The background of the entire page is a dark gray with a complex, abstract network diagram. This diagram consists of numerous small, light gray circles (nodes) of varying sizes, which are interconnected by a dense web of thin, light gray lines. The nodes are distributed across the page, with some clusters being more dense than others, creating a sense of organic growth and connectivity. The overall effect is a futuristic and technological aesthetic.

SYNTHETIC FUTURISM

EXPLORING THE POSSIBILITIES OF LIMITLESS ARCHITECTURAL GROWTH

HOVAG JOHN KARA-YACOUBIAN

COVER: *SYNTHETIC NETWORKS, 2017*
Hovag John Kara-Yacoubian

SYNTHETIC FUTURISM

EXPLORING THE POSSIBILITIES OF LIMITLESS ARCHITECTURAL CHANGE AND GROWTH

by Hovag John Kara-Yacoubian

Bachelor of Architectural Science, Ryerson University 2015

A thesis presented to

Ryerson University

in partial fulfillment of the requirements for the degree of

Master of Architecture

in the program of

Architecture

Toronto, Ontario, Canada, 2017

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SYNTHETIC FUTURISM

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Hovag John Kara-Yacoubian

Master of Architecture, 2017

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Abstract

Buildings do not have to burst out of the ground with a predetermined identity. They have an inherent need to grow, change and reinvent themselves to reflect the changes among the people and context.

In the ever-changing condition of the context, the design of a building must be conscious of and attuned to the growing needs of society. It cannot assume it is destined for a singular purpose, as instead it is defined by a continuity of growth and reinvention. With the onset of contextual changes, the fleeting moment of a design's conception becomes less significant. In turn, what rises in import is the integration of contingency to allow a design to metabolize the effects of the contextual change and synthesize new solutions within a flexible, absorptive system. Each added component through its relationship with subcomponents and previously existing elements can serve to create diversity, continuity and flexible internal hierarchies between continuous servant and served space. The summation of the Group Form that results from the melding of many parts can allow the building's identity to shift as the individual parts reform and change to form new cohesive identities. By manufacturing the base and set of core components, a radically diverse system can grow beyond the limits of the originating elements, adding malleability to the many comprising identities.

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To Ani, the love of my life

&

To those who look around and see the possibilities

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INTRODUCTION

Synthetic Futurism is meant to assist in repositioning architecture in such a way that its continuous adaptability and capability to reformat its identity becomes tied to the contextual changes of the world around it. Looking toward both practical and theoretical architecture reveals a unique area between spaces where the liminal conditions can deteriorate and help to define the relationships of objects as a whole.

The pursuit of some Modernist methods, framed by Avant Garde and Metabolist thought, leads to an interesting condition wherein the extensive discoveries and transformative social drivers of the time can be taken into account. Understanding can be drawn from the work of writers, designers and philosophers who have taken the time to analyze and find trends in the relationships of the greater context. Architecture, as such, can be attuned to these conditions, and rather than creating one-off limited solutions, a system may be designed to tie together existing projects and components with new contextual relations along with cultural, sociopolitical and economic identities. Though such an endeavour is by no means "future proof", it is perhaps a step in setting up the seed that may develop into architecture which goes beyond the originator's vision.

Buildings such as this would aim to outlive their expiry dates and in turn serve the participants in a more effective manner. There are opportunities to relinquish forced identities and adopt that which the contextual matter of the time has found to be significant. As the magnitude and rapidness of change has increased, so too has the need for more flexible systems. This continually becomes apparent in the ways people communicate, commute and confront their daily lives. By tapping into the various facets of the context, whole new identities and system components can be crafted in order to maintain the momentum and longevity of human advancement. Similar architectural premises have been pursued in history by previous designers and movements. However, the identities of the individual components and collectives, both human and architectural, within the systematized solutions have too often been overridden by the force of the large scale visionary works. It is with this sentiment in mind, one which suggests the importance of hierarchy and heterogeneity in systems, that the approach to previous futuristic work and current ideologies and trends becomes significant in the developing architectural climate. This provides an opportunity to develop impactful contingency based designs which can flexibly grow and integrate the ever-developing contextual condition.

1.0 REFLECTING ON OBSERVATION

The world of today, or rather of the “moment”, is subject to continuous and often radical change. These transformations vary from the mundane to the fantastic. Everything from social interaction, entertainment consumption, economic values and product fabrication are subject to this continuity of change that has become increasingly dominant and accelerated in the contemporary human condition. New means of entertainment and consumption of media facilitate different social interactions and change the means and methods by which people congregate to share, develop and propagate ideas. In reflection to this, the content and knowledge being passed on is constantly in flux, being reinterpreted under continuous development, and as such, the means of expression changes along with it.¹ As an extension of this condition, political personas and interests shift, pushing different agendas on the fronts of the social, economic and physical contexts.

In what should be an era of optimism, ephemeral change and physical transformations, architecture still finds itself in pursuit of one-off utopic conditions. The solutions are the result of designing self-reflective projects based upon one specific design concept, design solution, or in the more traditional framework, a parti. These monumental interventions placed in the context move on to age, deteriorate, and become derelict when their “moment” passes. Why should a project not deliver the promise of growth instead of the promise of demolition? Why should design not be the process for developing a new optimism rather than a fatal determinism? The Modernists, Post-Modernists, Futurists and Metabolists have in a disjunctive way been in pursuit of the similar goals despite basing them upon their own varied optimistic visions.² However despite their best intentions, projects seem to lag behind and become words on the page of an unread book, skimmed over like adverts for products the eye has become numb to. It is at this critical juncture in history where humanity is pushing toward more rapid and substantial changes that it is opportune to adopt a new optimism, of a less vision-based, but more contingently sound future. It is in this climate where the architecture can become a scaffold to prop up the unknown and unstable changes to come, ready to be taken apart and reassembled at a moment’s notice, cognisant of its own physical and philosophical dependence on the contextual conditions.

¹ Varnelis, Kazys. “Network Architecture.” Network culture. Accessed May 04, 2017. http://varnelis.net/network_culture.
² Koolhaas, Rem, and Hans Ulrich. *Project Japan Metabolism Talks*. Köln: Taschen GmbH, 2011.

2.0 CONTEXT

To proceed in realizing the contextual conditions that can drive design toward a Synthetic Futurism or an architecture of limitless change and growth, the historical context must be viewed through a critical lens. The components of the previous movements' and architects' philosophies and ideologies can be picked apart and appropriated in an informal manner wherein they assist in the realization of a non-prescriptive system around which freeform design can grow and reflect the transformative context in which it is placed. Visionary projects are burdened and restrained from growth and development by their greatest strength. The works of the past stand testament to the brilliant thoughts and minds behind them. Yet when the future context in its fluctuating condition hits, it is the abstract methods of their execution that may be licensed out toward developing a system which may in turn support a future where a preconceived vision is not necessarily impressed upon the design.

2.1 Modernism

Modernists such as Louis Kahn and Le Corbusier set a precedent for an industrial method of design while drawing on new philosophies in materials applications and aesthetics of buildings. Much of these component based designs, with modular elements, allowed for buildings to be efficiently assembled, and thus attempted to reconcile architecture with the massive technological and industrial growth the world faced in the wake of the industrialization of world economies.³ Following this, the Postmodern movement – championed by critical minds such as Robert Venturi – came to challenge the notion of the cold and non-contextual image of architecture that many proponents of Modernism had formed as a result of their practices in both material unitization and spatial organization. The Postmodern attempted to bring back context and imagery into the designs of architects.⁴

Despite the best intentions of both movements and their resultant projects filled with cross-germination of ideas, there seemed to be an apparent lack of concern for the future of a project, its constantly changing context, and the influence that is often continually exacted upon it by the architect. These works responded to snapshot moments, producing designs stuck in a moment of their respective historic contexts rather than accounting for the changes to come. These changing conditions were often the results of the work themselves as they sought to impose new ideas, forms of living and political agendas. The architects, in contrast to the nature of their designs, did not build in some degree of contingency for the innumerable possibilities of the onset of time. This was compounded by the injection of their interventions' impact on the site, notably its social and physical context. The use of specific architectural elements, or the lack thereof, does not define a building in its context, but rather it is defined by its ability to communicate with the participants and adapt to their changing everyday needs, both at a macro and micro level. These essential goals were true components of the work of architects who subscribed to both of these ideologies. Louis Kahn's suggestion of serving and served space hierarchies, as well Corbusier's allocation of resources and infrastructure in his city master plans suggested visionary organizational concepts. Both of these ideologies outlived their respective architects, and will go far

³ Scully, Vincent Joseph., and Neil Levine. *Modern architecture and other essays*. Princeton, NJ: Princeton University Press, 2005.

⁴ Venturi, Robert, and Vincent Scully. *Complexity and contradiction in architecture*. 1966.

beyond the expected lifespans of the buildings they have designed.⁴ The question which pursues this spirit of design inquires as to why these shells, designed upon these limitless ideas, should be so limited and finite in their practical use and lifespans. It is here that the “postmodern” criticism arises, stating that elements of the context must be integrated pieces rather than be faced with totalitarian segregation, as they were in much of mainstream Modernism.

By seeing the components as parts of a whole, successful ideas from these two movements can be synthesized into developed schemes which are ready to engage in future opportunities of social and economic change, as well as engage in the growth of the physical condition of the building. Referring back to Kahn’s work and the hierarchical structuring of servant and served spaces, this concept can be extracted and reapplied at a macro scale when dealing with the possibility of an expanding and growing structure. While the levels of interaction will be different relative to a singular project by Kahn, the understanding of function, space and their shared relations is a universal idea which can reinforce reasoning for the placement of future components in the expansion of a design. The value of a unit is not necessarily defined by its individual function. The relationship of that component or element of the design to its adjacent elements, and to the extended system of relations in a building as a whole, truly defines where the unit stands in the hierarchy of the design. This in turn helps to change and characterize how it is deemed to function. As the design changes over time, the internal workings of each unit need to be just as flexible in order to reflexively move into a new roles or attach to new elements avoiding compulsion.

However, in contrast to Kahn, the integration of spatial continuity can be more thoroughly maintained. When looking to Corbusier’s later works, continuity offsets what would otherwise become a disjunctive heterogeneous mess of modules and components in space. With this mentality, he expresses a lightness and fluid unity in design, despite moving from one space to another.⁵ Due to the extensive temporal scope of a project modeled upon a limitless expansion principle, this continuity and internal congruency and spatial connectivity is paramount in order to keep it from becoming disjunct. Thus, by keeping in mind continuity in program relationships and space, a unifying language can be developed that would otherwise not be necessary in one-off projects, where the individuality is what sets apart elements in their compositional context. A fluid reasoning and organization of functional demands being fulfilled can still follow industrialist ideas, while still remaining human and aware of the context.

Figure 1: An illustration of how servant and served spaces hierarchical system can assist in informing the sequencing of growth with continuity

4 Wiseman, Carter, and Louis Isadore Kahn. Louis I. Kahn: beyond time and style: a life in architecture. New York: W.W. Norton & Company, 2007.

5 Naegele, Daniel. “Savoye Space.” Harvard Design Magazine. Accessed May 04, 2017. <http://www.harvarddesignmagazine.org/issues/15/savoye-space>.

2.2 Metabolism

Metabolism has a deep seated connection to the concept of growth in architecture and urbanism, often developing it on massive scales. In alignment with this, there is a fascination in the movement with modular construction and possibilities of organic growth. Kenzo Tange, leading a number of students and colleagues of his, built the Metabolist movement up over the 1960s, with its influence expanding well into the 1970s and resonating with its living members' projects in their contemporary work.⁶ By covering a spread of varying applications and ideologies within the field of architecture, Tange and his colleagues endeavoured to explain and illustrate urban visions of Japan in the aftermath of the wars and bombings from the turn of the century. By exuding socialist theories, as well as mixing in Japanese traditions of beauty and craft, their works quickly became a deviation of those of the Modernists and Avant Garde in the western world.⁷ The beauty therein lies with the different interpretations and relationships the architects and theorists of the movement created with their respective projects and contexts. Kisho Kurokawa's designs, most notably the Nakagin capsule tower, illustrate the root ideologies clearly, while Arata Isozaki and Fumihiko Maki each follow different paths for realizing cultural and structural theories for architecture.⁸

Such internal diversity in a movement, with a cohesive leader and grounded ideology, should be possible and reflective in the creation of an architecture at a much more extensive scale. The multiplicity of interconnected explorations of the Metabolists often only loosely tied back into the physical manifestations of their architecture. Despite this, they persevered to create the worlds which they had originally imagined. The resultant whole of the body of work, both built and unbuilt, reflects the radical change that the introduction of Modernist and industrialist ideas caused in the Japanese social and physical contexts.⁹

The relatively late arrival of intensive industrialization to the Japanese culture caused waves of innovation to allow for the acceleration and unification of small companies. They aimed to in turn develop and bring the country closer to the production levels of other post-industrial nations. Much of these aggregated organizations tried to emulate the results of existing North American and European large scale production facilities. However, instead of the immediate large scale vectors of the West, the Japanese tied together a number of smaller ones to achieve similar results. The movement similarly integrated smaller components and modules with identities to systematically create cohesive wholes with their own overarching images and personas. Despite this, much of Metabolism's realized designs do not necessarily facilitate the long term and organic growth that was a large part of the core philosophy of the movement. Compromising due to existing construction practices, much of the rigidity in formal selection as well as utilized systems, undermines the concepts, methods and spirit used to formulate the initial design. As such, by looking back at elements of their successes and failures, it can be helpful to identify the culturally relevant components and effective design philosophies in their work. These implicit ideas from relatively failed interventions can in turn be used to help define a system that could have the ability to continually reflect the changes in the transforming context.

⁶ Koolhaas, Rem, and Hans Ulrich. *Obirst. Project Japan Metabolism Talks..* Köln: Taschen GmbH, 2011.

⁷ Lin, Zhongjie. "Metabolist Utopias and Their Global Influence." *Journal of Urban History* 42, no. 3 (2016): 604-22. doi:10.1177/0096144216635169.

⁸ Lin, Zhongjie. "Urban structure for the expanding metropolis: kenzo tange's 1960 plan for tokyo." *Journal of Architectural and Planning Research* 24 (2007): 109-24.

⁹ Koolhaas, Rem, and Hans Ulrich. *Obirst. Project Japan Metabolism Talks..* Köln: Taschen GmbH, 2011.

2.3 Megastructure and Group Form

Fumihiko Maki's analytical approach to the practices of Compositional Form, Megastructure and Group Form help reveal how to approach large scale conditions and continuity in architectural growth. By critically reviewing Maki's ideas, there is allowance for a flexible examination of the means and manifestations of continual growth, and as such helps to identify its relationships in the spirit of the Metabolist movement. Maki understands that the interconnectedness of design elements relies not just on the rigid skeleton structure that Megastructure sets in place, but also on the continuity of a more natural expansion along axial elements such as roads.¹⁰ He states that these conditions generate the axis for linear villages in Japan wherein multiple similar conditions, using variations of vernacular design language, create clustered cohesion in their grouped forms. By applying his identified practice of Group Form to modular design, there are also opportunities to metabolize and reintegrate the isolationist Modernist forms and programs into the greater context. It can therefore be posited that architectural design can in turn be used to reunite and reinvigorate the incoherent urban form. Acting along these lines, the work of Arata Isozaki ties in archaic ruins in his drawings with simplified new Modernist forms to create mixed, but intuitively complete architectural imagery. What all of the large scale interventions designed at this time shared was a mutual interest in organizing and breaking down extensive spans and volumes of space. However, either their homogeneity of formulation or complexity of design often became their weak point. This would regularly go hand in hand with the construction and prolonged development of such projects in the physical plane being highly unfeasible. Regardless, each design projected the strong social commentary and vision it originated from, often being cognisant of more than one perspective, and offering deeper insight into what it meant to partake in the proposed constructs.

Maki systematically interprets Compositional Form (the traditional urban context), Megastructure (the traditional large scale building) and Group Form (shared languages in close proximity).¹¹ The abstraction and de-contextualization of the first two forms of building organization and relationships is what tends to produce the skyscrapers and institutional projects typically recognized as iconic architecture. Despite the best intentions, much of the Avant Garde's work fell into these categories, especially the proposals of Buckminster Fuller in the context of Toronto in the 1960's.¹² Maki recognizes the strengths of each mode of organization in its own right, yet it seems there is an inherent appeal of the culture in Group Form, where it is possible his colleague Isozaki, in his pursuit of Japanese identity in Modernism, would most likely have agreed. Megastructure and Compositional Form have a tendency to make a project become a meta piece. This self-referential condition, largely the result of the Modern movement and its functional form-making practices, drives Megastructure to often damage social relations in favour of organizational hierarchy. The dogma in the design that results from the definitive skeletons of Megastructure, and the clear-cut limits of the sites of Compositional Form diminish the ability of the context to enact changes, and for the architecture in turn to receive them and react. It is also important to note the longevity of Group Form, especially in the context of the ancient and medieval cities. As Maki observed, the axis and site inform each other in cyclical process and grow over time into the complex bodies that are recognized as organized settlements, despite their organic and incidentally metabolic natures.¹³

10 Maki, Fumihiko. *Investigations in collective form*. St. Louis: School of Architecture, Washington University, 2004.

11 Maki, Fumihiko. *Investigations in collective form*. St. Louis: School of Architecture, Washington University, 2004.

12 Osbaldeston, Mark. *Unbuilt Toronto: a history of the city that might have been*. Toronto: Dundurn Press, 2008.

13 Maki, Fumihiko. *Investigations in collective form*. St. Louis: School of Architecture, Washington University, 2004.

2.4 Avant Garde Mentality

Armed with the larger scale ideological platform of Megastructure, a handful of western minds, including Cedric Price as well as Peter Cooke and Ron Herron of Archigram, brought about several radical interpretations of similar ideas. Through their designs – varying from Price’s Fun Palace and Potteries Thinkbelt, through to Archigram’s Plug-In City and Walking City – they interpreted the musing possibilities of massive architectural form for the advancement of the urban condition. The Avant Garde wished to impose massive designs, to reflect both the quirks in architectural practice and the crazed societal trends in conflict at the time. The works here are challenged by the overpowering visions that once again take over the architectural expressions, even more so than the Modernist projects as they exude more powerful visual compositions going beyond just form-making geometry to playing with colour and semiotics.¹⁴

Despite the definition of Megastructure including flexibility, and originating from Maki’s work in understanding the relationships of grouped architectural bodies, the overarching rigidity of the designs of the era often permeated deep into the work and were more often defined by sheer scale rather than by the pure spirit that originated the idea. The Avant Garde Megastructural ideas, that Reyner Banham writes about in hindsight, later come into review as dinosaurs, fossils of long lost ideas where the formal response took over the “nuts and bolts” detailing of the work.¹⁵ In his frustration the loss of reality in much of the wanton images of the Megastructuralists become meaningless and even lose Kenzo Tange’s original goal of “spatial harmony within diversity”. As the western counterparts of Metabolists, there are opportunities here to compare and contrast the extensive works varying from Paul Rudolph’s super highway to Yona Friedman and Buckminster Fuller’s space frames – most notably that of La Ville Spatiale and of Project Toronto. It is important to note that the constantly prescribed framework systems did not truly promote diversity; rather, they invaded as masses, constant and continuous in their character and function.¹⁶ One finds at this stage that the relevant ideas which continue to resonate into contemporary work are actually embedded in the intent of the execution, aiming to optimistically solve large scale urban issues with architectural intervention and growing scales, through a conglomeration of the components. By taking these goals and measuring them against current trends, both in the physical and social condition of the urban context, there is a means to move toward a diverse, tentative version of a continuous system of growth, synthesized to give relatively small buildings limitless possibility.

¹⁴ Sadler, Simon. *Archigram: architecture without architecture*. Cambridge, MA: MIT, 2005.

¹⁵ Banham, Reyner. *Megastructure: urban futures of the recent past*. London: Thames and Hudson, 1976.

¹⁶ Friedman, Yael. “Paul Rudolph’s Lower Manhattan Expressway.” *Urban Omnibus*. March 12, 2013. Accessed May 05, 2017. <http://urbanomnibus.net/2010/10/paul-rudolphs-lower-manhattan-expressway/>.

2.5 Fundamentals in Ruin

Arata Isozaki's series of drawings of ruins connect forms from classical architecture and antiquity and integrate them with Modernist components, in order to process the existing context into a cohesive whole, and provide a new, complete vision. Isozaki's work is reflective of his pursuit of Japan-ness and identity in architecture. In his work, he pursues reinterpretation and reinterpretability of buildings, especially prevalent in the drawing series of ruins. Each piece of found architecture can be seen as a discarded, decrepit piece of history, or it can be reevaluated and be reapplied in a new context. It is this type of optimism and determination is required to push forward a functional system wherein the found elements begin as fabricated components. As the identity of the building begins to shift, there are opportunities to deconstruct and find the ruins in the design and begin to re-ppropriate these components in a new context. Identity is therefore not attached to the object, but rather associated with it, as it interacts with the context.¹⁷ As the context shifts, the composition of the object may in turn do the same. The composite whole of these pieces can join to develop a cohesive, complete identity. Much like Friedman, Isozaki's designs were scaffolded onto existing elements of the urban fabric and as such, the found components became a part of the mixed character of the final architectural product. Taking this a step further, it is possible to use fabricated components with found conditions, and as their shift in identity occurs, these fabricated elements can be removed, relocated or added to the system, to extend identity into a found condition.

2.6 Soleri's Experiments

Paolo Soleri remains an outlier even among the Western world's Avant Garde. His pursuit of social change through architectural experimentation lead to the creation of what could potentially have been self-sustaining communities.¹⁸ Arco Santi, Cosanti and his innumerable unrealized projects followed a singular, major theme. This pursuit of social change, and how humanity functions by means of creating architectural experiments, drove through his lifetime.¹⁸ However, following his death, the work came to a grinding halt with no one to champion the ideology of experimentation. As such, Soleri's work has quickly regressed to becoming another form of exclusively iconic architecture built around a culture. An inverse approach, where one could consider architectural experimentation as response to social change, may also function well, and perhaps outlive the format Soleri created. Though this may seem to be a pedagogical interplay on Soleri's original ideology, it may still yield largely relevant results, while still remaining impactful over long periods of time.

If the context were to begin to drive the social change, then the architecture, rather than being proactive, could be reactive. However, in order to be reactive and reflective of the context, there must be a proactive system which in turn holds together the architectural experiments. As they respond to needs and deliver functional spaces for the rapidly changing participants' physical requirements, the embedded conditions within the urban fabric can also reflect the sociopolitical changes continuing to define a vibrant and well connected contextual project.

¹⁷ Isozaki, Arata. *Japan-ness in architecture*. Cambridge, MA: MIT, 2006.

¹⁸ Soleri, Paolo, Jeff Stein, Youngsoo Kim, and Lissa McCullough. *Lean Linear City: arterial arcology*. Mayer, AZ: Cosanti Press, 2012.

¹⁹ Wall, Donald, and Paolo Soleri. *Visionary cities: the arcology of Paolo Soleri*. New York u.a.: Praeger, 1971.

2.7 The Keys to Synthetic Futurism

As the preliminary foundation of this, the premise of Synthetic Futurism has been established by means of reviewing the historical context from which a system of limitless growth may originate. By extension, there must also be a clearly defined method and reason before a synthesis of these ideas can occur in a freeform system which recognizes the goals of a transforming context.

The summary of pieces:

1. Louis Kahn and Le Corbusier provided the core theory of a system with the application of Kahn's servant and served spaces and Corbusier's fluid continuity. These historically successful design solutions gave rise to spaces which provided the appropriate means for participants to achieve their short term goals, and could facilitate essential social functions in the day to day capacity.
2. Fumihiko Maki set the stage by coining the terms Megastructure, Compositional Form and Group Form for large scale buildings in context. By delving into his contemporaries' works in developing Megastructure, there is an apparent lack of the development of the Group Form which in turn, seems directed and produces more socio-politically flexible results.
3. The Avant Garde reaffirms the suspicions of the Metabolists that Megastructure is a powerful way to express a vision of society. It is this vision, by extension a visual projection, that entraps the design in a moment, discarding its fluidity. This condition creates an effective means of expressing an important narrative to society in a given moment, despite the execution of the design in the physical plane reducing its effectiveness in the long term. In this process it becomes a page in society's history rather than a reflection of the current issues.
4. Finally, Arata Isozaki opens up to the idea of returning to previously used materials and methods in novel ways. He entertains the idea of building upon ruins. This imagery and pursuit of identity entrenches design in the architectural realm between history and contemporary events, lingering between culture and pluralism. The Modernist imagery among antiquated elements promises to delve into an understanding of the persona of the society that has adopted it, and incorporated itself into.

Four essential elements of an architecture of limitless possibility can be taken away from this. First, space needs to function not just in relation to its adjacent spaces, but also among the network of spaces as a whole. Second, the parts of the whole in an organic heterogeneous composition can construct stronger wholes than planned engineered specimens, though they may take longer to reach the same scale. Third, identity can be contextually attached to a design, and does not have to pursue one singular position in the architectural realm as if it was destined for it. Finally, a narrative is not singular or indefinitely attached to an object, rather it can be replaced and transformed, and as such, the object must be malleable to portray new conditions.

3.0 RECOGNITION OF THE CONDITIONS

It is insufficient to know origin of the elements of an idea. To take the knowledge and give it direction is to know why and how a system can succeed in its execution. After delving into the history that architecture must be conscious of in order to be successful in the unknown future of limitless growth, the clinching points of design become apparent. The retrospective view sets the scene to tie into the catalytic moments of change that help to identify the component needs of a design. This is done not only to socially rebel like the Avant Garde, or to pursue functionality like the Modern, but to create a mould-breaking framework that can harbour all types of program and identity, as it becomes a fluid contextual mirror with increasing complexity. Accounting for the temporal context, the occasion to take action should not be missed, following the previously attempted premises, and refining them to attempt another shift in the paradigm of the existing architectural models. The Metabolist and the Avant Garde contemporaries of the Modernist thoughts can be accounted for and extrapolated into the model that differentiates a typical design thinking toward that of a model geared toward continuous change and growth, toward advancement, sustainability and profitability.

3.1 Foucault's Heterotopic Reflections

Foucault, a contemporary of the era of Archigram and the Metabolists, began to develop the idea of Heterotopias. This condition tied with the development of the newer phenomena of Accelerationism and Atemporalism defines how the contemporary world may react to an architecture of limitless expansion, and proves that the stage is set for the next steps of a shift in paradigm toward a contingent design process.

In his writing *Of Other Spaces: Utopias and Heterotopias*, Foucault outlines the conditions of a culture ingrained with Heterotopias. In principle he states that these Heterotopias can be plural, multiple spaces that deal in revealing the interconnected, contrasting and varied facets of society. In his interpretation, these spaces can range from crisis Heterotopias to places of entertainment. The sublime does not necessarily disappear in spaces like this, but rather it is shown for what it is, a cross pollination of ideas, ideologies and incompatible spaces.²⁰ What is most intriguing is the possibility of multiplicities of societal, cultural and political components, coming together and being juxtaposed, measured and transformed by the spaces around a Heterotopia. What could be an unseemly composition of mismatched components may actually tie more strongly to the context, and be more readily flexible, instead of adhering to a singular history or tradition. Globalism shares similar ideas, as it often ends up neutralizing more submissive cultural components in favour of others, and eventually, following the melting pot mentality, ends up assimilating and destroying their identities.²¹

As such, out of time and out of space places, like Heterotopias, can offer opportunities for freeform design to tie back into individual cultural identities. Through their interactions, rather than their historic value, such a system can integrate the identities into a mosaic, allowing for them to form the edges of the design, wherein novel elements can join and become a part of the continuity. A growing process can inherently change the identity, and allow the inner workings and overarching character of the architecture to challenge the unknown future in a stable manner, capitalizing on its own inner instabilities. Foucault's Heterotopias may in their uneasy composites seem dystopian at first glance. However, their success lies in their position of possibility, not manifesting as monumental arrangements, but instead, as enriched multiple assemblages with overlapping and changing meanings.

20 Foucault, Michel, and Jay Miskowicz. "Of Other Spaces." *Diacritics* 16, no. 1 (1986): 22. doi:10.2307/464648.

21 Foucault, Michel, and Jay Miskowicz. "Of Other Spaces." *Diacritics* 16, no. 1 (1986): 22. doi:10.2307/464648.

3.2 Heterotopia in the Construct of Film

Whether through intent or not, many films from the genre of science fiction have reflected upon the ideas of what could be seen as Heterotopias by Foucault. In the interest of delving into the cultural conscience of what could be possibilities of the future imagery of a continuously growing architectural project, a review of several aspects of standout pieces is necessary.

Among these works, there is a trend which reflects not only Heterotopia, but also Accelerationism and Atemporality. They focus on the existing conditions and what impact they are having on the individual and the space around them. As a result, the focus shifts to being present in the condition, and responding to it, rather than inherently remaining fixated on the past events. The beauty in these films is that the contextual conditions of the film are reflected in the spaces and characters, and demonstrates the participating characters' struggles with the changes in these systems. By extension, they help to show that as they change, both character and space reflect on the context and how it was transformed. Often the films will end with a world largely shaken, changed or in doubt. It is the uncertainty of the future that leaves the visual media, even in a fictitious context, unable to design the rest of the world and story. The limitation of being unable to predict a world beyond the existing knowledge, using preplanned space, leads to the possibility of an undesigned Heterotopic condition. As the old and new components of the world collide and reformat to match into each other, these marginal intermediary conditions begin to reflect the societal position people are experiencing in their day to day lives.

With this in mind, a handful of films allow the world around them to play this role in their characters' lives. The settings of these films are filled with token imagery, mixtures of obvious cultural iconography, as well as strange new hybridized forms. These forms help to allow the viewer, or in architecture's case the participant, to suspend their disbelief and contribute to the condition by actually taking the role of the context. This role in return, is projected upon the construct, and changed by its relationships, allowing for it to grow and form beyond what the director has given as a framework.

Though each of these films generally follows the aforementioned archetypes, there is some imagery and ideology ingrained in several that highlight the traits of Heterotopic spaces. The architecture, used to support much of the worlds' settings, is a backdrop that changes constantly, making the world a place that can identify with numerous ideologies. The strength in imagery here transfers over to the viewer, who in turn impresses their vision upon them.

Blade Runner (1982) – Directed by Ridley Scott

Here, the large pyramid-like corporate urban spaces give way to the backdrop of the Ennis house, neon encrusted city streets and the final confrontation in the Bradbury building. The unknown fate of the detective and the androids he is hunting draws into the foreground the question of what it means to be human. With this in mind, the reflections of futuristic fantasy architecture, juxtaposed with well-known buildings used in the film's context, demonstrates a marginal Heterotopia where the crisis of identity is illustrated. In the context, Ridley Scott also masterfully allows the nature of the existing "natural" buildings to be the contrast against the "unnatural" Megastructures which dominate the skyline and attempt to garner their own story in through the film.

Figure 2: Imagery from *Blade Runner*

Brazil (1985) – Directed by Terry Gilliam

Terry Gilliam's dream world acts as a counterplay against the boxlike prefabricated units of the architecture of the film. Once the dry repetitious world collides with the main character's mind's fabrications, the audience feels the projection of how the world is capable of great change. With rebellious figures attempting to constantly make their own manipulations and changes, the conflict escalates all the way to the conclusion of the film. The fantasy and real worlds bounce off of one another to an ending in which the audience can choose to project themselves upon the law abiding reality or the cacophonous fantasy. Regardless, the architecture once more leans toward breaking away from Megastructure and allowing for some unknown end to be a goal for the film's plot to move toward.

Akira (1988) – Directed by Katsuhiro Otomo

In the scenery of *Akira*, large highways and massive infrastructural bodies dominate the base of a high-tech city between which lie the scenes of typical urban conditions in contemporary cities. These conditions are distinctively broken up by illumination. Light becomes a massive contesting element in the story and the architecture reflexively mixes and plays with it throughout the film. These patterns are disrupted by trails of light often left by the characters passing through. The Heterotopic nature of the intersecting worlds of light once more draws to attention that the player of the context – in other words the audience – must interpret and return information to the film in order to pick apart and build an identity for the architecture as a whole. It is this trend that continues through the next few decades that sets the scene for these Japanese films to build up the layers of Heterotopias into what may be melded into the real world and practice of design.

Figure 3: Imagery from *Akira*

Ghost in the shell (1995) / *Ghost in the Shell 2: Innocence* (2004) – Directed by Mamoru Oshii

The early installments of *Ghost in the Shell* deal in similar issues as the *Blade Runner*, following and ruthlessly furthering the exploration of what it means to be human. As a result, the reflection of the fictional Heterotopia of *Ghost in the Shell* is one the most powerful manifestations of this inquiry. Shifting scenes constantly display different architectural characters where the time and place are barely described, and instead it is the context of this world that pulls together numerous cultural identities. Here the architecture is finally free relative to the past projects, as Mamoru Oshii masterfully blends and meshes these elements into each other. Where one element seems to have had a need, another has popped up to supplement it. With futuristic technology lining Gothic buildings and running up against traditional Japanese imagery, the film portrays a veritable expanse of characteristically different architectural imagery, and yet they all ply the same language, somehow united by the artistic direction and framework of the film. The free flowing storytelling language and artwork causes the contextual audience to once again project themselves and their time onto the film. *Ghost in the shell* is perhaps the closest rendering to what a physically manifested Heterotopic architecture may draw upon. As it has been reformatted and recast several times over the course of the franchise's evolution, the backdrops have grown and reflected changes that would otherwise be impossible in the physical realm for architecture, due to their scale and variety.

Figure 4: Imagery from *Ghost in the Shell*

Figure 5: Imagery from *Tekkonkinkreet*

Paprika (2006) – Directed by Satoshi Kon / *Tekkonkinkreet* (2006) – Directed by Michael Arias

The trend of seeking identity continues, and despite the inconsistencies between the synthesis of Modernist techniques with Metaobolist methods, a system can foster growth through the films' recurring themes. They are relevant to this discourse due to their Heterotopic nature. To take away the most from the cacophony of these films' phenomenally layered sets and scenes, the large stills of their scenery is needed. The meticulous layer by layer construction of these backdrops continues the trend set in previous years and leads to perhaps a broader understanding of Heterotopia in its own meta manner. When Piranasian arches frame Japanese shrines sitting adjacent to fairground rides, the contextual viewers eye is wrenched from place to place. However the places where each individual rests may vary, and the discovery of different patterns and pieces in the many layers will lead to the pieces being implicitly disassembled and reassembled. They are in turn re-projected, creating a new object every time the backdrop assails the audience. It is this type of architecture, despite being executed over a longer period of time, that may take into account the constant variability of the context, and perhaps be able to continuously grow in it and exert a structured and haphazardly cohesive identity.

Figure 6: Imagery from *Cloud Atlas*

Cloud Atlas (2012) – Directed by Tom Tykwer, Lana Wachowski, Lilly Wachowski

Finally, Tykwer and the Wachowski sisters incidentally offer up one final piece of the Heterotopia ideology. Their compositional arrangement of six different worlds coming together and intertwining across several timelines under one overarching story is ironically a somewhat inverted view of the process. Under Foucault's view of Heterotopias, these individual worlds would not necessarily be considered such in their own right. However the film as a whole, using the framework of a extensive musical piece, is actually a malleable and pliable Heterotopic story. The amalgamation is often left for the contextual factors, or in other words, the audience, to interpret, similarly seen in the trend of the selection of films previously mentioned. However, rather than implicitly layer the architectural personalities into one world and let the surfaces be balanced by viewership, it allows the context to project itself onto the Heterotopic spaces once more.

Reflecting on Films

The interjection of these films and the time it takes to understand their values and architectural significance may seem tangential at surface level. However, it is what they offer in terms of their unintentional or intentional interpretation of Heterotopias, in addition to their thematic transformations, that offers a foil to architecture and the development of what would be a limitless and growing system. The ongoing challenge each of these films faces is the theme of what it means to be human and what identity is to humanity. In a sense, the amalgamation of these films' contrasting worlds, yet somewhat similar crisis, inadvertently has created a functional whole, a Heterotopia of its own.

It follows that it may be possible to establish relevant and contextually aware architecture comparative to the work in the worlds of the aforementioned films and their approach to human identity. Further, one can see the reflection of what is created in multiple phases of mannerist exploration, actually develops as each new addition projects onto it a different mannerism. The many aspects of the whole generate a fluidity, and create duplicitous footing for those who wish to entrench themselves. What is constructed, following this philosophy and example, thus needs to be a truthful architectural system, projecting a framework that can reflect the transformative context and grow and reform as people, cities and cultures do, at varying scales and paces. Foucault's mixing of ideas and marginal identities, instead of liminal components, can be synthesized into the overarching cultural, physical and political contexts of an architectural project, and in turn projected in its physical manifestations, and their replacement, reformation and reuse over time. Old and new do not function as relevant terms in such a system, but rather there is only contextual differentiation.²² Instead, the elements' and components' focus is on the chaotic whole and how the people partake

22 Isozaki, Arata. *Japan-ness in architecture*. Cambridge, MA: MIT, 2006.

in it. This relates strongly to how the greater metropolis ties back into the results of the clad framework.

3.3 Aspect-to-Aspect

In his critically acclaimed piece of writing, *Understanding Comics*, Scott McCloud helps to demonstrate means of expressing the multi-faceted components of the medium. These narratives are disjunctive and broken into components labeled as frames, yet they produce strong sensations of an overarching continuity when grouped together. The two points McCloud describes that are most relevant to the development of an architectural Heterotopia are the approaches of “moment-to-moment” and “aspect-to-aspect.” McCloud reveals that “aspect-to-aspect” can build visual connections and relationships within the overarching character of the story by demonstrating it through various elements of what may be seen as one part of an object. Whether it be a city, group of people or abstract imagery, the means of keeping the whole intact is the framework cast earlier in the story. “Moment-to-moment” on the other hand demonstrates relationships between frames chronologically and in a logical sequence. The structuring in this manner requires little in terms of inferable relationships between components as it can easily be judged at surface value, and the arrangement and sequence of the points can only be read in one specific order without losing meaning.²³

These relationships, though once more set in another medium, show the value of an overarching framework as a backdrop for design. As frames are filled in with aspects, or units in the case of an architectural project, they can be symbolically or explicitly reformatted to meet the specific needs of their adjacent collaborating components. Validity is given, as each added piece and interpreted element can, much like the layers of Heterotopia and film, provide reasonable change to the whole body and reflect the contextual upheaval of its time.

Figure 7: The critical integration of context into concept and building will offer an opportunity of new possibilities and contingency development rather than its end of life.

²³ McCloud, Scott. *Understanding comics*. New York: HarperPerennial, 1994.

4.0 TO WHAT END? WHY NOW?

4.1 Atemporality

"We are into an era of decay and repurposing of broken structures, of new social inventions within networks, a world of 'Gothic High-Tech' and 'Favela Chic' (as I've called it), a crooked networked bazaar of history and futurity, rather than a cathedral of history, and a utopia of futurity."

-Bruce Sterling at Transmediale 10

Bruce Sterling coined the term Atemporality to describe society's current condition. Following Foucault and the analyzed films' logic, Atemporality describes the current state of social, cultural and political distress in the urban context.²⁴ The ongoing disregard for history, identity and sequence has produced a societal movement which Kazys Varnelis continually explores as Network Culture.²⁵ The continuous interchange of ideas and responses along vast networks, without beginning nor end, creates analogous conditions wherein he states that people do not feel the need to heavily pursue historic context.²⁶ Rather, it is the shifts in cultural identity that drives the social, political and physical transformations of cities. In its current state, architecture continues to hold to the large permanent construct, and it is with this knowledge that a framework system can be valuable. With a loose framework, current values can be impressed upon it, or removed and mixed heterogeneously into one another. By extending these conditions, this Atemporal status that culture has gone into can be seen as the result of the information overload society has experienced, following the slow regression of concrete Postmodern ideology that existed to challenge the theory-based Modern movement.

Sterling proceeds to further identify the conditions of Atemporality, as he explains that not only have the old master narratives been abandoned, but no replacements have been established. Despite him thinking that there may, in the next decade, be an emergence of such a master narrative, most signs point toward this being an indefinite condition barring a catastrophic collapse of infrastructure.²⁷ Architecture, in its current form, carries a strong tie to the narrative, which in turn, often strongly influences the formal manifestation of the construct. It is due to master narratives, often dictating the immediate realization of an architectural project, that buildings face a homogeneous treatment of spaces and skin. The Atemporal condition cannot abide this, and as such, buildings with watered down personas and decontextualized characters emerge, having cookie cutter systems, exemplified by condominium towers, whose master narrative is often defined wholly by the profitability of the building. In an Atemporal construct, the framework could support multiple expressions in variable manners, where improvements could be made by means of feedback loops and interconnected relationships between components. This possibility, following Foucault's Heterotopias and the application of Group Form and the layers of hierarchy and continuity between components, may set up a fundamentally stable architecture with contingency for the stabilization or radical change of the contextual condition.

24 Sterling, Bruce. "Atemporality for the Creative Artist." *Wired*. February 25, 2010. Accessed May 04, 2017. <https://www.wired.com/2010/02/atemporality-for-the-creative-artist/>.

25 Varnelis, Kazys. "Network Architecture." *Network culture*. Accessed May 04, 2017. http://varnelis.net/network_culture.

26 Varnelis, Kazys. "time. history under atemporality." *Network culture*. Accessed May 04, 2017. http://varnelis.net/network_culture/1_time_history_under_atemporality.

27 Varnelis, Kazys. "On atemporality." *On atemporality*. Accessed May 04, 2017. http://varnelis.net/blog/on_atemporality.

4.2 Into Woods' *Slow Manifesto* & *Political Machines*

Lebbeus Woods in 2009 asserted the summation of such architectural endeavors in his *Slow Manifesto*. It is around this time that the matters revolving around Atemporality were just emerging from the increasing concern from several fronts. Woods similarly highlights the need to respond to these new social and physical conditions that have emerged and begun to take hold in the urban environment. Several months later, he expanded upon these ideas with the addition of *Political Machines*.²⁸ Over the course of these two forays on the topic, he examines and expresses the concerns of the unrepresented and weaker members of society, and the power architecture can have to express and reflect the new and changing needs of the people it serves day to day. *Slow Manifesto* describes,

“... [an] architecture seeking persistence in a world of the eternally perishing, itself giving way to the necessity of its moment—architecture writhing, twisted, rising, and pinioned to the uncertain moment, but not martyred, or sentimental, or pathetic, the coldness of its surfaces resisting all comfort—architecture that moves, slowly or quickly, delicately or violently, resisting the false assurance of stability—architecture that comforts, but only those who ask for no comfort...”

Though he continues to describe several more aspects of such an architecture, it is from this excerpt that one can finally extrapolate the conditions truly needed to achieve an architecture with a recombinant system wherein the evolving design can pull all of the pieces together within the social, physical and political contexts and reflect the transformations of each over a prolonged period of time.²⁹

Figure 8: As a project intensifies, it can expand and connect further with other components that are added in, on an as-needed basis

²⁸ Woods, Lebbeus, and Clare Jacobson. *Slow manifesto*: Lebbeus Woods blog. New York: Princeton Architectural Press, 2015.

²⁹ Woods, Lebbeus, Michael Menser, and Aleksandra Wagner. *Lebbeus Woods: radical reconstruction*. New York: Princeton Architectural Press, 1997.

5.0 THE NEW OPTIMISM OF THE UNCERTAIN FUTURE

5.1 *Bridging the Time Gap*

Even with all of the pieces in place, the architect lacks the ability to predict the future. However, this does not mean a design cannot be prepared to follow the onset of new physical, social, political and economic trends. Contingency is a key element of preparedness and assists in the anticipation of support systems, especially for conditions wherein intelligence gathering may begin to define as significant to society. Historically, architecture in many realms relied on an end to justify the means. In order to fulfill an immediate human want or need, a project would be formulated and executed, and the cycles of human fulfillment in design continuously fostered the growth of the splaying disjunction of the urban environment. Having understood the cause of the Atemporal condition and the means by which it may be remedied, a framework may be devised to catalyze a response to it, and continually grow into the contextual changes that have yet to be determined.

With this in mind, Modernism reached the pinnacle of one track development in their designs. This created immense self-referential bodies, reaching for specific truths which could be fulfilled just by their individual existences or purposes. Metabolists resonated with this meta manner of design thinking, creating individual truths based upon environments in which their theoretical projects often inhabited. Each of the theoretical city projects brought about by Tange and his contemporaries catered largely to one immediacy of the environment which they occupied, specifically dealing with setting a city in a sky, on the water or in an agricultural context.³⁰ Additionally, despite Isozaki often taking issue with his association with the movement, he represents this thinking best when he draws his Modernist forms in the midst of ruined bodies of architecture. Each image is self-fulfilling and entices the individual by solving the immediate problems of the broken bodies visible in the graphic. Each of these Futurist manifestations did not take interest in exercising the synthesis of information and ideology, directed primarily in favour of progress, but rather they achieved fantastic utopic images which did not necessarily tie to the existing social and physical context, let alone the conditions which would emerge within the incoming decades.³¹

30 Lin, Zhongjie. "Metabolist Utopias and Their Global Influence." *Journal of Urban History* 42, no. 3 (2016): 604-22. doi:10.1177/0096144216635169.

31 Doolittle, Robyn. "From great glass pyramids to gigantic Ferris wheels; a history of Toronto waterfront development." *Thestar.com*. August 31, 2011. Accessed May 05, 2017. https://www.thestar.com/news/gta/2011/08/31/from_great_glass_pyramids_to_gigantic_ferris_wheels_a_history_of_toronto_waterfront_development.html.

The goal of these works is often too far reaching, and does not account for the variability of the nature of the world as they work toward them. The obsolescence of the ideas is inherently built into them, as they do not work toward progress, but only an ideal, as set forth by their project goals, or the movement to which they belong. This, being broken down in Atemporal conditions and generated Heterotopia, may begin to mark progress, as defined in part by Frederic Jameson. With this position, architecture may overtake the otherwise utopic ideals of the work of the Modernists and Postmodernists. As a result, there is lack of comprehension that ideologies of the future need proper bridging elements to tie them together, as they will be disjunctive and in flux, undermining the goals of the bodies of work. Instead, they are left inert, as theoretical projects or broken in realization, subject to their eventual dereliction as typical constructs.³² As Woods, Sterling and Varnelis all hinted, the most potential lies in systems of progress, both societal and technological, as well as the acceleration of the most socially beneficial of contemporary agendas and philosophies. These forces can be harnessed and subverted through a freeform design, in order to synthesize a result that strives to achieve more relevant goals revolving around securing a habitable future.

5.2 Accelerationism the Political Economic Vehicle

In the current context, there is a trend which leans toward radical change in economic management. Affixable to both socialist and capitalist styles of management, the Accelerationist Manifesto begins to more specifically outline the contextual conditions that architecture will have to cope with to be able to fundamentally function in the Atemporal conditions of modern society, within the framework of Heterotopias. The Network Societies, which Varnelis continues to explore at the Network Architecture think tank, feed directly into the Accelerationist agenda. As an extension of this, large scale networks are compressed, and human intervention is reduced in favour of increased efficiency and profitability as a whole.³³ This in turn will cause more varied social changes, as the sharing of knowledge through social networks increases. The character of the predominant types of spaces needed for society, and even their archetypes, may shift broadly. This is only one of numerous possibilities. As a result the contingency built into a system will need to be able to act as a scaffolding to numerous known and unknown conditions in order to functionally reflect the transient conditions.

Nick Srnicek and Alex Williams outlined in *Inventing the Future* ideas in line with core philosophies of Accelerationism. The suggestion of an approach of full automation, Accelerationist politics and the transformation of modern capitalist society can help to inform the onset of a new synthetic generation of architectural design. Though their interpretation is fraught with leftist bias, the intent is to look forward into a better, functional future. Following the Accelerationist ideology, they aim to increase the pace of productivity and overall efficiency, in order to free up people to better pursue advancement either societal or technological.³⁴ Accelerationism calls for the increase of the latent productive forces that may be, when viewed through the lense of the Atemporal condition, built upon Network Cultures and inducted into existing systems at varying the levels. It works to empower the development of a rapidly increasing threshold of productivity, instead of adhering to existing practices that work only to keep money in the economy and in the hands of the wealthy. This interjection in the architectural approach is not meant to represent a political position, but rather looks to

³² Woods, Lebbeus. *OneFiveFour*. New York, NY: Princeton Architectural Press, 2011.

³³ Srnicek, Nick, and Alex Williams. "ACCELERATE MANIFESTO for an Accelerationist Politics." *Critical Legal Thinking*. February 08, 2016. Accessed May 04, 2017. <http://criticallegalthinking.com/2013/05/14/accelerate-manifesto-for-an-accelerationist-politics/>.

³⁴ Srnicek, Nick, and Alex Williams. *Inventing the future: postcapitalism and a world without work*. London: Verso, 2016.

the gravitas of the philosophy behind automated practices, and the freedom given to people leaving them to achieve goals.

The increase in speed at which design can evolve, in order for it to be reflective of the social and physical change in the context, can be made possible just by leaving allowances for contingent reformatting and expansion. Accelerationism has worked to integrate and adapt the opportunities granted by modern technological advancements to improve social conditions. Similarly, the development of architectural projection in the urban context can become reflexively responsive, and capitalize on the opportunities of uninhibited productive growth.³⁵

It is within the aforementioned framework's allowances to take an economic policy from the existing context and synthesize it into the system where the architectural construct can produce effective results. The tendencies of trends can be read, just as they are within Accelerationist and Futurist works, and reinterpreted as architectural responses coopted into the larger, free-flowing architecture, formulated to be responsive as a result of the Heterotopia it is poised to produce. The Atemporality is in turn subverted into sequencing a series of evolutions, which, rather than decay and rot the context, will enrich and revitalize it.

5.3 The Other Economic Facet

A stepping stone into the stage of future global politics and human interaction at the contemporary juncture seems to be the concept of UBI (Universal Basic Income). Under UBI, all individuals, regardless of social standing, would be given a right to a fixed income whether they make an active contribution to the progress of society or not. Numerous projects have been undertaken in the European countries, including, but not limited to, Finland, Switzerland, the UK and Canada. The traction of UBI has led to the proposals of varying scopes, all loosely based upon the same ideas as outlined in Srnicek and Williams' book, *Inventing the Future*. These allowances would essentially call for the reduction of a person's daily working hours, increased automation to replace labour, as well as the affordance of higher brackets of profitability on goods, and more skilled job opportunities for the motivated.

This in turn will change the way people live, and similar trends will have to be addressed. As UBI, Full Automation and/or Accelerationism get stronger footholds, peoples' interactions with the goods produced will also shift.³⁶ This can already be seen with custom services and package shipping options for consumers. People are growing accustomed to having things come to them, rather than them going to things. The production increase of localized automation can in fact directly support this, and may become increasingly attractive as it will only require the initial capital investment, and will return cheaper goods locally and sourced with higher profit margins. These promises portend that the inclination of the Atemporal conditions' solutions will tend once again toward the Heterotopic and functionally hierarchical systems' methods. The need for flexibility and adaptability to the increasingly rapidly changing context becomes more and more apparent when tracing the possibilities and anticipation of growth in architecture.

³⁵ Srnicek, Nick, and Alex Williams. *Inventing the future: postcapitalism and a world without work*. London: Verso, 2016.

³⁶ Srnicek, Nick, and Alex Williams. *Inventing the future: postcapitalism and a world without work*. London: Verso, 2016.

At a more local scale, Ontario proposed a pilot UBI project as of November 2016, set to be executed in the spring of 2017. Though it may be a token sum of \$1320 per month per citizen, it sets a precedent for people to work reduced hours. This directly allows them the freedom to pursue personal interests, education and sets them in a social context that is much looser in its structure, compared to the rigid systems of the working class today.³⁷ Finland has already engaged with a pilot which has shown promising results, and seems likely to pursue a long term UBI as of December 2016.³⁸ Similarly in Scotland, the city of Glasgow too is engaged in realizing a fully complete pilot to engage a broader spectrum of citizens in their economic plan. As the economic context shifts, so too will the social and political contexts. These changes in climate will help question contemporary premises, and help adapt to the changing conditions that will eventually come as a result of different social practices associated with UBI and Accelerationist approaches to labour. The trending effects of the fluidity of work and lifestyle forcibly prove architecture's inability to anticipate what form the social structures may take. With the possible need for massive spaces of automated production, as well as the massive scale of a sociopolitical transformation, a systematized design can, in effect, loosely inform the manifestation of the architecture, and draw upon the mannerisms of each contextual change. A design where people have access to variety, customizability and the vastly freer social context can support individuals in surviving and settling into a new form of living.³⁹ Failing these trends setting in and driving large scale change, the contingency in the design would allow for it to continue to adapt to more subtle nuances. In this scenario, it would be more inclined to support the existing social system, despite the optimism, driving it in spirit, being primarily given to the anticipation of progression, rather than stagnation.

37 Unnikrishnan, Kesavan. "Ontario proposes basic income of least \$1,320 a month." Digital Journal: A Global Digital Media Network. November 10, 2016. Accessed May 05, 2017. <http://www.digitaljournal.com/news/world/ontario-proposes-a-basic-income-of-least-1-320-for-its-citizens/article/479021>.

38 Agerholm, Harriet. "Finland launches universal basic income pilot of 560 Euros a month." The Independent. January 03, 2017. Accessed May 05, 2017.

<http://www.independent.co.uk/news/world/europe/finland-universal-basic-income-pilot-ubi-560-euros-a-month-helsinki-poverty-unemployment-a7506696.html>.

39 Srnicek, Nick, and Alex Williams. "ACCELERATE MANIFESTO for an Accelerationist Politics." Critical Legal Thinking. February 08, 2016. Accessed May 04, 2017. <http://criticallegalthinking.com/2013/05/14/accelerate-manifesto-for-an-accelerationist-politics/>.

5.4 Synthetically Eclectic Culture

Through the deconstruction and examination of the films, and the nature of their intertwined cultural references, one can expect similar outcomes in the physical realm of the city as it responds to its respective catalysts for change. As a result of the continued development of an architectural project trained toward growth and imagination over time, the Heterotopian and Atemporal elements will draw in the local culture, as well as more far flung identities and elements in the city, as they connect to the site as well as. The result will be not only an amalgamation of the contextual changes, and transformations of the urban fabric reflected in the growing architecture, but also of the numerous multifaceted cultures that make up the mosaic of the greater city where it is situated.⁴⁰

Customizability, and freedom of multiple component integration, can inherently lead to an increase in cultural eclecticism in the physical manifestation of a Synthetic Futurist project. Varied cultural traditions skewed and transformed by Heterotopianism and Atemporality can help represent them in the architectures of a stronger identity, continuously reflective of the contextual transformation in more granular detail. These conditions can be seen in the existing context, where characters of culture bleed into each other, yet keep some definitive traits which are strongly visible in the city of Toronto, where the ideology of a Cultural Mosaic is largely pervasive. These conditions can be replicated by considering that a major control point in a design system, focused upon expansion, is the allotment of space. Beyond this, the persona of the building largely will be reliant on the collective will of the context and increasingly diverse cultural components that begin to become a part of the growing seed project. By eventually tying together the more isolated cultural components, the design can have opportunities to reconnect with major cultural and entertainment components in a city, and present a unity in the heterogeneity of the design.

40 Foucault, Michel, and Jay Miskowicz. "Of Other Spaces." *Diacritics* 16, no. 1 (1986): 22. doi:10.2307/464648.

6.0 SYNTHETIC FUTURISM

6.1 Synthetica

Having investigated Metabolism, Modernism and elements of the aftershocks from Postmodernism, it is possible to develop a means of distilling out components of their respective design methods and philosophies into the necessary synthetic method. Framed by Foucault, defined by Sterling and fueled by Varnelis, Srnicek and Williams, the synthetic system of architecture can concern itself with future growth without creating rigid design frameworks that tie down the identity of the construct.

This Synthetic Futurism can be an approach to formulate buildings that can achieve much of the preceding movements' goals in their elements of flexibility, modularity, continuity and growth. However, it will aim to also keep in mind the context of the Atemporal nature of transient cultures, and create the means of encouraging growth, both physically and economically. By tracing the surrounding trends and conditions, and their integration into the process of synthesizing the necessary components for the site, the intent of the framework will be to keep pace with the changing context socially, economically, politically and physically.

Since it is impossible to predict what the future may bring in terms of contextual change – let alone the results of an architectural project attempting to accommodate these changes – the building needs to be treated as a malleable object. It can act as a putty that is an ever changing synthesis of its original concept, blended with the forces acting on the object from both its internal and external transforming contexts. As David Ruy brings to light in the context of his *Returning to Strange Objects*, the value of an object does not necessarily lie in the observable properties which it exhibits, but also in the unobservable internalized concepts. This “dark nucleus”, coming from the work of Graham Harman, can offer insight as to what the opportunities are to synthesize a new architecture of resistance and growth.⁴¹ By returning to Ruy's text, one may also note that new objects may be created from the relations between multiple strange objects without exhausting their own qualities. In turn, one may also factor in that everything, including the architect, must be treated as a strange object.⁴² By taking this condition into account and exploring the architectural object as a whole, it can be seen to be a multiplicity comprising of its internal relationships. Harnessing this speculation on the dark nucleus, and designing with contingency in mind, the project, as it grows with the context, can become a manifestation of the changes that may beset a site through the passage of time. Heterotopic tendencies that may arise from this draw the objects' relationships even closer, tying together the identities of components into multiple varying wholes with different scales of interaction. The explicit connections of circulation act as a counterpoint to the implicit connections of program and identity, as well as previous iterations of both. The building, much like Varnelis' Network culture, generates its own internal networks, acting at magnitudes of increasing impact, as the project continues to expand and effectively correlate with the contextual spaces, building physical interventions into them as needed.

This kind of systematic architecture cannot recognize arbitrary borders, but rather, as Foucault would have placed it, would seep into any and all cracks it finds in the urban fabric and seek to strengthen the overarching relationships of the spaces it comes into contact with. This melding of components' responsibilities, as well as the methods of

41 Harman, Graham. Bells and whistles more speculative realism. Winchester: Zero Books, 2013.

42 Harman, Graham. Bells and whistles more speculative realism. Winchester: Zero Books, 2013.

preceding movements, leads to additional process of synthesis, blending them into new identities. This extension of borders is part of the integrated cultural and physical context. In order to fully understand the urban environment, the seed project that gets placed in it will, after achieving a state of critical mass, begin to connect, directly and indirectly, to components in the city. The addition of infrastructure to components associated with living and working will allow for this system to thrive, and, in a fashion, metabolize and more readily incorporate the needs and ideas of the urban context in which it is situated. Both goods and ideas produced as a result of the synthesis can be exported back into the greater context, continuing to provide energy to drive the network supported by the Accelerationist systems that can augment the production of components. The inherent heterogeneity of the building essentially directs it toward a melding of the urban fabric, while remaining cognisant of its varying pieces' identities. It is by this synthetic means that the architecture may develop itself and propagate the system, producing a multifaceted reflection of the possibilities that may come to pass. The architecture can subliminally find the connections that are most important to future growth by acting as a terminal crossroad. By taking this role, it may have a means of synthesizing the necessary components to reflect these findings. In essence, the repeated developments of unitary elements, which may prop up stronger and more unique visual and tectonic imagery, allow for the findings of multiple "dark nuclei" in the project, protecting it from obsolescence and dereliction by means of having multiple redundancies. The synthetic connections of a system with this direction can be reformatted and in turn, return to the focus of a sustainable growth.

Figure 9: The objects comprising of the building in turn form a larger object with its own dark nucleus. As time progresses and uncertainty increases, the deeper meaning and nucleus may be revealed, and in turn, the new opportunities for a design.

6.2 Intelligence Gathering

In order to begin to accommodate issues outside of the means of the architectural system of design, there must be a contingent commitment to the gathering of intelligence, and subsequent designing by intelligence, when new components are added or required. These processes relates back to Michael Speaks' *Intelligence After Theory*, wherein he outlines that a practice's survivability and success is based upon its ability to innovate and react to solutions that do not necessitate it being based solely upon a static idea. A repository of knowledge and methods can be developed in order to help combat issues and develop appropriate solutions relative to the contextual conditions a practice would find itself in.⁴³ By taking this idea and escalating it further into the realm of design, a project could identify trends and begin to account for the upcoming conditions, undermining what may, in the first place, have been accepted as an absolute truth in terms of the program, image or construction of a building.

Impacted directly by this constant change, technology rapidly changes building techniques and materials to help them evolve to better suit the scenarios in which they are applied. With this in mind, integrating components in a building, and allowing those to have multiple purposes or reformatable systems, can drive change and growth. As one element transforms, it will have a direct or indirect impact on another, and as such the collective whole can heterogeneously change. The ensuing path can be referred to once more as a crossroads, and by branching, it can anticipate jumps from one variable to another. As large quantities of collective intelligence form, the possibilities of following numerous options over a long period becomes increasingly probable for the architectural project. Over a series of interventions, the assembled framework will become a unique project, directly reflective of its hidden potential embedded in its conception, and the impacts of the external forces that guided its multistage reformations and extensions. Collecting intelligence before and after each reformation in design, or in other words, the tracing of contextual changes and trends, the design can be innovative and collaborative with components added in the contexts of the urban environment and of the existing constructs.

43 Speaks, Michael. "Intelligence After Theory." *Perspecta* 38 (2006): 101-06.

Case Studies

No one case study, in its totality, exemplifies the conditions that are being pursued and evaluated through the investigation of the existing trends and design thought processes.

However, it is the summation of their relationships as well as the chronology of the projects' developments that helps to identify practices as well as methods that may be conducive to developing a viable systematic approach to continually expanding architecture. The sequential identification of trends, limits as well as successes through the works through the comparison of the direct and indirect relationships founded through relevant movements or approaches, is vital to reflecting back upon the theoretical practices that have been posited.

By collecting these projects' relevant relationships in sequence trends toward fabrication methods, automation and deviation back and forth with Megastructure become apparent. This, in turn, highlights the need for a return to the means by which architecture is expressed and assembled. The value of implementing and evaluating contextual change further helps to identify the exceptions in the design patterns as well as their respective successes and failures. The results can in turn assist in informing the programmatic structuring of what may become the beginning of a project which can, in time implement and synthesize relevant contextual impacts and practices.

The extensive writing analyzing the design against its subservient theory or goals can be found in Appendix B: Case Studies.

Figure 10: Key of relevant themes in case studies surrounding the discourse.

7.0 PROGRAMMING

The essential programmatic requirements and growth processes have been outlined in a map, wherein the core needs and conditions that must be compensated for are left for future interventions to consider. The identity, proximity and specific use of each unit of added space to the seed project will be determined by the designer, charged with the intervention as well as the individual or organization set to occupy it. Further, as the attachment to existing urban components develops, these conditions will become more complex networks, tying back into threshold conditions, infrastructure and adjacent constructs.⁴⁴

The project will rest on a “factory,” divided into 3 primary portions of commercial, warehouse and fabrication. The self-sustained power of these components, and their products, will offset future costs, as well contribute to making the system as self-sufficient as possible, until it begins to tie more strongly into the grid and urban fabric as a whole. Circulation components will later be used to help develop the necessary infrastructure, as well as delineate spatial hierarchies within the overarching system. Units will tie into each other as they grow, as well as to the interstitial components being added, for transferring both utilities and structural loads from one segment of the project to the other.

Figure 11: A network of anticipated program components that may be required for the project over its development.

⁴⁴ Wade, John W. *Architecture, problems and purposes: architectural design as a basic problem-solving process*. New York: Wiley, 1977.

Figure 12: Anticipated growth from original construct, illustrating area within which context will begin to more directly impact development.

Figure 13: Anticipated site for the seed project in the urban context.

7.1 Site Selection

Site selection is justified by the conditions that will benefit from the “mixed use” program, including:

- 1. Access to multiple transportation systems
 - Gardiner Expressway
 - Toronto Railway yards
 - Waterways (boat shipping)
 - Jack Layton Ferry Terminal
 - Union Station
 - Billy Bishop Airport
- 2. Nearby relevant institutions and organizations
 - George Brown College
 - Corus entertainment
 - Pinewood Studios
 - PS Production Services
 - Project 10 Productions
 - Screen Industries Research and Training
 - Cirque du Soleil
 - Showline Studios
 - Fedex Ship Centre
 - Storage Space
- 3. Parks and Green space
 - Sherbourne Common
 - Parliament Square
 - Harbour Square Park
 - Cherry Beach
 - Corktown Common
 - St. James Park
 - Toronto Islands
- 4. Room for growth
 - Large Property with multiple addresses
 - Developing area of the city
 - Not affiliated with new zoning by-law (condominium proposal aims for 15 stories)
 - Companies will bolster continued development of industrial and commercial aspects
 - Urban Park project slated to be built nearby
 - Opportunity to harness multiple sources of power

5. Entertainment / Social Hubs

- St. Lawrence Market
- Rogers Centre
- Esplanade
- Distillery District
- MTCC

5. Demographics

- Generally well educated
- Used to high rise dwelling
- Relatively Young

550 Queens Quay E

The site for the proposal is a large plot approximately 160m x 330m in the Northeastern segment of Toronto Harbour. The strategic positioning of the site allows for ease of growth in the early stages of the project, and a location for infrastructural support as required. The sourcing of materials and export of product is eased by the access to the harbourfront, the Gardiner expressway and the rail yards. Numerous local cultural hubs exist nearby, as well as industrious organizations and college campuses. The ideal site is realized for a platform for the synthesis of the incoming contextual changes within the city, as the site is home to a multiplicity of social and economic conditions allowing for the diversity required to tie into the Atemporal Heteropias. This can be achieved at 550 Queens Quay E through the continual developing of cohesive Group Forms that can reflect the multitude of identities through flexible component assemblies.

Figure 14: At face value the quality of interventions may seem the same, but it is the continuous development and pressure from the context that tests its strength.

7.2 Overarching Functions

The issue in the nature of many programs, at face value, is that they seem to present similar identities. The impact of the intervention on the site, as well as its programming over time, changes the effects of the context on the design and programs, and vice versa. The intent is realized when a continuity is threaded through a project, and over time, it is the resilience of these relationships that is tested, rather than the durability of materials. The Heterotopic nature of allowing freedom of design, utilizing a framework and drawing in numerous program types, tries to find strength in the identity and contextual changes that are a result of the Atemporal conditions of the site. As the changes of the culture and the accelerated agenda of the economy and politics sets in on a site, the strength of the bonds between components, both implicit and explicit, are tested, and, in turn, drawn up to a standard realized by the newly formed context.

It is at this critical moment where the design can either fail and face dereliction of demolition, or thrive on the marginal conditions, and reform with new layouts, relationships and forms. Static relationships will take all of the components down as a whole mass, whereas weak or loosely defined relationships will cause the collapse of a construct as a whole. The continuity of the design and its essential programming may shift, however, it can still bring value to the table in terms of renewed or upgraded uses. A spread of components can change, facing customization or reimagined applications, but it is the ability to remain flexible and retain contextually valid elements that allows for the long term growth and continued reflection on the site.

In accordance to the Accelerationist approach to the progression of contextually shifted social, political and economic norms, the program must push for the increasing impact of a renewed industrial practice in the urban environment. It is with this in mind

that the goals of the mixed use components must be defined, as traditional layer cake strategies cannot exist in a flexible component system, striving for the realization of a Group Form.⁴⁵ Despite the underlying will and direction, the addition and subtraction of units and spaces, as well as the continual fluctuations of relationships, as individuals re-tailor their identities to new cultural and social conditions, will make the catalytic programming above the base level less rigid and open to change.

Figure 15: The anticipated development of the program over time. Each stage of the project will help to generate capital for the next.

⁴⁵ Maki, Fumihiko. *Investigations in collective form*. St. Louis: School of Architecture, Washington University, 2004.

Figure 16: Sizing clearance and spatial relationships of the base program blocks

7.3 Fabrication

The 'Megafactory' program block of the base is a prop developed to introduce the idea of Accelerationist automated manufacturing. The reduction of the human fabrication element, and the introduction of broader UBI programs, allows for large areas to be utilized within these parameters, in order to help produce both the custom and standard components of the construct, as well as products for commercial and capital gains. The largely automated facsimile of a factory, or oversized workshop, is the platform required for strong Group Form to propagate over time, and develop into a cohesive community reflective of the contextual change.

7.4 Warehouse

In order to supply the industrial portion of the base with the necessary materials there needs to be, within the base block, a means to continually store, ship and receive a variety of standard and non-standard materials. These materials in turn may manifest in new components and elements that assist in the continued flexible growth and development of the Group Form.

7.5 Rooftop

The footprint of the large base would be used to support the development of the surrounding Group Form. The platform provides a large rooftop, which lends itself both as public space and as a platform from which the continued construction of units on site can begin. This platform can also later serve as a direct connection to extended infrastructure in the city. As the need for more servant spaces arises, in order to keep the fluid continuity of space, the project may bleed into the extended cityscape. In order to support this, the beginnings of circulation corridors are cut in 3 locations. Two wide accessible ramps connect to the roof plane, bisecting the

factory space and allowing for reasonable pedestrian access to the primary development area of the roof top, where the large portion of intensive programming and unit installations take place. The mixed commercial and residential uses of the raised plane can be further supported by two primary horizontal bridging elements that tie the site together in the east west direction, and allow for the open ground plane segments to be crossed over without additional access routes needing to be formed.

7.6 Commercial and Residential

By cutting two pedestrian corridors, the primary blocking of the ground plane can be activated and the edge conditions of the base block can be utilized as auxiliary commercial spaces, pending the completion of units on the upper levels. The applications of these commercial spaces reflexively can generate capital, which can in turn be reinvested into intelligence gathering and development. The data and trends identified in this matter can lead to additional reinvestment in the form of variable commercial spaces, using the components of the Group Form in order to continue the development of the served upper levels. With a freeform and ad hoc manner of adding and removing units along the way, residential components will break up and exploit divergences and changes in the commercial and office cultures of the site. On the west end, the relationships with Chorus and George Brown framing the urban park space can help to additionally foster stronger commercial ties and begin the process of integrating the site with the inputs of the greater urban context, perhaps even providing relevant housing opportunities.

Figure 17: Layout on site highlights access to harbour and roadways.

Figure 19: Layout on site highlights access to harbour and roadways.

Figure 18: Base blocks as reflected on site relative to building heights of adjacent properties and urban infrastructure.

7.7 Extended Urban Networks

As each of the unit-to-unit and servant-to-served relationships reaches a critical mass, it forces further expansion in the system. The addition of new programs and components is possible in the site until a cumulative group of these hierarchical masses reaches its own sustainable upper limit and forces expansion further into the urban context. These extensive servant spaces can delve back into the developing continuity in space and urbanity by latching onto nearby points of interest in the city. In turn, by metabolizing the most appropriate nodes in the city, the organic development of the project can continue to find marginal or mixed conditions to develop the Heterotopic Group Form from the original site resulting from the seed project, as well as at the new node which has been tied into it.

These points of interest share varying levels of interaction, both with each other and with the site. As they are connected by the tissue of the spatial components added through the project, they become recombinant elements of the Group Form at a large. Reflecting on the Atemporal conditions, and returning to partially drawing upon the ideology of Network Culture, the accelerated growth can be increased exponentially. Further, their ability to help bind together the connective tissue of the project by bridging the mixed marginal areas as alternative Heterotopias, the sum total impact increases as some units carry the potential to become locations and staging points for seed projects of their own. Further into the urban timeliness, a satellite site may connect back through the unitized tissue of the group form increasing the area of influence and adaptability of the intervention as a whole. The goal of the seed site is to tie the initial nodes together into a hub wherein they become more readily accessible to future growth. More importantly, they may demonstrate the catalytic nature of a Heterotopic application of Group Form in a free-flowing system. This connection can assist in informing the intelligence gathering processes and in reinterpreting the context and cultural values of different parts of the mosaic of the city into a balanced core.

Figure 20: Elements within the site and city can be mapped, and the vectors of growth may be anticipated.

Figure 21: As the site hits critical mass, the extents of the city and new marginal spaces become the boundaries of the Group Form.

7.8 Megastructure: An Errant Tangent

Through the first iterations of the design process, and largely under the influence of the case studies found in Appendix B, the manifested design solution attempts to resolve, to some extent, the conditions of what future growth may look like at the Queens Quay site. This method logically breaks down the ground plane for vehicular traffic, and attempts to maximize the given floor area for the enclosures of the building. Following this, in order to pragmatically develop the future growth on the site, a large scale skeletal system for circulation, both machine and man, can be installed, then populated with speculative unit compositions.

This approach unfortunately overwrites the intents of the investigation of the Queen's Quay site as a platform from which a Group Form may emerge. It contradicts the goals of garnering the development of Heterotopias in the new Atemporal context. The inherently organic character, as Maki would have deemed necessary, is lost, and the archetypical growth, which would act much like the medieval cities in the original Group Form studies, cannot flourish. A design, if developed by these means, would lead to similar failures and shortcomings that previously unbuilt or struggling projects have experienced. Further, the contextual relationship and freedom of identity through aesthetic would be compromised, as the preinstilled vision of the development would take hold and drive the process of growth on the site.

This Megastructural approach, implementing an immediate reaction to install circulation systems and primary structure, compromises the dissonant harmony that an otherwise flexible growth pattern may provide. The interstitial Heterotopias which may form through marginal spaces are additionally compromised, as all preplanned volumes would have a specified form which they would follow, with prescribed spacing and orientations. It is here where the Avant Garde's and Metabolist's approaches and intentions met similar difficulties, and it is with this issue in mind that the top down approach of Megastructure can be displaced by the bottom up thinking of Group Form. The compositional context of the city cannot harbour such immediately intensive systems, and as a result, it becomes a significant contextual influence in the design, directing it toward slower, more purposeful, and more thought-out interventions, which would increase the project's long term scope. In order to cope with the macro scale, the entire site could be taken out of the equation for a moment, to examine the optimal micro scale which may, instead of a full scale intervention, become one that may grow to occupy it.

Figure 22: The full scale plan on site develops an awareness of the rigidity of Megastructure despite its progression.

Figure 23: A conceptual visualization of the homogeneity found in the Megastructure exploration.

8.0 SYNTHETIC FUTURISM SYSTEMATIZED

In order to ease the propagation of systems designed for continuous growth, some elements may be standardized, based on constant variables of functionality. As such, the essential unit and span has been reduced to a square base of roughly five hundred square feet. The intent here is to roughly define a footprint of a unit, using the basic area requirements of living based upon general usage statistics. This dimensional element can be extruded into an integrated piece of a system. Further, to cope with the eclectic nature a freeform system and to recognize the possibilities of variability in constructs' secondary systems, there is a need to supplement the primary structure. These supplementary systems should be enough to maintain rigidity for ease of construction, but not to the point where they will come to dictate the final form or identity that the addition or change of a unit will project.

The continually changing conditions of the context will require varied magnitudes of intervention on the site, and as such, the variability of unit sizes and their relationships is conceived to allow for various incremental changes and possibilities for spatial additions. Each double story unit has the potential to increase its functionality two-fold by supporting additional floor plates, as well as connect to other units at uneven intervals, while maintaining feasible occupancy spaces.

Figure 24: Skin and structure, though they influence each other, may not necessarily force the other to change. Flexibility is retained.

8.1 Units: Blocks of Space Without Form

Each unit essentially represents the need and occupation of space. The space is defined by the programming which will occupy it, which is in turn defined by the push and pull of the context as a whole. The moment intelligence reveals a Heterotopic possibility, the application of a unit into the occupation of space becomes feasible and begins to reflect the Atemporal conditions of the context in its existing form. The recognition of the fact that each element requires certain allowances for servicing, as well as supporting secondary structures or specialized cladding, leads to the development of the buffer blocks. These components in various orientations carry the responsibility of fulfilling numerous flexible functions, as the system needs it. They target specialized areas as well as assisting in integrating new or custom components. The Accelerationist vehicle for achieving this is further reflected in the additions of more complex components that increase the automation of the building's servicing, while increasing value with new program spaces.

The extended network of units will become a series of clusters and groupings which may in turn, create a positively reinforced Group Form on the site, rather than the traditionally planned Megastructure.

Figure 25: Each unit's function and purpose is defined by the context, as well as its adjacent components. Buffers serve to separate and service larger disparities between units.

8.2 Units: Unit Hybrids versus Super Hybrids

The hierarchical attachment of units is purely based upon the recombinant elements of the program they house. The design anticipates that there are numerous redundancies in sizes of additions. As such, a matrix of three primary sizes illustrates the combinations of spatial configurations and their subsidiary components as the project grows. The diminishing returns of unique spatial configurations can be seen when experimenting with combinations of up to three unit sizes. As the tree progresses, the number of recombinant possibilities is reduced. Despite the reduction in unique space sizes and the possibilities of redundant congruent variations, the combinations can remain infinite. New relationships are in reality defined not just by dimensions, but by the preexisting components that the new addition joins. This chain of program types, materials and identities can continue to indefinitely keep the architecture in line with whatever social or physical changes the context is undergoing, while processing and generating unique identities and unit combinations.

Figure 26: Various hierarchical systems can help to map and define the unit relationships. However, it is their contained identities and programs that creates the true variability beyond redundant combination of unit archetypes.

Embedded deeper within the method of the design system, there are two possibilities of growth systems that can be developed to attend to the growing Group Form of the multi-use project in the urban context. The Component Hybrid and the Super Hybrid each cater to a specific approach, though only the latter can be applied as the dominant system, due to the need for flexibility. The Super Hybrid defines a system in which each unit, much like previous Metabolist and Megastructural projects, comes with all of the same amenities and components oriented and fixed in a similar manner. The blocking and stacking of these individual parts creates a fairly repetitious homogeneous whole, and as such, this system is rejected in favour of the Component Hybrid. As the more favourable of the two systems for providing a framework for Synthetic Futurism to operate in, the Component Hybrid instead chooses to operate only in the realm of spatial values and basic frames. These undefined elements allow for quantifiable spaces to be filled in with mass customized components or with minimal connections. The assembly is largely within the site's parameters, which ideally garners fabricated elements from the factory and the base platform. The diversity of the parts that are used to reach critical mass on servant spaces still allows for some standardization, wherein they can be remobilized or built upon over time, as the contextual shifts occur.

Figure 27: A conceptual comparison of elements following the characterizations of Component and Super Hybrids units.

8.3 Taxonomy: Unit Hierarchy, Assembly and Ruin

Despite the reduction in unique space sizes, the possibilities of variation overtakes the limitations of components produced to mock up the spaces. The combinations of the elements are created by following the direction of continuous expansion and change. With a relatively limited set of components, numerous assemblies are realizable with simple resources. Derived from the same components and reassembled through different types of relationships and goals, the flexibility of the cube is explored and proven valuable, as a variety of formal and cultural expressions is made possible with additional or custom components.

Figure 28: A scale prototype of a unit's primary structural system.

Figure 29: The primary taxonomy of elements to experiment with.

Big House

Figure 30: The Big House design experiment.

As the first attempt at a construct which could be mounted ovetop of the base platform, the Big House reflects upon impacts of blocked out circulation. Further, the hierarchy of spaces is prototyped by expressing it through folding facade systems, which can articulate different types and identities. The limits of addition are found to be largely dependent on the flexibility of the previously existing surface and the adjacent components' sizing. Additional reinforcement is absent, as units are plainly stacked, and lack the ability to have horizontal growth at higher elevations.

Clad Tower

Figure 31: The Clad Tower design experiment.

The Tower begins to explore the idea of secondary structures, and the verticality of the building type predominant in the cityscape. The flexibility that the secondary structure adds allows for a freer cladding. The result is a series of small point connections that can rapidly and simply attach and detach from the system. The Tower's identity could shift at any moment, yet remains a robust construct through the reinforcement of the buffer and circulation blocks. These two elements introduce some rigidity, while the beginnings of a cladding introduce flexibility.

Elevated Plane

Figure 32: The Elevated Plane design experiment.

By locating a series of points on the ground plane, the area of the base plate could be freed up to be maintained as a larger public realm in the future. The base blocks lack the additional support required to build expand vertically as the Clad Tower did. However, new components can be identified and added to increase the structural quality of specific units, in exchange for some spatial configuration compromises. As floor plates are introduced, they mingle interchangeably with walls of adjunct elements, and create negative pockets of public gathering space within the gaps of the units.

Ruin

Figure 33: The Ruin design experiment.

All of the components have continuous value. The demolition process engages more in finding new uses for both the units and added the components, following the ideology of a Component Hybrid. By tracing the applications of components and moving them into newly imagined systems, they may be revitalized and become integral to further growth. The end of a unit's use will usually be the end of the specific assembly, and the program it was attached to. However, this does not end the viability of the framework and the materials it comprised.

Structuring

As a result of the initial constructs' studies, the need for new structural assemblies becomes apparent. Following the precedents below, as well as the findings of the construction series, an extensive set of components was produced. This triggered development helps to define enough of a system to engage directly with the site and the verticality of contemporary construction.

Single Tube

AON Tower

Reinforced Tube

Hancock Centre

Modular Reinforced Tube

Leadenhall Building

Bundled Tube

Sears Tower

Buttressed Tube

Burj Khalifa

8.4 Taxonomy: Components by Design Fabrication Over Time

Unit Blocks:

Units divided on a base of five hundred square feet. These elements create the essential hierarchies of the servant and served spaces. The internal layers define the specifics of the relationships. Varnelis may see the opportunity here wherein Network culture can become embedded in the Heterotopic growth patterns.

Secondary Structure:

These components allow for the assembly of more complex floor plates, allowing the unit boxes to step into bearing larger loads and extending beyond their regular spatial limits. The modular dimensions allow for several configurations to attach to any of the scales of unit block sizes. This category also includes bracing components, both for individual units, as well as other spaces.

Busblocks / Buffer Blocks / Butress Blocks:

Identified by their functionality, these components array into several subtypes. The overarching theme is reinforcing the goals of unit blocks, and completing functions the secondary structures cannot. Acting as servant components to the unit blocks, busblocks provide the vertical distribution of utilities, while buffer blocks provide gaps and help zone resources. Butress blocks may act as bracing when stacking and reinforcement reaches otherwise unfeasible heights.

Circulation Blocks:

Sized at approximately a quarter of the volume of the unit blocks, circulation blocks provide corridors for both people and machines to move through the continually growing construct. Utilized for pedestrian walkways and elevators, these components can also act as additional bracing.

Floor Plates / Basic Cladding:

A variety of shapes and sizes can be formed with these templates, both for floor plates with and without the boundaries of the individual unit box. Simple facade solutions can also be extrapolated from these elements, depending on material choices and the identity the occupant of the space portrays. The dimensions and shapes limit certain structural assemblies, and as such, the attachments will change over time as well.

Articulated Cladding:

A variety of floor plates and forms will emerge over time. Self-supported cladding systems, with multiple points of articulation, allow for the assembly process to be efficient. By changing panels for voids or alternate materials, the contextual changes and internal identities can create unique assemblies. The final external identities are driven by this component.

8.5 Synthetic Future Assembled

After placing the initial unit onto the base platform, the design begins to take a form largely of its own volition, nudged in directions by the designer. Often times, the elevation of a component or a specifically designed floor plate will require additional support. The units following each other create volumes that reflect program possibilities. In the process of attempting to design within the system, the designer becomes the contextual influence. Over time, these personas will compound into the formal representation, as well programmatic changes. Each component is added with the increase of intensity on the site. Once an area has hit critical mass, the opportunity

Figure 34: Progression of the Synthetica conceptual building model.

to engage further across the whole site, with new intelligence and networks, becomes apparent. Attempting to increase intensity on the site through the existing design language slowly expands the form to a state where busblocks and buttress blocks are needed to bring services to the upper levels, and ensure the lateral structural stability of taller elements without deep foundations.

As more pieces of eclectic elements are drawn in, materiality as a placeholder for finishes and cladding may shift once more. The articulated facade provides ease of access to the new and less cooperative forms. As such, when realizing the potential of future conflict, the construct begins to demonstrate its reliance on the extent of change it can handle. The disassembly of the previous constructs continually informs the means and methods through which the new elements come together. It is with this confidence that the marginal space, a piece of the site, becomes a Heterotopia in itself, ready to experience the transitive conditions that a Network Culture, fueled by Accelerationist

Figure 35: Progression of the Synthetica conceptual building model.

machines, would create. The existing trends will inherently shift, but their components will have left the Group Form, with trending conditions within themselves, to help in continuing the propagation of growth and reformation. Synthesizing all of these pieces into a full compliment of architectural languages gives definitive value to the not just the outcome, but the processes leading to the variable pathways. As Varnelis aptly engages with the ideas of Sterling, and indirectly with Foucault, so too does the construct with those of the Metabolists and Modernists.

Figure 36: Conceptual model of Synthetica demonstrating the flexibility and variability that can be found in a growing system of components.

Figure 37: Sectional relationships of circulation, structure and programming.

The sectional relationships of the base platform, and its sub levels, provides the support from the ground level needed to continue the growth of the upper levels. Buttress blocks and circulation blocks have opportunities to have similar functional properties within the programming of their adjacent spaces. However, one seeks to service structure and utilities while the other services structure and human circulation. The positioning of the servant corridors is defined by the existing spaces that need servicing, forming an inversion from the classic Megastructural model which typically would involve a skeletal infrastructure limiting the location of added spaces. The servant spaces that are attached as units reach a point where the served spaces are requisite. Similarly, the application of buffer blocks between units may vary both in placement and in purpose. The facade's secondary structure may require the addition of buffer blocks, whereas other components may require them to level out structures, or for purely mechanical purposes. It is the individual units, reflective of their internal workings, that help to define the overarching relationships of the building, much like the context formulates the Heterotopic clusters themselves.

Individual Unit

When an individual unit is assembled for a single dwelling with an extended floor plate, there is approximately 800 to 900 square feet of floor space. This comfortably allows for internal circulation, two washrooms at roughly 60 square feet and a kitchen and bedroom of 200 square feet each. Dining and living can be accounted for in the remaining 400 square feet. The assembly also allows for flexible spaces. Suspending the second floor plate from the main unit frame allows for interesting dynamics, such as mezzanine bedrooms, or spaces that are open to below. Storage additionally can be set up in the open spaces of the lower level, unless for example if the upper floor slab is not suspended, and is instead supported by a central core wherein the storage would be located.

It is the buffer block and self supporting facade that largely make this dynamic possible. Unit roofs may vary depending if additional levels are going to be added on in the near future as well.

Figure 38: Exploded axonometric of a possible single block unit assembly.

8.6 Synthetic Future Applied

With the site conditions in mind, it becomes pertinent to avoid total occupancy of the ground plane. By creating permeable corridors that follow both human scale and the scale of the structure as a whole, it becomes possible to integrate the adjacent park and to draw in pedestrian traffic. This condition can enhance the impact of the development both at the onset of the project, and positively influence future growth patterns. The westernmost block of the site becomes the primary development of the seed project. In turn, it focuses primarily on residential and commercial aspects. These first stages can help generate revenue as well as set the character for the early stages of the site development. Following the principles of intelligence gathering, the responses to the early stages of the development may drive the engagement of facade systems as well as new programs to be added, following the overarching needs of the contextual changes.

Figure 39: Speculative Master Plan of the site. The nearer to the seed project a components is the easier it is to predict its transformative conditions.

Figure 40: Initial anticipations of the ground plane conditions and facades that may be assembled on site.

As an interpretation of the Synthetic Futurist model, the Queens Quay site's seed project would not engage in an immediate intensity. Rather, the units would engage in blocking and stacking out the primary program spaces. This would be followed by the addition of second story floor plates to the unit segments as required. Based upon the initialization of the project, and the response to the capital generated therein, the subsequent additions would increase the intensity and rapidity of the development.

Programmatic allotments would be made following the sequencing and relations of the earliest residential and commercial units added to the site. As such the homogeneity, even at the structural level, is broken up, creating opportunities for the Heterotopic tendencies of the site to manifest. The images rendering such an assembly do not definitively demonstrate the manifestation of the structure in the physical plane. However, they may be used as reasonably accurate speculations based upon the gathered intelligence and program goals, as well as adjacent contextual conditions of the existing site.

As masses develop, the following additions would begin to engage in increased structural support through the use of buttress and buffer blocks, as well as more intensive circulation elements. All of these reinforcing elements begin to refine and allocate the primary program spaces, and lead to the early stages of defining targeted cladding elements. The suggested cladding systems within the existing taxonomy are by no means designed to be prescriptive. Following the character of massing, they are designed to act as notions of what realizable cladding systems could integrate into the broader hierarchy.

As the intentions are drawn out in the speculative imagery, the importance of detailed design elements begins to become more apparent. The final image, following the development of the primary cladding imagery, targets specific masses and begins explorations directed at specific material properties. This engagement is pushed further by means of additional digital speculation, to assist in the understanding of the possibilities of the indeterminate formulations that may result.

Figure 41: Speculated progression of the seed project. The need for a more developed skin system becomes apparent in the process of cladding several areas.

Articulos

Articulos represents the first detailed speculation of the possible materials assemblies that may occur in a Synthetic Futurist construct at the Queens Quay site. Following a thought process similar to the development of the unit blocks, the sheets of triangularly tessellated material are dimensional derivatives. Each panel spans nine by nine meters, and in turn can be pinned onto other panels to increase the coverage area, or to allow for more flexibility in crafting increasingly complex geometries. Additionally, the first assembly also considers the possibilities of different triangular patterns, in order to increase the assembly's strength in specific orientations or to reduce geometric subdivisions when not desired.

Each panel could be finished with a surface sheet of material either zinc, aluminum or plastics based upon contemporary materials. This sheet would be laminated onto rigid insulation materials, which in turn would be backed by steel meshes for strength, and subsequently affixed to the structural steel sheet, which could be geometrically bent and folded into the requisite forms on site. The interior face may be finished with an additional laminate – a final layer of wood, gypsum or plastics – as the inhabitant of the unit would desire. Ultimately the goal of the Articulos speculation is to provide materials and geometric variability while still allowing for simplicity in assembly. As such, a system of anchors would be attached to both the secondary and primary structures of each unit, in order for the folded sheets to simply be hung during assembly on site. Finally, in order to have optimal facade configurations, panels may be removed and in turn replaced with operable windows with parallel operating apertures. Window systems applied in this format would reduce the impact on a panel's overall range of motion, while providing fresh air and views for the units' inhabitants.

Figure 42: Conceptual visualization of the Articulos.

Figure 43: A typical wall section of the Articulos.

Figure 44: A perspective section speculating the volumetric relationship of an assembled unit with a second level utilizing the Articulos skin.

Scala

Scala pursues a speculative skin wherein material efficiency becomes dominant in the assembly of the skin. With the extended floor plates, it is possible to have some commercial areas or industrial spaces utilize this system. The skin in this scenario is comprised of two primary aspects; the first, the pillow-like plastic double skin filled with translucent insulation, and the second being the scale-like panels of the exterior cladding suspended on steel cables. Scala aims for rapid deployability. The wall assembly requires little to no engagement in the construction process and can provide varied results, by simply supplying the site with spools of the insulation wrap and steel cable. The assembly process can simply be completed by hanging the scales comprised of various material finishes and functions.

Scala also opens up to additional contextual impacts by making the exterior sheets highly flexible, as it is possible to source local or reclaimed materials, as well as salvaged elements. This allows for a heightened eclecticism in the customization process of units, while still allowing for ease of deployability, functionality and maintenance. Operable windows in these scenarios would require breaks in the insulation wrap to be sealed around them, as well as the implementation of upward swinging windows to follow the logical arrangement of the panels, both above and below the opening.

Over time Scala could be replaced or transformed, following the intelligence gathered regarding aspects of the surrounding program. The contextual impact could more readily be demonstrated through this speculative skin rather than that of the Articulos. However, its shortcomings in the interior expression of the space would most likely drive it toward more industrial and commercial spaces, while skins following similar thinking to Articulos would cater to higher end commercial and living spaces.

Figure 45: Conceptual visualization of the Scala.

Figure 46: A typical wall section of the Scala.

Figure 47: A perspective section speculating the volumetric relationship of an assembled unit with a second level utilizing the Scala skin.

0 1m 5m

Articulos + Scala

By continuing to apply the two skins in tandem, the speculation of the facade massing can progressively be refined. The inherently unknown elements are left unclad, allowing for the continued integration and exploration of additional, purposeful manifestations for the facade. The aesthetic can be continuously redefined and explored through both new techniques and materiality, driven and defined by the contextual impacts of the surrounding sites and urban fabric. The combined forces of multiple adjacent programs and the continued development of the site and its neighbours may deliver and fluidly change the currently anticipated expressions of the skin.

Figure 48: Spatial variability following the application of the speculative facades of Articulos and Scala.

Figure 49: Progression of attempting a new unit addition to the existing design as well as integrating existing materials systems.

8.7 People and Architecture

Contemporary cities rely upon detailed building codes, urban planning and zoning practices in order to ensure their cohesive, sustainable and safe development. Despite this, there are many shortcomings in city developments as economic and sociopolitical shifts often cause large deviations in the intended impact of planned regions of cities. Further, the zoning practices of Toronto would not allow for the unorthodox plan of a Synthetic Futurist design, which entails not only a boundless growth on site, but also industrial practices which are largely seen as archaic, as modern developed cities often deindustrialize in favour of other economic pursuits. These clean industries remain typically information and knowledge focused and do not generate capital based upon products and resource refinement. With the development of automated and clean energy technologies there are new opportunities for refined versions of such exiled industries that may once more have a place in the urban context. Beyond this, the continuous borderless development of such a design would contrast existing preconceptions of property ownership, plot division and zoning type restrictions. To address these conditions, there are already some mechanisms in place in the political structuring of the city, which, with some additional governing bodies, can help to ease the transition into a more relaxed zoning condition. With such mechanisms in place, the design, formed through continuous and extensively mixed use development, could become possible.

Current Toronto zoning is in a grey area, with large parts of the city under the old 438-86 bylaw, while the majority has shifted to the newer 569-2013 model. It is with this condition in mind that a project that thrives on change can be executed. The selected site, along Queens Quay East, currently identifies under the old 438-86 bylaw.⁴⁶ There is thus a fairly limited window of development, and any extensive or varied property development would require the attention of a Design Review Panel, and a Committee of Adjustment, who would in turn help to rezone the site, and apply any required variances or adjustments.⁴⁷ This critical timeline for change in the city's existing zoning systems, and the formation of mandatory reviewing bodies, can help realize solutions for the next steps of a project that thrives on contextual, economic and social changes.

The largest hurdle for a project such as this would be when it eventually outgrows the limitations and capacity of the site to hold its program, and begins its intended adjunction and integration of satellite sites. In order for the project to step beyond its property lines, the bodies that existed for review could be reformatted and brought in as long term committees in the context of the development. In one possible scenario, the combination of the preexisting committee members, along with the architect, project stakeholders, city planners, as well as a number of tenants would help the decision-making process for the addition of scope, and programming of new unit blocks in the design framework. Though identity would remain in the hands of the new unit's tenant and/or owner, the appropriateness of the continued development's impact and timing could be evaluated under multiple lenses, and provide what would be ideally the best long term results.

Each representative would provide the original architect, who would be seated in the committee, with requisite information, as it becomes relevant. This data would be available in case the new addition is being completed by another designer; they could, in turn, be provided with the data, opinions and relevant drawings to allow for full integration into the system, though the materiality, assembly and image may differ.

46 "City Planning and Committee of Adjustment Application Forms." Developing Toronto - City Planning | City of Toronto. Accessed May 05, 2017. <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=d14552cc66061410VgnVCM10000071d60f89RCRD>.

47 "Official Plan and Zoning Amendment Applications." Toronto Development Guide. December 2011. Accessed May 4, 2017. https://www1.toronto.ca/static_files/CityPlanning/PDF/guide_sectionA.pdf.

With this style of a system of governance for the site in mind, the architect's role, after the progression of the seed project, would shift from the more traditional master decision maker and creator of a project, to that of master mediator. His intents, after the initial creation of the design, would be geared toward the legacy of the spatial continuity and programmatic harmony of the project. The addition, removal and transformation of units, blocks and phases to the system would be driven by the needs of the site, contextual change and the arrival of new tenants and stakeholders. Further, if the intentions of UBI come to fruition in the city, people who partake, live and operate in the system would be allowed more time to express their opinions and pursue responsive and impactful change in their communities.⁴⁸

As with the traditional projects of the Modernists, the architect will certainly continue to design, delegate and organize elements of the project. They will in turn find themselves moving between the development of new system components, aesthetic applications of the old and new elements that help produce continuity throughout their life. The legacy of their work becomes its ability to continue to grow and reflect the social, political and economic spheres of influence that it will come to inhabit at a multiplicity of scales.

Figure 50: The implicit and explicit relationships of the participating parties helps to define the manifestation of the design mediated by the architect.

48 Srnicek, Nick, and Alex Williams. *Inventing the future: postcapitalism and a world without work*. London: Verso, 2016.

9.0 CONCLUSION: TOWARD THE SYNTHETIC FUTURE

Architecture strives to continually pursue thoughtful and cohesive solutions to reconcile contemporary issues with both design thinking and contextual information. However, this has become increasingly difficult with the disillusionment of master narratives and the introduction of fast-paced changes due to Accelerationism. The trajectory Atemporality has taken, as a result of its originating direction, suggests that the new reconciliation that design must face, specifically in the social context of the urban environment, stems from the rapid deviation from the original architectural plans' determinism. The Atemporal condition has led to a broadening of the urgent need and increasing subconscious cultural awareness of Heterotopias. As a result, there has been continuous development of the extensive world of Network Cultures, and the increasing reduction of dependence on the truth of a singular master narrative. It is with this in mind that the contextual implications, when applied through the lens of Accelerationsim, allow for a Synthetic Futurism to be possible. The drawing together of elements, ideas and approaches can generate multiple possible outcomes and can create a contingency measure that has been largely absent in the expression of previous architectural works.

By drawing upon the core ideas attributed to the thinking of the Modernists, Metabolists and Avant Garde, it is possible to follow a similar line of thought when developing strategies for growth. In the given context, there is opportunity to begin to engage in loosely designed frameworks, which may, in turn, harbour a design thinking focused upon systems development, encompassing a variety of scales. The need for a definitive image in a continuously propagated assembly can be overridden by a conceptual space in which the architectural design fluidly operates. Without relying on a singular aesthetic or predetermined formal plan, as most Megastructures do, the reduction of the design ego is possible. This in turn can increase adaptability and impact relative to the contextual conditions that develop. As contextual urban and sociopolitical upheavals become evident, so too does the need for the ability to have optimistic approaches to developing and evolving solutions. Where Megastructure fails to deal with identity and flexibility, a Synthetic Futurist design may find success by applying Group Form thinking. This critical position may allow for dynamic design solutions, reflective of contextual changes, without the sedimentary layering of these solutions in a traditional design system.

The meta image and spare individual identities of architecture may come to shift over time. In spite of this, visually crafted and composed contemporary projects often have very successful design elements and spatial qualities. However, there is a viable opportunity for a freeform takeover by a more eclectic condition. The individual image of a singular, major design element should not necessarily be prioritized over the success that may be presented by the sum of a various elements. With this in mind, it becomes clear that each component should be flexible, to be interpreted and reinterpreted in whatever context the solution is currently being resolved in. An individual system or assembly will not necessarily make a design successful. However, the continuity of adding and changing multiplicities of assemblies may generate cohesion. By customizing the reactions of a framework through interpreted trends and gathered intelligence, continuous supplementations can offer new aesthetics, spatial conditions, and identities, which cater to the Heterotopic nature of the contextual shifts' needs.

It remains to be seen if the currently observed trends in the social and political context will continue unperturbed, or if they may be forcibly replaced by a future that brings substantial change. However, as suggested by the thinking of Network Cultures, the principle goal of systematic design is not necessarily to find the singularly correct answer, but instead to engage in the discussion of developing multiple paths toward solutions. The methods presented by Synthetic Futurism cannot necessarily be seen as a predetermined and resolved system. Instead, they aim to engage in this new condition of experimentation and acceleration, while providing a means to contingencies, should the future exhibit radically different trends. It is with this in mind that the need for synthesis of oncoming changes undermines the originally determinate nature of architectural systems. This indeterminate and more ephemerally planned approach may in turn subvert the dereliction associated with architecture at critical junctures in urban, social and economic development. It can therefore be posited that the indeterminism of a fluid system can synthetically integrate and harness the contextual conditions to promote a limitless, yet functional and cohesive architecture.

APPENDICES

APPENDIX A: VIDEO EXPLORATIONS FOR EXPANSION, SPACE AND FORM

APPENDIX B: CASE STUDIES

Nakagin Capsule Tower – Kisho Kurokawa

The Capsule Tower is one of the hallmark buildings of the Japanese Metabolist movement. Examination of the successes and failures of this project can offer a deep insight into what is required for modular construction to be feasible, at both macro and micro scale. Banham's criticism of many works from numerous Megastructural designers is that there is an overarching lack of concern with the detailing of larger scale plans. Nakagin manages to combat this issue to some extent by providing avid detailing and following through with the realization of the project. However, the rigid adherence to the detailing principles in the design are also part of the undoing of Kurokawa's project. The dilapidated condition the building is currently in, as a result of both neglect and internal design failings, can be seen as an opportunity to learn. The units supposedly designed for modular replacement are ungainly, heavy and stacked upon each other in a manner wherein replacement becomes extremely difficult. The detailing of designs such as this requires a degree of easy modularity that the units themselves and the overall plan represent. Despite being slated for repair and restoration, after the death of the architect, the building remains largely without permanent residents, used mostly for part-time living and offices.

Arco Santi – Paolo Soleri

Arco Santi represents a change in the management of a property and its growth process, and the role of the user is transformed more so into that of a participant. Under the leadership of Paolo Soleri, the design of Arco Santi, formed over a number of years, was funded and constructed by the cohabitants of the project. The conceptual model primarily focuses on sustainable experimentation of Soleri's ideas, but has the potential to be transformed into a more commercially viable model. The body of work that Soleri represents through Arco Santi tells a story of expanding architectural plans, where the growth is directed toward inhabiting and sensing the social changes and trends beyond that of the design. The value of having self-sustained systems in a building is positive, but his design, much like others, tends toward Megastructure. It is very isolationist and self-referential, as it is positioned in a desert with very little context to help influence its growth directly. The calamitous failure of the project is that it does not entail any sort of contingency and as such, since the death of Soleri, has failed to produce any more developments. This resonates with the phenomenon of the Nakagin capsule tower.

Habitat '67 – Moshe Safdie

Safdie's largely successful project demonstrates a model of modular construction that has the potential for use in multiple contexts. The organization and structuring of this project allows for numerous configurations, but fails to become a sustainable model that can be viable for continuous development. Taking the conceptual success and failings of this project into account, better systems can be developed for continuous management and growth. His modular pairings and orientations, combined with individual units, does some justice to the pattern growth of the building, but it does little to start differentiating the design from other homogeneously identifiable projects.

Sagrada Familia – Antonio Gaudi

Gaudi's monumental masterpiece speaks to the value of a building reflecting the transformative qualities of a site's social and physical context over time. The history of the assembly of this building spanning over a century has been impacted by both economic and political upheaval and war. The constant flux of the region and the enormous scale of work that had to put into the design demonstrates the immense immediate impact that a design may have on its site, and in turn, the effect of the site upon the design. The project is trans-generational, and despite being planned by Gaudi, the vision remains largely intact. It has experienced the influence and progress which was made under the supervision of other authorities and architects after his death. The value the project brought as a social and religious landmark gave it enough support to have people continue to have a vested interest in its development and tentative completion. It is important to note that social engagement in a large expanding project will also require such characteristics to draw interest from individuals and larger bodies who will feed its growth.

Manhattan Tower Proposal – Mark Foster Gage

Amongst contemporary architects Gage's work is an anomaly that may, at face value, seem antithetical to the development of a continuously changing design. Despite this, there is a marked connection in his work, where he is exploring his own architecture of resistance as well as attempting to apply the concepts of object-oriented ontology in a critical fashion. This in turn is reflected in the work of his most recent Manhattan tower proposal, where he has begun to synthesize exaggerated elements of historical architecture, in order to fabricate a new form which speaks to the purpose of the design and the site. This design synthesizes a form from multiple objects and is lodged into the context of an environment where its connection is tenuous at best. However the parts of its whole share characteristics with other buildings, and, as a sum total, they become more relevant to the entirety of the urban fabric.

Winery Gantenbein – Gramzio & Kohler

The winery's design is informed very clearly by a multilayer assembly, and a replicable process. Defined by the primary structural frame, the infill of brick, laid in a digitally formulated pattern, creates the illusion of raster images on facade. The digital method of development and the robot arm used in the assembly process could continuously be applied and reused in other designs, suggesting an understanding of an automated and modular construction process.

Scarborough College – John Andrews

Universities generally tend toward expansion and modular development, as the structure of their programs require it. They often introduce components of program to their master plans as they are needed to support a growing need or population. Despite this, the need for interconnectedness is often ignored, with designs tending toward the isolationist form-making of many of the Modernists. However, the Scarborough college design is reminiscent of the super highway drafted by Paul Rudolph, with a large scale proposal supporting multiple components. Acting like a Megastructure, other large scale developments can take cues from it and act in a sequential and connected form.

Tesla Gigafactory – Elon Musk

Upon completion the Tesla Giga factory will be one of the largest man-made interventions on Earth. The factory is slated to be ten million square feet, dedicated to advanced battery, solar cell and automotive production. It will be a home for machines to serve humanity, and ties strongly into the principles of Accelerationism and full automation. The factory is tending toward large blocks of production of primary components, which are stationed adjacent to the assembly areas and development spaces for other required subcomponents. The servant spaces between these areas allow for minimal circulation of new parts, maintenance and small vehicles. Further, the factory is designed to be one massive self-sustaining entity. Its Megastructural outlook on design breaks it down into segments, each containing self-sustaining components, which will help build it up towards the completed form.

122 Leadenhall Street – Roger Stirk Harbour + Partners

The Leadenhall building, despite being a Megastructure of sorts, represents a typical skyscraper building type. In the relatively unassuming nature of the building's form lies a system of design and construction which demonstrates a forward thinking method to assembling buildings. Built entirely offsite and only assembled with small teams of workers, the Leadenhall building's three part construction system is cognisant of the support systems needed to allow a design to be pieced together in modules, which are then adjusted and arranged as the project reaches completion. With a service core consisting of large steel members, prefabricated concrete floorplates, and a steel diagrid supporting the whole assembly, the design uses a deceptively simple system to achieve the desired results of a clear floor plate and simplified assembly in a crowded city. It is important to realize that a properly regulated and preconceived system can not only increase the temporal efficiency of the construction process, but also the spatial.

Project Toronto – Buckminster Fuller

Buckminster Fuller made a proposal in the 1960s regarding the waterfront of Toronto. He claimed the city of Toronto was a place prone to Brain Drain, where the educated and intelligent would take their resources and move to more interesting and profitable places. His proposal, though visionary, relied on the mass structure and Megastructural tendencies of the era. What he sought to accomplish was to unite Toronto under an iconic design, which included the extension of University Avenue, a large monolithic tower, and a massive climate controlled pyramid housing commercial components. The unbuilt design proposed the integration of another university campus which would contribute as another intelligence hub at the waterfront of Toronto, solidifying the growth of the city and foreshadowing his intent to build artificial "Pro-to-cities" on the lake itself. Unfortunately, Fuller's exercise demonstrates the weakness and limitation of the Megastructure as the pyramid and obelisk, in their monstrous forms, lack the ability to be remade in any capacity. Further, there is a lack of focus or balance of spatial and cultural identities. Fuller's massive constructs force an image and identity upon the city, rather than accepting the multiplicities of the identities that exist in Toronto's cultural mosaic. The weakness of Megastructure is demonstrated in schemes similar to this, even as the works of Archigram and the Metabolists tried to complete similar tasks. The reservations and imposition of Megastructure worked against them as well.

La Ville Spatiale – Yona Friedman

Yona Friedman's work, specifically *La Ville Spatiale*, plays into largely Megastructural principles of design. He sets forth to occupy large spaces above existing buildings in the city using a large grid propped up on stilts. Similar to the Walking City of Archigram, Friedman thinks a presupposed structure can allow for the inhabitants of the frame to pick up and freely locate their design. The lack of permanence in his work reflects the need for continuous change in the architectural context. However, he fails to realize the extent at which the internal development would be needed to maintain the immediate scope of such a large intervention. The immediacy of Megastructure grows into a homogeneous static intervention which, similar to Buckminster Fuller's Pyramid, becomes exclusively an exhibition of one visionary construct.

Ruins – Arata Isozaki

The images of ruins that Arata Isozaki rendered integrate the newer Modernist's sentiments into elements left from classical and neoclassical form. His approach helped to find defined identities within undefined and broken situations. As these broken elements provided a framework, Isozaki broke down the limits of his own assembled components by bridging the gaps and forming new identities which rest between the gaps of the new and old. This artistic expression can be evaluated, reinterpreted and seen as a start to a possibility of a hierarchical structure between which the assembly of identities can be placed. Rather than use the sterile Modernist forms, it is possible to allow for more flexible frameworks to be created, allowing for more fluid assemblies to encompass and interpret the identities that would dwell within them.

Bridge Prototype – MX3D

The firm MX3D has begun to explore the applications of 3D printing structural systems using robotic arms and steel filaments. This falls in line with contemporary prediction and requirements that the Accelerationist movement has identified. There is an allowance for the reduction in human involvement in the production process, as well making industrial practices cleaner, less wasteful and largely cheaper after the capital investment of the required technology. Their proof of concept project is slated to be a pedestrian bridge which will be constructed on the designated site by two robotic arms on rails. The completion of this project will open up a broad realm of possibilities not just for full automation in production, but also the extremely flexible building elements which cater to mass customization and custom fabrication.

Center for Fulfillment, Knowledge and Innovation – Greg Lynn FORM

Greg Lynn's proposal centers on a new form of organization and circulation. It combines a new age industrial elements, emerging robotic delivery systems and commercial offices in one fluid design. The proposal appropriates the leftover space of an old factory and introduces new elements to supplement the shortcomings it faces within a new contextual condition. It is the optimistic and pragmatic new systems implemented within the existing framework that proves that dereliction or demolition may not be the end of a building's lifecycle. However, the newly introduced elements are unique components with little room for continued development or advancement in themselves. As such, despite the renewal of the previously condemned building, its future condition is left in question. The lack of contingency for the radical technological change, which left the original building abandoned, causes some concern for the hope of the design surviving further large contextual changes.

Potteries Thinkbelt and Fun Palace – Cedric Price

Price's modular way of thinking incorporates not only systematic change, but also aims to trace mobility and relationships within a site and architectural assembly. His approach to solving multiple issues with novel solutions directs people toward educating themselves and integrating into the system he designed. The importance of the participant's contextual impact is often expressed by means of the changes they enact on the mobile components of the projects he developed. This, in turn, created a means of expression which remains partially fixed and partially dynamic. The components and system remain largely the same. However, it is the restructuring and relocation of the elements that creates the layers of dynamism needed to support the theoretical projects.

Drawings – Lebbeus Woods

Through the publications of *Onefivefour* and *Radical Reconstruction*, Woods' drawings helped to break down spaces between and within buildings by using unique yet constructible skins. The layering of these new disjunctive components is brought together by unique internal structures, as his imagery speaks directly to radical change and the need to combat it. However, this is often derived from the destruction or shortcomings of existing conditions, and rarely begins from its own impetus. His work is directed toward seeking the formal investigation that variable social orders and programs require. In the drawing series, the uniform geometries of Modernism and Cartesian planar projects are rejected in favour of attempting to create elements that generate formal and material interpretations of the primary goals of the space. Through this methodology, he acknowledges that the events and shifts are caused by the multiplicities that form the context around him. It retains cognisance of the possibilities of shifts, and the ideology that the world is not made of individual elements, but oddly cohesive blends of transformative multiplicities. The truly multifaceted nature of the world cannot be reflected in the sterile, singular cohesiveness of individually planned and ideological structures.

Super Highway – Paul Rudolph

Paul Rudolph, a brutalist and Modernist, created several images of large extensive highways and actively participated in the expressions of Robert Moses' plans for New York. He ultimately impressed numerous people with the size, scope and detail of his interventions and schemes, but followed largely similar principles as the Avant Garde and Metabolists when it came to the expression of Megastructure. For the purpose of his highway proposals, which presented an immense disregard for much of the existing urban scales, he developed repeating building masses to support some semblance of programming around the immense highway. This character continues in the covered portions of the highway wherein he attempts to integrate what appears to be a number of program types and spaces into a massing that resembles the larger tower elements in his proposal. The continuous, monotone nature of his Megastructural intervention demonstrates the ability to create visionary solutions to support large scale urban development. However, the cost of losing nearby identities is a major deterrent to realizing similar proposals.

Plug-in City – Archigram

Archigram attempted to express visionary and transformative futures through radical projects. These expressions often boldly highlighted specific aspects of the ideology they were looking to develop. In the case of the Plug-in City, the work reflects the ability of a system to continually replace units and systematically maintain architectural constructs. The issue with this exploration is that the singularity of a vision takes over. The Megastructure and system not only dominate the aesthetic of the design, but detract from the overarching needs of flexibility and individuality. It is in this level of resolution where the conditions of society can be highlighted. However, they are not necessarily addressed in a manner which is sustainable or realizable. Plug-in City demonstrates the need for both programmatic hierarchy as well as constructability of a project, yet still detracts from the overall radical logic of the movement. The intent to express bold visions and individual expression are actually repressed and crushed under the weight of the powerful Megastructure, whose implementation would not only homogenize the existing context, but would also demand the overt simplification of design thinking. Further, there is an inherent disregard for existing urban scales with the integration of schemes at the immediate scale of Plug-in City.

Kowloon Walled City

Similar to Ponte Vecchio, Kowloon Walled City provides an interesting interplay of architectural transformation at a more reasonably observable scale. However, unlike the largely successful bridge, Kowloon met an untimely end in its demolition the 1990s. Kowloon was the result of multiple programmatic uses, ad hoc additions and generational changes on the site. However, with no feasible framework, and largely incompatible programs melding into each other, it became a Heterotopia of crisis. With many derelict spaces, poor living quality and broken, haphazard relationships, the long running history and cultures of the site, rising from an old dynastic settlement became lost. The lack of maintenance and monitoring of internal hierarchies act as a word of warning to other Megastructures, as well as Group Forms, as the lack of discussion or attention to developments at larger scales may diminish their impacts.

Cellophane House and Loblolly House – Kieran Timberlake

As a firm, Kieran Timberlake have had a rich history in the fabrication and assembly of buildings. Their major research, focused forays with the Loblolly Cellophane houses, dealt in the organization, modularization and construction of sustainable housing. They successfully create feasible design elements and assemble the living spaces out of them. However, each of these has a stronger specific, singular application, rather than the ability to be utilized in different contexts. Each piece largely represents the flexibility of current custom fabrication techniques rather than allow for variable assembly through modular applications. These projects could attempt reconfiguration, but could only have fairly limited variation. However, they do still present the proof of concept for new systems being able to integrate with existing building elements and construction techniques.

Villa Savoye and Ville Radieuse – Le Corbusier

Corbusier operated at immensely varied scales, however his ideology remained largely intact and in line with the Modernist philosophy. In both his execution of the Villa Savoye and Ville Radieuse, one can see the fluidity of movement and the controlled continuity of spaces. In both projects, he keeps circulation of people, vehicles and information as large driving factors, which are in turn informed by his own principles and understanding of elements of architecture. Villa Savoye expresses these sentiments in the smoothly transitioning open spaces, which the program and circulation often cohabitate. On the other hand, Ville Radieuse, his master plan for Paris, does this at a much grander scale with large layered highways, characterizing portions of the city and programmatic intensity, increasing at major intersections of transportation types. In each case, he aims to integrate the program and spaces into cohesive flows information and people, which he in turn develops using available technologies and techniques.

Salk Institute – Louis Kahn

One of the best expressions of Kahn's fundamental ideology of servant and served spaces is the Salk Institute. This project exemplifies the compartmentalization of program and the dedication of organizational hierarchy that was pervasive in much of Kahn's works. Here Kahn sets his hierarchies of public and private spaces subdivided into those aimed at work and living. The Laboratories are serviced by large internal circulation blocks, which in turn feed into the exterior courtyard spaces designed to act as the primary circulation between program spaces. Each block is supplemented by towers which contain offices dedicated to specific research, wherein the scientists would reside. The whole of his plan included living quarters and conference spaces which were never built, further demonstrating the additional hierarchies that intended to add to the vertical and horizontal interplay of the served work spaces and servant circulation spaces.

Seattle Public Library – OMA

Koolhaas' library design situated in the city of Seattle becomes an interesting study of how a facade system may support and wrap around major program spaces. The library designed by OMA has programmatic masses which were based upon interior functions and external relationships with the site at large. As such, the expression of the cladding becomes reflective of these volumetric relationships and provides a system by which the programmatic expression becomes expressed in elevation. The dual nature of the drivers, which created the form, provide the largely independent skin with both purpose and logic, so that the library does not become an isolated element without contextual relations. Such logic could be appropriated into systems approaches with more flexible assemblies, to create impactful and transformable conditions. This ability to adapt will differentiate the long term impact from OMA's intervention as it will be unlikely to adapt to the continuing changes of the sites around it.

Ponte Vecchio Florence – Taddeo Gaddi

Ponte Vecchio bridge has a long and confused history. Its value lies in the changes and expansions it has experienced over the centuries. As more occupants and program types have come to inhabit the bridge, it has become more intensely occupied and increasingly layered with a variety of materials, finishes and goals to accommodate the additional users. The Group Form of these disjunctive interventions demonstrates at a much smaller scale the ability for organic growth and the character of medieval cities. The design language, though often similar, has nuanced variability and can describe very closely the era from which it came. This infrastructural element, which evolved to serve other purposes beyond a bridge and open air market, remains as one of the longest lasting anomalies to operate at this scale.

Swarm Engineering – Sabine Hauert

Coding does not define the identity of the work of swarm engineers. Similar to group form at a micro scale, each microorganism or robot cannot necessarily complete a task or have a formal expression. However, as more and more units are added, patterns inherently form and relationships change the reactionary properties of the body as a whole. As the group begins to move toward directives, the varying parts of the swarm based upon their material properties or directives indirectly impact the continuity of the whole.

Project ARA – Google

Google began to explore the possibilities of a smartphone that can be upgraded and used long term. Like most architectural projects, technology faces a limited window of usefulness until it needs to be discarded or replaced by better iterations. Google began project ARA in hopes of developing a system in which the components could be replaced and reused in other systems. Project ARA's framework allows for new components to be designed and be built into the existing components, in the process it integrates and retrofits existing technology into its component module systems. The largest limitation of this philosophy is the durability and strength of the framework. As with many other technologies its framework can only accept material so long as wear and tear hasn't claimed its ability to do so.

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