Manifesto on the Mechanization of Architecture

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by

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MANIFESTO

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ACKNOWLEDGMENTS

I would like to thank my parents for supporting me through my undergraduate career and influencing me to challenge myself both academically and professionally. I would also like to thank my thesis advisor, Jon Yoder, and thesis defense committee members, Charles Harker, Rui Liu, and Brett Tippey, for consistently challenging me to create the strongest thesis possible.
PREFACE

Part 1:

The following thesis is designed as an architectural manifesto in response to a physical model constructed on the idea of combining the fields of architecture, motorcycle fabrication, and baseball into a singular urban fabric. The word manifesto is derived from the Latin word *manifestus* which means may be laid hold of by the hand.¹ Through time the use of this term has changed, but in today’s architectural field a manifesto is used to convey a design concept and argue its practicality for its inclusion in the professional realm. Often this design concept is expressed through brash statements and bold presentation of the argument at hand, usually controversial or provocative in nature. The overall composition of the architectural manifesto is heavily graphics oriented with only the inclusion of text for bold statements that are also stylized to fit the feel of the document. One of the most famous and prominent architecture groups in the realm of creating manifestos was Archigram; examples of their work in architectural manifestos are included in the following pages of the Preface.

Walking Cities is a representation of how a city could transform using the ideas and mechanics of space design that was at its time of greatest public interest in the 1960s.\(^2\)

Figure 1: Walking Cities\(^2\)

The Walking Cities Collage helps to represent the use of text in architectural manifestos and how they can build on previous images to convey or emphasize certain information.\(^3\)

Figure 2: Walking Cities Collage\(^2\)


Plug-in City is conveying a design concept that would allow for additional program to be constantly added to a city through the connection to a central infrastructure.\textsuperscript{5}

Figure 3: Plug-in City\textsuperscript{4}

The Plug-in City Section shows graphically the interconnectivity of spaces through the different programs.\textsuperscript{5}

Figure 4: Plug-in City Section\textsuperscript{4}

\textsuperscript{4} Cited: Peter Cook, \textit{Archigram} (New York: Praeger, 1973)
Certain overlays of images or recurring themes help to emphasize the intended audience for the architectural form; in Figures 5 and 6 images of average cars and families were used to represent the architecture as a solution for the everyday person’s home. 

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Instant City focuses on the use of technology to connect several different ideas into one metropolis; much like how the three main design concepts, as seen on the first page of the manifesto chapter, relate to one another in the formation of a singular urban fabric.

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Part 2:

After studying architectural manifestos, as described in Part 1 of the Preface, one aspect in design seemed to be missing. That missing aspect is the physical manifestation of the idea. Many of the early manifestos are textually or graphically driven with the concept being able to relate to the actual construction of a design, but very few actually ventured into the realm of creating the mock-up. This condition is what makes this thesis so intriguing because not only are the manifesto’s concepts and ideas portrayed in a physical model, but the entire manifesto creation stemmed in response to how to represent the ideas and lessons learned from the creation of the physical model. The fabrication of the physical model was a year-long experience and the construction process of it is documented in the following pages.
The construction of the physical model started with the fabrication of the base through welding. This step in the construction process was the most time consuming and difficult. One of the main factors for utilizing welding techniques in the model was to replicate the processes used by fabricators in all of the three previously described fields.
After the fabrication of the base of the model, additional massing was added to represent programmable elements of the urban fabric and their interconnected relationship in the urban fabric. The physical model was completed when the accumulation of multiple additions of massing and activation of space through varying materials were finished.

Figure 16: Model Construction 8

Figure 17: Model Construction 9

Figure 18: Model Construction 10

Figure 19: Model Construction 11

Figure 20: Model Construction 12
Figure 21: Final Model 1

Figure 22: Final Model 2
The mechanization of architecture is the determinant of innovation.
The manifesto is a design response to interests in the fields of architecture, motorcycle fabrication, and baseball that resulted in the construction of a physical model; later to be activated diagrammatically. Baseball is becoming a secondary sport to football in the United States because it has refused to adapt to changing times. Today spectators want constant action and, conversely, the time between plays and pitches in baseball keeps the game at a very slow pace. It is time for baseball to utilize technology and architectural advancements to alter the game in ways so that spectators can receive what they demand; close proximity to the playing field and a visual connection to the urban setting surrounding the stadium.

The main design program of the mechanized model is a baseball stadium that is directly altered by its surrounding architectural context. The integration betters the game and allows for baseball to remain America’s pastime instead of just a game of a past time. The base of the model is cherry wood and the foundation of the design consists of welded steel.

Figure 1: Rotary Mechanics
Figure 2: Program Connections

Programs may have a set of tangible boundaries in the legal sense, but no program should segregate space from another program and should be a series of overlapping layers.

Materiality
A- 1/16" Super-grey Chip
- 1/8" Acrylic
B- 1/8" Hardboard
- Steel Reinforcing
- 1/8" Acrylic
C- 2" D. Steel Pipe
- 1/4" Copper Tubing
D- 1/8" Hardboard
- 1/8" + 1/4" Dowel

As long as both programs are public or share a common user demographic.
The Pompidou Centre was a good representation of how mechanics in a building could be utilized for architectural design purposes; but not great.  


The overall building concept for the relationship of spatial conditions in the floor plan are designed to maximize open space in each programmatic area while having accessory components, mechanics, and structure on the periphery. The Pompidou Centre by Richard Rogers and Renzo Piano follows a similar design philosophy, but falls short in the integration of the building with its surroundings. With the structural and circulatory components on the exterior of the building they should be combined to form a connective tissue between buildings that will allow easier access and improve building integration while allowing the public to seek shelter from the rain, the streets, etc. However, the Pompidou Centre was designed as a self-contained system instead of immersing to its context. Additionally, the mechanization of architecture beckons for pedestrians or “outside community” members to enter the interconnected urban fabric and one of the main ways the model does this is through the creation and maximization of view lines into the centerpiece of the city; the baseball stadium. This fascination of entering the urban fabric and its creation through architecture was shared with Rogers and Piano; for they also saw the Pompidou Centre as a place or destination versus just a building. Cited: Jeremy Melvin, *Richard Rogers Inside Out* (London, England: Royal Academy of Arts, 2013), pp. 25-32
The integration of public space and vegetated areas creates design challenges that push the boundaries of architecture. Often, it is nearly impossible to use architecture alone to combat design dilemmas that result from dealing with large-scale projects such as urban fabric; additional fields of study should be explored for possible solutions. In this case, motorcycle fabrication techniques were researched for how the urban fabric could be cohesively molded together. Notable scholars, such as Cedric Price, have been well documented that many times a confounding architectural question is best answered by utilizing techniques found in non-architectural fields. Additionally, this cross-referencing of fields allows for a certain flexibility in the building and urban fabric to develop; resulting in the ability for adaptation over time. Cited: Cedric Price, *Theories and Manifestoes of Contemporary Architecture* (West Sussex, England: Wiley-Academy, 2006), p. 217.

Figure 4: Vegetated Void

An urban fabric needs varying levels of density and with that a diversity of materiality. This applies to the diverse material pallet between buildings, but is most important in regards to differentiating low and high density areas through the integration of vegetation within low density voids.6

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6 The integration of public space and vegetated areas creates design challenges that push the boundaries of architecture. Often it is nearly impossible to use architecture alone to combat design dilemmas that result from dealing with large-scale projects such as an urban fabric; additional fields of study should be explored for possible solutions. In this case, motorcycle fabrication techniques were researched for how the urban fabric could be cohesively molded together. Notable scholars, such as Cedric Price, have been well documented that many times a confounding architectural question is best answered by utilizing techniques found in non-architectural fields. Additionally, this cross-referencing of fields allows for a certain flexibility in the building and urban fabric to develop; resulting in the ability for adaptation over time. Cited: Cedric Price, *Theories and Manifestoes of Contemporary Architecture* (West Sussex, England: Wiley-Academy, 2006), p. 217.
Design is constantly related to or criticized in relationship to previous projects, but still tends to slowly evolve. A lot of architecture is designed within a certain parameter already established, and when it breaks outside of these parameters it is often ridiculed. The real question is why do we have a set of rules or standards anyhow? All they do is provide a barrier for intellectual innovation instead of allowing creativity to flow and evolve. Therefore, it is important that at a certain point in the design process you say to yourself “Fuck it, design.” because you should not have anything dragging down your design, do what you want and follow what your mind and heart are telling you about what your project should be; for all you know what every outside source is telling you could be a lie. Summarizing Rogers’s quote above, all good architecture will be provocative so the less you constrain your design, the better it will become. Cited: Richard Rogers, *Theories and Manifestoes of Contemporary Architecture* (West Sussex, England: Wiley-Academy, 2006), pp. 252-253 and quote cited: Marcus Fairs, “The Pompidou Captured the Revolutionary Spirit of 1968” Dezeen Magazine. 26 July 2013. Web. 11 Apr. 2016.
Figure 6: Driving Building Design Sectionally

Sectionally, an urban fabric should point towards its heart.  

90° rotations change view, thought, perspective, but not concept.

8 The interplay of buildings in the urban fabric should suggest movement through their massing and dictate how factors such as daylighting will be attained in its core. Massing should digress towards vegetated areas, but sectionally continuous and connected through the use of variable height vegetation.

9 Alike rotating around a parked motorcycle, viewing an architectural model at each elevation causes the viewer to become aware of new conditions in each view as well as be able to draw on certain aspects that are universal and connect to other aspects of the model. Additionally, certain conjectures can be made after viewing the model 90° at a time that could not be made by simply viewing one aspect of the design. However, through all this mechanized rotation of view the concept remains the same and should be visible and innate from each elevation.
The program, defined in Figure 2, is vague and semi-peculiar for a reason. If the program were laid out explicitly with definition and/or companies in mind the entire building concept would become instantly more rigid and narrow the scope of influence that one might construe in their mind from reading a more generic title. Additionally, as Cedric Price wrote about in his “No-Plan” manifesto, the best program or company to inhabit a space is not known until after years of trial and error and adaptation so it would do the urban fabric an injustice by conforming to a certain company’s design standards when they might not even become the beneficial tenant they so strive to be; so it is best to design for the fluidity of the urban condition instead of compartmentalizing the fabric and designing each piece separately. Cited: Cedric Price, *Theories and Manifestoes of Contemporary Architecture* (West Sussex, England: Wiley-Academy, 2006), pp. 239-240
Figure 8: Publicizing Parks

The ballpark flows seamlessly into the public park.
Not all design is intended to function directly as how it is constructed in a conceptual model; areas of interest are exaggerated to show importance. The Servient Building, location shown in Figure 2, is greatly exaggerated because of its program usage; housing the mechanical systems for the entire urban fabric. The systems are even dually utilized for both mechanical and circulatory purposes. So, as in motorcycle design with the motor and accessory components taking the focus of aesthetics, the Servient Building is enlarged to take more focus when viewing the model as a whole. Additionally, materiality was explored to draw more intrigue to the area and resulted in the usage of copper piping that added a color to an almost completely monotone project.

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11 After investigation of works done by Cedric Price and a biography of his work written by Rem Koolhaas, a realization was made that exaggeration in architectural form can be influential to conveying concept and allow for the architecture to become what it is desired, even though it is meaningfully and purposefully “misrepresented” in drawing form. Cited: Cedric Price, *Re: CP* (Basel, Switzerland, Boston, MA, and Berlin, Germany: Birkhäuser - Publishers for Architecture, 2003), pp. 6-8
Rogers and Piano were wrong. Maybe Pompidou was right in the 80s, but today, they are wrong. In their “Statement” manifesto the team describes their main common factors utilized in the design process for the Pompidou Centre. Many items on this list I am in agreement with, but far too many I am not. They state “No major differentiation in the section and facade..” as one of their common factors and they are wrong in using this parameter of influence in their design. With the mechanics being on the exterior facade of the building it becomes a huge design opportunity to create an interstitial condition between the facade and section that could be utilized to create circulatory paths that are both directly related to the interior conditions and secondary circulation that is designated only for the transportation of people through the urban fabric. Additionally, the segregation in design aesthetic between facade and section allow for a further exaggeration of depth to be used on the skin design. The separation allows for two experiential conditions to be designed because the initial interior sectional space naturally becomes a secondary facade on its own; so why not be able to manipulate it to bring focus to certain aspects while negating lesser important design aesthetics? Rogers and Piano also state that there should be “Maximum exploitation of minimum industrial materials.” The limitation of industrial materials and the lessened variance of them deletes an architectural design condition of aesthetics in both geometric standards (length, width, height, depth) but also in tactile information transferred from building and inhabitant. Finally they state “Skin, structure and services clearly defined” should be a common factor to follow, but if these components are explicitly defined they will lose their ability to adapt to changing conditions in the urban fabric and eliminate their ability to be multidisciplinary to function for more than one building requirement. Cited: Renzo Piano and Richard Rogers, *Theories and Manifestoes of Contemporary Architecture* (West Sussex, England: Wiley-Academy, 2006), pp. 248-249
Change is the one thing that will never change.\textsuperscript{13}

\textsuperscript{13} Change is never new, change is always changing. Change is innovating on an idea or ideal to express it more precisely. For instance, the idea of architecture has changed from medieval times, but also has not. There was no change in the pattern of the requirement of change through time even though ideas have altered from pure form of shelter to sustainable practice and helping to maintain or improve the environment. Cedric Price expresses this condition of change in his “73 Snacks” of architecture and states that the phenomenon for the ability of change to occur is through its retention of a “memory of delight”. Therefore, in means of architecture changing through time, architects may be more concerned about sustainability nowadays, but when designing they still relate the end-goal to that of medieval builders in that they are trying to create a place of shelter and comfortable, inhabitable space. Cited: Cedric Price, \textit{Re: CP} (Basel, Switzerland, Boston, MA, and Berlin, Germany: Birkhäuser - Publishers for Architecture, 2003), p. 86
The “gods” of diagrammatic architecture imaging, Archigram, push the envelope to showcase the beauty of their design. In their design of a pool enclosure for Rod Stewart they completely turn architectural imaging on its head with the incorporation of female models alongside their own model. There is an interplay of beauty where the two different categories of models fight to dominate the image, but concurrently result in increasing the beauty in one another. Cited: Simon Sadler, *Archigram: Architecture without Architecture* (Cambridge, MA and London, England: The MIT Press, 2005), p. 181
The mechanization of architecture is the determinant of innovation.
WORKS CITED


PREFACE

Figure 1: Walking Cities

Figure 2: Walking Cities Collage

Figure 3: Plug-in City

Figure 4: Plug-in City Section

Figure 5: Drive-in Housing Perspective

Figure 6: Drive-in Housing

Figure 7: Instant City Perspective

Figure 8: Instant City


Figures 9-20: Model Construction 1-12

Figure 21-22: Final Model 1-2

- Figures 9-22 from personal thesis model archive.
MANIFESTO

Figure 1: Rotary Mechanics

- Motorcycle Engine Axonometric Drawing from wiringdiagrams21.com

Figure 2: Program Connections

- N/A

Figure 3: Permeable Stadium

- N/A

Figure 4: Vegetated Void

- Silhouette Image of Person Walking from dayasroid.top
- Silhouette Image of Motorcycle from openclipart.org
- Image of Tree from pngimg.com
- Motorcycle Exhaust and Manifold Drawing from mac-motorcycles.com

Figure 5: Vegetated Void: Enlarged

- Image of Tree from pngimg.com

Figure 6: Driving Building Design Sectionally

- Image of Tree from pngimg.com
- Motorcycle Front-view Axonometric Drawing from 3cyl.com

Figure 7: Driving Building Design Sectionally: Enlarged

- Image of Tree from pngimg.com
- Motorcycle Front-view Axonometric Drawing from 3cyl.com

Figure 8: Publicizing Parks

- Image of Tree from pngimg.com
- Image of Shrub from asiatrvl.com
Figure 9: Fibrous Entrance

- N/A

Figure 10: Playing Field Plateaus

- Image of Tree form pngimg.com
- Image of Shrub from asiatrvl.com

Figure 11: Architectural Model