contemporary art. It was also chosen because of the background that the architects have in the conversation between garment design and architecture.

Description - The Institute for Contemporary Art is an example of an art museum where the architecture is derived from the program and the structure, rather than the flamboyance like many other art museums. Designed by Diller Scofidio +Renfro in 2006 the architects approached this building from a unique perspective, the perspective of an artist. Most of their projects from their studio, until the ICA, were theory based and in the realm of art, and in over twenty years of practice they had only completed one building.

The Site -The ICA is located in a somewhat desolate area of Boston; surrounded by vacant parking lots and virtually no landscaping, the ICA becomes a prominent feature among the Boston Harbor horizon (Figure 30). The building makes an impression, yet, it is one that fits in with the surrounding site, it is one of reflection. As soon as you enter the building the harbor and the city become part of the exhibition. Boston is no longer the site or place where you are, but rather a composition of artwork which you view.

Protection -This building shelters you from the surrounding city as soon as you enter or come across the façade facing the water. The most powerful façade is the one facing the water. With the 80 foot cantilever you feel as though the building is floating above you.

The building shields you from the parking, traffic, and the industrial edge of the city, and

encourages you to engage with the water. This building, and particularly this façade, feels proportional to the site, a continuation of the water. Through the use of material and site selection the building is an actual continuation of the Boston Harbor Walk, "with one continuous surface material—Santa Maria, a hardwood used in boatbuilding—the boardwalk 'flows' up to form the stadium steps overlooking the water". ⁴⁸ This wood continues strategically wrapping the cantilever ceiling above and eventually flowing to the interior spaces. Figure 31 shows the wood bottom of the large cantilever and how the structure ICA frames the view of the Boston skyline; the first of many intentional compositions framed by the architecture.





Figure 30: Exterior of the ICA looking onto the parking lots and the Boston Harbor (K.Wetherbee)

Figure 31: Cantilever and continuous wood frame the Boston city skyline (Google Images)

Body + Expression - This building expresses identity in two significant ways. First is a quiet, almost absent identity of the gallery spaces to allow the art to express an identity of its own. Second, there is the identity of Boston and the harbor; on the exterior they are approachable real places; then, once in the museum they become framed views of art, part of a choreographed journey. As you travel closer to the building (thus further away

⁴⁸ Amelar, Sarah. "After Punching Holes in the Fundamental Concept of Museums, Diller Scofidio + Renfro Actually Creates One: a New Building for Boston's Institute of Contemporary Art." *Architectural Record.* 195.3. 2007.

from the city and the harbor) an amazing this begins to happen: you become more aware, closer, and connected to the city and the harbor. The building perfectly relates the city and the harbor through reflection, as seen in Figure 32; the ICA is continuation of these two entities; it is the thread that ties them together. From this point on, as you enter the building, reflection becomes a powerful design tool used throughout the building. The building engages with the human body in a very intentional way, circulation. The architects purposefully and carefully choreographed a person's journey throughout the building, describing it as a control valve to different views. The elevator is the beginning of the choreographed journey through the ICA that was designed in detail by the architects.⁴⁹ The works of art are shown from the top downward. You travel to the top (fourth floor) of the building in a large glass elevator where the floor is made out of the same Santa Maria wood that wraps the exterior cantilever. As you rise in the elevator you see obstructed views of the harbor and city. Without being able to completely view the outside you have a feeling of being lifted off the ground, above the water and the city. Once you arrive to the top you immediately feel separated from the city, the harbor, and the exterior of the building; now you are completely aware of the artwork. The architecture and interior design controls your perception of the room, your surrounding, and where you look. This happens in a subtle and elegant way, enhancing the art in these spaces. The fourth floor is home to all of the exhibition space and feels very open considering there are no windows; this is due in part because of the free plan show in Figure 33. The free plan also allows for maximum flexibility of space with movable

⁴⁹ Amelar, Sarah. "After Punching Holes in the Fundamental Concept of Museums, Diller Scofidio + Renfro Actually Creates One: a New Building for Boston's Institute of Contemporary Art." *Architectural Record.* 195.3. 2007.



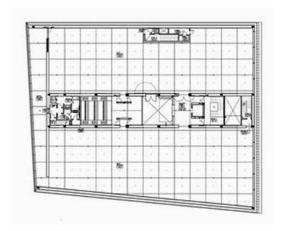


Figure 32: (Left) Corner detail of the ICA showing reflection of the Boston Harbor (left) and the city (right) (K.Wetherbee)
Figure 33: (Right) ICA Fourth Floor Plan (Incerti, Guido, Daria Ricchi, and Deane Simpson)

partitions separating the spaces. Architect Diller describes their approach to the very important gallery spaces: "Having spent our lives on the other side of the wall, making art and feeling frustrated by space, we wanted the galleries to be neutral, reprogrammable, unscripted." ⁵⁰ Because there are no views to the exterior in the art galleries it allows a person to give their complete attention to the art. The galleries have light gray concrete floors and neutrally colored walls. The light diffuses in the room from the ceiling, coming through stretched fabric; this is either illumined by daylight or electric lights, either way having a soft natural feel. In a few of the exhibition spaces there are seating areas which are low, gray, and in the simple form of a rectangle. The spaces of these galleries are simple and understated; there is no competition with the art, the spaces allow to the art to express its identity.

The most exciting exhibition on the fourth floor was the one found in the Founder's gallery; this is the exhibition showcasing the Boston Harbor. Just like the

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⁵⁰ Amelar, Sarah. "After Punching Holes in the Fundamental Concept of Museums, Diller Scofidio + Renfro Actually Creates One: a New Building for Boston's Institute of Contemporary Art." *Architectural Record.* 195.3. 2007.

other exhibition spaces control your focus on the artwork, this space controls the focus to the large panorama of the Boston Harbor. Figure 34 shows the Founder's Gallery and the feeling of this panelized painting spanning the entire room. This space is presented as a piece of artwork by continuing the language of the other exhibition spaces with the neutral materials and seating; as you would sit and look at a painting, you sit and look at the framed view of the Boston skyline.



Figure 34: ICA Founders Gallery over looking the Boston sky line (K.Wetherbee)

As you leave the ICA, the city and harbor rushes back to all of your senses. The quiet serene views of the harbor and city are gone. The ICA gives you an entirely different perspective of the city. The architecture is dependant on the city, the views, and the surroundings. Because the priority of the design was not to an advent-guard exterior, but instead the priority was to the exhibition spaces, the interior, and the views to the city. And for this reason the ICA is successful.

Thesis -Like garment design this building was designed in layers; the exterior made to express and identity, and the interior made to house a body – the artwork. It challenges the way in which art museums are designed by raising the standard in which buildings approach art. The architecture respects and pays tribute to the artwork shown in the building, as well as the surroundings of Boston.

Exhibit "Bad Press"- Architects Diller Scofidio + Renfro are some of the more contemporary architects to contribute to the conversation of garment design and architecture. In the earlier years of their practice (and still) they challenge the boundaries of architecture, bringing art, fashion, and other factors into their designs. One of their performance exhibitions titled Bad Press challenged of the typical man's dress shirt. They describe wanting to challenge the geometry of the design, the production, the packaging, and the ironing:

"The standardized ironing pattern was devised so that a minimum of energy would be expended in pressing a shirt into a flat, rectangular shape that would fit economical into orthogonal systems of storage: the shipping carton, the display case, the dresser drawer, the closet shelf, and the suitcase. The residual trace of the orthogonal logic of efficient is work on the body." ⁵¹

They are arguing that this garment is not designed for the human body, it is seemingly designed for everything but the human form, yet we wear it. I am arguing that buildings, cities, and public spaces are plagued by this same symptom of being designed for too many factors that are outside the realm of the user.



Figure 35: Video still of *Bad Press* (Diller Scofidio +Renfo)

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⁵¹ Diller Scofidio + Renfro. *Bad Press: Dissident Ironing*. Permanent Collection, SFMOMA, San Francisco CA. 1993.

3.6 The Work of Lucy Orta – Refuge Wear

The work of Lucy Orta was chosen because of her explorations in wearable architecture. She creates designs that blur the line between clothing and architecture, and each garment is a way for her to express issues of urban environments.

Description- In her exhibition *Refuge Wear*, Orta designs wearable shelters that focus on social problems such as the plight of the homeless. Buildings and clothes become one to provide protection, "Orta refutes premise that clothing and shelter are separate entities and uses her work to highlight the ugly social reality of contemporary urbanism where dazzling retail and residential spaces coexist with a rising problem of homelessness". 52 Figure 36 shows *Refuge Wear* both with a body and without.



Figure 36: *Refuge Wear (Lucy Orta Studio*, www.studio-orta.com)

Materials- The garments Orta designed for *Refuge Wear* are made to protect a person from the environmental elements. Refuge wear uses materials such as polar fleece, aluminum, and even incorporates amenities such as a compass and lantern; combining materials traditionally used for specifically garment design, or specifically architecture.⁵³

& Planning a. 42.9, 2010, p. 2104.

Solution of the Planning a. 42.9, 2010, p. 2104.

Solution of the Planning a. 42.9, 2010, p. 2104.

Solution of the Planning a. 42.9, 2010, p. 2104.

Solution of the Planning a. 42.9, 2010, p. 2104.

Solution of the Planning a. 42.9, 2010, p. 2104. orta.com>

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⁵² Crewe, Louise. "Wear:where? the Convergent Geographies of Architecture and Fashion." *Environment*

Body- *Refuge Wear* is designed for the scale of one human body and because of this it is related more to a garment than architecture. However, it is meant to give the body more protection than the average garment. It is interesting to look at *Refuge Wear* in regards to the addition and subtraction of a body; while a person inhabits it, it function like a garment, and when there is not body, it functions more like architecture. This is where Orta has blurred the line between clothing and architecture.

Expression – The concept of *Refuge Wear* is to give an identity to the growing homeless population that Orta observed. "The artist developed the *Refuge Wear* series in conjunction with certain homeless people whose paths she had followed over a number of years. The aim of the *Refuge Wear* is to serve as objects of meditation, made more poignant as some of the homeless have since succeeded in reintegrating into society". 54 *Refuge Wear* shows is that when the line is blurred between garment design and architecture a very powerful form of expression can exists.

⁵⁴Orta, Lucy. "Refuge Wear." *Lucy Orta Studio*. Ed. Lucy Orta. 2012. Web.7 March 2012 <www.studio-orta.com>

3.7 OMA for Prada

The collaboration between Rem Koolhaas' design studio OMA and one of the leading houses of fashion, Prada, was chosen because of the unique relationship and mutually beneficial outcomes that has resulted for both fashion and architecture.

Description – In 2001 a design relationship began between architect Rem Koolhass and fashion designer Miuccia Prada. Prada commissioned Koolhass to design her flagship store in New York City and ultimately support her branding mission. The 23,500 square foot flagship store located in SoHo cost \$40 million dollars, which averages to about \$1,700 per square foot. This relationship has developed into a design collaborative between OMA and Prada, designing stores, runways, materials, and look books for the Prada brand. ⁵⁵

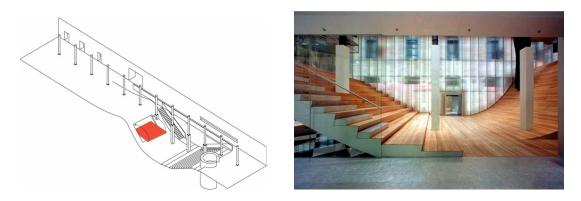


Figure 37: Diagram and photo of "The Wave" (oma.eu/projects/2001/prada-new-york)

Expression + Materials- The main architectural element in the store is "the wave" seen in Figure 37. This was designed to be a place for merchandise and for people. The wave draws people's attention and encourages them to interact with the architecture of the store. The wave also acts as circulation down to the lower lever, but it blurs the line

⁵⁵ Giovannini, Joseph. "Finally, Prada." *Interior Design*. 73.4 2002.

between stairs, seating, and display area. The seating area is made of a gel which is typically found in shoe inserts, "made to simulate the consistency of flesh, the material makes a memorable seat". Koolhaas challenges the body when it comes to the design of the dressing rooms. Initially you enter and the walls of the room are a transparent clear, you then step on a pedal, turning the walls opaque and allowing for privacy. An interesting approach of the addition of skin and the feeling of private and public as discussed earlier.

Expression – The store was designed with flexibility in mind changing identities from day to night. During the day the environment is a store, with merchandise hanging on suspended shelves that are on a track, "At the base of the wave, clothes are suspended in a movable shelving system borrowed from library technology". At night these shelves can easily be moved away to create a performance or entertaining space within the store. Another way Koolhaas gave identity to the store was with a large screen wall that can constantly change the image it is displaying; this allows for choice and flexibility in identity. (Figure 38)



Figure 38: Flexible Screen Wall

⁵⁶ Brake, Alan G. "Prada World's Price Tag." *Architecture*. 91.3.2002.

⁵⁷ Giovannini, Joseph. "Finally, Prada." *Interior Design*. 73.4 2002.

3.8 Fashions of Alexander McQueen

The fashions of Alexander McQueen were an inspiration to this thesis because of the materials used and how the fashion designs pushed the limits of what conventional high fashion is, how it is constructed and how it is presented.

Expression- He was both criticized and celebrated for having runway shows that were a form of installation art and performance. His shows and clothing often represented socially and politically charged issues such as women's identity, climate change, incarceration, and evolution. Figure 39 shows a design from his Spring/Summer 1999 show, where the model was dressed in all white before robots painted the garments various colors. Figure 40 shows the final design. This garment is one example how McQueen expressed his fashion through performance and live installation art.





Figure 39: Spring Summer Collection Runway (Knox, 2010) Figure 40: Spring Summer Collection Final Design (Bolton, 2011)

Materials + Body- McQueen often used unconventional materials when creating his garments such as horse hair, shells, feathers, metal, automobile parts, animal bones, antlers. Figure 41 shows a dress made entirely of razor-clam shells. He often would

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⁵⁸ Knox, Kristin. *Alexander Mcqueen: Genius of a Generation*. London: A & C Black, 2010. p. 16.

explore these materials and their proprieties through contrasting materials and textures. Figure 42 shows a sculpted hard body piece contrasted with horse hair skirt. McQueen explored the human body through his garments by questioning the figure, and often distorting human proportions through his structures. Figure 43 shows a dress made entirely out of black duck feathers that exaggerate the proportions of a woman's hips and shoulders, speaking to the fashions of the 1950's. ⁵⁹

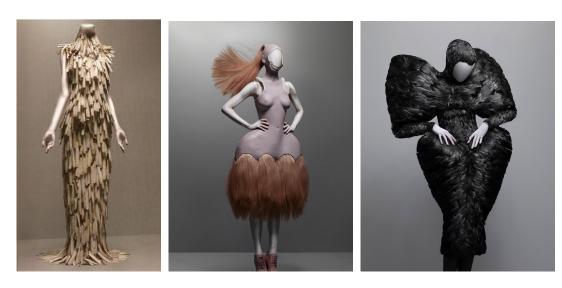


Figure 41: Razor-Clam Dress Spring 2001 (Bolton, 2011)
Figure 42: Spring Summer 2001 Collection (Bolton, 2011)
Figure 43: Black duck feather dress from "The Horn of Plenty"
Autumn/Winter 2009-2010 collection (Bolton, 2011)

Thesis - McQueen's use of materials, texture, joinery, and sculpture are concepts that will influence the designs of this thesis in terms of technologic strategies. The presentation of these garments and the deliberate expression through fashion and performance has a significant influence on the designs, program and framework for expression that is created.

 59 Knox, Kristin. Alexander Mcqueen: Genius of a Generation. London: A & C Black, 2010.

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CHAPTER 4

LOCATION OF STUDY

Portland, Maine is the city which this thesis is explored, and more specifically the East End district of the city. The specifics of the city are discussed later on, but what I hope to convey is a general understanding of the city. For years the East End has been a planning experiment gone horribly wrong. A false promise of an architectural intervention to change the East End is not my intention. Instead, it is to build upon the connections that already exist and introduce a public space into a vacant site that connects these pieces of urban fabric. You can look at statistics, history, demographics, development strategies and come to many different conclusions about the East End; but spend a sunny afternoon strolling the streets you will find vibrant neighborhoods, ethnic diversity, small shops, community gardens, families, and students. This thesis recognizes these successes and attempts to draw attention to these neighborhoods, it is not about redeveloping the East End to mimic downtown, it is about allowing the East End to have a voice, and making a place that invites people to shape conversions about the community. This thesis is about connecting the urban fabric, physically and socially, and envisioning a new public place shaped by people.





Figure 44: Map of New England (Left) Map of Portland (Right) (ersi.com)

4.1 Portland Maine

Demographics- Portland is the largest city in Maine, with a population of 66,194 and 230,000 in the entire metro area, which is based on the 2010 census. ⁶⁰ Of Portland's residents 43.3 percent have a Bachelors degree or higher. Portland receives 3.6 million visitors a year. ⁶¹ The median age for Portland is 36 years.

Climate- Being on the Atlantic coast the site of Portland experiences maritime weather conditions. The average temperature for January is 22°F and for July is 69°F. On average Portland has 130.8 days of precipitation with accumulation more than .01 inch, and a total of 47.25 inches of precipitation annually, snowfall occurs 15.9 days and accumulated 61.9 inches annually. Annually, Portland has 7106 Heating Degree Days and 360 Cooling Degree Days on average. 63

Transportation- Portland is accessible by car and within the city there is public transportation of bus and ferry connecting to the nearby islands. There are many walking and bike trails throughout Portland resulting in the majority of Portland being pedestrian and bike friendly. The residents of Portland commute to work mostly by personal vehicle 80%, and 11% walk. Major transportation routes which intersect and connect Portland are US Route 1 (which goes the length of the eastern seaboard) Interstate-95, and Interstate-295. Transportation hubs in Portland include: Airport: Portland

[.] *Maine Demographics*. Ed. Kristen Carney and Anthony Morales. 2012. Web. 22 October 2012 www.maine-demographics.com

⁶¹ ______. City of Portland Maine Online. 2012. Web. 22 October 2012 <www.ci.portland.me.us > NOAA. "Climatological Report (Annual) Portland Maine." NOAA Webiste. 3 January 2013. Web. Date of Access: 6 January 2013. <www.nws.noaa.gov/climate/index.php?wfo=gyx>

⁶⁴ _____. City of Portland Maine Online. 2012. Web. 22 October 2012 <www.ci.portland.me.us >

International Airport; Train: Amtrak Station; Bus: Concord Bus Terminal; Ferry: Casco Bay Ferry Lines; Ship: Ocean Gateway Terminal.

Public Areas- The districts of Portland have various character to them and throughout the city you will find small public areas: parks, trails, squares, and the docks. The primary public area is Monument Square which connects the Downtown and Arts Districts. Figure 45 Shows photographs of some public areas that you find in Portland.

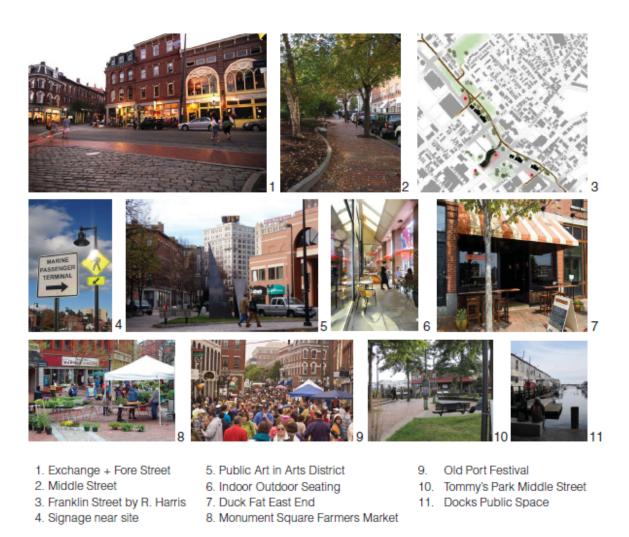


Figure 45: Public Areas in Portland Maine (Image collage by author, sources vary)

4.2 Context of the Site

The City of Portland Maine is comprised of three major districts: Downtown,
West End, and the East End, Figure 46. The site of this thesis is located in the East End
in a commercial and business district. It has views to the waterfront and abuts the
Downtown District of Portland, the "Old Port". The site has three streetscapes, located
on the intersection of Fore Street, Hancock Street, and Thames Street. Thames Street is a
continuation of Commercial Street, which is adjacent to the waterfront and is one of the
primary streets for commercial, business, and pedestrian activity. Connections to the site
include:

- Bus: On the Portland Metro Bus Route Peninsula Loop
- Ferry: Near the Casco Bay Ferry Line Terminal, Ocean Gateway Center
- Vehicular Access
- Walking and Biking: On the Harborwalk Trail

The site is part of Portland's Waterfront Development Plan, in the "Central Redevelopment Area", and will also be affected by the re-development plan of Franklin Arterial. The goal for the Waterfront Development Plan is to bring more activity along the waterfront and revitalize places such as this site; three goals are outlines as: (1) connect the Eastern Waterfront Development Area with the city fabric of Portland, (2) provide appropriately scaled streets for the expected vehicle and pedestrian traffic, and (3) encourage pedestrian -oriented, mixed-use development in the Eastern Waterfront. The primary streets of focus in order of priority are: Commercial and extensions

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⁶⁵ *Design Guidelines for the Eastern Waterfront*. The Waterfront Development and Master Planning Committee. 3 June 2002.

⁶⁶ ibid. (*Design Guidelines for the Eastern Waterfront*)

(Thames), Fore Street, India Street, Hancock; these are the streets of the chosen site.

Other primary streets include Middle and Franklin. Guidelines and/or restrictions that are affected by the Eastern Waterfront Redevelopment Plan are as follows: ⁶⁷

- Architecture: New construction should represent the historic character of Portland's waterfront, while representing the best elements of contemporary design. It should be human scaled architecture that complements a pedestrian environment.
- <u>Building Composition</u>: Buildings should be placed at the sidewalk with their primary entrances oriented to the street. Building Height: 3 to 5 Stories.
- Materials: Should reflect historic character of Portland's waterfront, straightforward use of natural and traditional materials in encouraged; brick, stone, high quality metals, cast concrete, wood, and glass work best with the test of time in terms of changing community taste and withstanding the maritime climate.

Current Conditions - There are two buildings on the site; one is a water pump station that is owned by the City of Portland, the other is a historic property that was formerly the Grand Trunk Railway Freight Station, a remembrance of Portland's Railroad history. The site is not included within the historical district of Portland that is registered with National Register of Historic Places. This site was home to a blacksmithing company in 1924, Figure 47. The site is currently classified as B3 Zoning, which is Downtown Business, and is vacant.

The adjacent buildings are mostly commercial. There are restaurants and small shops, as well as office buildings. There is a large parking garage as well as a parking lot adjacent to the site. This area of Portland is less traveled and not as pedestrian friendly as the more western sides of Portland are, such as the shopping and dining districts. The

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⁶⁷ Design Guidelines for the Eastern Waterfront. The Waterfront Development and Master Planning Committee. 3 June 2002.

⁶⁸ *Portland Maine Assessor Office Website*. 2012. Web. 22 October 2012. www.portlandmaine.gov/assessors/assessors.asp

overall character of the neighborhood is that of light commercial and residential. Visiting the site you see many people walking by the site, making their way to the Old Port or going home to the East End. Currently, the site has potential to act as a connection hub for the city; a potential that the thesis project builds upon.

The site is near the end of Franklin Arterial which was created in 1967 as part of urban redevelopment. The previously pedestrian and commercial friendly street is now a four lane highway, exclusively for vehicles. Franklin Arterial severed the connection of the East End to other districts of Portland. Vibrant communities and businesses declined, as is the story of so many places destructed in the name Urban Redevelopment. Jane Jacobs writes, "These amputated areas typically developed galloping gangrene"; a fitting description of the fate of the East End. More recently however, the East End has been a location for positive developments and talks of how to revitalize the area. The East End is mostly residential, with a handful of housing projects, and is home to a younger generation of students, artists, young families. The Bayside Neighborhood has the most diverse population is the state, with 197 dwellings representing 21 countries of origin.⁶⁹ A handful of specialty businesses, restaurants, and food co-ops have located in the East End, drawing attention to the area. In 2008 the Ocean Gateway Terminal opened, which now serves as a welcoming place for tourist from cruise ships, however because of the lack of place, tourist go directly from the Ocean gateway to Downtown. The Ocean Gateway is adjacent to coastal side of the site, and the Ocean Gateway parking garage is adjacent to another side of the site.

⁶⁹ Muskie School of Public Service. East Bayside Neighborhood Study. Web. 2009. Date of Access: 06 January 2013. www.ci.portland.me.us/planning/603finalreport.pdf

Phases- In 2012 a Master's of Architecture Student from the University of Massachusetts Amherst, Ruthanne Harrison, developed strategies of how to redevelop Franklin Arterial so that it reconnects East End to the downtown District of Portland. The proposal included community gardens, a marketplace, public art, scaling Franklin Arterial back down to a two lane street as it was before 1967, introducing pedestrian and bike paths. I am treating the strategies of Harrison's thesis as a phase I, and where this thesis left off, my thesis begins as phase II. The goal for phase II is to now take the newly developed physical connection of Franklin Arterial and develop a public area for community in the East End.



Figure 46: Portland City Districts. Orange = Arts. Teal = Downtown "Old Port". Purple = East End (Image edited by the author)

⁷⁰ Harrison, Ruthanne. *Transformation of Urban Public Space*. Amherst, Mass: University of Massachusetts Amherst, 2012.



Figure 47: Historical Building on the Site (mainememory.net)



Figure 48: Site and Surroundings (Kathryn Wetherbee)



Figure 49: Photo Context of the Site (Kathryn Wetherbee)

CHAPTER 5

THESIS PROJECT

This chapter outlines the design of the thesis project: concept design, process work, and final designs.



Figure 50: View of Site and Project (Kathryn Wetherbee)

5.1 Overview

The project is located on the coast of Portland, Maine in a urban area of the East End. The goal for this project is to create a public area that becomes a hub of activity and connection to the city. A framework for expression in the public space was created by designing a suspended footpath: a structure and walkway that defines the site, connects to the ocean, and creates public space. Within the large suspension footpath there are smaller interventions: movable carts that can be manipulated by people to define space and moved in various arrangements to change the program of the urban public space. Three primary types of programs are designed: performance, market, and gathering. A goal for the project is for the architecture to be flexible as to inspire other types of programs for the space.

5.2 Concept Modeling and Forms

The preliminary design work began with conceptual modeling of joinery and materiality along with discovering various ways to manipulate materials, create forms, allow for adjustability, and to discover what types of movements were involved (Figure 51). Connections of the site and city were also explored early in the design phase through site mapping, photography, and wire to show connections (Figure 52). These concept investigations were influential in the final design of a new public urban space.

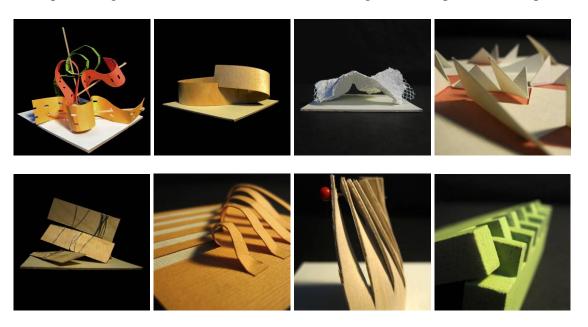


Figure 51: Concept Study Models
Upper left to lower right: 1) paper+wooden rods 2) water soaked wood veneer 3) plaster on wire mesh 4) paper 5) wood veneer +wire 6) paper 7) wood veneer + pin 8) foam.

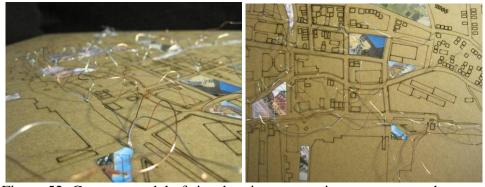


Figure 52: Concept model of site showing connections, context, and streets.

5.3 Site Plan and City Context

The site is an urban setting that can benefit from a new type of public space. The site has many potential connections that can be linked such as, community and residents, tourists and the city, trails to the East End, and people to the ocean and working waterfront. This site has the potential to act as a gateway to the city and the ocean, bridge the divide between the East End and Downtown, and become a desirable public place for the community. The design proposes to eliminate vehicular traffic from Thames Street, which is currently a dead end street. This allows for the expansion of a public area to the working waterfront without the street severing the connection for pedestrians.

While continuing to explore and define the site, the design of the public space began with the interest in rail design and the rail history of the site. A circular turn around as a connection and pause point for rail tracks inspired the initial form. This circular form was then manipulated to create the suspended footpath, that defines the site, connects to the ocean, and creates public space (Figure 53). Figure 54 shows a conceptual diagram of the form making and Figure 55 shows the final design site plan.

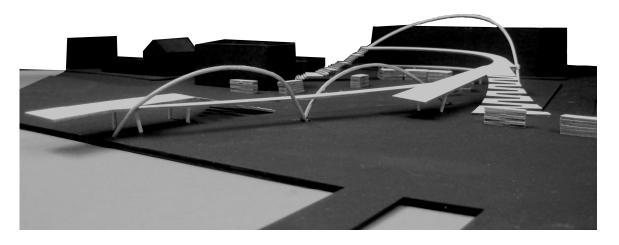


Figure 53: Final model of project and site

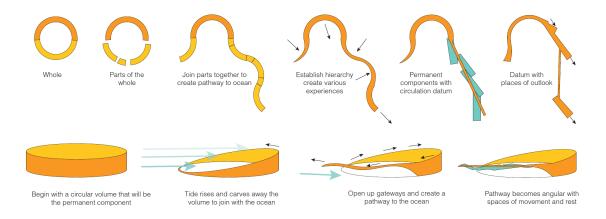


Figure 54: Diagrams of form making



Figure 55: Site Plan

5.4 The Suspended Walkway

The suspended walkway is a permanent architectural gesture on the site. The walkway has three main entry/exit points: India Street, East End, and the central site. Two of these entries are fully accessible by integrating the design of ramps, stairs, and seating. (India Street is not handicap accessible). The highest point of the walkway is an elevation of 35 feet that parallels Fore Street and allows for views to the public space below and to Portland Harbor. From the 35 foot elevation the walkway slowly descends back down, either to stairs coming out by India Street, or slowly descending to two outlooks; one overlooking the working waterfront, the other overlooking and connecting to the ocean. The walkway is suspended by pre-stressed cables and steel beams, with additional columns supports when needed. The material of the walkway is IPE wood which is durable in salt water conditions and is consistent with a desirable material defined by the City of Portland.⁷¹ Additionally, there is an exterior fabric skin that envelopes parts of the walkway that serves as a temporary means of expression; a skin that can be used for performances, or can be lighted to signify an city wide event. The entire public area becomes a framework for expression.



Figure 56: West Elevation of suspended walkway

⁷¹ Design Guidelines for the Eastern Waterfront. The Waterfront Development and Master Planning Committee. 3 June 2002.



Figure 57: Highest Point of Suspended Walkway



Figure 58: View of walkway stairs and site coming from India Street



Figure 59: View from outlook

5.5 Movable Carts

The movable carts are a central design component to the public space, this is where the programs are defined by the public, and where people have control over their built environment and the expression of it. Each cart is designed to be moved by five to ten people on casters. It is intentional that each cart takes multiple people to move, because the carts are what defines the space and program, and it should take many people to influence the public space. Each cart section is 10 ft. x 10 ft., length 23 ft., and with a square footage is approximately 230 ft². Each cart is a unit that can be used as an individual, or pushed together to become a collective unit. An example of the collective unit is a stage component. Three types of carts designed are:

- Panel Cart: panels that spin and slide which can enclose a cart or open it to the public. Panels can showcase art, ideas, information, and be used as ways of expressing.
- Screen Cart: designed to allow for various experiences within a cart, a person can move a screen to let more light in, or to be protected by a coastal breeze. The skins themselves are designed with expressive patterns.
- Cable Cart: can be clothed with textiles and other forms of expression to indentify a cart or idea. The cable carts also have designed furniture designs such as a chair that can be spun to create a table.

This thesis proposed three designs for carts, however, it is also proposed that these carts can be designed by artists, architects, and community members all to add expression to the public place (Figure 60).

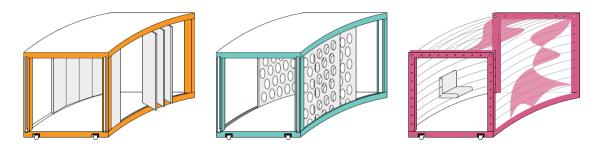


Figure 60: Movable Carts: Panels, Screens, Cables.



Figure 61: View of Panel Cart being used for selling flowers

5.6 Changing Programs

The three changing programs that incorporate the suspended walkway and the movable carts are:

- Performance: where the carts are moved to create a stage, demonstrations can happen here, protests, concerts, and plays. The suspended walkway has a stage component, 12 feet above ground level. This stage connects with the carts to form a larger performance area.
- Market: where the public place has a more defined circulation for events such as art walks, farmers markets, small festivals. This arrangement promotes the local community.
- Gather: a design that will allow for any type of arrangement, that the public could use. For Example a few carts together to create a small meeting place, while at the same time there is a small market or performance.

Overall the programs and iterations of the designs allow for small and large gatherings, planned and spontaneous events, all shaped by people.

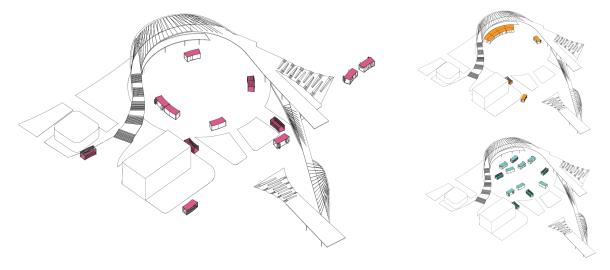


Figure 62: Program Variations (Pink = Gather, Orange = Performance, Blue = Market)

CHAPTER 6

CONCLUSION

The hope of expression through architecture and a new way of experiencing public space inspired this thesis from beginning to end. Implementing architectural strategies that are inspired by garment design, allows for a new way of envisioning public space. A place where people physically create the spaces around them through architectural manipulation and expression of ideas, art and performance. The canvas of this thesis was the city, and the rich potential of urban areas. Author David Harvey writes:

"then the question of what kind of city we want cannot be divorce from the question of what kind of people we want to be, what kinds of social relations we seek, what relations to nature we cherish, what style of daily life we desire, what kinds of technologies we deem appropriate, what aesthetic values we hold. The right to the city is, therefore, far more than a right of individual access to the resources that the city embodies: it is a right to change ourselves by changing the city more after our heat's desires. It is, moreover a collective rather than an individual right since changing the city inevitable depends upon the exercise of a collective power over the processes of urbanization. The freedom to make and remake ourselves and our cities is, I want to argue, one of the most precious yet most neglected of our human rights". 72

This idea of making and remaking ourselves and our cities has inspired the architecture and program of this project. A place where people gather, ideas are spread, and

⁷² Harvey, David. *The Right to the City*. 2008.

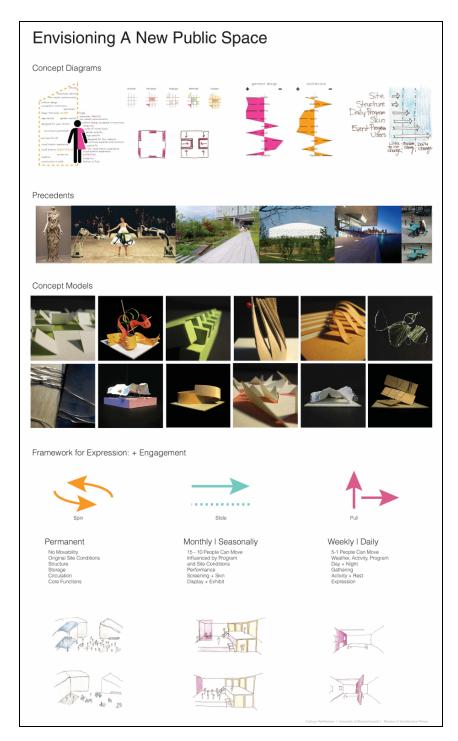
community connections are made. Whether it is a silent gathering, whispers of people, thoughts of individuals, performances of a group, or protests of many, the architecture can create a framework for these types of expression and can connect people and the city.

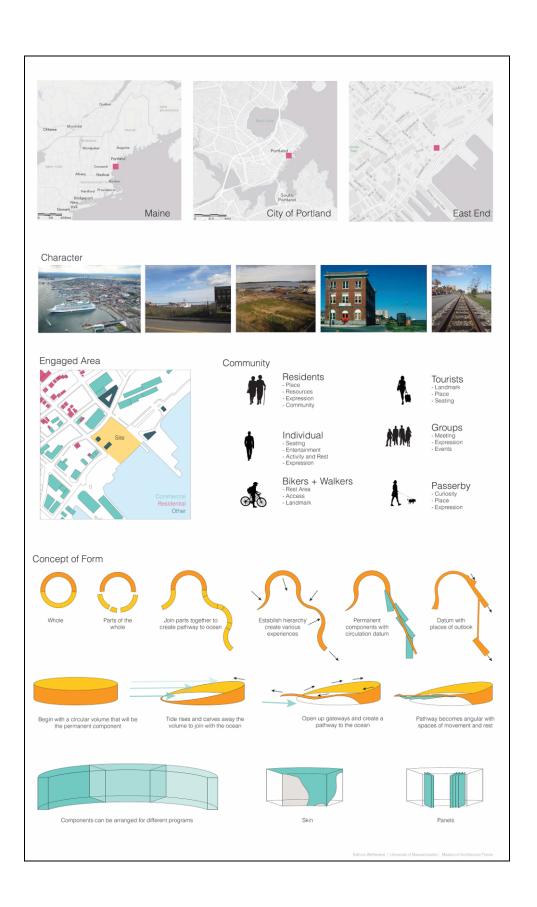
By creating a framework for expression in a urban public setting, people are able to communicate through architecture by changing the physical spaces that surround them. Individual expression spurs the connection of people; the connection of people spur the connection of a city; and ultimately a city with meaningful connections, both physical and otherwise, develops a more socially engaged society.

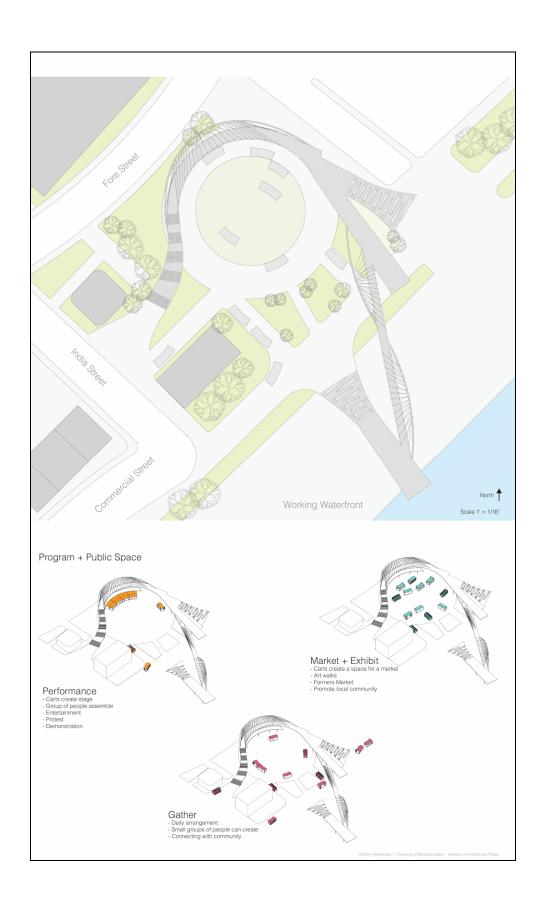
APPENDIX

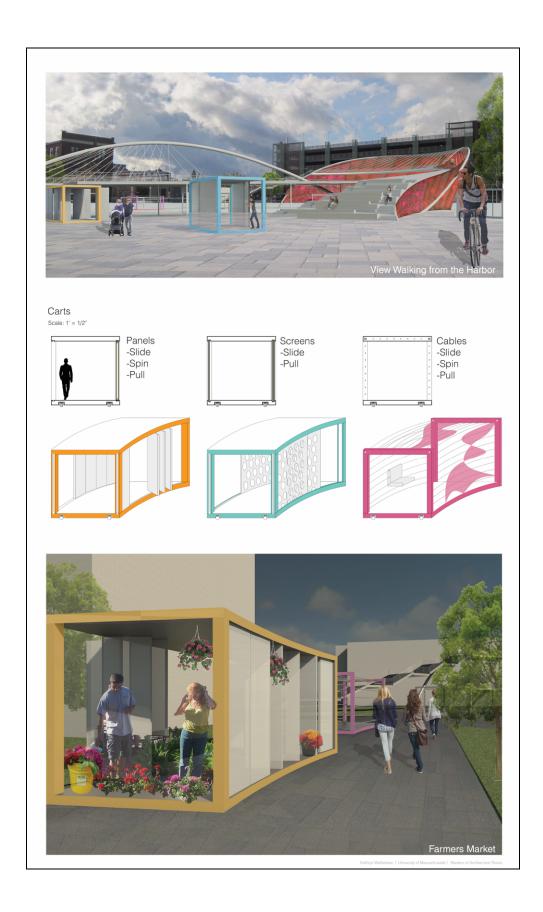
FINAL REVIEW BOARDS

The following six images are the final thesis presentation boards that were presented on April 12, 2013. Actual Size of each board is 36" x 60".













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