Operational Jakarta:

The problem of representation

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Kevin Patrick Jeffers

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-K.P.J.

ABSTRACT

As the twenty-first century unfolds with newly formed degrees of hyper-complex interactions and reactions amongst space, time, economy, politics, social dynamics, and cultural paradigms, we are observing new typologies of urbanism that are different in kind, rather than degree, from the previous “urban” upon which the vast majority of present theoretical and practical discourse has been based. The techniques, strategies, and methodologies of the twentieth-century no longer serve to adequately represent or to explain the phenomena of today’s incipient mega-cities. A new vocabulary must be developed. A new way of seeing is required in order to understand and therefor to operate within these new conditions.

The operational drawing thus becomes a functional methodological alternative. By conceptualizing urban zones of operational conditions within a field of probability, one may understand the hyper-urban space as a series of operational paradigms within a networked matrix, whereby form and special arrangement are no longer the parameters of measurement. In order to de-couple the presumption of a non-real spatio-formal reading of urbanity from the operational patterns of urbanity as real observed phenomena, and moreover to represent and communicate these patterns, a new form of mapping is required.

Operational mapping is based upon observed phenomena of social interaction, economic exchange networks, data and communications networks,

political territories, infrastructural parasitism, and environmental pressurization as it unfolds in both real and fictive space.

Jakarta serves as an Ideal case-study, from which this methodology has been developed. As a very real case of hyper-complexity, and the explosive terrain of new mega-cities, to observe and “map” Jakarta is to observe and map the future of the world itself.

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CHAPTER ONE [INTRODUCTION]

BETWEEN HYPER-COMPLEXITY AND HYPER-REALITY

This project is seeking out new symbiotic models of research and practice in which architecture, and design in general, may find more relevant and accessible means of implementation and engagement with populations typically considered outside of our reach or our consideration. Fundamentally, it is pursuing design-research methodologies for the 21st century in which we must must confront emergent hyper-complex systems that the present set of theories and systemic solutions are categorically incapable of conceptualizing, much less providing a working model with any real efficacy. We need new tools and metrics that don't yet exist. This project is seeking those.

Specifically, "Project on Jakarta" seeks to elaborate on these systemic, infrastructural, and institutional failures in a highly regimented methodology of documentation and representation. In a sense it is a pursuit of finding the gaps between present models of architectural/ urban representation/ practice models and a new set of realities in emergent post-urban spaces most highly embodied in Jakarta. In many ways, the object of study in this case, Jakarta, defies the

name “City,” and as of today, not only pushes the boundary of that definition, but goes further to outright break it. It represents the next step in the evolution of the urban environment in which globalized urbanization within the Anthropocene epoch totalizes the landscape, and metastasizes beyond explicit boundaries of form. It has a new set of under-documented rules, systems, territories, economic relationships, political implications and general definitions.through a collaborative effort, I hope to document field conditions in new ways in order to better understand the realities in Jakarta, and to exhaust the presently canonical cartographic models, representational processes and urban vocabulary in order to find the gaps between simulacrum and reality, out of which to form new means of representation and a newly defined vocabulary for the urbanity of The Anthropocene.

What is at stake ranges from the micro to the macro scales. On the one hand, the urban poor within present-day Jakarta often become scapegoats for infrastructural or institutional failures, and in many cases become the targets of eviction, demolition, and marginalization. This is in effect because of a failure to understand the more complex reality on the ground than what the image may provide. Further it is because these informal constructs of development in which the urban poor tend to dwell are not truly understood, documented, or “mapped,” they are denied access to any territorial legitimacy or agency, making them

vulnerable to those that would rather see them removed in pursuit of the vision of a utopic “globalized city.”

On the other hand, it is precisely these patterns of development generated by the other-than-affluent in Jakarta that may provide new modes of resiliency in urban living. They possess a resiliency in a place that is prone to increasingly frequent and extreme seasonal flooding, governmental demolition to counter the flooding, severe economic peaks and troughs, and any number of other events that would be considered utterly cataclysmic within the “rigid” cities of the West. It is precisely because of their multimodal and incremental pattern of development, economy, and social structuring that this is possible. When things fail, they fail incrementally, and are rapidly repaired or replaced through the very same ad-hoc-methodology as they were devised.

Jakarta is an early adopter of new modes of urban inhabitation in this way, and it may prove to be a model for dealing with new problems globally as coastal cities around the world begin to face the same sets of problems as urbanization rates continue to explode around the world, and as climate change begins to impact the very same rigid urban infrastructures and systems that Jakarta has managed to work around already.

FRAGMENTED CITY

If once we conceptualized the city as whole, completed, as static form and space, then now we must re-assess these presumptions, given the dynamic and complex models of development precipitated by the explosion of rates of urbanization and the pressurization of climate change, economic globalization, resource depletion, and new speeds of information and transformation. Fundamentally, the problem with the representational techniques inherited from the twentieth century is that they are outpaced by explosive rates of change, and made nearly irrelevant by emergent models of habitation and interaction. The real is illusory within these old models, and their reductive nature fails to present either fine grained information or the large scaled relationships and flows of an emergent urban paradigm in which the micro and macro-scaled systems that drive the city, and tie it into the global network are more intimately linked than ever before. The old models are ultimately nullified by dynamic states and flows within varying system scales.

This thesis is a critique of present methodologies in its proposal for new ones. A paradigm shift has occurred within the reality of urbanity, and as such, fissures are emerging between the city as lived, the city as imagined, the city as represented, and the theoretical underpinnings by which we conceptualize, understand, and operate within the fragmented terrain of urbanism.

The primary focus of this course of study is in exploring the cracks, and utilizing the void space as an operational basis for a new discourse, and a new standpoint of observation and analysis.

JAKARTA: CITY FUTURE

The City of Jakarta and its urban region is unique in its scale, its challenges, its complexities, and its advancement. Its uniqueness is merely a temporal differentiation, however. Jakarta is the future of all cities. It is the future of all of humanity. It is the future of civilization. It is the terminal state of urbanity.

It is for this reason that Jakarta serves as fertile ground for study. The very visible chasms of the city allow for the emancipation of the fragment, and the extraction of information from the void. The details of this will be discussed later on.

CHAPTER TWO [PRETEXT]

PRELUDE TO A PRÉCIS

The aim of research in Jakarta is in examining, critically analyzing, and seeking solutions within the context of informal communities that may provide insight into, and solutions in mitigating, the effects of the broader systems that are affecting Jakarta as well as a great number of cities globally. The particular forces of interest here are the convergence of rapid urban growth in informal or “slum” communities as a result of rural-to-urban migration, and the onset of climate change. The end goal is to seek out the role of possible design-based solutions in Jakarta that address a set of problematic conditions (frequent flooding, highly vulnerable urban-poor, resource scarcity, water insecurity, political and economic disenfranchisement of marginalized communities…) that are already evident in this city today. This research aims to find solutions to a set of problems that will become a new norm in coastal cities globally in the decades to come. The experimentation and research put into this solution-finding process within this specific context, seeks to serve the broader global community as the effects of climate change unfold during this century.

The proposal of design must address several specific imperatives in relation to the conditions of Jakarta’s urban poor; The social and political disenfranchisement of informal communities in relation to governing bodies, this

disjunction of the local informal economy and the globalization and rapid growth of the formal economy and the wealthy, and the duality of the scarcity of potable water and the inundation in floodwaters. The designed outcome to be desired would therefor bring both political and social agency to the urban poor, provide basic needs that are not being met by the city or national government, and provide a resiliency and security of infrastructure and community that is not currently possible under the present circumstances. The desired outcome is something that is executable in the short-term in order to alleviate the dire circumstances found here, and as a result must be at once a subversive action of willed agency on the part of the community itself, as well as an agent of visibility in and of itself in order to bring national and global attention to these conditions. It is only through this visibility and through the visualization of the problems faced here that the world will begin to see their own impending future, and then to act, not simply out of empathy, but out of global self-preservation.

CIRCUMSTANCE

On the Humanitarian and Capital implications of Climate Change

As the greater impacts of climate change are only beginning to be understood, and are only incipient in todays discourse on urbanism, we find ourselves with increasingly divergent and often utopian/ dystopian theories on how and where to mitigate these impacts. Simultaneously, we are observing escalating trends of urbanization, particularly in the worlds most impoverished regions, and the rapid

growth of urban settlement forms that are neglected by governmental bodies, rife with abject poverty, inhumane living conditions, and human lives perpetually on the brink of collapse. This rapid growth is occurring in regions that are highly vulnerable to the negative impacts associated with climate change, including sea level rise in coastal zones, the increasing strength of storms and the flooding associated with them in estuaries of major river systems, and the unpredictability of wet/dry seasons that are the basis of life in regions further inland. This collective network of human life is already on the brink of a meager existence, and it is in these same communities that people are paying the true cost of the capitalist boom of the 19th and 20th centuries. These are people whose lives have been considered to have little to no capital value within the global capitalist economic structure, and are thus rarely considered in the discourse of urban adaptation to changing climatic conditions. As it is yet unseen what the full impact of the convergence of these two trends will be, we must begin documenting, analyzing, and proposing new strategies, practices, and methodologies to generate real, positive, human outcomes. How, then, can we begin an approach to design that inherently values human lives without the presupposition of economic return? How may we operate at a level of global humanistic equity?

On the Impulse of Humanitarianism

In its present form, the global objective-capital system is failing humanity because it tends, as any empirical system, to ignore outliers and externalities to

the system itself. The nature of the digital age has rendered humanity into a numerical data set for use in everything from marketing strategies to resource allocation by governmental bodies. The problem with this process is that it is no less a system of belief than any other ideology, and the trust that we place in this numerical analysis, in trend forecasting is increasingly falling apart as it increasingly fails to deliver us from human crisis. As the reality of the highly complex set of systems that shape humanity and the built environment in which they inhabit are far out of reach of this analytical process, humanitarian efforts are left blind to empathy. The root of this problem lies in the very nature of objective thinking: Humanity is not an objectively acting entity. Human beings act irrationally when viewed through the lens of objective rationality. The reality of human beings is that they are far more complex than either of the terms “rational” or “irrational.” Human beings as individuals are constantly weighing a staggering number of forces, ideas, beliefs, thoughts, and impulses that simply cannot be quantified. How then, can that set of humanity that holds the majority of the resources be expected to act from a point of empathy when left so blind to that set of humanity in the most dire conditions, that is in need of resources the most, in order to simply preserve human life and prevent disaster?

This is a failure of empiricism, of objective thinking, of capitalism. It becomes all the more complicated when groups of people are considered. When we consider the needs of a group of people at the scale of a neighborhood, a city, a nation, a

region, the global humanity, objective thinking can but barely scratch the surface of the complex networks at play in the daily lives of people.

When people are objectified into this kind of digital ephemera, we fail to see humanity, but instead see statistical information, and those who would otherwise see the dire situations of humanity and feel empathetically, instead think and process rationally. It is this abstraction and separation of humanity that allows the greater global capital system and those living in and among it to ignore the outliers, to not be bothered with externalities of their system.

This is precisely why capital only becomes interested in those outliers after the disaster has struck. When those existing outside the walls of capitalism, people who have become forgotten by and invisible to those within the walls, have some great cataclysm befall them, they are suddenly made visible. Media covers the stories as they unwind, documenting human drama as if it were reality television. People within the walls of the capitalist system then suddenly find themselves feeling guilty, afraid, or even empathetic, and donate money in order to avail themselves of the guilt of privilege. Increasingly common is the ability to purchase this very same set of indulgences through the purchase of promotional products with x% going to aid the crisis in “x,”.

In this model of “humanitarianism” it is only in the visual aftermath of utter human destruction, and by the voyeuristic desires of those within the walls of the

capitalistic world, and their narcissistic need for self-alleviation of guilt, or of fear, that there is any concern for those who exist outside of the walls, those who are not a “target-demographic” to the greater capitalistic world.

The same could be said for war, genocide and terrorism. This is the other mechanism by which people who are invisible to the capitalist eye can become visible. This mechanism also operates from guilt and fear. Only once a population becomes a perceived threat to the inherent freedoms of those within the walls of the capitalist system, or are considered oppressed and deprived of the freedoms of that system which is perceived as implicitly superior, do they warrant any attention. This is where the foreign aid really rolls in. The capital is invested in the form of war spending, they “bomb the bad-guys” then deliver democracy to a brutalized populace in order to free them, giving large contracts to companies from within the walls of capitalism to rebuild infrastructure, provide food, water, electricity; to develop them. This process is often lauded in its effort to “win hearts and minds.” Everyone packs up and goes home, feeling good about how they freed an oppressed people and developed them so that they may become integrated into the capitalist system. This process was once known as is imperialism when conducted by individual nations, however the whole process has become veiled behind the ideologies of “consensus-based coalitions” and the granting of “democratic self-governance” in the 21st century.

In this model of “humanitarianism” the capitalist system is actually able to profit both in social and political good feelings and in economic activity from the “aid” that is so freely given to those most in need. It really is a win-win.

Thus, under the empirical and objective framework that has been inherited from the 19th century or earlier with little real evolution but in the language used to describe it (“white man’s burden1”), we in the 21st century are able to find only two strong outlets by which humanity outside of the walls of capitalism are made visible by humanity within those walls:

1. Humanitarianism as voyeuristic/ narcissistic self-help in response to the “human drama” of disaster as seen in photos or video. This is truly a late 20th century innovation: (Disaster-Porn)
2. Humanitarianism as providing democracy and liberty to an oppressed people or those left in the wake of terrorism or genocide, also a means by which to ensure and protect capitalistic interests (particularly in natural resources) from a perceived threat, while providing that same narcissistic fulfillment of “the greater good.” Often tied to imperialism.

On The Role of Architecture

Of the many disciplines and academic discourses to which humanity matters, architecture has perhaps the broadest range of explorations and ideas into how

humanity lives and could live within their environment. Architecture as an academic discipline claims its territory into the very fabric that defines the human environment. At its most ambitious, and most successful, architecture can go beyond the means of simply supporting human life against the forces of nature, and into the world of human expression, into the expressed forms and ideas manifest into physical space that make up our collective identity as humanity. It is not only in our monuments, in our basilicas, mosques, temples, shrines or reliquaries that we construct this identifiable form of cultural identity, but also in the very spaces in which we dwell, in the most seemingly mundane buildings. Cultures of all epochs, of all places, have in some way imbued their lived identities into the buildings they constructed and inhabited. Architecture beyond all means of simply housing has the ability to carry cultural meaning, and collective identity.

It is this very identity which binds us together as one family, neighborhood, city, culture, nation, society. Our home binds our identity as family, our public street and park binds our identity as neighborhood, our central square and civic buildings and monuments, our infrastructure, our walls, bind our identity as city… etc. It is in this series of constructs of identities that each individual is motivated to act collectively. It is because of collective action that humans emerged from the fields and forests and were able to escape the earthly bounds of nature from the very birth of civilization.

So then it follows that in our present era, on the precipice of cataclysmic climate change, that as a collective act, we must once again find shelter from the coming storm. To simply find this shelter, however, without retaining our culture, our collective identity, would be to lose humanity to the fields and forests once again. In order to move forward as humanity, as a civilization, we must do more than to merely survive this great coming cataclysm. We must retain our collective identity, our memory, our history.

Thus, it is the imperative of architecture to carry our collective identity forward, through built form into the emergent future, that we may do more than simply survive, but rather, to thrive in this new world yet to be seen.

METHOD

Finding solid grounding for a methodological approach to design in the 21st century is a shaky endeavor at best. The 21st century is marked by its volatility, variability, and extraordinary level of interconnection of abstract objects and subjects. The ability to successfully construct and maintain even the most basic of factors upon which to establish a design process, much less its outcomes, has become something like rolling dice in a tornado during an earthquake. All of the rules, once thought universal, if only for a given time, are no longer rules. The volatility of technological change, cultural evolution, environmental dynamism, scientific theory, socio-entropic transformation, economic fluctuation, geo-political realignment and reactivity and our very worldview are all reforming themselves at exponentially acceleration. The growing rate of change in these abstract notions

upon which we form our methodologies, ideologies, and very basic understanding of reality, has transformed design into a multidimensional and multivariable equation. One in which every step we make closer to what we think is a solution, or even a question, finds us even more lost into an infinite ethereal abyss of variables. Probabilistic realities are all we are left to ponder. In this way the only sensible methodological approach to studying any given object or subject seems to be most closely resembled in the scientific understanding of quarks and quantum strings. When we look to the study of these, we may glimpse a possible path to finding reality again. In the study of quantum mechanics, we may see a particle exist and not exist simultaneously. We may find these particles to be entangled, where a change on one simultaneously effects the other, regardless of distance in space. They may be popping in and out of existence, in and out of our universe, our dimensions of reality, and into others. The only way we may study them is through probabilistic analysis. We may only observe them indirectly because the act of observation changes their behavior. If we look to this methodology found in quantum physics as a way to view the interactions of people, space, time, buildings, cities, cultures, technologies, forms, ideas… we may be able to formulate a truly unified methodology. The world we now live in is and interconnected network. It is a world fundamentally different than the world of the 20th century. A new way of approaching methodology must emerge that reflects this change. We must find a way to approach architecture with the infinity of possibility, probability, and doubt

that reflects our new world, our new universe. This approach must address much broader, deeper, and more variable ideas, objective and subjective realities and surealities that this new world produces within its vast network of coherent beings. To this end, there is no linearity of methodology that we can hold on to. We must embrace the abstraction of randomness, duality, and unpredictability. We must follow this irrational sequence into the vast abyss in hopes of finding an understanding that can ground the way we construct our physical reality in built or unbuilt forms.

The Research that will lay the groundwork for framing all further endeavors has been necessarily very broad-based. In order to grapple with the Great magnitude of complexity surrounding the overall scenario, one must be well read, and well expressed in ways of seeing, ways of interpreting. In this way, it is the theoretical and methodological groundwork that will lens how data and documentation is analyzed.

The Challenge when approaching data is enormous given the hyper-complexity and exponential dynamism of the overall scenario is monumental. The problem is that data is always in flux, and can at times be misleading and at worst, dehumanizing. However, given the broad complexity of the situation there is little option but to use data well, and to strategize with computational tools and means of visualizing data.

GROUND OPERATIONS IN JAKARTA

The most fundamental encounter with the proposed research must be experienced first-hand. I will Travel to Jakarta during the monsoon season in order to document and observe the forces at play, the city as it works and moves, the people as they live, all in an attempt to become fully immersed in and grounded in the full depth of inquiry of research. It is at this critical juncture of field study that the real connections can be made, and real ideas formed. This is where solutions will emerge.

As a means of operation in direct research in Jakarta, an imperative lies in pursuing that which is not readily visible. The primary objective in ground research within the city is in chasing down rabbit holes, subjective observation as a means of interacting with the networked systems of the city in order to grasp the deeper meaning, and the deeper mechanisms by which the city operates in is apparently disjunctive and contradictory modalities. The aim in short, is to go beyond the illusion of appearance and into the human scale of understanding a latent system or socio-political-economic ephemera.

The obvious challenge is in the dilemma of the stranger, the uninitiated, the outsider. As an outsider to this system, someone from a background such as my own faces a two-fold dilemma in this interaction, that it to say: The tendency to misread the city's text, and The tendency for the deeper meanings and interactions to remain distant, illegible. The goal in field research will be in bridging this gap through the formation of strategic alliances on the ground,

through operating and/ or interacting to varying degrees by proxy of the initiated, the known and the knowing.

What is sought is a better understanding of the shadow systems at work in order that these systems may become more visible as to reveal their existence to the political, social, and economic powers of the regions of the world, that this model which serves to sustain such communities against all odds may be examined as an example of how globally we may begin to form new models of the city as an adaptive necessity against the profound impact of climate change.

PROGRAM

The Refugee Metropolis of the late 21st and 22nd Centuries must be understood and designed under the assumption of semi-self-organizational systems. Emergent Cities will follow unpredictable human migratory patterns but will however maintain a level of programmatic predictability. In this sense the challenge is boiling down how the metropolis operates as a habitat for collective groups and how to design new urbanisms to fit the unpredictable patterns of earths coming changes in a way that programmatically solves two primary scopes of problems:

1.The alleviation of the initial problems of displaced, impoverished, and disenfranchised peoples + The socio-political and socio-economic impacts of these + The initial source of capitol financing strategies to start the engine of change.

2. The long term need for evolution within these new urbanisms that cannot be predicted + The long term socio-political remapping of our geo-political maps + the new economic systems that emerge from these new paradigms.

In this way, programming is a highly complex problem to begin to unpack. First, a programming of this emergent urbanism must meet the necessary modalities of human survival and livelihood; i.e. How do we feed people? How do we provide clean water and proper sanitation? How do we generate places for displaced peoples that goes beyond mere housing? How do we preserve cultural identities or develop new ones? How do we allow the freedom for self organizing systems such as economies and social structures to emerge while still providing the basic infrastructural network that is necessary to sustain human life?.

Second, this program must meet longer-term, and permanent solutions; i.e. How can a displaced people resettle into new lands without losing their history? How do we avoid conflict as arising form resource strained systems? How do we rethink identities, particularly global identities, regional identities, nationalistic identities, ethnic identities, cultural identities, regional identities, and familial identities, in a new way that will allow for more flexible integration of displace populations?

The notion of program is something that must be wholly reconsidered in this context, as it cannot be considered in a stable state, and what is more, it's unpredictability is among the highest levels of any aspect when considering the

dynamic nature of a multi-variant condition that is climate-refugee-cities. To predict how we will live, how we will operate, what our expectations will be, in our new world is an impossible venture. To some extent it is necessary to revisit the futurists such as Lissitzky, Marinetti, and Sant'Elia, and to look back at Jules Verne and Isaac Asimov, and how they projected futures as yet unseen.

Predicting this future is the most important means by which to arrive at a notion of programming, as program in its core is a reflection of how human life works at a point in time, and therefore the necessary spaces and places to act as vessels for that endeavor.

In any case, We can predict one thing: An emergence of wholly new forms of human activity, social and economic paradigms, political systems, and as a resultant, new forms of urbanisms.

The end-goal of the research is to find solutions for resiliency and visibility the slum communities. It is only by making visible the invisible populace that humanity can act from a point of empathy, and help to balance the scales that keep these communities in a vulnerable state of existence, and it is the lessons of resiliency that in turn can be learned through exploring the design opportunities in this unique place that may hold the key to broader questions of resiliency to climate change globally.

SITE

The notion of “site” is all to simplistic in the present discourse of architecture. One tends to look at a few graphs, maps, charts, photographs, perhaps a handful of diagrams, maybe even demographics, if you’re lucky. The true depth of the contextual network in which an individual building operates and operates upon is infinitely complex. The source of this is likely embedded in a long history of an object-based approach to buildings and their surroundings. If we are only to consider these as things, then it is simple to observe at a distance and to contemplate the world from 3 miles up, or from an axonometric. With this stance, we may narrow our variables to the simple data set we typically use to gain some sense of knowledge about a place.

This, however, leaves out completely any true humanity. With this stance we as designers fail to realize the great ecosystem of humanity we have an influence over. When we zoom out past the singular building, we can see a great network of interactions and dialectics taking part through time and space, thought and culture, that we call the metropolis. The metropolis, is at its core, a macro-structure for containing humanity, society, civilization, along with all that humanity contains. The structures of architecture are but vessels that contain, and in turn reflect the endeavors of mankind. To this end the metropolis is its own macro-organism. The metropolis can be equated to an amalgamation of interacting organs; which in their own parts are composed of cellular structures; the cellular structures are composed of cells; the cells themselves contain their own complex

metabolic structures and organelles. In this view, the metropolis works because of an infinitely complex interaction and co-dependency of all of its most basic parts; a fractal structure of interaction. Nature has found an efficiency in this model. In our vanity we have lost touch with the humanity of buildings. We have forgotten the subjective landscape upon which our realities, our dreams, are constructed.

In order to design the metropolis of tomorrow, the metropolis that the world will need, the evolving metropolis that can grow and change to meet the growing and changing demands that will be placed on it over the coming century, we must look to this model. We must understand and approach site not merely in its objective and micro-relational space, but in the macro, networked, and complex role that it plays as a place. If we focus on seeing places rather than merely spaces, (a difference of engagement on the part of the observer as subjective, involved, rather than cold and distant) the we may better see and relate to the humanity of site, and in doing so, once again design for humanistic ends, rather than merely objectively architectural ends. We must remember that it not about us, it is not about architects, and it is not about (capitol A) Architecture. We must drop the pretention, drop the need to impress architects, and begin designing for those who truly need our expertise. We can save the world, but first we as a community must get back to basics, back to humanity

JAKARTA

Jakarta is a city that exhibits two convergent trends emerging in urbanism that are applicable to many cities globally facing the same set of problems. The first being the over-paced growth of the urban population: As rural-to-urban migration rates have accelerated over the past decades due to economic, social, and environmental changes, in Jakarta, as in many megacities around the world, an enormous number of people have ended up in slums, overlooked by governing bodies and very often at a high risk to poverty, malnutrition, substandard housing, and environmental catastrophe.

Jakarta is also a city that exhibits a challenging relationship between this exploding urban environment and the natural environment. Much of Jakarta lies near or below sea-level, and additionally carries the effluence of the Ciliwung River. As a result of these two converging realities, much of Jakarta is heavily flood-prone. Annual Monsoons bring tremendous rainfall to the mountains to the south of Jakarta, which then rapidly filters through the river system. The city possesses an elaborate system of levees and floodgates to mitigate this, however these systems have not kept pace with development.

The confluence of these forces, rapid growth of informal dwellings, particularly those in the most flood-prone regions of the city, and the increasing frequency and severity of flooding events, makes Jakarta a living case study in resilience, yet also a living city which most desperately needs intervention. In this way, exploring solutions in Jakarta can provide insights that could have broader

applications globally, as these trends continue around the world. What can be gleaned by studying Jakarta may set a basis for solutions in coastal cities globally as they face the full surge of climate change.

To delve too deep into conjecture prior to field research may prove misleading and perhaps discoloring to reality.

CHAPTER THREE [RETROSPECTIVE ITENERARY]

Jakarta, the capitol city of Indonesia, along with its four adjacent districts comprises a mega region of over 30 million people. It is one of the largest, fastest growing and most rapidly evolving cities on earth. This massively scaled conglomeration stands as an early indicator, and a very expressive example, of a new type of urban structure that has yet to be fully understood or documented. This new post-urban landscape possesses a great number of new problems as well, problems that cities around the world will soon face as outpaced urbanization rates, global climate change, and resource scarcity unfold within the 21st century.

Jakarta provides an ideal case study in these novel strains of urbanism, defined by self-organized socio-economic structures that stand apart from the more rigid normative models of city life that we have understood up until now. These new forms have yet to be fully explored, documented, or theoretically conceptualized, and as a result, the way in which architecture and planning operates within these new territories has become increasingly problematic and ineffectual in combatting a new set of issues for which they are ill equipped to solve.

To be simple, the problem that we face is that the growth of these new urban forms and the set of issues which they face, has outpaced the evolution of our

models and methodologies. It is therefore critically imperative that we develop a new theory of urbanism, and new models of the city, in order to build a new set of tools that will allow urban designers to grapple with new problems.

The unique context of history, culture, social structure, geography, economy, culture and climatic dynamism make Jakarta an exception to the global rule, for now. This exception is quickly emerging as the new global norm. Cities around the world, particularly within the global south, are now seeing very similar problems to those that are visible in Jakarta: explosive rates of rural-to-urban migration, the escalating impacts of climate change as well as devastating public policy failures attempting to mitigate them, the restructuring of capital systems within a globalized market, and the widening of the chasm between formal structures of capital and political agency and the urban poor.

Yet, in spite of all of these seemingly insurmountable problems, Jakarta is a city that functions at a very high level. The city is flexible in a way that allows it to rapidly evolve to meet the needs of emerging issues facing the city. It is able to do so primarily by virtue of its informal systems and infrastructures that exist largely outside of the realm of official political and economic institutions.

This project aims to critically engage with, document, and analyze Jakarta, and ultimately to precisely define how it works in order to gain access to new

strategies for architecture and urban design. My goal for this project, and beyond, is to conceptualize the city in new ways, to generate new methodological approaches to urbanism, and ultimately to begin forming a new comprehensive theory of urbanism informed by Jakarta.

The principle mechanisms by which I will engage with the city are through the development of critical documentation, photography, mapping, writing filming and diagramming. The strategy is to develop a holistic representation of Jakarta, identifying its systems, structures, and convergent realities that culminate in the city and its workings.

In order to fulfill this overarching strategy of critical representation, a specific set of tactics and field operations must be undertaken at varying locations and at various scales. Specifically, the deployment of rigorous engagement at the ground level, within the urban fabric, in the streets, alleys, informal markets, transportation systems, and cultural nodes will be conducted through the use of video, photography, diagrammatic analysis, mapping of unmapped areas, and procurement of aerial and satellite photography. All of these means are to be deployed within specifically pre-designated areas of significance within the city, which I have identified during my first trip to Jakarta in January 2016, with the aid of a number of the foremost scholars on Jakarta.

My trip in January has primed my research up until this point. Following 6 months of research based in Knoxville, I spent nine days studying the city in a

broad-based survey, and had the very fortunate opportunity of working closely with a number of highly regarded academics based in Jakarta. My first trip fell short of accomplishing all that I set out to do, unfortunately, due to the January eleventh terrorist attack on Sarina Mall. The day of the attack I had planned photography in the area, however due to technical difficulties with my equipment that morning, was late in getting out to the site. After news broke of a terrorist attack in the area, the research group with whom I was staying went into lockdown, and we remained in the office for the remainder of that day. It was a day lost in an already highly compressed schedule, and what is more, the city itself took on a much more alert state, stifling many of my efforts throughout the remainder of the trip. During the remainder of those days, however, through a combination of my own exploration of the city, and through interviews with researchers on the city, I was able to identify a specific set of locations within the city, which provide a powerful insight into its workings, and the interrelationship of its parts. Upon returning, I hope to have the time to specifically focus on documenting and analyzing these places in order to gain a deeper understanding that only extensive and intensive field study might reveal.

One of the most beneficial outcomes of my first trip was in developing a network of connections within the city. These individuals proved invaluable in orienting me, and acclimating me to the city. Among them are Dr. Etienne Turpin, author, theorist, and founder of the PetaJakarta organization, which has launched a

social-media based platform to track flooding in the city. Dr. Turpin provided several valuable interviews in which he offered incredible insights into Jakarta, as well as providing me with a “home-base” out of which to operate during my stay. Christina Leigh Geros, Fulbright-National Geographic Fellow, is conducting research through personal interviews of people living in the Kampungs (Southeast Asian form of urban slum). She provided valuable resources on how to navigate within this environment, as well as introduced me to other contacts in Jakarta. She brought me along during a portion of her research in which I was able to see first-hand the eviction and demolition of an urban Kampung by governmental authorities. Finally, Frank Sedlar, a Master of Engineering Student with the University of Michigan, who is currently working with PetaJakarta and the government of Jakarta using Drones to map flood-prone regions of the city as well as studying flood mitigation strategies in the city, played a pivotal role in introducing me to the Kampung, taking me into places that I would have otherwise been unable to access or unaware of. He also introduced me to the often outmoded flooding mitigation strategies and infrastructure in a city which is currently dangerously prone to catastrophic flooding as a result of climate change. These individuals played a pivotal role in directing me as to where to begin looking, and as to what questions to ask, and in many ways shaped the trajectory of my present research. I will be working closely with them once again upon returning to Jakarta.

Given the opportunity to return to Jakarta I will further my research from the ground level in a meaningful, and targeted way. I hope to engage with the city in a new way that will bring to light new, more informed strategies for engaging with the city of the future. Clearly evident in Jakarta today are a set of problems including massive government corruption at every level, eminent threats of terrorism, the violent impacts of climate change, massive resource scarcity, and the brutal friction at the convergence of the urban poor and new global capital structures. These problems are evident there today, but will soon be the problems of the world. This research is engaging with the most imperative set of issues that we face in the 21st century. I am dedicated to following this research wherever it takes me, and am committed to generating new and more effective methodologies and strategies to combat new problems in this incipient global reality.

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VITA

Kevin Patrick Jeffers was born in 1989. He graduated with his Bachelors of Science in Building Science from Appalachian State University in 2013, and his Master of Architecture in 2017. He wrote his thesis over a two-and-a-half-year period, traveling nearly fifty thousand miles over three continents.