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# **Framing Disaster Research as “Wicked” Design Problems**

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**A thesis submitted in fulfillment of the requirements  
for the degree of Doctor of Philosophy in Architecture**

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# Abstract

Though generally considered “natural” disasters, cyclones and earthquakes are increasingly being associated with human activities, incubated through urban settlement patterns and the long-term redistribution of natural resources. As society is becoming more urbanized, the risk of human exposure to disasters is also rising. Architecture often reflects the state of society’s health: architectural damage is the first visible sign of emergency, and reconstruction is the final response in the process of recovery. An empirical assessment of architectural projects in post-disaster situations can lead to a deeper understanding of urban societies as they try to rebuild.

This thesis offers an alternative perspective on urban disasters by looking at the actions and attitudes of disaster professionals through the lens of architecture, situated in recent events: the 2010 Christchurch earthquake, the 2010 Haiti earthquake, and the 2005 Hurricane Katrina. An empirical, multi-hazard, cross-sectional case study methodology was used, employing grounded theory method to build theory, and a critical constructivist strategy to inform the analysis.

By taking an interdisciplinary approach to understanding disasters, this thesis positions architecture as a conduit between two divergent approaches to disaster research: the hazards approach, which studies the disaster cycles from a scientific perspective; and the sociological approach, which studies the socially constructed vulnerabilities that result from disasters, and the elements of social change that accompany such events. Few studies to date have attempted to integrate the multi-disciplinary perspectives that can advance our understanding of societal problems in urban disasters. To bridge this gap, this thesis develops what will be referred to as the “Rittelian framework”—based on the work of UC Berkeley’s architecture professor Horst Rittel (1930-1990). The Rittelian framework uses the language of design to transcend the multiple fields of human endeavor to address the “design problems” in disaster research.

The processes by which societal problems are addressed following an urban disaster involve input by professionals from multiple fields—including economics, sociology, medicine, and engineering—but the contribution from architecture has been minimal to date. The main impetus for my doctoral thesis has been the assertion that most of the decisions related to reconstruction are made in the early emergency recovery stages where architects are not involved, but architects’ early contribution is vital to the long-term reconstruction of cities. This precipitated in the critical question: **“How does the Rittelian framework contribute to the critical design decisions in modern urban disasters?”**

Comparative research was undertaken in three case studies of recent disasters in New Orleans (2005), Haiti (2010) and Christchurch (2010), by interviewing 51 individuals who were selected on the basis of employing the Rittelian framework in their humanitarian practice. Contextualizing natural disaster research within the robust methodological framework of architecture and the analytical processes of sociology is the basis for evaluating the research proposition that architectural problem solving is of value in addressing the ‘Wicked Problems’ of disasters.

This thesis has found that (1) the nuances of the way disaster agents interpret the notion of “building back

better” can influence the extent to which architectural professionals contribute in urban disaster recovery, (2) architectural design can be used to facilitate but also impede critical design decisions, and (3) framing disaster research in terms of design decisions can lead to innovation where least expected. This empirical research demonstrates how the Rittelian framework can inform a wider discussion about post-disaster human settlements, and improve our resilience through disaster research.

# Acknowledgement

Words are not enough to express my deepest gratitude to the beautiful individuals who have made this work possible, and if word limit were no object, this section deserves its own chapter.

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# Abbreviations

AFH	Architecture for Humanity
AIA	American Institute of Architects
APA	American Planners Association
ATC-20	Applied Technology Council (Document 20): Procedures for Postearthquake Safety Evaluation of Buildings
BBBC	Build Back Better Communities
BNOP	Bring New Orleans Back
BWB	Builders Without Borders
CanCERN	Canterbury Citizens Earthquake Recovery Network
CCC	Christchurch City Council
CCDU	Christchurch Central Development Unit
CCRP	Christchurch City Recovery Plan
CERA	Canterbury Earthquake Recovery Authority
CDEM	Civil Defense Emergency Management
CIAL	Christchurch International Airport Limited
CRS	Congressional Research Service
CSO	Civil Society Organization
DAP	Disaster Accountability Project
DDR	Donor Driven Reconstruction
DHS	Department of Homeland Security
EBNet	Ecological Building Network
ECan	Environment Canterbury
EQC	Earthquake Commission
FEMA	Federal Emergency Management Agency
FEMA	Emergency Support Function report #14
GCCDS	Gulf Coast Community Design Studio
GDP	Gross Domestic Product
GO	Grassroots Organization
GNS	GNS Science, New Zealand Crown Research Institute
GoH	Government of Haiti
HCDA	Hope Community Development Agency
HRF	Haiti Reconstruction Fund
IDP	Internally Displaced Persons
IFRC	International Federation of Red Cross
IHRC	Interim Haiti Reconstruction Commission
INGO	International Non-governmental Organization
LEED	Leadership in Energy and Environmental Design
LRA	Louisiana Reconstruction Authority
MERA	Monitoring and Evaluation Research Associates
MIRF	Make It Right Foundation

MINUSTAH	UN Stabilization Mission in Haiti
MP	Minister of Parliament
MRN	Maori Recovery Network
NGO	Non-governmental Organization
NOLA	New Orleans, Louisiana
NZIA	New Zealand Institute of Architects
NZSEF	New Zealand Social Entrepreneurs Fellowship
ODR	Owner Driven Reconstruction
OSE	UN Office of the Special Envoy
PCR	People Centered Reconstruction
PID	Public Interest Design
PIDI	Public Interest Design Institute
RFP	Request for Proposal
SEED	Social Economic Environmental Design
SHAC	Sustainable Habitat Challenge
SMO	Social Movement Organization
SPRPAU	Social Policy Research and Parliamentary Affairs Unit
TCC	Tulane City Centre
TNC	Transnational Corporation
UC	The University of Canterbury
UCAONG	Unité de Coordination des Activités des Organisations-Non-gouvernementales, Government of Haiti Ministry of Planning
UC SVA	The University of Canterbury Student Volunteer Army
UIA	International Union of Architects
ULI	Urban Land Institute
UN	United Nations
UN-HABITAT	United Nations Human Settlements Programme
UNOP	Unified New Orleans Plan
USACE	US Army Corps of Engineers
USGBC	US Green Building Council

# Interview Participants

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# 1. Introduction

## 1.1 Executive Summary: Disaster as a Wicked Problem

In urban disasters, architectural damage is the first visible sign of emergency, as well as being the first visible indicator of a city's physical recovery. This qualitative, cross-sectional case study research of three recent urban disasters explores how architectural responses to natural disasters serve as a vehicle for investigating the relevance of architectural design thinking. This exploration of architectural design thinking is often missing in disaster research literature.

The main motivation for undertaking this research stems from the researcher's professional involvement with Architecture for Humanity, an international humanitarian design organization. As the co-founding director of the regional chapter in Auckland (AFH-AKL) from July 2007 until July 2012, the researcher learned at firsthand the value of engaging in pro bono design services for communities in need, particularly in post-disaster settings. As such, this research is situated in practice. The award of a William Chick Doctoral Scholarship in 2010-2011 has afforded the author economic support.

What also catalyzed the need for this research has been the enduring public perception of architects as the last responders to disasters, despite many examples to the contrary. According to Charlesworth (2006), this perception is common even amongst design professionals. She argued that such a position is unprofessional, and it calls into question the responsibilities of architects in society (p. 6). This research is also written at a time when, despite the emergence of architectural professionals' involvement in humanitarian endeavors in the last two decades, minimal research exists on the progress and contribution of the architectural profession in disasters. This research begins with the premise that critical architectural framework can be the first step in evaluating the early design decisions in modern urban disasters.

Horst Rittel (1930–1990), a professor of architecture at the University of California Berkeley, coined the expression “Wicked Problems” in 1973 to describe a complex issue of situated research (1973, 2010). As a predecessor to complexity theory, Rittel's approach contends that a rational methodology can only be applied to “tame” problems that are easily identified and controlled as if within laboratory settings. But many societal issues such as disaster research are situated in the real world and cannot be solved using rationality alone. He called this class of problems “wicked”.

This thesis extends the Rittel's approach for evaluating the early design decisions that take place without the architects in complex events like urban disasters. It argues that closed systemic approaches to rebuilding have largely failed in part because the *wicked* issues of architectural design have been approached as if they were a *tame* problem. Brown, Harris, and Russell (2010) extended Rittel's theory in *Tackling Wicked Problems* where they argued that many of the wicked problems in society elicit transdisciplinary responses. According to Brown et. al, *wicked* problems require an open systems approach<sup>1</sup> that embraces multiple

---

<sup>1</sup> The rationality enforced a degree of naivety, which led to problems for failing to consider the consequences of actions taken. Rittel, Protzen, and Grant (1973) proposed a reframing of DTM in which the former systems approach is castigated as first generation, and

methods of constructing knowledge by the “humble position of uncertainty and provisionality” rather than through positivist determinism (p. 39). The concept of sustainability, for instance, cannot be addressed from a single perspective, but requires global multi-disciplinary methods of inquiry. Many of the *wicked* attributes of society are amplified during the chaotic period following a major urban disaster, and *wicked problems* are essentially challenges that, in many instances, cannot be resolved overnight. This research builds on Brown et al.’s proposal for “transdisciplinary imagination” as an essential component for facilitating “just and sustainable decision-making” (pp. 4-5).

Disaster research is an interdisciplinary field that involves professionals from multiple disciplines. Perry (2007) noted that, in the field of disaster research, there is a distinct divergence between those researchers who follow the “hazards” approach, the study of disaster cycles; those who adopt the “sociological approach”, the study of social disruption accompanying disasters; and those who take the “social phenomenon” approach, the study of socially constructed vulnerabilities and social change (pp. 1-15). According to Stallings (2007), the divergent approaches of disaster researchers can sometimes produce contradictory findings that create more confusion than understanding (p. 56).<sup>2</sup> These contradictory findings also suggest that the “wickedness” is not inherent in the phenomenon of disaster itself, but exists as a byproduct of the human response to the disaster. As such, the social constructivist approach is an important consideration of this research. Further, the discourse of disaster sociology can be enriched from the situated architectural design perspective, by using the *wicked problems* framework developed by Rittel. The critical research question, therefore, is:

*How does the Rittelian framework contribute to the critical design decisions in modern urban disasters?*

Currently, the architectural profession’s contributions to disaster reconstruction take the form of technical manuals for the construction of emergency and transitional shelters, the reconstruction of permanent buildings, and the restoration of infrastructure. Society considers architects as the last responders to disaster. Charlesworth (2006) observed that architects are seldom involved in the critical political decisions that determine the reconstruction process of post-disaster societies (p. 16). She also suggested that “architects should adopt an interventionist stance by taking a professional stand against the violation of human rights... [using] their design expertise” (p. 6). In finding architects to have little political influence in post-conflict cities, Charlesworth sets out a challenge for architectural researchers:

*How can architects engage in... the problem-sharing processes needed in urban centers... broken by systemic urban conflict? Is it our role to provide the definitive solution, or rather to provoke... collective action in rebuilding civil society after the disaster...?(2006, p. 132)*

---

offered alternative approach as a second generation systems approach. Rittel recognized that design and planning problems are often wicked, which led to the formulation of the second generation systems approach.

<sup>2</sup> False analogies and contradictory findings can result from the research drawing blanket observations based on external symptoms without adequately understanding the underlying social conditions that accompany disasters. In response, Perry calls for an alignment of classifications and typologies employed in conducting disaster research (14). A major challenge remains in that much of the prototypical disaster research is produced as field studies (Stallings, c2007, p. 56), but the limited resources and improvised conditions in which such studies are produced often lead researchers to employ closed-systemic approaches to justify their methods.



While Charlesworth does not situate her research in Rittelian terms, the evidence of *wickedness* is ubiquitous in her characterization of urban disaster challenges as problems that need to be shared, and in her articulation of inherent challenges of providing “definitive solutions” in a place of systemic conflict. This research also builds on the work of Charlesworth by evaluating these issues through the *wicked*, Rittelian framework and by investigating the early design problems that accompany urban disasters.

In summary, this research has two objectives:

1. To evaluate the critical design problems in post-disaster environments in order to understand specific constraints that have limited the involvement of architects in the area of humanitarian assistance;
2. To survey the attitudes and opinions of Rittelian designers (both architectural and non-architectural individuals) on various urban disaster strategies and tactics that were put into action after a disaster.

## 1.2 Thesis Structure

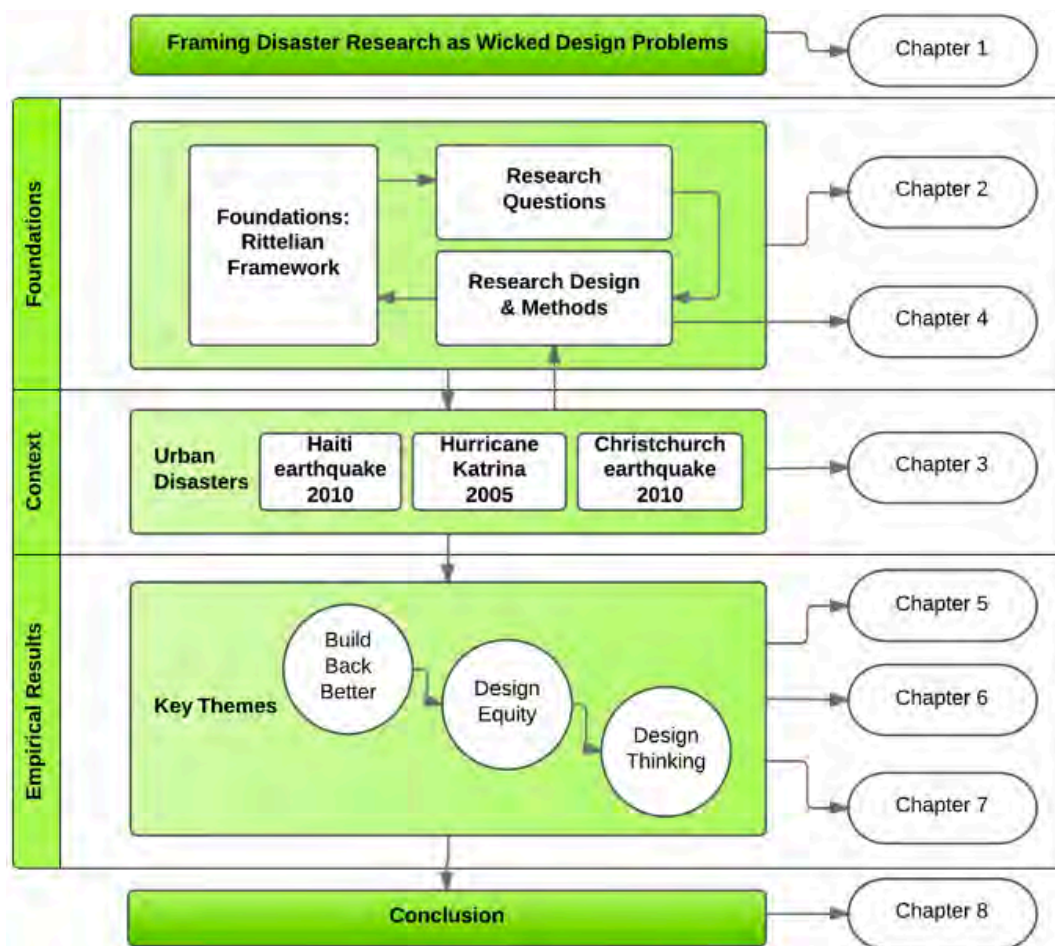


Figure 1-1: Thesis Structure

### Chapter 2: Rittelian Framework in its Context

This chapter establishes the relevance of the Rittelian framework in disasters by discussing the societal developments from within the architectural field as well as from outside the profession. It looks at the 1960’s community architecture movement, and the development of key theories from other disciplines that can explain the present-day involvement (or lack thereof) of the architectural profession in urban disasters. In

light of the recent debate on whether architects are the last responders to disasters, the balance of this chapter considers the multiple sides of this argument by exploring the factors that limit the involvement of architectural designers as well as those that signal optimism. Comparative analysis of this argument provides the theoretical grounding for the subsequent investigation of architectural design strategies and tactics emerging from the qualitative research in post disaster contexts.

### **Chapter 3: The Three Urban Disasters**

The next chapter outlines three case study sites that illustrate the key social, cultural, and political challenges that need to be considered before the Rittelian framework can be employed in the assessment of the environment's "wickedness". The case studies are examined in closer detail in the subsequent discussion.

### **Chapter 4: Research Design, Interviews, and Fieldwork**

In this chapter, research methods involving empirical, multi-hazard, cross-sectional case studies are justified against alternative methods, and the ontological and the epistemological positions of the research are also stated. This chapter also outlines the expansion of the critical question into specific subquestions. It goes on to discuss the selection process for interview participants and the overall research design, including its various phases from pilot study to field-data analysis.

### **Chapter 5: Build Back Better**

As the first one of three discussion chapters of this thesis, this chapter presents some of the tensions arising from the current practices of reconstruction agencies are discussed in terms of the adage 'build back better'. This chapter summarizes the key barriers that limit architectural profession's contribution in urban disasters by considering the pre- and post-disaster architectural conditions.

### **Chapter 6: Design Equity**

A community's access to architectural design is a gauge of its capacity for recovery. This access can affect the extent to which communities become further polarized or empowered by architectural designs in the post disaster reconstruction process. This chapter presents key anecdotes taken from the interviews with architectural design proponents to illustrate the ways in which architectural design has either facilitated or impeded post-disaster societal equity.

### **Chapter 7: Design Thinking**

This chapter explores the concept of architectural design thinking based on views expressed by architectural designers and non-architectural experts. It considers a number of adaptive challenges in each case site and identifies how some of these are addressed by individuals who employ the Rittelian framework.

### **Chapter 8: Conclusion**

This final chapter brings together the main findings of the thesis and the theoretical framework to reflect on the critical research question. It also opens up the discussion to the implications of the key findings, the research limitations, and the areas for further research.

## 2. Rittelian Framework in its Context

This literature survey briefly outlines the architectural concepts relevant to urban disasters, identifies gaps in current research, and justifies the use of the Rittelian framework in evaluating disasters. Epistemologies and ontological strategies employed by Rittel, such as objectification, generational systems thinking, and design politics, complement the methodological principles adopted for evaluating the empirical research outcomes in **chapters 5, 6, and 7**.

### 2.1 Understanding Disasters: Disasters as Social Change Catalyst

One of the earliest architectural writing that documents the impact of disasters on buildings is Leon Battista Alberti's architectural treatise, *On the Art of Building (De re aedificatoria, c1452, 1988)*, which is an extension of Vitruvius' *Ten Books on Architecture (De architectura, c15BC, 1999)*. For the most part, Alberti reinforces the Vitruvian principles of firmness, commodity, and delight, which consistently remain, even by today's standards, the hallmarks of quality in architecture. But Alberti's distinctly humanist approach to the built environment is one of the key theoretical distinctions from Vitruvius (Roccasecca, 2009; Pearson, 2011), as is recurrent discussions on the relationship between buildings and disasters (Books I, II, IV, and X). Pearson (2011) observed that "Alberti emerges from his architectural treatise as... much preoccupied by the potential destruction of buildings and cities", because "each city holds within itself not only the possibility... of its final destruction but also of its total transformation, of upheaval and reinvention"(p. 26). Alberti argued that an architect operates in an environment that constantly faces a possibility for destruction by nature, but the failure of his or her work to survive is not a product of nature's malice, but rather the fault originating with man; for not building in complete harmony with nature.

*...the body has no defense against the laws of Nature... there are frequent accidents by fire, lightning, earthquakes, battering of waves and floods, and so many irregular, improbable, and incredible things that the prodigious force of Nature can produce, which will mar and upset even the most carefully conceived plan of an architect. (Alberti, On the Art of Building, 10.1, 320)*

So how can architects avoid construction of follies that present impediments to the laws of nature? What kind of architecture did Alberti consider to be harmonious? While condemning buildings that have not been well planned, poorly constructed, and overtly ostentatious, Alberti provided design guidance on materials, construction, and ornamentation throughout his Ten Books. Roccasecca (2009) suggested that Alberti's design principles were derived from the Aristotelian concepts of matter (physical materials) and form (knowledge), in that "the humanist demands that the architect have[sic] two capabilities: that he be an intellectual insofar as he creates the project, and practical insofar as he chooses the materials according to form". However, in Pearson's view, Alberti saw architecture to be in a constant battle with nature (p. 40), where, depending on how it was approached, architecture "may be one of the noblest activities that man can undertake... [or become] among the greatest follies—proof of how far man has strayed from the order of nature"(p. 43).

Disasters can therefore act as a catalyst for assessing the health of buildings, where any destruction forced upon it offers invitations for change. While Alberti's architectural treatise remains an important part of architectural history, the relationship between architecture and disasters remain an under-explored research area in architecture.

### 2.1.1 Social Orientation of Disaster Research

Current research on disasters are largely conducted outside of architecture, hosted within the fields of sociology and engineering, and to a lesser extent, political studies, geography, and anthropology (Stallings, 2003). However, what remains constant throughout the history of disaster research is in how the studies consistently document, in one way or other, some evidence of social change that result from the physical phenomena (Kreps & Drabek, 1996; Hoffman & Oliver-Smith, 2002; Aldrich, 2012; D. Alexander, 2005).

A Canadian sociologist, Samuel Prince's 1920 thesis, *Catastrophe and Social Change*, which documented the 1917 Halifax explosion is considered by current disaster scholars as the first qualitative study of disaster (Drabek, 1968, p. vii; Scanlon, 1988, p. 213; Stallings, 2003). Despite its seminal value, scholars contended that the "unverified" and "journalistic" character of Prince's research methodology discounted its credibility and overall significance (Scanlon, 1988, p. 228), reinforcing the need for methodological vigor in disaster research. While sociological theories of disaster had only opened up at the beginning of 1960s, and much progress has since been made in terms of research process, the subject remains largely misunderstood.

But Perry (2007) argues that the social construction of disasters, as advanced by Stallings (1998), Smith (2005), and Cutter (2005), is an evolution of the classical sociological discourse, which centers on vulnerability of society affected by disaster. Legitimized by the sociological lens, such an approach can create "intellectual and empirical vacuum" to near exclusion of study on physical agents (p. 3). Kreps (2001) defined disasters as, "non-routine events in societies or their larger subsystems that involve conjunctions of physical conditions with social definitions of human harm and social disruption"(Kreps, 2001, as cited in Rodriguez, Quarantelli, & Dynes, c2007, p. 310), and Drabek (2007) contended that "non-routine" aspect of disaster fragments the efforts to systemically coordinate crisis management agencies (Drabek, c2007, p. 226). Kreps and Drabek (1996, cited in Drabek, 2005, p. 6) proposed that viewing disasters as a particular social problem can enhance its analytic potential.

Disaster research documents social change and progress as its primary objective. Quarantelli (1978) and Hewitt (1983) observed that disaster research shifted its initial focus from the physical elements of disaster to the social behavioral aspects of people affected by the event (Hewitt, 1983, as cited in D. E. Alexander, 2009; Quarantelli, 1978, p. 2). But the social framework for understanding disasters reflects a gendered approach, which Fordham (2005) characterized as largely "male-dominated" and "world-dominating" in research orientation. Emergence of disaster sociology as a subset of disaster research revealed a "highly gendered" aspect that seldom accounts for the way in which a gender lens manifests in practice (p. 343). Fordham noted that while development research began as study of developing countries, disaster research emerged from predominantly European milieu and has left a large gap in terms of considerations for gender, ethnicity, and culture (p. 344). Considering that disasters often amplify disparities along economic, racial,

and gender lines (McClellan, 2010), there is value in advancing the understanding of disasters with insights drawn from conventionally non-dominant and under-researched perspectives.

### 2.1.2 Architectural Conceptualization of Disasters

The concept of disaster as a catalyst of social change has been more common in sociology, but as the knowledge of natural hazards are becoming more relevant to discussions about social, political, and economic crises in recent years disaster has now become a topic of interest for architects, because the nature of the profession is closely attuned to, and mirror, societal developments. Although architects are considered “outsiders” to the discussion, like sociologists, disaster is viewed as part of the context in which the profession operates. The marginal interest to date may be explained by the profession’s aversion to political topics (Thorpe, 2012, p. 26; Till, 2009, p. 162), because post-disaster activities have always been political (D. E. Alexander, 2006a; Fox, 2001; Cuff, 2009). Woods (2004) criticized that architectural discourse since the Cold War had become “monological” and fearful of contention, and inferred that sites of disaster offered an opportunity to engage in insightful discussions on the future of architecture.

*The monological tendency in global affairs has cast a pall on architectural debates... the conversations of architects shifted... to narrower concerns... When the World Trade Center towers fell, the only question obsessing architects was who would be commissioned to rebuild them. What could have been a great moment of debate about the relationship of architecture to the city, indeed, of the state of architecture as an idea and practice, was lost. (Woods, 2004, pp. 18-19)*

Moreover, Woods argued that architecture “must do more than valorize in monumentally stylish new building’s global power” and also “valorize the struggles to change... [within] the places of crisis” (p. 20). In *Space in Crisis*, Wigley (2009) observed that such catastrophes remain peripheral to the practice of architecture yet they permeate not only architectural practice but also within society.

*Crises always appear as the failure of a spatial system, a failure of architecture... Nobody can plan for crisis since crisis is exactly the name for that which defeats both planning beforehand and response afterwards. (Wigley, 2009)*

Wigley argued that a crisis is a threat to an existing system in which an emergency response tries to contain the failure. Characterizing a crisis as a symptom of systematic failures is mirrored by the sociological articulation of disaster as a moment in which the social structure becomes dysfunctional. Compared to specialized disaster research disciplines or sociology and political studies, discourse on the phenomenon of disasters is relatively nascent in architecture. Consequently, there is seldom any distinction between terms such as “disaster”, “crisis”, and “catastrophe”, for which are differences in sociological literature. Alexander (2005) explained that definitional challenges within disaster research was a “minefield” but maintained that such distinctions are secondary to questions of social equity (p. 28).

## 2.2 Development of Architectural Profession

### 2.2.1 Professionalization of the Architect

How architects have come to be largely absent in disaster recovery activities as when compared to the medical, the legal, and even the engineering profession, can be explained through the history of professionalization and that of the architectural profession in particular. The professionalization of trades in the 19th century across the industrial nations of the Global North resulted in many trade professionals, including architects, to establish professional associations in order to gain competitive advantages in the market by sharing their knowledge, resources, and culture. According to Scheeler and Smith (2007), what propagated this was the unanimous understanding among those who joined such associations in realizing that “isolated achievements coming out of discrete architects’ offices, no matter how meritorious, would not alone ensure a vibrant future for the profession” (Scheeler & Smith, 2007, p. 7).

Professionalism was also characterized by an emphasis on the promotion of “the aesthetic, scientific, and practical efficacy” as its common objectives (AIA, 2009, p. 5), which suggests the positivist inclination shared by professional organizations. Code of ethics employed by professional associations tend to prescribe a set of moral principles that meet the profession’s objectives as well as to govern professional practice for the mutual benefit of its members and the public. Barber (1963) proposed the attributes essential to professional behavior as embodying: (1) high degree of expertise, (2) primary orientation to the community interest rather than the individual,<sup>3</sup> (3) high degree of internalization of code of ethics, and (4) system of reward that recognizes the achievement as an end in itself rather than as means to individual self-interest (p. 672). In other words, professional positions exist for the public good rather than to serve the self-interest.<sup>4</sup> Indeed, professionalization of trades began as a social contract between the professional body and the public, based on mutual trust and the public good as the outcome of the profession’s privileged position within society. The notion of public service in architectural associations in the UK, the U.S. and New Zealand are embodied within the broad ethical canons of professional conduct such as care and diligence, excellence, honesty, integrity and professionalism (NZRAB, 2006, pp. 46-58; AIA, 2012, pp. 1-4; RIBA, 2005, p. 3).

### 2.2.2 Threats to Professionalism

In recent decades, professionalism has come under increasing public scrutiny. Bordass and Leaman (2013) argued that the authority of building professionals has diminished because a professional system was being replaced by a bureaucratic one in the industrial era (p. 2). Appeal to expertise alone no longer provided the same privilege that traditional architects of earlier era had over influencing the design of the built environment, and building professionals have been left to compete against what Abbott (1988) characterized as alternative forms of structuring expertise, such as through establishment of “organizations” and “commodification” of professional services. Bordass and Leaman observed that the combined forces of commodification and organization had already “colonized” professionalism via “larger, often multinational,

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<sup>3</sup>Barber explained that this does not assume an absence of self-interest, but that it is “sub served indirectly”.

<sup>4</sup>Rawls (1971) extended this principle by articulating the “difference principle” in accepting social and economic inequalities as long as such positions were established under equal opportunity and they present the greatest benefit to the least advantaged members of society.

organizations... employ[ing] building professionals as part of the organizational machine, [while] constrain[ing] their independence” (2013, p. 5). It can therefore be argued that organization forces in the form of government regulations, and commodification of the building industry via standardization of processes and products have contributed to curtailing the independence of the architectural profession in recent years.

Such trends have long been the norm within the building industry, where rapid industrialization and corporatization of building processes have resulted in fragmentation of roles in the name of efficiency. At commercial level, the built environment professionals now seldom work directly with the end-users of buildings they design. In spite of the fact that the “[designer-user] relationship... [is at] the heart of what the architect does and has to offer the community”, architects have become, in many cases, “mere expendable cosmeticians”(Marshall, 1973). Bordass and Leaman argued that increased demands for efficiency and cost-reduction are replacing trust for accountability, and ethics for rules and regulations. In similar vein, Till (2009) observed that the profession of architecture is in demise due to its dependence on object-centricity which is volatile and subject to market demands, because the professional institutions are, by and large, self-referential and “self-defining in order to self-perpetuate”(p. 159).

Outside the building industry, other professions have adapted in response to increasing threats of losing many of the traditional privileges that were given through social status. Sullivan (2000) observed that medical and law profession successfully secured their members with public authority, economic security, and socioeconomic mobility, whereas engineers and architects have been unable to obtain career security and protection from market fluctuations. What seems to distinguish the medical and the law profession from the other service professionals is the fact that they created a closed-loop system between research, practice, and education. Hartenberger, Lorenz, and Lutzkendorf (2013) argued that a closed-loop system allows the profession to be less influenced by the structural forces of commodification and organization due to the ability to self-regulate and self-organize, on the basis that the public interest comes first (p. 66). Yet architects are not alone in this. Hartenberger et al. parallels the predicament of the architectural profession to that of engineers who are vulnerable to market fluctuations. Nevertheless, this thesis argues that this apparent occupational trait is more a product of the profession being characterized by its inherent dependence on others, than due to the lack of efforts by the profession to secure the market. As Till argued, architectural “dependency” is a “defining feature of architectural practice” (Till, 2009, p. 151), shaped by the immediate context on which it is built, including other adjoining factors such as time, politics, culture, and people. Architecture presents a medium through which both the material reality and the social construction of space converge on a physical object. In most cultures, architecture is its cultural symbol and social artifact (Boano & Hunter, 2012, p. 5), and equally, a manifestation of human intentions (McDonough, 1993).

### **2.2.3 Identity Crisis of the Architectural Profession**

That building professionals lack a common purpose is nothing new. Fisher (2000) observed that the architectural profession faces an increasing marginalization within the building process since the 1970s due to the profession’s inability to establish value. The fact that aesthetic values cannot easily be appraised by economists, coupled with the difficulty experienced by architects in articulating their value to others, can result in “competing service providers... push the architect further and further away from the client, and delay

the architect's input to ever more belated stages of the building process" (Fisher, 2000, p. 26). Heath (1991) contended that qualitative form of engineering knowledge appeals to commercial clients of industrial age, because they prefer to deal in quantities: statistics and sums of money is what they understand the best (Heath, c1991). Yet in practice architects are seldom able to give precision to their concepts, much less able to make evidence-based judgments to justify their recommendations. This is further declined by attempts to package architecture as art, which is inadequate from the functionalist perspective of an average capitalist who get to veto the final decision over the check book.

As much as some architects consider architecture to be a medium for "socio-aesthetic crusade" by architectural designers to have a leading role in society (Ray, 2005, p. 16), Fisher observed that the dominant perception is that "architecture is an expense to be minimized or that architects are aesthetics who must be managed" (Fisher, 2000, p. 26). Cruz and Tate (2010) argued that interdisciplinary collaboration between architecture and other fields have been limited to importing of formal attributes rather than becoming a catalyst for redefining political and economic frameworks. The need to "reengage these multiple spheres and reevaluate our own modes of operation" (pp. 78,83) are held in tension against the public perception that "an architect was a strange animal to be viewed with suspicion" (NZIA, 1955).

Bell and Wakeford (2008) suggested that "without the ability to address broad societal goals, architecture was left to focus inward"(p. 20). Watkin (2001), illustrated this inward focus of the profession in suggesting that the lack of critical analysis within the profession exposed its members to "fall back on the belief in a unitary, all-pervasive Zeitgeist" (p. 113). Tension arises where the common purpose does not line up with practice, in the absence of a closed loop that Hartenberger et al. proposed. Architects have published numerous visioning documents—in the UK (1987, 2007), in the U.S. (1957, 1988, 2000, 2007), and in New Zealand (1955, 1968, 1989, 2005, 2009)—as a testament to enduring efforts by architects to remain relevant to society. The NZIA had even restructured in 1972 to be more effective in their services to the general public upon realization that public interest is the cornerstone of the institute and "designing good individual buildings to improve whole neighborhoods or city cannot be achieved in isolation from the rest of the community"(Haughey, 1972, p. 176). Multinational associations of architects such as the UIA and CAA reiterate the salience of public interest (Vago, 1998, p. 191; CAA, 2003),<sup>5</sup> but Bell and Wakeford expressed concerns that in the U.S., architectural profession has continued to pledge their loyalty to "less than two per cent" of all buildings constructed (Bell & Wakeford, 2008).

### **2.2.4 Community Design Movement in the 1960s and its Resurgence**

Jenkins and Forsyth (2010) cited many antecedents to the architectural profession's social participation, in what Bell and Wakeford characterized as housing strategy for "the other 98 percent" of society. The mediating role that architects play in local communities as "skilled understanders" (Ward, 1996, p. 17), and enablers who can solve problems between inhabitants and their habitat has been widely observed across the U.S. and the UK. Jenkins and Forsyth observed that "community architecture movement" first emerged in the UK in the 1960s and in the U.S. in the 1970s as a direct reaction to the proliferation of public housing and

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<sup>5</sup>In the charter of UIA, (Vago, 1998, p. 191), and the CAA, the role of an architect is to "serve and promote the public interest in his efforts to improve the environment" (CAA, 2003)



state-led mass redevelopment (Jenkins & Forsyth, 2010, p. 69). As alternatives to top-down building systems, the “self-build” approaches of John Turner (1963) and “supports” approach of John Habraken (1961) mobilized a generation of architects and planners to reinforce the needs for “wider social participation” in architecture. Jenkins and Forsyth argued that this, in turn, set the tone for government authorities to include community participation as part of their planning and policy (2010, p. 26).

Community Design Centers (CDCs) in the U.S. were American equivalents of the UK public housing lobbyists, but Comerio (1987) argued that a vast majority of the designs produced by CDCs were never implemented as the centers were mostly run by “young inexperienced professionals whose ideology was stronger than their technical skills”, driven largely by “a rebellion against the sterility of modern planning and design”, for whom CDC was a mere creative outlet for the young professionals. According to Comerio, community participation was a means for better design in the UK, while in the U.S., community empowerment was an end in itself, but contended that “the social motivation behind community design does not, and should not, preclude good design”(Comerio, 1987, as cited in Jenkins & Forsyth, 2010, p. 27).

Community-centered design approach that was championed in the 1960s and 1970s by pioneers such as John Turner (Turner, 1972) and N. J. Habraken (Habraken, 1972), has been regaining popularity in recent years. Contemporaries such as John Peterson (Peterson, Carter, & Cary, 2010), Teddy Cruz (Cruz & Tate, 2010), Bryan Bell (Bell, 2004), and Cameron Sinclair (Sinclair, Stohr, & Architecture for, 2006) have each delved into both theoretical and practical aspects of designing with communities across different permutations of participatory design in architecture, such as “community-led design”, “cooperative design”, “co-design”, “co-creation”, and “self-help design”, where design is used as a mediating tool for communicating and interpreting needs and priorities of stakeholders. A case in point is “the one percent” initiative by Public Architecture, U.S.-based non-profit organization that promotes architects to pledge one percent of their time annually on community projects. Its founder, John Peterson<sup>6</sup> (2010), contended that the work of professionals solely driven by “generosity of spirit” or altruism cannot be self-sustaining in the long run; it must incorporate non-profit work within normal for-profit practice while the former meets the performance objectives of the latter (John Peterson, as cited in Peterson et al., 2010, p. xi). The initiative demonstrated that the main barrier for architects to engage in non-profit work—whether in post-disaster reconstruction or in low-socioeconomic communities—is not for the lack of financial incentives or for the lack of time, but because the *pro bono* component of architectural design service had not yet been professionalized and recognized as they have been in legal profession.

### **2.2.5 Architectural Professionals as Middle Agents**

Community centered reconstruction movements can also be traced against the backdrop of widespread avant-garde obsession with object-making in the architectural profession (Till, 2009; Cruz & Tate, 2010; Boano & Hunter, 2012; Jenkins & Forsyth, 2010). Historically, the moral hegemony of architecture has been polarized between a top-down approach (autocratic, architect as an artistic “prima donna”) and a bottom-up

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<sup>6</sup>John Paterson is the founder of Public Architecture, a U.S. based non-profit organization that promotes architects to pledge one per cent of their time on community projects.

approach (democratic, community-centric) (Burgess, 1983; Ward, 1996; Watkin, 2001; Ray, 2005, p. 16).<sup>7</sup>

However, Janda and Parag (2013) contended that such dichotomous approaches can overlook the role of architects who, as “middle actors”, can offer valuable insights. In contrast to Abbott’s (1988) suggestion that structural forces of commodification and organization may dominate over professionalism, Janda and Parag argued that architects are important “middle agents” who can shape practices because “they are neither top nor bottom, and neither suppliers nor consumers”(p. 47). Middle agents can exert influence by adopting strategies to enable, mediate, and aggregate design decisions that connect and facilitate the top (by influencing policy) and the bottom (by influencing clients and users). This unique position of professionals as middle agents provides architects with agency to articulate needs, constraints, and potentials “upwards, downwards, and sideways [to their peers]” with impact and as a complement to existing top-down and bottom-up approaches. But given the different agendas, interests, and resources, the role of architectural profession as middle agents, Janda and Parag does not prescribe the “middle-out approach” as a panacea for societal challenges.

Despite the physical portrayal of architecture as material end-product, the concept of architecture as process and service industry remains a relevant topic within the discourses of architecture. Architecture can be a framing agent for the built environment—a neutral backdrop against which societal power dynamics can be studied (Dovey, 1999, p. 2)—but Till (2009) argued that greater potential remains in the process of architecture rather than in its outcome as final object, where architectural professionals can act as the transformative agents of creative processes. In the absence of professional autonomy, the profession faces a “serious hazard... [where] the practice of architecture will be... placed in the hands of client organizations and the building industry” (Gutman, 1982), and architectural agency within the practice of architecture can be opportunities to influence change.

The history of architectural profession compared alongside medical and legal professions reinforces the strong reciprocal relationship that architectural profession has with society, in mirroring its developing in both positive and negative ways. The discussion has also left open the possibility for the profession to act as an influential middle-agent that can enable, mediate, and aggregate societal change, as much as it can disable, disconnect, and disaggregate relationships. What does it mean for architectural profession to be an agent of societal change? How is it different to perceive architecture as means rather than as ends? How can the architects, as middle-agents, influence societal change positively?

*In a world with little respect for traditional structures, almost everything... can be approached as a design problem, in which new solutions must be sought to meet particular needs and specific contexts. (Fisher, 2000, p. 4)*

One possible consideration, which Fisher (2000) proposed, is in the diversification of roles of architects,

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<sup>7</sup>Top-down approach employs an outcome-led design process defined by regulations, whereas bottom-up approach encourages a process-led approach characterized by consensus-building and community-centered strategies. There are advantages and shortcomings in either approaches, which are not mutually exclusive to each other.

rather than to change the status quo by altering the way architects practice<sup>8</sup> or by increasing competition with their professional peers.

## 2.3 Generational Systems Approach

### 2.3.1 Horst Rittel and Design Methods Movement

The design methods movement began in the early 1960s, led by design theorist Horst Rittel, emerged as an attempt to rationalize how better buildings could be designed. Developed at the height of rapid industrialization of the building industry, Cross (1984) observed that design methodology movement progressed from idealization of design process, to description of intrinsic design problems, to observation of the design activity, and finally to the reflection on the fundamentals of design (1984, p. x). The systemization of design was intended to “supplement, rather than to supplant, traditional design methods”, but the scientific orientation of early systems approach led architectural designers to “assume that the ‘systematic’ must be the enemy of the ‘intuitive’”(p. 1).

In response to this paradoxical disposition, Rittel (1973) proposed a generational split between two distinct approaches to design processes, in which the earlier generation design approach was thought to be inadequate for addressing complex design problems. Rittel<sup>9</sup> believed that “second generation” design methods had the potential to lift the design profession from its own “crisis”, because it was both procedurally and attitudinally different from the scientific, “mission-oriented systems approach” of the former generation (1973, 1984, p. 320). In developing the “second generation” approach to design processes, Rittel coined the expression “wicked problems”<sup>10</sup> to describe a complex issues that arise from design and planning, but it is equally applicable to situated research. A rational methodology can only be applied to “tame” problems that are easily identified and controlled as if within laboratory settings, but many complex societal issues such as disaster research are already involved in the real world, and cannot be solved using laboratory-like rationality alone. He called this class of problems “wicked”. Another key characteristic of the second generation design method was to place activism and ultimate self-elimination at its core, where “the best world would be one where no planning *for others* or on the behalf of others or at others was necessary”(1973, 1984, p. 326). The second generation design method was more humanist and open-ended than its predecessor, and as such, it has been of particular interest to the profession of architecture, environmental design, and planning (Cross, 1984, p. ix).

Protzen (2010) observed that when Rittel developed the WP framework, Rittel made no distinction between

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<sup>8</sup>Fisher suggested pro bono community design as a possible outlet for restoring confidence in the general public in architecture. The Latin expression “pro bono (publico)” which translates as, “for the public good”, is widely understood to mean professional services undertaken on volunteer basis, yet it has only recently gained prevalence among the the architectural profession.

<sup>9</sup>Christopher Alexander was once an exponent of design methodology, but he retracted from the field upon learning that it had “degenerated” to being about the study of “methods for its own sake” (Alexander, as cited inCross, 1984, p. 316). Although Rittel recognized the shortcomings of the early models of design methodology, he sought to reframe it in terms of the “wicked problems” because Rittel considered the role of design methodology to be more important than its practical application. (H. Rittel, Grant, & Protzen, 1973, 1984, p. 316).

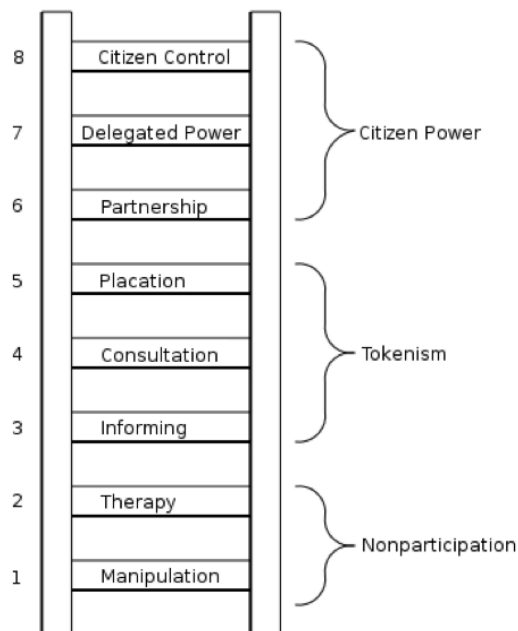
<sup>10</sup>(Because any attempts to solve such problems from within often lead to other problems, Rittel and Webber (1973) recommended that we embrace paradox, uncertainty, and complexity (H. W. J. Rittel & Webber, 1973).) As a thought leader of Design Theories and Methods (DTM), which emerged from the assumption that rationality can result in better designs, Rittel challenged the concept of a “systems approach” to society’s problems by outlining the limitations of rationality and scientific means of solving situated problems (Protzen & Harris, 2010, p. 152).

the activities of designing and planning, because he was more focused on solving problems. Rather than limiting the scope of design problems to a particular profession, Rittel argued that “everybody designs at least some of the time” (p. 2). Charlesworth (2006) made a similar argument in *Architects Without Frontiers*, employing the terms ‘architect’ and ‘architecture’ to encompass multiple professional groups operating in the built environment—in her case, reconstruction activities of post-war European cities (p. 18). Despite the traditional association of architecture with “elite edifices for the emerging bourgeoisie”, Charlesworth argued that architecture also embodied “broader acts of thinking, creating, and implementing in a structured intellectual framework” (p. 19). The context of disasters provide an opportunity to discuss, as per Charlesworth’s challenge of how architects can “engage in... the problem-sharing processes needed in urban centres... broken by systemic urban conflict”, where Charlesworth asks: “Is it our role to provide the definitive solution, or rather to provoke... collective action in rebuilding civil society after the disaster...?” (p. 132).

### 2.3.2 Democratizing Design

Jenkins and Forsyth (2010) contended that planning is the only profession which statutorily requires some element of “wider social participation”, which developed out of reactions to top-down planning approaches in the post-war redevelopment in the UK and North America in the 1960s (p. 69). An influential work that emerged from this era is Arnstein (1969)’s concept of the “Ladder of Citizen Participation”, which articulates a tiered notion of power distribution.

Figure 2-1: Arnstein (1969)’s Ladder of Citizen Participation



SOURCE: (Arnstein, 1969) Reprinted with permission: The ladder of participation, categorized under eight successive rungs according to the levels of participation are determined by extent to which the participating citizen has influenced the outcome. The eight rungs of the ladder are clustered into three tiers of power, namely: citizen power, tokenism, and non-participation.

Arnstein explained that “citizen participation is a categorical term for citizen power” in which forms of participation are distinguished from its substance, where participation can become an “empty ritual” if it does not accompany resources and influence (p. 217). But Davidson, Johnson, Lizarralde, Dikmen, and Sliwinski

(2007) insisted that the lack of existing guidelines on how the principles of participation can be applied in practice remain the main challenges in implementing effective community participation (p. 102). Tokenism is commonly observed in state-led community consultation forums where ideally the participants are given the opportunity to express their views based on well-informed opinion developed prior to the consultation. The downside of consultation is that the participants, who are often stakeholders of the issues being consulted on, are heard but not necessarily listened to. Davidson et al. also contended that “consulting, and informing have often been passed off as legitimate forms of community participation in reconstruction, despite the users’ participation in decision-making being stifled”(p. 102), because there is no assurance that the views of the participating community will be reflected in the design decisions made for them. Non-participation in the context of disaster response is a default strategy for many disaster agencies operating in the emergency phase of the disaster.

When applied to architecture, the power dynamics within the professional practice reveal reappropriation of architecture as an artillery of power. Design charrettes usually fit this category, where design is used as a democratizing tool for leveling the power discrepancy among the charrette participants. Without preconceptions, discovery happens simultaneously with experts through creative process of brainstorming with a group. An important aspect of this is ownership and responsibility, where power is redistributed via means of taking on accountability, not merely authority and choices.

In light of what has been discussed so far: a concept of disasters as social change agent, the sociological understanding of disasters, and how history of the architectural profession highlights its dependence on society and social change, the next section explores the concept of disaster urbanism.

## **2.4 Disaster Urbanism**

### **2.4.1 Humanitarianism**

The 20th century was an age of contradictions. Not only was it the bloodiest century as compared to earlier eras,<sup>11</sup> it was also a turning point for the world which fought for democracy and the establishment of the modern human rights movement, marked with the formation of the United Nations (UN) to replace the League of Nations in the early years of Cold War, shortly followed by the ratification of the Universal Declaration of Human Rights (UDHR) on December 10, 1948. Conceived “at the apex of human folly... it represents a monumental change in moral and political thought, where the ancient paradigms of power and strength begrudgingly cede turf to conscience and morality” (O’Neil, c2006, p. 301), UDHR remains the most ambitious aspiration constructed and endorsed by world leaders following the WWII. Holmes (2011) and Fox (2001) suggested that international disaster relief efforts largely began as an ad hoc volunteer effort by multinationals in the early 20<sup>th</sup> century to deal with fragile states (Holmes, 2011, p. 113; Fox, 2001, p. 275). In his call for a reform of the humanitarian response in the 21<sup>st</sup> century, Holmes suggested that natural disasters are becoming more difficult to predict and manage. Inability of international aid agencies to cope with major disasters in the 21<sup>st</sup> century raised doubts as to whether “international system as it then stood

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<sup>11</sup>Norris, Margot, (2000), *Writing War in the 20th Century*, The University Press of Virginia: VA, p2; McCullough, Michael E. et al. (Eds), 2000, *Forgiveness: Theory, Research, and Practice*, The Guilford Press: NY, p3

was... really a system at all” (2011, p. 115). Although Holmes argued that humanitarian agencies need to be better coordinated to improve their effectiveness on the ground, Fox cautioned that the humanitarian aid sector is becoming increasingly politicized, “[in] a world where bilateral aid is... restricted to those countries prepared to follow Western strictures on the economy” (Fox, 2001, p. 288). The “first generation” of international agencies like the UN sought to contain the spread of communism through diplomatic interventions and assistance of its member states (Cahill, 2003b). However, as communism became less of a threat and as trade barriers between nation states opened up, global multinational, humanitarian aid conglomerates have evolved to focus on disaster relief and development of nations.<sup>12</sup>

Many humanitarian agencies champion policy frameworks that aim to “build back better”, but because they aggregate complexities of disaster by optimizing how they respond to a given situation, longer-term considerations of architecture remains at the margins of shorter-term recovery priorities (Boano, Lamarca, Hunter, Leclair-Paquet, & Wade, 2010; Boano & Hunter, 2012, p. 3; Lizarralde, Johnson, & Davidson, 2010).<sup>13</sup> For instance, UN is the dominant player in the global humanitarian aid sector, within which there are specialized institutions that focus on specific aspect of post disaster response: World Food Programme focuses on distribution of emergency supplies of food to disaster victims, while World Health Organization distributes healthcare, and UN High Commissioner for Refugees (UNHCR) assists refugees and internally displaced persons in repatriation process through short-term supply of emergency shelters.

Within such structure, participation of wider public in addressing the post-disaster design problems is often suppressed or bypassed by professionals themselves in the name of expediency and short-term results (Davidson et al., 2007, p. 101). Contrary to the common knowledge that wider social participation in the process of recovery is beneficial in the long run, the organizational design in many humanitarian agencies do not, in practice, consider community participation as an instrumental performance measure.

Baudrillard (2005) denounced this phenomenon as “Western humanitarianism”, an instrument of neocolonialism without regard to and respect for the affected population (Baudrillard, 2005, as cited in Lacy & Wilkin, 2005, p. 11). Fox (2001) suggested that this “new humanitarianism” that is burgeoning in the 21<sup>st</sup> century—defined by its principled, politically sensitive, and human rights based characters—may be a new moral banner under which Western moral values persist. But evidence also suggests that even when disaster victims are given the opportunity to make design decisions for themselves, many opt for less

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<sup>12</sup>Other non-governmental organizations (NGO), such as the Red Cross, Médecines Sans Frontières (MSF), Salvation Army, and Oxfam, followed suit, joined by smaller, local NGOs and civic society organizations (CSO) operating at regional scales. Cahill (2003), a professor of medicine and international affairs, suggested that humanitarianism faces many challenges for its basis in Western ideologies of the Global North, for effectively “sheltering Western states from the spillover effects of political crises but is less so in solving problems it claims to address”(Cahill, 2003a).

<sup>13</sup>Another example is Volunteer Architects' Network (VAN) founded in 1995 by a Japanese architect Shigeru Ban, who began personally responding to both national and international humanitarian crises on pro bono basis. Ban's first project with UNHCR in developing paper tube tents for Rwandans displaced by civil war in 1994 marked a beginning of his career in disaster relief architecture, using biodegradable material and inspired by traditional Japanese joinery (Ban, 2010, p. 9). VAN initially operated as a subsidiary of Ban's regular architectural firm, then later on as a part of Ban's academic activities with his students testing various permutations and strengths of low-cost, recyclable materials. Most importantly, the design prioritized “beginner-friendly” details which could be constructed by students but later on be assembled by anyone in a disaster. The legacy of Ban's work in disasters over the years has been, and continues to create a younger generation of architects and other volunteers worldwide to apply their skills and resources, much in the same spirit as Ban, to nurture disaster victims. Ban has been involved in Haiti following the 2010 earthquake, and most recently in Christchurch.

seismically stable “western” concrete building instead of more appropriate and economically viable vernacular design that use locally sourced timber and construction systems (Rapoport, 1969; Bell & Wakeford, 2008). When the perception of wealth and higher social status are preferred over safety and structural integrity rebuilding professionals are in an untenable position to advocate for *building back better*.

### 2.4.2 Architects as the Last Responders of Disasters?

Reconstruction of the built environment is considered the last stage of post disaster phases (Haas, Kates and Bowden, 1977; Brusma, 2007; Freudenburg, 2009; Whitaker and Levitt, 2009; Dupuy, 2010; Oliver-Smith, 2010; Lizarralde, Johnson and Davidson, 2010), but many of the decisions pertaining to building activities are made much earlier in the process, by non-designers. There is a question of whether building professionals themselves need to be involved in the early stages of recovery prior to reconstruction, but some hold the opinion that building professionals, particularly architects, should be the last responders of a disaster.

Within the architectural profession, Thorpe (2012) observed that there is a 20-year gap between the profession’s active engagement with public affairs: the community design movement of the 1960s lost momentum in the late 1970s, then reemerged in the late 1990s as architectural designers began to take interest humanitarian and ecological design principles (pp. 9-10). While this resurgence has sparked interest in ways that architectural design could provide “agency” and “engagement”, Nussbaum (2010) questioned whether humanitarian design was the “new imperialism” (p. 13). Why do majority of so-called humanitarian designers emerge out of America and Europe, for clients in Asia and Africa? Do these designers understand the colonial legacies of the countries they want to do good in? Could the locals produce their own solutions without external intervention? Nussbaum’s reservations about the premise of humanitarian design mirror the attitudes of Baudrillard and Fox as stated earlier. Professionalization of architecture, by creating a special interest group of highly skilled architects, inherently denied the notion that “everyone is a designer” (Nussbaum, 2007), and thus undemocratic and “imperialist”. Such practices have led many communities in post-disaster context to view architectural contributions as covert forms of “colonialism” (Bell & Wakeford, 2008, p. 31), “imperialism” (Nussbaum, 2010), which is altogether “marginal at best” (Sanderson, 2010). The “Nussbaum controversy”, as it is widely referred to by design bloggers attests to the fact that design services in post disaster settings can have negative consequences. But what do we make of the humanitarian designers? Are their contributions to post disaster urban conditions necessarily all negative?

### 2.4.3 From Donor-Driven to User-Driven Reconstruction

Against this debate, however, disaster research has shown that the nature of humanitarian assistance in recent years are shifting from one that had been professional-led to an approach that is more community centered. Already in 1972, the British architect John Turner supported this by arguing that dweller-controlled homes are cheaper and functionally better than those that have been built by third-party such as governments and corporations (Turner, 1972). But before going further in this argument, the distinction between “donors” and “owners” need to be clarified. Within disaster research literature, *donors* refer to government entities and NGOs who would typically contract the construction work to builders, while *owner-driven* are the self-helpers in developing countries who do so out of need. In the industrialized nations of the West, however, *donors* and *owners* can be synonymous, as corporations often develop tall buildings to make

profit rather than according to the needs of its users. Based on this, Schilderman (2010) identified the four categories of housing processes (Schilderman, 2010, p. 18):

1. Sponsors decide and sponsors provide<sup>14</sup>
2. Sponsors decide and users provide<sup>15</sup>
3. Users decide and users provide
4. Users decide and sponsors provide

Which one or combination of the four processes are implemented depends on each case. The closest approach to Turner's ideal of "dweller-controlled" housing is when users can be both design decision-makers and builders of their own housing (Schilderman, 2010, p. 15). Having the autonomy to build on their own terms offers many positives, such as flexibility and a sense of empowerment, but it can be quite challenging in practice. Such type of housing is common in the developing countries with unregulated housing sector, which is often dubbed "informal housing", "slums", and "favelas". While the dwellers have complete control of the housing process, the major down side is that they do not receive any financial or technical support from outside agencies. As such, the process of construction is "incremental" since they are completed in small sections as resources become available. Housing of this type depends on the limited skills and resources of the inhabitants of each dwelling, which can have a detrimental effect in disasters. A popular assertion exists among international seismologists that "earthquakes don't kill people, but buildings do" (Gledhill, Ristau, Reyners, Fry, & Holden, 2011), and in Haiti, such informal settlements, combined with overcrowding, has been blamed for a significant percentage of casualties in Port-au-Prince (Oliver-Smith, 2010, p. 35).

Schilderman observed that participatory approaches to rebuilding have replaced the non-participatory strategies of many governmental agencies and NGOs. However, Schilderman also warned that participation may not be as effective since the emergency relief agencies are still hard-wired to behave in the top-down manner (Schilderman, 2010, p. 33). In practice, many relief agencies seek to maintain control and implement Turner's first model: "sponsors decide and sponsors provide", and as a result, communities can be left out of the design decision making that directly impact on their livelihood. According to Schilderman, the model of "users decide and sponsors provide" is becoming more common in recent years (p. 18). Sponsors have come to recognize that, irrespective of who builds them in the first place, users will be the long-term dwellers and caretakers of houses. Participatory reconstruction strategy such as Public Private Partnerships was intended to reduce the skills and resources gap by working in partnership with private sector agencies.

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<sup>14</sup>"Sponsors decide and sponsors provide" has been, and still continues to be, the preferred model for all parties during the emergency phase of a natural disaster. Sponsors in this case would be governments, but where capacity is limited, it may also involve other humanitarian agencies such as the International Federation of Red Crescent or Red Cross (IFRC) and the United Nations Refugee Agency (UNHCR). But there are also exceptions in terms of how sponsors are defined in post-disaster rebuilding process. In the aftermath of the 2010 Haiti earthquake, the national government was rendered unable to function, and the task of emergency housing was taken over by an international community of non-governmental organizations (NGOs) who made decisions on where to place and provide for over 2 million internally displaced Haitians. The immediate need for shelter against outside elements for disaster survivors who have been displaced by disaster is just as critical as the access to food, water, and medicine. As such, housing provided under such circumstances tend to be of temporary nature, prefabricated, and made out of materials that are not durable beyond the short-term usage.

<sup>15</sup>"Sponsors decide and users provide" is becoming a preferred method of housing for many developmental agencies. A case in point is Habitat for Humanity International, who provide all of the initial financing and technical support for housing selected inhabitants, where users are required, in exchange, to give "sweat-equity" by participating in the construction of their own house and are given a long-term interest-free loans to pay back a part of the construction cost of their house. Following the 2005 Hurricane Katrina, New Orleans Habitat Musicians' Village was created in partnership with the local Habitat for Humanity affiliate in the Upper Ninth Ward of New Orleans, where a collective of local musicians banded together in an effort to preserve the city's musical culture and its multiple generations of musicians and their extended families.



However, in practice, Boano and Hunter (2012) argued that “people-centered vision of development and post-disaster practice... tend to lose momentum (because of) participatory neologisms”(p. 4), where “participation” can mean different things to different stakeholders. A major challenge of user-centric approaches remains to be in moderating the extent of user participation in practice. If users have limited involvement in the decisions that affect their livelihood, the success of sponsor-supplied housing is also limited. If we are to consider the approach that would be in the best interest for the profession, it goes without saying that architects would prefer the donor-driven approach, as architects – in the western industrial nations at least – have traditionally been commissioned by wealthy patrons.

But putting professional interests aside, there are also precedents for architectural design that advocate for user-driven approaches, particularly in the early works of John Turner, John Habraken, and Stewart Brand. Habraken (1972) developed a system of design decision-making that subdivides design process in terms of the urban tissue, the architectural support and the internal fit-out, the latter of which changes most often according to the needs of the users. Turner (1972) has articulated the need for housing that is dweller-controlled, reframing it in terms of “housing as a verb”, rather than as a noun, focusing on the social aspects of how housing enables livelihoods rather than from the point of view of a house as an object (p. 152). Similarly, Brand (1994) acknowledged that building is “both verb and noun”, and argued that even though architecture strives for permanence, change with use is inevitable because “function melts form” (pp. 2,156):

*Almost no buildings adapt well. They're designed not to adapt; also budgeted and financed not to, constructed not to, administered not to, maintained not to, regulated and taxed not to, even remodeled not to. But all buildings (except monuments) adapt anyway, however poorly, because the usages in and around them are changing constantly.*

Disaster research scholars agree that to *build back better* neither donor-driven nor user-driven approaches are optimal solutions. In the donor-driven model, agencies tend to take a narrow view of building back better to build at scale at speed, without addressing other underlying causes such as poverty and inadequate local capacity to maintain donor-supplied housing. In the owner-driven model, the quality can be compromised without adequate support and guidance from donor agencies, who in many cases tend to take over the rebuilding process. Schilderman offers a third approach: people-centered reconstruction (PCR), which goes beyond the challenges that both donor-driven reconstruction (DDR) and owner-driven reconstruction (ODR) strategies present. It goes to the heart of the original intention of *build back better* which recognizes the physical destruction of the built environment as the symptoms of deeper underlying vulnerabilities of human settlements (Schilderman, 2010, p. 33). But what implication does PCR have for the architectural profession?

### **2.4.3 Post-disaster Humanitarian Aid Design**

Alternative design solutions for emergency housing—offered by architects in equally spontaneous design competitions that crop up after major disasters—rarely evolve past the prototype stage in development (Ban, December 3, 2012). Merkel and Whitaker (2010) argued that many have turned into “an architectural beauty contest” (Merkel & Wihitaker, 2010, p. 129), citing that “unproven concepts can be a distraction to the task at hand” (C. Sinclair, (2010), BD Online, as cited inMerkel & Wihitaker, 2010, p. 129). Indeed, Regan

Potangaroa, who has over 15 years experience in disaster relief, observed that, “there are two types of aid workers we don’t want to see in emergency: first, those with a lot of passion but no experience; second, those who are technically competent but has no heart” (R. Potangaroa, Personal Communication, March 13, 2012), suggesting that architects like to design things, but it is not the skill that is needed in emergency relief.

Despite there being many social, cultural, political, and economic reasons that add to the complexity of post disaster contexts, the urgency of disaster recovery activities remain the main reason why architectural design activities are de-prioritized. In addition, UNHCR is specifically only mandated to provide temporary alleviation from suffering caused by major social disruption—whether it is caused by war or natural disaster (Wilde, 1998, p. 111). Many humanitarian aid organizations steer clear of activities that can prolong the temporary nature of external assistance, even though in reality many people stay beyond the intended duration in temporary shelters. However, Olshansky and Johnson (2010) argued that emphasis on speed alone can lead to mistakes from inadequate analysis and hasty decisions that cannot be corrected (p. 218). Overall, it points to a large systemic gap between what is logistically possible on the ground and the types of architectural design solutions offered by many architectural designers, however well-intended, reflecting on the inadequate appreciation of the situation by those offering such service.

#### **2.4.4 Limitations of Systemic Approaches**

Spector (2001) contended that systematic approaches to architectural design can lionize the designer as an “anonymous, detached, scientifically rational diagnostician”. A temporary refuge that such approach provides, however, also limits further opportunities to integrate dialogue with intended users of its design (p. 208). Indeed, Ward (1996) agreed that problem is exacerbated when overlaid with regulations and bureaucracy, because it inflates a sense of confidence which can make architectural designers feel competent beyond their expertise to consent to designing hospitals right through to entire cities without sufficient additional training (p. 21).

However, McKnight and Block (2010) suggested that “professionalization is the market replacement for a community that has lost or outsourced its capacity to care” (p. 36).<sup>16</sup> The main risk of professionalism is that professionals provide specialist service to a community, using deep domain expertise gained from outside and thereby creating an unhealthy dependence between communities and professionals for access to that expertise. Professionalization of disaster can alienate communities from its ability to be self-sufficient.

When it comes to design, humanitarian agencies and architectural professionals both view the general activity of design as a systemic means to reduce cost and increase productivity. The main difference is that humanitarian agencies view architectural design as an excessive component to disaster recovery process (Ban, November 3, 2011), while architectural professionals view the same activity as an opportunity to innovate (Jenkins & Forsyth, 2010, p. 78). Many designers understand that any expenses associated with prototyping and testing—which can often be the most resource-intensive component of the building

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<sup>16</sup>The rejection of professionalism is by no means to advocate for an insular society that is hostile to outsiders, but to highlight the dangers of unabated reliance on globalization and potentially one-sided systems of commodification that can diminish the well-being of communities at every scale: local, national, and global. For communities to truly prosper, McKnight and Block said that people cannot thrive in a consumer society, and that people have to re-learn to become citizens and producers.

process—but argue that this cost can be recouped through economies of scale. But in the context of disasters, humanitarian principles are largely “concerned with addressing acute human suffering” (Amaratunga & Haigh, 2011, p. 8), for which there never is enough time or resources to help those in need. Activities that do not immediately contribute to this objective, design services or otherwise, are de-prioritized by those attending to disasters.

Overall, the critics of humanitarian design are less concerned with the motivations of designers than they are with designers’ ability to impart unintended negative consequences. McKnight and Block contended that efficiencies in themselves do not address problems if underlying problem are not first addressed:

*Systems aggregate deficiencies in the name of efficiency. Systems and professionals promise that the institutions customizes care and personalizes service, but it is an unfulfillable promise... What they miss in the aggregation of deficiencies is that the structure itself and the thinking that underlies it makes personalized care impossible. - McKnight and Block (2010), The Abundant Community, p.41 (John McKnight & Block, 2010, p. 41)*

Similarly, the challenges facing humanitarian design practice does not seem to lie in establishing post disaster context as the new frontier for engaging creative professional practice, nor to force alternative forms of shelter upon disaster survivors by competing with established aid operations. Doing so would only be addressing the symptoms of crisis rather than alleviating its cause.

#### **2.4.5 Opportunity to Design from the Bottom-up**

For those designers who advocate for, and practice, humanitarian design, they insist that such humanitarianism is “the new compassion”, which “demands more than a one-off transactional relationship between demand and supply: it becomes an integrated discipline that responds to local needs more directly than conventional practice”(Kaye, 2011). Nevertheless, Pilloton (2010) argued that “most critics who call humanitarian design the new imperialism haven’t done the work and realized how messy, political, and complex it can be”, while conceding that “we don’t have the best practices or answers yet”. Influencing social change by enabling design to occur from the ground up has been a common strategy for humanitarian design practitioners.

The ability for the world to “meet the needs of the present without compromising the ability of future generations to meet their needs” (WCED, 1987, p.43 as cited in Fordham, 2005) has always been at the very heart of self-build advocates (Habracken, 1972; Turner, 1972; Sinclair et al., 2006; Watkins, 2009; Ban, 2011) who advance an evidence-based argument to suggest that community-centered design is superior to those built without them in the long-term. Nussbaum (2007) contended that democratization of architecture should not promote mass proliferation of pseudo-architecture, but instead to invite architects to reassess the process of design and the overall objective by “switch[ing] gears from designing for to designing with”.

Over the last 40 years, humanitarian agencies and government entities sought to increase the level of participation of people in making future design decisions by adopting community-based post disaster recovery approaches, but the results have been underwhelming (UNCHS–Habitat, 2001, p. 40). Rebuilding

from the ground up entails an equal partnership between rebuilding agencies and the community members, yet the lack of clarity on how to achieve equity have resulted in decentralization of power without first ensuring that there is capacity within communities. The UN observed that devolution of resources without accountability can lead to greater inequality than in reduction of it (2001, p. 40). Fordham (2007) and Aldrich (2012) argued that overemphasis on “social capital” is prone to abuse through purely technical application for the same reasons (Fordham, 2005, p. 343). The resourcefulness of the local residents—who have, over the years, developed dependence on the “outside” professional assistance—can be limited. Moreover, Aldrich (2012) argued that social capital is a “double-edged sword”, which can increase the resilience of those with robust network while disadvantaging those at the margins even more (Aldrich, 2012, p. 2). But it is also worth noting that community-centered design approach, when successful, holds a promise of an improved local resilience through increase in accountability and empowerment of communities. The main challenge of community-centered approach in post-disaster settings remains to be in its implementation.

In the last decade, growing number of natural disasters visible to the public eye also gave rise to humanitarian design practices like Architecture for Humanity, Project H Design, Emergency Architects, Builders Without Borders, and Public Architecture to name just a few. Despite the Global Financial Crisis (GFC) which has led to a slump in both the quantity of available work in the construction industry and the rising unemployment of the architectural profession in the western industrial nations, many of these organizations, to their own surprise, have grown steadily in size, and in the case of the U.S., they were among only a handful of organizations that have continued to hire architects at or above the pre-recession rate.

### **2.4.6 Architectural Empowerment**

Why do humanitarian agencies not demand higher standards for post-disaster reconstruction? Should architectural designers participate in humanitarian endeavors? Can architectural designers be first responders in disasters? Boano and Hunter (2010) acknowledged the significant power for architecture “to reconstruct social networks, raise solidarity, empower communities and encourage partnerships”, asserting that professionals with appreciation for the central role of community need to exist alongside the technical expertise.

Currently, the architectural design contributions to disaster reconstruction are found in the form of technical manuals for constructing emergency and transitional shelters, permanent reconstruction projects, and restoration of infrastructure. Architects are considered by society as the last responders to disasters. Esther Charlesworth (2006) observed that architects are seldom involved in the critical political decisions that determine the reconstruction process of post-disaster societies (p. 16), and suggested that “architects should adopt an interventionist stance by taking a professional stand against the violation of human rights... [by using] their design expertise” (p. 6). In finding architects to have little political influence in post-conflict cities, Charlesworth sets out a challenge for architectural researchers: “how can architects engage in... the problem-sharing processes needed in urban centres... broken by systemic urban conflict? Is it our role to provide the definitive solution, or rather to provoke... collective action in rebuilding civil society after the disaster...?” (p. 132) While Charlesworth does not situate her research in terms of the *wicked problems*, the evidence of the *wickedness* is ubiquitous in her characterization of urban disaster problems as needing to be

“[shared]”, and an inherent challenge of providing a “definitive solution” in a place of systemic conflict. This research builds on the work of Charlesworth by reevaluating these issues through the *wicked* architectural lenses of architectural designers situated in the field of disasters.

But if humanitarian designers do not see themselves as the last responders of disaster, what role do they play? Why do humanitarian agencies not demand higher standards for post-disaster reconstruction? Should architectural designers participate in humanitarian endeavors? Contextualizing disasters within the robust methodological framework of architecture and the analytical strategies used in sociology are the basis for evaluating the research proposition that architectural problem solving is of value in addressing the wicked problem of disasters. In adopting well-established research frameworks of both fields, this research seeks to maximize the impact of its findings, and by extension, make the research more widely accessible.

# 3. The Three Urban Disasters

## 3.0 Overview

The urban conditions of the three selected case study cities are defined by their particular histories and circumstances, and thus each presents its own unique set of “wickedness”:

1. **Port-au-Prince, Haiti** – as an industrial capital of a nation that has been marred by the long history of transnational colonialism and multi-generational dictatorship, mismanagement of resources, together with the environmental destruction over time depleted the Haitian soil, deterioration of its once lush forests and the resulting loss of livelihoods have forced many rural Haitians to move to Port-au-Prince in search for work. Indeed, one of the central arguments by disaster researchers has been that the lack of planning, rapid population growth coupled with unmet urban housing supply in Port-au-Prince led to proliferation of *Bidonville* (informal settlement) in the last three decades, which has been the chief cause of most of the fatalities in the Haitian earthquake of January 2011.

Figure 3-1: Location of Case Sites (1) and (2)



2. **New Orleans, Louisiana; Biloxi, Mississippi, U.S.** – New Orleans is one of the largest metropolitan cities amid the southern states of the U.S. along the Gulf of Mexico, known as the Gulf coast. For over 100 years, this flood-prone city accommodated rapid urban development by draining out the adjacent marshlands and building artificial levees along the banks to drain out excess water, causing many parts of the land to sink below the sea level over time. As with Haiti, the devastation of the 2005 Hurricane Katrina is considered a manmade disaster caused by engineering failure of flood levees, more so than a natural disaster.

Figure 3-2: Location of Case Site (3)



As with Haiti, the devastation of the 2005 Hurricane Katrina is considered a manmade disaster caused by engineering failure of flood levees, more so than a natural disaster.

3. **Christchurch, New Zealand** – as the second largest city in New Zealand, significant losses followed from the February “aftershock” of the initial earthquake in September 2010. Like New Orleans, the 1856 “Black Map” of Christchurch showed that areas

of significant liquefaction damage mirrored the former marshlands prior to human occupation.

### 3.0.1 Site Selection and Presentation Strategy

The sampling strategy for the case study sites was purposeful, opportunistic, and based on a set criterion. While the specific rationale for choosing the case study approach will be explained in more detail in **Chapter 4**, it is important to briefly acknowledge the process by which the sites were chosen to foreground the discussion on the *wicked* design problems observed at each of the three urban disasters. Vaughan (1992) reasoned that, “the lack of variation in our choice can inhibit the discovery and development of theories”, equally as it can lead to fragmented ways of building on existing knowledge (p. 174). Also, Eisenhardt and Graebner (2007) argued that sample cases can be selected for the likelihood to illuminate and extend relationships among a set of theoretical constructs. The criteria for initial site selection were:

1. **Scale:** It meets at least one of the four disaster criteria as set out by the Center for Research on the Epidemiology of Disasters (CRED<sup>17</sup>), namely: 10 or more people killed; 100 or more people affected; declaration of a state of emergency; call for international assistance.
2. **Site Access:** Where Architecture for Humanity (AFH) was or is active, which would enable the researcher to undertake field reconnaissance safely with efficiency<sup>18</sup>.
3. **Timing:** At minimum, the interviews are carried out at least 6 months after the event to minimize disruption to emergency response activities and prospective interview participants; at maximum the case study disaster occurred in the last ten years.
4. **Access to Participants:** Access to design professionals and community leaders who were or are actively involved in humanitarian endeavors.

Figure 3-3: Map of AFH Projects in 2012, AFH (2012) DLYGD 2. Reprinted with permission.



Since access to data and the opportunity to carry out empirical research was a core determinant of site

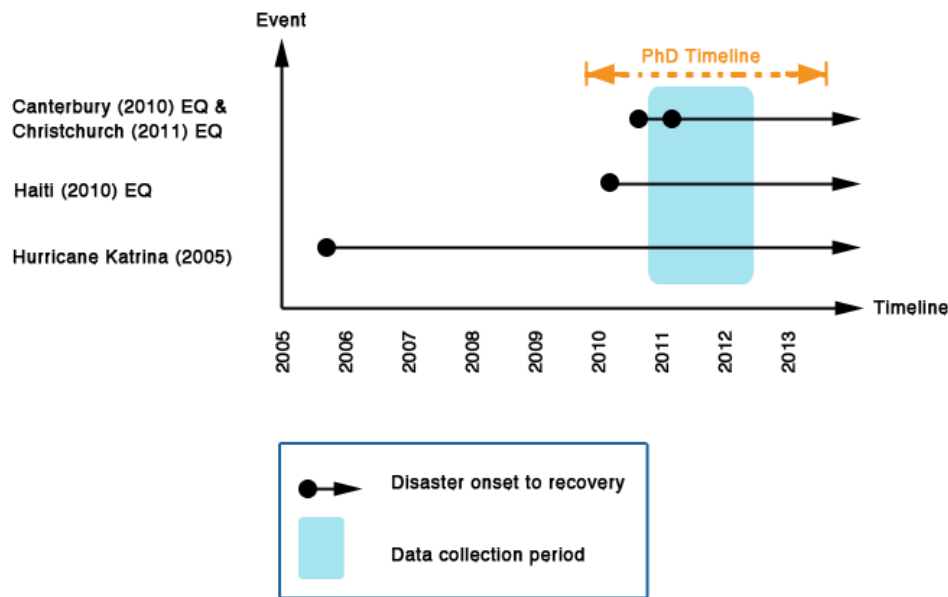
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<sup>17</sup>CRED manages a global disaster database on behalf of The United Nations International Strategy for Disaster Reduction unit (UN-ISDR)(CRED, 2011).

<sup>18</sup>Reconnaissance – stems from French verb reconnaitre, meaning “to revisit” – is a terminology used by the military and humanitarian aid agencies that carry out field work immediately after a major disaster to survey the affected areas.

selection (Yin, 2009, p. 26), the active project sites of AFH were shortlisted first and screened against the aforementioned criteria to select three feasible sites. The sites selected include Christchurch, where the researcher led the Auckland Chapter of AFH's recovery initiatives between February 2011 until November 2011<sup>19</sup>, during which the researcher developed strong rapport with local experts and community leaders. For ethical reasons as outlined in the criteria 3 above, no interviews<sup>20</sup> were conducted in Christchurch until November 2011. The other two cases were the 2005 Hurricane Katrina, and the 2010 Haiti earthquake.

Figure 3-4: Disaster Case Studies and Research Timeline



The order in which the case studies are presented in this thesis starts with the 2010 Haiti earthquake, followed by the 2005 Hurricane Katrina, then by the 2010 Christchurch earthquake. This order reflects the conceptual development of key theories in this thesis, as they successively build on from the initial case study. Implicit within this rationale is the argument that linear chronology of phenomena is secondary to juxtaposing the events according to key ideas that this research tests, namely, *“How does the Rittelian framework contribute to the critical design decisions in urban disasters?”* A superficial assessment of urban disaster responses in Haiti seemed most chaotic, authoritarian, and undemocratic out of the three case sites, followed by responses to the Hurricane Katrina, and then the Christchurch earthquake, which was initially seen to be most organized and democratic. However, deeper engagement of each case site through the Rittelian framework revealed that the reverse is true.

Additionally, it takes into account the broader, historical narratives of places. As will be illustrated in the next

<sup>19</sup> It needs to be noted that the researcher included Christchurch as a case study for this thesis out of a sense of personal responsibility as a New Zealand citizen, and that it is independent of the researcher's professional obligation to AFH or any other research interest, academic or otherwise. In analyzing Ruth Behar (1996)'s autobiographical ethnography work, *The vulnerable observer*, Thomson (2013) contended that, “when working on questions of social justice, it's impossible to be distanced and uninvolved, and what's more, it's immoral”. According to Thomson, having emotions in research can make its outcomes “more engaging”, “rigorous”, “powerful”, and “influential” (Thomson, 2013). It suggests that subjectivity in research is not antithetical to achieving research objectivity, just as Rittel contended that the ‘designer’ cannot be separated from the ‘design’ (Protzen & Harris, 2010, p. 15).

<sup>20</sup> One exception to this is the three interviews that were conducted in Christchurch as part of the pilot study, in January 2011, a few weeks prior to the February 2011.



section, Haiti and New Zealand are culturally most dissimilar, while Haiti and the U.S. share some striking similarities, culturally, demographically, and even politically. Many of the interview participants for the Haiti earthquake case study are also American, but many of the community stakeholders in the Hurricane Katrina case are of Haitian heritage. A case in point is the letter of condolences from the former Haitian President Jean-Bertrand Aristide, who reminded New Orleanians of their shared Caribbean roots.

*The historic ties between Haiti and Louisiana are rooted in its namesake land purchase occasioned by the Haitian Revolution. Today this connection has expanded. It finds new root in a shared human suffering caused by this week's catastrophic storm and ensuing floods... The grieving faces that we see so resemble the grieving faces of Haitians who have faced similar waters that swept away lives and engulfed tiny boats overloaded with people fleeing the political repression following the coup d'état/kidnapping of February 29, 2004. (Aristide, 2005)*

Figure 3-5: Haitians celebrating Easter Friday on the streets of Port-au-Prince



In terms of the interviews, there were 10 interview participants from the Haiti case study, 15 from the Katrina case study, and 20 from the Christchurch case study, out of 49<sup>21</sup> total interview participant. Collectively, the interviews reflect a diverse array of thoughts and ideas that built on each other, and where there were gaps in one of the case studies, interview data from other case sites helped to substantiate the overall findings. As such, the central ideas from interviews within each section of this thesis are generally presented and discussed in the same chronological order in which the interview was carried out, paralleling the development of the overall themes from broader, meta-level ideas to specific, micro-level issues.

### 3.0.2 Theoretical Comparison of Three Case Sites

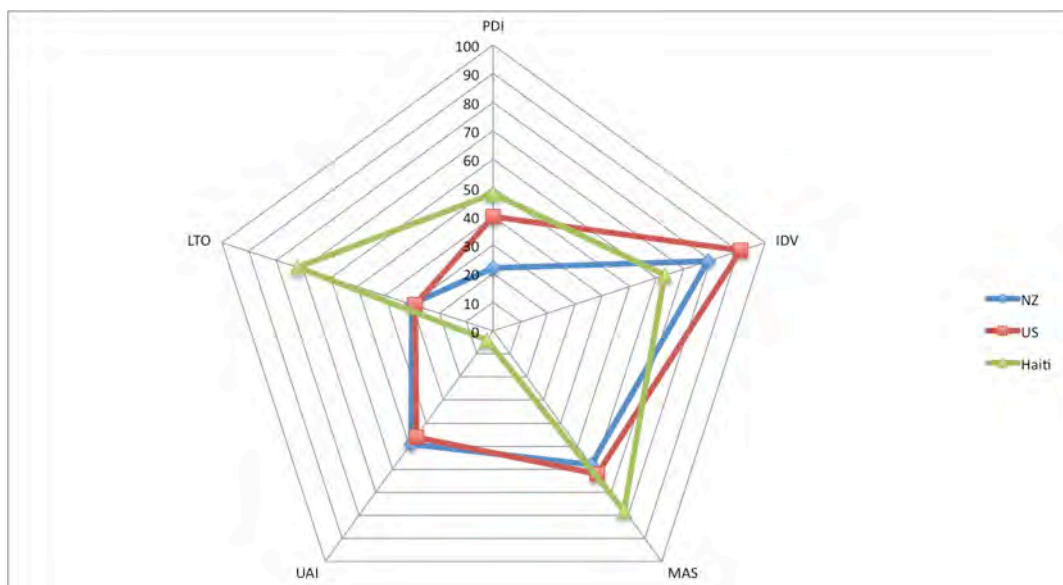
Because disaster relief activities fall outside the purview of traditional day-to-day architectural practice, those architects who are involved in post-disaster recovery efforts tend to go unnoticed to the wider architectural profession. This research has found that architects in urban disasters tend to assume non-traditional roles,

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<sup>21</sup>There are some overlaps in the number of experts who have experience in more than one case study and could speak to more than one. This also includes some global subject experts who did not have specific experience in any of the three case studies.

which leads to the question, how can contributions of non-traditional architects be evaluated? Before this question can be answered, whether such services are needed or seen as being appropriate must first be answered. In many situations of humanitarian assistance, there is an inherent disparity of culture between those who are helping and those who are being helped. An earlier discussion on the literature introduced the concept of architectural design in humanitarian contexts as a new form of imperialism, which makes the cultural distinction an important consideration, particularly in terms of discussing how architects operate under particular societal context and systems that may be dissimilar to what they are traditionally accustomed to. To this end, Lee and Potangaroa (2010) found Hofstede’s analysis on the dimension of cultural scales to be a useful tool for comparing the cultural differences among disaster agents.

Figure 3-6: Hofstede (2010)'s Cultural Dimensions for the Three Case Sites



Hofstede (1980)'s five cultural dimensions<sup>22</sup>—Power Distance, Individualism, Masculinity, Uncertainty, and Long Term Orientation—are determined in relation to 76 countries. The Power Distance Index (PDI) is the perception of power distribution within organizations in a country, where lower scores indicate higher perceived equity; Individualism versus Collectivism (IDV) is the level of interdependence within a society as determined by whether people identify themselves in terms of “I” or “We”; Masculinity versus Femininity dimension (MAS) assigns a gendered perspective to a culture as characterized by the degree to which the members of society are driven by competition and winning (masculine traits) as opposed to quality of life (feminine trait) as a success measure, where higher the score the more competitive a society is; Uncertainty Avoidance (UAI) is the predisposition of a society to handle uncertainties, where a high score indicates the lack of tolerance with uncertainties and being risk-averse; Long Term Orientation (LTO) indicates whether society’s values are future oriented or based on deep societal traditions. The magnitude of cultural differences among the three case study countries—New Zealand, the US and Haiti—are illustrated in **Table 3-1** below. The data for NZ and the U.S. were taken directly from Hofstede’s website (1980), and the values for Haiti were derived from an independent academic research conducted by Marc (2010). **Table 3-1** and

<sup>22</sup>Two additional dimensions were added by Hofstede since 1991, namely the Long Term Orientation (LTO) and Indulgence versus Restraint(Hofstede, Minkov, & Hofstede, 2010).

**Figure 3-6** illustrate how the three case study sites are similar and in ways they are different.

Table 3-1: Hofstede (2010)'s Cultural Dimensions for the Three Case Sites

Country	New Zealand	U.S.	Haiti
Power Distance (PDI)	22	40	48
Individualism vs. Collectivism (IDV)	79	91	63
Masculinity vs. Femininity (MAS)	58	62	78
Uncertainty Avoidance (UAI)	49	46	4
Long-term vs. Short-term orientation (LTO)	30	29	72

Source: (Hofstede, 1980),(Marc, 2010, p. 80)

New Zealand PDI (22) score is significantly lower than the U.S. (40) and Haiti (48), indicating low perception of power hierarchy within the country (compared to 76 countries studied). According to Hofstede, low PDI score suggests that “communication is informal, direct and participative” (Hofstede et al., 2010). All three countries score highly on individualism although the greatest difference exists between the U.S. (91) and Haiti (63). This was apparent in the post-Katrina New Orleans, which saw an unprecedented level of community engagement in the post-disaster planning process (Irazabal & Neville, 2007);(Lukensmeyer, 2007). Anthropologists refer to New Orleans culture as being heavily influenced by more collectivist Creole (Haitian) culture (Brunsmas, Overfelt, & Picou, 2007);(Thomas, 2009). In terms of MAS score, New Zealand (58) comparative to the U.S. (62) and Haiti (78) scores the highest out of the three in terms of its culture being driven by ‘masculine’ values such as competitiveness and success rather than on ‘feminine’ values such as quality of life and creating a nurturing environment (Hofstede et al., 2010). In UAI scale, both NZ (49) and the U.S. (46) have moderate aversion to uncertainties, whereas Haiti (4) score reveals that they are highly tolerant of uncertainties, and according to Hofstede, “there should be no more rules than are necessary... schedules are flexible, hard work is undertaken when necessary but not for its own sake, precision and punctuality do not come naturally, innovation is not seen as threatening”, which in other ways, is reflective of their political volatility as it will be illustrated in **Chapter 4**. Finally, both NZ (30) and the U.S. (29) similarly display short-term orientation culture as when compared to Haiti (72), which is long-term oriented. While Hofstede described this as having “an ability to adapt traditions to a modern context”, it can also be viewed as those countries with long-term orientation as having a high level of resilience against unpredictable events such as earthquakes.

Application of Hofstede's frameworks in this thesis helps to establish some grounds for making comparative assessment across the three case studies at a national level, since cultural dimensions of nations invariably shape attitudes of its people. However, given a moderate sample size of this thesis, there is limited scope for making reverse generalizations.

### 3.1 The 2010 Haiti Earthquake

The magnitude 7.0 earthquake that struck the coastline near Port-au-Prince on January 12<sup>th</sup>, 2010, killed more than 230,000, injured 300,000, and displaced further 1.5 million. This is a significant percentage of some 2.6 million Haitians who resided in Port-au-Prince immediately prior to the 2010 earthquake, of the

population of 10.1 million. Some 3 years on, the number of internally displaced persons (IDPs) in Haiti is estimated at around 600,000, dispersed in camps as well as in informal settlements. While there is no consensus amongst the humanitarian agencies as to how many IDP camps there are still remaining, various sources estimate anywhere between 600 (UN-HABITAT, 2011) to 1,350 camps (IFRC, 2011, p. 10). By IFRC's estimate, some 70 percent of buildings in Port-au-Prince were destroyed, leaving 25 million cubic yards of debris. As the first major urban disaster that international humanitarian community experienced, the event has brought unprecedented international media attention which has brought to surface industry-wide problems,<sup>23</sup> the least of which is the inability to deal with 1.6 million internally displaced Haitians without houses.

Figure 3-7: Haiti's National Government Palace after the 2010 earthquake



With a history of vulnerability and misfortunes before them, Haitians continue to face many transnational challenges and struggles for democracy. If disasters are “catastrophes in the making” (Freudenburg, 2009), then Haiti's earthquake is the “culmination of more than 500 years” (Oliver-Smith, 2010). As Wearne observed, in Haiti, “the symbols and symptoms of three different competing development models... (of) Haiti's past, present and every possible future” persist. The earthquake in Haiti is a Pandora's Box of many consequences of disastrous yet human-induced decisions. Particular world views of individuals can enhance the understanding of “disaster reconstruction culture” but it can equally alienate certain groups through perpetuation of stereotypes, and the post-earthquake environment of Haiti is a case in point. To dispel such tendencies, broader mapping of different world views are a necessary step towards better understanding of how communities can build back better.

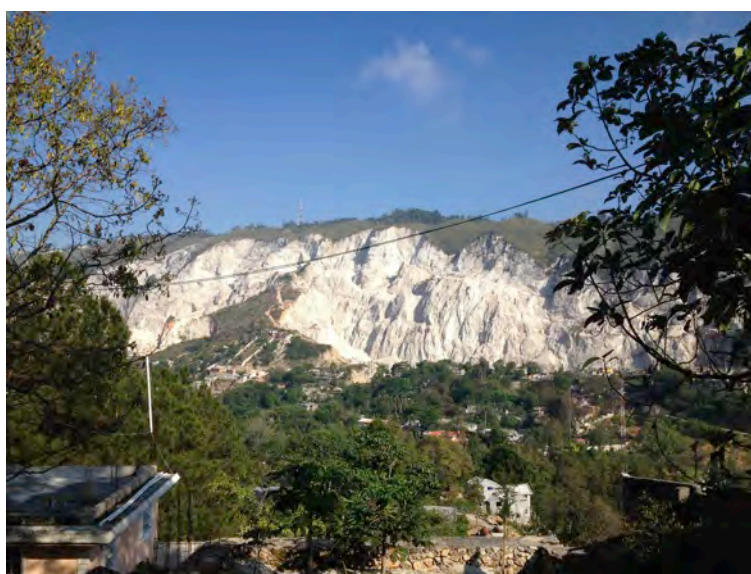
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<sup>23</sup>Holmes (2011) and Fox (2001) suggested that international disaster relief efforts began as an ad hoc volunteer effort by multinationals in the early 20<sup>th</sup> century to deal with fragile states (Holmes, 2011, p. 113),(Fox, 2001, p. 275). In his call for a reform of the humanitarian response in the 21<sup>st</sup> century, Holmes suggested that natural disasters are becoming more difficult to predict and manage. Inability of international aid agencies to cope with major disasters in the 21<sup>st</sup> century raised doubts as to whether “international system as it then stood was... really a system at all”(2011, p. 115). Although Holmes argued that humanitarian agencies need to be better coordinated to improve their effectiveness on the ground, Fox cautioned that the humanitarian aid sector is becoming increasingly politicized, “(in) a world where bilateral aid is... restricted to those countries prepared to follow Western strictures on the economy”(Fox, 2001, p. 288).

### 3.1.1 Environmental Factors: The Geo-Politics

Environmental degradation in Haiti is closely linked to problems accompanying deregulation of human activities, such as rapid urbanization and overcrowding in cities coupled with deforestation and topsoil losses in rural areas (Dolisca, McDaniel, Teeter, & Jolly, 2007; Concannon & Lindstrom, 2012; Diamond, 2005). Dolisca et al. (2007) contended that, through neglect, poor land management, political instability and unregulated international trade, the native forest was reduced to less than 3 percent of the total land area (p. 278). Concannon and Lindstrom (2012) suggested that formerly pristine landscape of Haiti was stripped bare through years of monocyclic crop production, which dried up the nutrients in the soil, leaving Haitians with no alternatives for livelihood but to burn through its ancient forest for coal (Concannon & Lindstrom, 2012, p. 1161).

Figure 3-8: The Haitian hillside showing the extent of erosion from deforestation



Diamond (2005) claimed that, prior to Napoleon's occupation, Haiti had an agrarian economy with rich topsoil, but its conversion into cash crops with strong export capacity depleted minerals in its soil. Coupled with mass logging of its forest for coal has turned its once lush forest into volatile landscape prone to landslides and even more vulnerable to seasonal cyclones in the Caribbean. Since its independence in 1805, pressures from neighboring economies and abolition of import tariffs led Haitian farmers to lose their livelihoods because they were unable to compete, ultimately leading to exchanging their agricultural lifestyle for an industrial one in Port-au-Prince. Indeed, as Wearne (2012) noted, the rapid urbanization of Port-au-Prince in the 35 years leading up to the earthquake was an environmental disaster in the making (Wearne, 2012, p. 16).

### 3.1.2 Political Factors: The Republic of NGOs

In 2010, Haiti experienced unprecedented levels of destruction, loss of lives and habitat through poor management of land and leadership, but it has also received unprecedented support from the international community (OSE, 2011, p. 12). An ALNAP report produced in the first six-months after the earthquake observed how the earthquake triggered a massive influx of donations, as well as disaster experts, policy makers and technicians from around the world (Rencoret, Stoddard, Haver, Taylor, & Harvey, 2010, p. 24).

The proximity to the U.S. and Brazil, as well as its Caribbean neighbor, the Dominican Republic, meant that there were opportunities for accelerating development and growth.

But Dupuy (2010) explained that most of those who have benefited from this geopolitical advantages were outsiders. Dupuy argued that gradual removal of trade barriers since the 1970s, coupled with foreign investment incentives through low-cost labor force made it difficult for Haiti to compete in the world market, while growing its dependence on foreign aid. By the time the populist President Jean-Bertrand Aristide took reign in 1990, it was too late to reverse the effects of neoliberal economy engrained in Haiti. McGuigan (2006) noted that just three decades ago, Haiti's rice production was entirely self-sufficient, but now it imports 80 percent of domestic rice consumption. The net negative impacts of trade liberalization, coupled with trade embargo that extended from the 1990s into the 2000s made it increasingly difficult for the Haitians.

Figure 3-9: AFH Haiti team debriefing after a long day



Darren Gill, an architect at AFH Haiti, explained that one of the major problems of rebuilding in Haiti was the cost of construction, caused in part by the monopoly on the construction industry since Haiti had already been stripped of means to produce its own building materials.

*...Everything is imported. That's the main cost... A sheet of plywood costs US\$ 45 over here, but costs US\$ 15 in Miami... that's the saddest thing to me; when you make the effort to employ local contractors as we do, they're not the ones making huge amounts of money... the material suppliers and distributors... are mostly based in the United States... so the money all just leaves anyway. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Sapat and Esnard (2012) illustrated in particular the dedication of Haitian diasporas to support their

homeland through increased remittances—which accounted for 30 percent of Haiti’s GDP even before the earthquake (p. 13). The Haitian diaspora played a critical role in assisting Haiti with the post-disaster efforts, serving as “an invaluable post-earthquake conduit for Creole-speaking [professionals]”(p. 3).

At the same time, the flight of Haitian refugees into U.S. borders have caused difficulties in trying to manage the sudden influx of “illegal immigrants” who had to be turned away and repatriated despite not having a home to return to (Sapat & Esnard, 2012, p. 4). Eric Cesal, the program director for AFH Haiti, expressed his frustrations at being unable to extend the training of a talented Haitian design fellow in the US, “because he is young, and single. They will think he will try to stay behind once he is in the country, and won’t issue him a visa” (Cesal, E., US Architect, AFH Haiti, April 9, 2012, Personal Communication). The main risk that architects of Haitian origin faced in the U.S. since the earthquake was threats of deportation. Dollar and Kent (2011) reported that due to “the fear of mass migration” the U.S. immigration officials resumed deportations (p. 96) and detention of Haitian nationals without any reason (p. 123) than to forestall the mass influx of Haitian asylum seekers in the aftermath of the earthquake. The U.S. had been on a high alert since the earthquake of potential Haitian mass immigration, and many Haitians are locked up in immigration detention centers for arriving at the U.S. borders without visas (p. 126), but the U.S. authorities insisted that “attempting to leave Haiti now will only bring more hardship to the Haitian people and the nation” (Secretary Napolitano, as cited in Dollar & Kent, 2011).

### **3.1.3 Social Factor: Haiti’s Human Capital**

Given Haiti’s historical backdrop, the country’s main challenge as well as its hope remains in the social capital. Recent figures from the UN report that an estimated 40 percent of the population are unemployed, and some 50 percent of the population are under the age of 18 (OSE, 2012b). Yet Martin Hammer, an American architect working in rural Haiti for Builders Without Borders (BWB) said, “people are the most under-utilized resource in Haiti” (Hammer, M., U.S. Architect, June 28, 2011, Personal Communication). Several of the interviewees in Haiti acknowledged that most Haitian parents would spend a large portion of their income on educating their children than on basic food supply.

*Haitians value education very highly and many families will sacrifice almost everything else but they will make sure that their children get an education. It costs money to do that. There is very little public education. (Hammer, M., U.S. Architect, June 28, 2011, Personal Communication)*

*...those who support and are involved in international aid... there is this perception that because this is the third world people can make do with less, their schools can be inferior, their homes can be inferior etcetera. So getting past that cynicism and opening peoples eyes to the fact that what we see as a reality that because people are poor does not mean that they are entitled to a good school or a good home... Psychologically, you take what you can get but I think that fundamentally Haitians want the best for their children, just like everybody else on earth. (Cesal, E., U.S. Architect, AFH Haiti, April 10, 2012, Personal Communication)*

The most important challenge since the earthquake has been the retention of talent that the event first attracted, and also reconciling the fact that many of these experts reside outside of the country. According to

the U.S. informants in Haiti, most of the individuals are from Washington, D.C. and the two primary states of Haitian diaspora: New York and Florida, the latter of which is only a 2-hour flight from Port-au-Prince. Gill explained the irony of Haiti's geographic proximity to the headquarters of aid agencies:

*You can still live your normal life and you can come down here, it's only two hours away. In principle you can, but obviously there's an awful lot that gets lost because you don't have that day-to-day interaction. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Although the experts who work off-site do not engage with the community on a daily basis, Gill acknowledged that they do have an impact on the general public by influencing policy, and making future design decisions on what projects get implemented at a higher level. Gill suggested that it is important to have people on the ground to enable the overall integration and coordination between agencies, which will be more sustainable for local communities in the long run.

*...there could be better interaction with the agencies if a lot of these agencies kept people on the ground full time, so it's not always project specific, it's more about the overall level of integration coordinates between agencies I think that suffers the most... (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

A key criticism to this work arrangement is that, in being absent, the integration of work between and within agencies can be difficult. It stems from the assumption that agencies do not station full-time staff on the ground because their main objective is to implement projects on the ground, rather than on building relationships with people. Holmes (2011) argued that the most innovative and effective "humanitarian performers" work at "sharp end in the field" and that "size is not a criterion for effectiveness" (p. 119), even though larger organizations can be more difficult to coordinate due to its fragmented structure (p. 118). However, Gill disputed that the issue of scalability was a paramount determinant of effective rebuilding in Haiti.

*...It's the question of 100 versus 100,000, if you find 10 people... that's great, but what you really need is 100. So that's also a big challenge. And there's no quick fix to that, other than the only quick fix is to bring diaspora back into play. But the brain drain of this country has suffered is just huge. And the long term solution is to train people up here to be able to do those kinds of things, but that, again, would take years and the only quick fix is to try and staff it with diaspora because there's no quick way to learn how to do those things. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

While Gill agreed with the notion of developing Haiti's social capital as being the key developmental objective for Haiti's long-term sustainability, he explained that, because there is limited capacity, there are no easy ways to train the locals in the time frame needed for them to rebuild the nation. The only intermediary solution, therefore, was to bring in Haitian diasporas.



*Haitian diasporas... there is a huge population, principally in Miami, New York, Chicago, Montreal... who left... who had the ability, either intellectually, professionally, financially to leave... their willingness to come back and work here is a critical part of the ability of this country to rebuild itself. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

But the involvement of Haitian diasporas raises another cultural challenge for Haiti, which is the tension between the indigenous Haitians (almost 50 percent of whom are under the age of 18, and 78 percent of the population live below the poverty line) and the relatively small percentage (of upper-middle class Haitians which includes the diasporas). The large gaps in income, access to education, health care and other resources between the two groups led Wearne (2012) to characterize Haiti as having been in a continual state of “development” for the last 50-years (p. 15).

### **3.1.4 Cultural Factor: The Haitian Way**

*By far the most significant humanitarian effort since the earthquake has been the one you never hear about outside the country: Haitian-to-Haitian... ‘Lé ou bezwen, se ou k pou mache’ – ‘When it’s you in need, it’s you who takes the first step’ – Haitians say of this proud self-reliance and independence. (Wearne, 2012, p. 16)*

In addition to the social, political and environmental factors, what has been largely missing from international literature on Haiti is the perspective of the locals. In the book, *Tectonic Shift*, Schuller and Morales (2012) turned what had, until then, been the dominant western world views of disaster literature on its head by reexamining the earthquake from the Haitian perspective. A balanced view of both can offer insights into what “building back better” can mean for Haiti. One caveat, as with any research that involves ethnographic component, is that the worldview of the Haitian diaspora are not always representative of the Haitian peoples. There are the Haitian elites, the working middleclass, and the disenfranchised majority of the nation who have different priorities, dependencies, and needs.

Much of the present social, cultural, economic, and political conditions in Haiti precipitated over multiple centuries of foreign interventions and reforms, but from the perspective of a Haitian, “it would be for Haiti to figure out what their model is going to be” (Theodore, M., April 5, 2012, Personal Communication). Theodore had moved back to Haiti after living in the US for 27 years, and having lived in both countries, she offered a view that represented both cultures. Theodore explained that systems imported into Haiti from outside have not worked for Haiti.

*I believe it would be for Haiti to kind of figure out what their model is going to be. Any model that is imported will not fit Haiti per se. We’ve tried so many... different models. It really is about having a national conversation about which is our best model and what is in our best interest... then build upon it with investment, job creation... reviewing all our framework for laying title to property... Haiti is still using their Napoleonic code which dates from the 18th*

*century and so sometimes it just doesn't work especially in a small population kind of country. It's difficult to apply. (Theodore, M., Director EDC, AFH Haiti, April 5, 2012, Personal Communication)*

Figure 3-10: UN service vehicle passing through a weekend market in PaP



As the first African Republic in the world, Haitians nationalism has continued despite, or perhaps reinforced by its history of bloodshed, which is marked by: multiple foreign occupations by the U.S.; series of military dictatorships by Duvalier regimes; unsuccessful democratic leadership of Jean Bertrand Aristide; and most recently the near collapse of the Haitian Government from the earthquake. Gill explained that, “national pride is an incredibly powerful thing in this country... but I also think it's risky” (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication).

In practice, the cultural differences between foreign agencies and Haitians can lead to miscommunication and frustration on both sides. Several rebuilding organizations, such as Architecture for Humanity and Builders Without Borders engage Haitian contractors in their projects, but the main challenge has been to reconcile with the local work ethics. Aligning the motivations of the Haitian contractors with the project mandates of reconstruction agencies has proved to be difficult on site.

*Time is money. That's the bottom line and that's the US corporate mentality. Time is money. So the more time you spend on something if the quality isn't going to be better then they're going to decrease the time...(Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication)*

Figure 3-11: Haitian street vendor setting up shop



However, Jean Rene Lafontant, Haitian architect from AFH Haiti, explained it from his perspective:

*There's some misunderstanding... just minor problems – you should expect this kind of problems – between AFH and the contractors; AFH and the client... because here they have a mentality and when the contractor is doing something he expects you to pay him for time but here they expect to pay him for a result so that's the difference. (Lafontant, J., Haitian Architect, AFH Haiti, April 5, 2012, Personal Communication)*

### 3.2 The 2005 Hurricane Katrina

In August 2005, when Hurricane Katrina swept through the U.S. Gulf Coast during the Atlantic hurricane season, it tore open the floodgates along the Mississippi River Delta, deluging the low-lying residential neighborhoods of New Orleans that were former swamps. Although some 90 percent of the population successfully evacuated the area in time, the rest were left behind to face the forces of the Category 5 hurricane. While New Orleans is no stranger to flash floods (Gertz, 2008), the havoc caused by Katrina, with an estimated \$108 billion of property damage affecting some 70 percent of homes in its path, the 2008 hurricane remains the costliest flood in the U.S. history (Amaratunga & Haigh, 2011). Although sociologists claim that “people only remember the worst effects of a hurricane for about seven years”(B. Morrow, as cited in Amaratunga & Haigh, 2011, p. 6), the impacts of societal hardships can still be felt some 8 years on. The various social, political and economic traumas of the hurricane linger on in the megalopolitan area of the Gulf Coast. This section focuses on the city of New Orleans, Louisiana, and Gulf Coast town of Biloxi, Mississippi where architectural rebuilding activities were most pronounced.

Although it has been over 9 years since the disaster, the impact of Hurricane Katrina will continue to be felt for many more years, in part due to the domino effect that the hurricane has triggered on social, cultural, and environmental dimensions. But in order to understand how the architectural profession participated in the

Gulf Coast rebuilding activities post-Katrina, it is necessary to first understand the political arena in which they operate.

### 3.2.1 Leadership Structure in the US

When a major disaster happens within the United States, the responsibility for dealing with it lies with the local government rather than with the federal or the state authority, in contrast to Australian or New Zealand system where the national government takes initial leadership in civil defense and emergency management (Britton, 2007).

*In this country the philosophy is bottom up, so local government in the cities is powerful in terms of controlling their own destiny, so for example as mayor of this city I controlled of the police department, the fire departments, the public works, the hospitals, the airport, the port, the police, the jails, everything was under me... That doesn't mean I was a dictator; it means I had the authority to exercise if I had the courage to do it. And the courage is an important part of exercising authority because very often because of the position you hold as a political leader, you have access to information that gives you a vision for the future that the public may not understand. (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication)*

The former mayor of San Francisco, Art Agnos, explained that, in the U.S., when a natural disaster strikes, the local mayor had all of the region's authority to mobilize and manage the city's resources. Agnos had dealt with the aftermath of the 1989 Loma Prieta earthquake, which caused fires and structural damages of buildings in downtown San Francisco. Agnos learned that disasters are full of leadership challenges, where there are many risks and his credibility is stake.

*You see, capital... A politician has to have the confidence to use their political capital... in politics we don't use money, or capital; we use credibility. I had a vision and believed in it and was willing to take the risk politically and paid for it in election, and lost, and it hurts. (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication)*

Agnos explained that, for politicians, their public "credibility" is the currency on which their career depends. The worst damage from the 1989 earthquake was the partial collapse of the Interstate 880, a highway that connected San Francisco to adjoining cities across the Bay Area. Agnos saw this as an opportunity to build back better in the long run: "to grow our city in a way that includes everyone with affordable housing" (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication). While Agnos had the authority as the city's mayor to coordinate the local emergency forces, what enabled Agnos to create a vision for the city beyond the emergency phase was by working with the local architects.

*...architects play a role before the disaster. In the case of earthquakes architects as professionals have a responsibility to educate the people responsible for planning a city and the public at large about the best regulations... for architects, part of their ethical role begins at*

*the point of planning and introducing the best kind of building codes for whatever they're building or drawing plans for, but during a disaster architects didn't play a big role until it came to rebuilding... (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication)*

Even though the mayor admitted that architects “didn’t play a big role until it came to rebuilding”, engaging the services of the architectural profession became pivotal to facilitating conversations about what is possible. The design decisions for rebuilding began long before the fresh concrete is first poured into the ground. In fact, the rebuilding of the Interstate 880 took a total of 9 years with extensive community consultation (Jackson, 1998). Agnos confirmed that architects were invaluable in the early visioning processes of rebuilding the highway.

*It was the architecture community that helped me develop the arguments that offset the highway engineers which wanted to rebuild the double decker freeway and the architects gave me the arguments, the data to make the best decision for the city going forward. (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication)*

However, there is also a downside to having a localized authority. Rodriguez, Quarantelli, and Dynes (2007) contended that while the political lifecycle runs on election cycles, disasters are unpredictable and irregular; every disaster is often the political official's first. In Johnson's experience, she observed that disasters can often test the political leadership under pressure, and it can be difficult to predict how politicians will behave because their role and accompanying responsibilities are vastly different from the day-to-day operations.

*I think disasters really... They polarize politics a lot... (The) disaster makes you raw in a way and so you sort of see the person uncovered. So for politicians and for the public, I think that that's a shocking thing, because we typically interact with our politicians with their cloaks on, and you don't really see them under stress publicly, and the disaster really does that. So it really exposes them...there are two parts of it. One is vision and the other one is ability to act... What you might show as ethical might actually be a by-product of those two issues being under stress. (Johnson, L., U.S. Planner, July 12, 2011, Personal Communication)*

Johnson asserted that disasters can “polarize politics” but the division is intrinsic rather than extrinsic in the way that a disaster can “expose” the leadership capacity of political leaders. New York mayor Giuliani and former U.S. President Clinton are examples that Johnson gave of political leaders who thrived in disasters, while in her view New Orleans mayor Nagin struggled to demonstrate ‘visionary’ leadership. Stallings (1995) explained that since most of the information that are made available through mass media during a major crisis tend to be fragmented and are seldom based on sufficient data, politicians tended to be reluctant to issue public announcements and forewarnings for the fear of setting off false alarm. Nagin's inability to deal with the *wicked problems* of post-Katrina New Orleans not only had serious political repercussions for Nagin, but for the city itself. According to Campanella (2010) Nagin made no reservations about criticizing his own team at BNOB when their plans for shrinking the footprint of New Orleans came under public scrutiny, in

order to be re-elected as a mayor despite his poor performance in managing the emergency (p. 158). Agnos, on the other hand, was not re-elected in his mayoral campaign because he maintained his 'vision' for rebuilding San Francisco against the local businesses' interest.

Alexander (2002) argued that the intergovernmental response to the U.S. Terrorist attacks on 9/11 was overreactive, and foreshadowed the events that unfolded in Katrina:

*Seen from the perspective of an outsider, the initial response to the disaster was more characteristic of civil defence than of civil protection: i.e., it harked back to an earlier time when civilian disasters were tackled in a paramilitary way under the assumption that the principal problem was how to restore law and order, rather than how to restore health, safety and dignity to the affected population. (D. E. Alexander, 2002)*

In other words, the public sector response to Katrina was top-down. In the four years leading up to Katrina, Alexander argued that the U.S. government had shifted the focus of emergency management from "civil protection" against natural disasters to developing international military defense system against terrorist threats, which were to a large extent "hypothetical" rather than based on fact (D. E. Alexander, 2006b). While the intergovernmental agencies passed blame from one hands into another, what the people of New Orleans and the Gulf Coast perhaps needed was a "benevolent dictator" in the hands of local government officials who are, by the constitution and law, able to exercise such influence. Agnos presents an alternative:

*People in the community will be in stress, and they will need to find things that are familiar. Leaders should be expert at that...whether it is arranging for instructions in a language or dialect that is familiar (to the locals)... for certain foods to be available...or anything else that is appropriate. (Agnos, 2009)*

When reflecting on the challenges of serving as a mayor following the Loma Prieta earthquake, Agnos replied, "a disaster is full of challenges because you're not really prepared for them when they happen" (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication). In politics, "risk" and "courage" are synonymous, and "credibility" is the bedrock on which leadership is tested, particularly when communities are under stress.

The leadership styles of mayors Agnos and Nagin, following a natural disaster in the U.S., illustrate two divergent types of political relationship that architectural professionals can encounter. Although both mayors worked closely with architectural professionals—Nagin with ULI and Agnos with a group of "design zealots" (Manus, C., Former President, AIA, April 12, 2012, Personal Communication), the former chose the populist path, while the latter chose to sacrifice his political credibility for the city's long-term social and economic benefit. Clark Manus, the San Francisco architect who had worked with Agnos in the visioning process of the Interstate 880 following the 1989 earthquake, explained his role as an architect in working with Agnos:

*...you're trying, in this role as a facilitator, not to take sides, and not to be so focused on "it has*

*to be my solution or none”, because that never works... So the notion is, of helping, looking at the alternatives, figuring out the pros and cons of what those are, in a quantitative way and then moving the discussion to the point where you say where are the dollars, when can we do it, what's the public safety thing, what's the visual tradeoff... I-880 was all about politics. (Manus, C., Former President, AIA, April 12, 2012, Personal Communication)*

Figure 3-12: Housing redevelopment in the Upper Ninth ward of New Orleans



### 3.2.2 Civil Protection or Civil Defense?

Hurricane Katrina stands as a testament to a series of poorly considered policy decisions in pre-disaster planning and management, which can exacerbate the effect that disasters can have on society. Alexander (2002) contended that, in the U.S., the authoritarian attitudes of “civil defense” had seeped into “civil protection” operations. It meant that the defensive attitude sets out to try to control and manage the civilian populations using combined forces of police and military even when there is no widespread evidence of crime and violence (p. 209).

Katrina amplified a number of preexisting societal issues. From escalating racial tension in a city of African American ethnic majority, where the post-disaster urban blight was noticeably divided along racially segregated neighborhoods, to the sheer absence of both local, federal, and state level leadership that led to overreactive paramilitary response rather than supporting the displaced population. Larrance, Anastroio, and Lawry (2007) observed that the socio-economic disparity in New Orleans grew even further apart since the disaster. Majority of those displaced from the floods were low-income residents who had lived in the lowlands where the land was more affordable. Shehab, Anastroio and Lawry (2008), argued that slow progress in rehabilitation of displaced residents kept returnees living out of government-supplied FEMA

trailers, leading to serious health consequences which Adams, Van Hattan, and English (2009) described as being caused by toxic formaldehyde exposure. The humidity in the South over its cyclone season had triggered the deterioration of FEMA trailers, which were not designed for such conditions, and ultimately led to exposing its occupants to dangerous level of formaldehyde resin that the interiors of FEMA trailers were built from (Adams et al., 2009, p. 628).

New Orleans was no stranger to seasonal hurricanes and the accompanying floods that it brings on an annual basis.<sup>24</sup> The artificial flood embankments, or “levees”<sup>25</sup>, were originally installed throughout the Mississippi River to drain the natural marshlands to accommodate the growing population of New Orleans, and were also used as floodgates for occasional riparian overflows. Yet in Hurricane Katrina, over half of levees failed in one way or other (Heerden, 2007, p. 26). Klein (2007) noted that just a year prior to the devastating event, FEMA had spent \$500,000 to develop a disaster plan for New Orleans, but the follow-up studies were not carried out due to the lack of funding. Greene (1990) also discovered that FEMA had requested to develop a contingency plan for the state of Louisiana a year before Hurricane Katrina hit, but the subordination of the agency under the Department of Homeland Security (DHS) prevented this from being undertaken. Tierney (2007) argued that the DHS was established in reaction to 9/11 terrorist attacks to increase the national military force, which ultimately came at the cost of reducing the financial and authoritative capacity of FEMA to respond to emergencies.<sup>26</sup>

While Jurkiewicz (2007) reinforced the vocal outcry of the media criticizing the actions and inactions of key administrators in the country who were either paralyzed “awaiting direction and approvals” or nonchalantly hiding “in the upper floors of a luxury hotel and unresponsive to the endless emergency needs for leadership” (p. 83). Pre-Katrina events that led to incapacitation of FEMA, delayed the levee upgrades, and delayed evacuation orders on the Gulf Coast residents all contributed to transforming Katrina into a “perfect storm”. Johnson explained that the key problem was the fact there was inefficient communication between stakeholders.

*...both at the city level and even at the state level, people didn't know what to ask for, so they didn't know what to request of FEMA. They just hadn't had the training and they didn't have the expertise locally. And I think that that really then applies to the NGO community (as well).  
(Johnson, L., US Planner, July 12, 2011, Personal Communication)*

Johnson, who helped to coordinate the UNOP—which is the city-wide planning initiative funded by the Rockefeller Foundation when all other official planning processes failed (Lukensmeyer, 2007, p. 4)—opined

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<sup>24</sup>The Mississippi delta region had always been subject to floods, but it had not deterred its residents from taking advantage of its geographic location as a gateway to trade with Europe and Latin America across the Gulf of Mexico. Following a series of failed attempts to keep out the overflow water from Lake Pontchartrain and the Mississippi River during its hurricane seasons, the Federal government established the Mississippi River Commission in 1879, and instituted the Flood Control Act in 1928 as a means to protect the population from future floods (Campanella, 2008). Despite many warning signs, including those from Gilbert F. White who, in 1945 observed that artificial levees were masking the dangers of inhabiting low-lying areas which were being tamed by developers to lure more people to the area (Macdonald, Chester, Sangster, Todd, & Hooke, 2012).

<sup>25</sup>Etymology of “levee”, meaning “raised” in French (*levée*, the past participle of verb *se lever*; to rise), was coined by the first European settlers of New Orleans in reference to the natural ridges above floodplains in the region.

<sup>26</sup>Levitt and Whitaker (2009) noted that the mounting criticism of FEMA’s response to Hurricane Katrina and pressure from public led Michael Brown, the director of FEMA, to resign within a few days of the event. (Whitaker & Levitt, 2009)



that this criticism was not limited to just political administrators. The professional consultants involved in the planning process, including architects and planners, generally ‘had good intentions’ but were unprepared for the scope of work that ensued in post-Katrina New Orleans.

*...when I look at FEMA, as a process... had very good intentions... What messed it up was the political handling of the public input into the process... the architect may not necessarily have as much experience with that... architects often go in and sell themselves as... recreating the urban landscape, when really what they've had as experience is a single building... than a post-disaster environment... (when) you need to be thinking about the entire reconstruction of the community. (Johnson, L., U.S. Planner, July 12, 2011, Personal Communication)*

The bottom line for architectural professionals working in post-disaster environment, it seemed, was to understand the extent to which the disaster changes the dynamics of not just the physical environment, but also the systemic, social, and political factors that ultimately shape it. Johnson explained the importance of understanding the change in scale, and the way in which “the entire reconstruction of the community” goes beyond the “experience” of a “single building”.

*...We don't acknowledge the value and the importance of plans. But plans can be making the business case. They can be a justification for allocation of funds. They can be a vision. They can motivate investors. They serve a number of, I think, really valuable purposes. (Johnson, L., U.S. Planner, July 12, 2011, Personal Communication)*

Although Hurricane Katrina had initially reinforced and amplified the societal tensions that preexisted the disaster, many researchers (Jurkiewicz, 2007; Irazabal & Neville, 2007; Lukensmeyer, 2007) agreed that the experienced had the effect of strengthening the community. Johnson and Olshanksy (2010), who wrote a book which reflects on the planning process of post-Katrina New Orleans, dedicated their work to the “citizen planners” of Louisiana. It implied that people had virtually become proficient planners in their own right, having lived through years of community planning and consultation sessions with experts.

### **3.3 The 2010 Christchurch Earthquake**

At the time of writing this research, over 10,000 earthquakes of magnitude 3.0 or above occurred in the Canterbury region in the three years since the September 2010 (GNS Science, 2013), out of which 57 were recorded above magnitude 5.0 earthquakes and 4 were above magnitude 6.0. As the second largest city in New Zealand after Auckland, Christchurch was home to some 370,000 people, constituting about 8.7 percent of the nation’s population at the time of the disaster (Statistics New Zealand, 2012). The “Darfield” Canterbury earthquake on September 4, 2010, stymied the city’s growth, and over 10,000 people left since (Bascand, 2012). Vast majority of those who fled are from the lower socio-economic background, leaving due to lack of support (Stylanous, 2012). This section focuses on Christchurch, New Zealand, documenting the recovery and rebuilding processes following its most catastrophic natural disaster since its founding in 1850.

In terms of impact, the Christchurch earthquake fades into insignificance when compared with the 2010 disaster in Haiti.<sup>27</sup> However, if the earthquakes in the two cities were controlled for scale, and put major social, cultural, economic and political differences aside—without of course trivializing the great loss of lives, human injustice and suffering—it is possible to recognize some of the recurring issues that urban disasters reveal. In both Christchurch and Haiti, the major burden of disaster falls upon the shoulders of the segment of population that are least able to cope. If we now turn to Christchurch alone, there is much to be learned about the challenges, factors, and paradoxes that have emerged in the subsequent aftershocks.



Figure 3-13: Becker, Ross (2013) *The most photographed car in Christchurch*, [photograph], Retrieved on 16 Aug 2013 from Picasa Commons:

<https://picasaweb.google.com/114788127440201076357/2010SeptemberCanterburyEarthquake?noredirect=1#5516302123647047922> Copyright 2013 by BeckerFraserPhotos. Reprinted with permission.

The September event is often portrayed in the media as a practice drill compared to the extensive damage caused by the February earthquake in the following year. In some respects, the drill had helped the Canterburians to prepare in advance, and catalyzed wider community engagement. The systemized local networks and communication channels that were set up almost six months before the major quake in February, neighborhoods were able to quickly mobilize and their collective cohesiveness has helped to mitigate an even greater damage that could have resulted without this ‘training’.

By comparison, six months were not long enough for government agencies and professionals to prepare for the subsequent aftershocks, and some reports revealed that vital information about impending earthquake was held back due to the government agency’s resistance against scaremongering, perhaps in a similar manner to how the government had responded to the 1888 Wellington earthquake (Maskell, 1889). The

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<sup>27</sup>The news media observed that the September 2010 earthquake in Canterbury and the earthquake in Haiti earlier in the year were similar in size (magnitude 7.1 and 7.0 respectively) but polarizing in outcome (AFP, 2010), (NZPA, 2010). It seemed that Christchurch had only suffered minor cosmetic building damage with no casualties from the impact, but in Haiti the same impact had crumbled over 80 percent of the capital’s building stock and caused over 220,000 deaths.

need for repeated structural assessment of buildings after each moderate to large aftershock and its inconsistencies meant that access to the industrial hub of the CBD which was hit hard by the February quake was further restricted. While such draconian measures may have eliminated further human fatalities, the local businesses were left to wither or to relocate to another location altogether.



Figure 3-14: Becker, Ross (2010) A mobile disaster response unit parked at a supermarket carpark in Moorehouse Avenue. [photograph] Retrieved on 16 Aug 2013 from Picasa Commons:

<https://picasaweb.google.com/114788127440201076357/2010SeptemberCanterburyEarthquake?noredirect=1#5516302506954384482> Copyright 2013 by BeckerFraserPhotos. Reprinted with permission.

In fact, the government's over-reliance on experts reduced the overall resilience of the government agencies as well as its citizens. Nigg and Mileti (2001) argued that chronic threat from such hazards in the absence of appropriate management strategies can "lull [people] into a false sense of security" by deflecting the responsibility to the government. The Royal Commission report on the Canterbury earthquake reinforced this (APNZ, 2011b), and also confirmed by the research informants.

*(Christchurch has) some examples of global worst practice... in some of the dynamics that have happened that have been publicly aired... in the media around the relationship of... civic leadership. The failure to understand... the social and human dimensions of recovery and the preoccupation with the physical and economic... (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

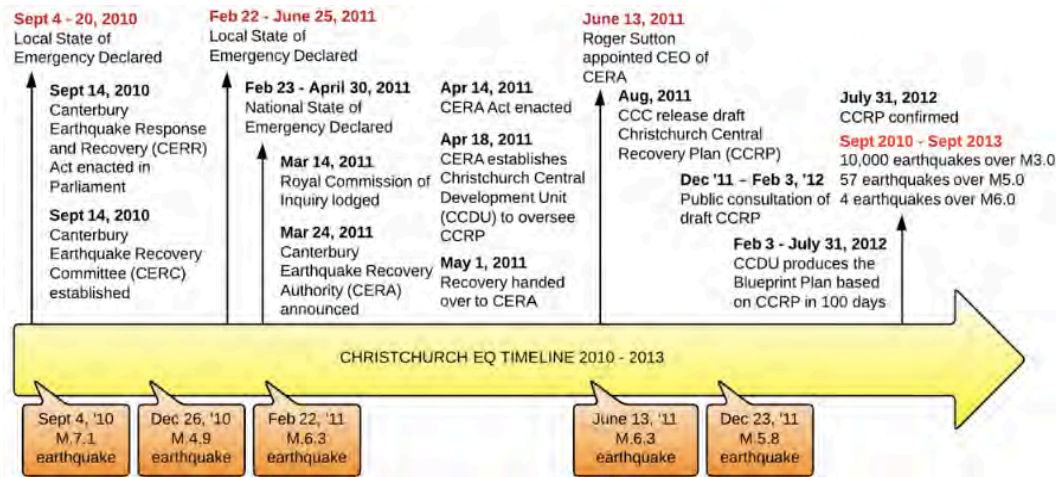
### 3.3.1 Institutional Disaster Response

*What's needed in a situation like Christchurch is bringing all of the very best brains of the country together... but you've got people within the Council or the bureaucracy who have never got anything built are yet now deciding how to build a whole city. (Roberts, C., Director, Social Policy, Salvation Army, February 28, 2012, Personal Communication)*

Within 10 days of the first earthquake in September, the Parliament passed a bill that would allow the government an "unprecedented" authority over earthquake recovery decisions in Christchurch that "cannot

be challenged through the courts” which some viewed as “extreme” (Heather, 2011). It also exposed the vulnerability of the government who was forced to undertake such a draconian measure for civil protection. It became particularly troublesome when, in February of the following year, the government established a recovery agency with a view to take over the management of Christchurch’s disaster recovery in anticipation that the local city council could not handle the emergency response for long.

Figure 3-15: Timeline of Governance Decisions Since the 2010 EQ



The government’s “takeover” of disaster relief and recovery operations created more concerns as continuing aftershocks delayed the future design decisions for the city. Building inspectors and engineers had assessed the safety of every building in Christchurch following the September earthquake, issuing color coded inspection notices to reflect the state of the building’s structural integrity (based on a U.S. system called ATC-20, invented in the U.S. following the 1989 Loma Prieta earthquake<sup>29</sup>), but this system quickly became cumbersome as every building had to be reassessed each time there was an aftershock above the magnitude of 5.0 on Richter scale, of which there were many. The figure above illustrates when these additional earthquakes occurred, which also meant that CERA had to reevaluate their decisions based on new information. Glavovic explained that the level of uncertainty had been frustrating for everybody involved—the government, the private sector, as well as the community.

*There was a commitment from the government to basically rebuild and to remediate land and to get life back to normal. But with the series of ongoing events and with the enhanced understanding of the nature of seismic risk... the whole dynamic around what’s going to happen and what is the nature of recovery changed. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

Recurrent aftershocks meant that all planning decisions made or considered up until that point had to be wiped out and reevaluated from scratch. However, Potangaroa contended that urban disasters like the Christchurch case needed more “fluid” strategy as opposed to the conventional disaster response protocols<sup>30</sup>

<sup>29</sup>(Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication)

<sup>30</sup>“Most of us have dealt with the rural problem in the sense that... it does follow the phases: the emergency response, the recovery, reconstruction... but in the urban what we’re finding is that all phases happen at once. Because you get different levels of those that are

because urban disasters do not follow the linear, staged recovery processes.

*(Disaster) has a very fluid dynamic in changing situations (where) you also have to be realistic... there's this tension and dilemma between the need to make speedy decisions with the need to think through and engage in a process of dialogue and deliberation and so those are tensions that play out all the time. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

Additionally, Potangaroa measured a very high level of trauma among the residents in Christchurch, which he claimed at the time as being unsurpassed by any of the previous disasters that he had worked as post-disaster consultant in similar studies he conducted in the last 25 years (Potangaroa & Kipa, 2011). Further to this observation, in rating the city's disaster response performance on a global scale, Potangaroa contended that social justice has "completely failed" to deliver in Christchurch.

*...we failed because we didn't actually engage with the poorest of the community or the neediest in the community: we didn't go and check to see; we didn't monitor; we didn't check our assumptions; we didn't do all the sorts of things that we would normally do in a humanitarian situation – on a humanitarian aid situation as opposed to a humanitarian response situation. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

Potangaroa asserted that many people have only been in "accidents", not "disasters". But disaster management communities generally rely heavily on established networks and relationships, which can fall apart in unpredictable ways in a disaster.

*...what I call accidents... smaller disasters, say a flooding... you can handle that by being able to call up people. But what it does suggest is that the formal linkages between teams need to be a lot more flexible in terms of how you do things and if that's achievable then that flexibility will give you the relationship aspect that you're after.*

As had already been noted in both Haiti earthquake and Hurricane Katrina, government administrators and officials in post-earthquake Christchurch quickly lionized them in the media, but the "harrowing uncertainty" had just as quickly turned the public sector leaders into scapegoats. Lianne Dalziel, a local politician explained that the ways in which government officials interacted with communities changed dramatically from post-September and post-February (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication). Even in cases where successful track records of community engagement was evident in the aftermath of September 2010, the shift in power from local leaders to centralized coordinators led to

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affected in the urban scale what you get is, you get both the emergency response where you're trying to dig people out and save them. At the same time you're trying to do recovery. At the same time you're doing reconstruction." (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)

abrupt withdrawals in communication.<sup>31</sup> The “communication breakdown” between the council and local residents since the CERA takeover, while the process had been inevitable, it had created a rift between the citizens and local authorities that became increasingly difficult to bridge. Dalziel explained that the level of “uncertainty” had induced a strong sense of “dislocation” and “limbo”.

*Post-February meetings were less personal, less accessible. Partly due to the fact that it was not run by local community leaders... all the meetings were run by the Council and they were run outside because people were worried about being in buildings... there were no questions at the meetings. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

So what did this mean for professionals who consulted with government agencies and those who worked with rebuilding agencies in Christchurch? Roberts admitted that this was a challenging process because one method (autocratic) was no better than the other (democratic).

*...more democratic way of operating in a crisis, by the time they've decided what they're going to do it's all over, the need's passed and you're onto something else. So that was a dilemma for our organization working with other organizations. (Roberts, C., Director, Social Policy, Salvation Army, February 28, 2012, Personal Communication)*

Tony Watkins, the Co-Director of Sustainability Work Program at UIA, suggested that disasters gave architects an “opportunity to shine”.

*The system is not open; it's geared around people making money; it's geared around power; it's geared around disabling people... and disasters give you an opportunity to shine because it's immediate, there's no questions, it's a crisis. (Watkins, T., Co-Director of Sustainability Work Programme, UIA, January 11, 2012, Personal Communication)*

In Christchurch, where the architectural practitioners had difficulty “getting heard” at top levels, their best chance for public service and contribution was directly with the community, from the bottom-up.

### **3.3.2 A People's Republic of Christchurch: the Anti-neoliberal Culture**

*It would've been good to have a bit more support from Civil Defense and the Council – it was limited... they got better, but they didn't know what they were doing themselves... we expected them to know everything... but the reality is no-one had dealt with such a disaster before. (Johnson, S., Community Leader, January 26, 2011, Personal Communication)*

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<sup>31</sup>Carr, a vice-chancellor of local university, had successfully led his university through post-disaster recovery, and he emphasized that constant communication was vital to maintaining engagement as well as trust. (Carr, R., Vice-Chancellor, UC, February 22, 2012, Personal Communication)

Sam Johnson, the founder of the University of Canterbury Student Volunteer Army, mobilized the first mass grassroots-led cleanup of the liquefaction in residences around Christchurch suburbs after experiencing the frustration of “painfully slow” progress by the “official” first responders. Vivian Hutchinson, a social entrepreneur, observed that such social innovations spring from being situated within diversity.



Figure 3-16: Becker, Ross (2011) *A selection of equipment available for volunteers.* [Photograph] Retrieved on 16 Aug 2013 from Picasa Commons: <https://picasaweb.google.com/114788127440201076357/EastChristchurch?noredirect=1#5725837985851611234> Copyright 2013 by BeckerFraserPhotos. Reprinted with permission.

*...the best thing is to get people from diverse political thinking into the same room... That's true of all community development. You should have as many naysayers in the room as people of the same world view and it's out of that forced diversity having to come to grips with each other that real innovation can get established... It requires a different variety of leadership. (Hutchinson, V., Social Entrepreneur, February 19, 2012, Personal Communication)*

Alongside such examples of grassroots-based social activism there are as many tales of local resistance to outside interventions that are seen as unwelcome encroachments by the ‘other’. Some of the research participants explained this behavior of Canterburians as a residual characteristic of “homogenous” and “conservative” groups with deep “Anglican roots”, forged long before the February earthquake. However, the post-earthquake Christchurch community movements such as that of Johnson’s defy the xenophobic sentiments of the few. Mobilization of entire neighborhoods, whether through common purpose or through common place, demonstrate that people in fact embrace heterogeneous “world [views]”, revealing a “resilient” yet “radical” culture of citizens forged against the threats of “[privatization]” and neoliberal governance, giving rise to its often used moniker: a People’s Republic of Christchurch.

Christchurch has a long history of activism. The growing tension between the local authorities and the residents post-earthquake surmounted in a series of public demonstrations: in response to “massive” pay rise of Tony Marryatt, the Christchurch City Council’s chief executive (Sachdeva, 2012); to halt the demolition of Christchurch Cathedral (Cairns, 2012b); more recently, in protest against forced mergers and even closures of many schools in depopulated suburbs of Christchurch (Mann, 2012). The former Christchurch mayor Vicki Buck described the Christchurch crisis as an opportunity seized by the government to privatize the city, which is familiar in the living memories of those who fought against the privatization of the business sectors in the 1980s.

*...the move in local government was, throughout the country, to privatize the community-owned assets, so the power lines, your court, your airport, you know... sell it all, sell it all, sell it all... because (the assumption was that) the private sector does such a much better job than the public sector... Christchurch got disparagingly cruel: the People’s Republic of Christchurch in a way; a communist entity, because we wouldn’t sell it. There was just no way, and so you knew that people would actually take pride in that... (We) were People’s Republic of Christchurch. (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

State-owned asset sales as a default economic strategy by the national government following the earthquake reinforces familiar tactics of disaster capitalism as seen previously in New Orleans and Haiti. Even though scholars argue that government-led asset sales is a valid route of recovery strategy from lost economic productivity (Stevenson et al., 2011), Farrell (2011) argued that New Zealanders are opposed to free-market capitalism. The free-market policy is intended to foster innovation, but the lack of design controls and establishment of standards meant that the overall quality is lowered rather than pushed up. Dalziel contended that transparency, accountability, and leadership are key elements of recovery required in leadership, and the best recovery practice can be learned from mistakes made elsewhere.

*(Most) people when you talk to them out on the streets about who do you think makes the decision about zoning they think it’s CERA, based on geo-technical advice which is why there’s all this pressure to release this geo-technical advice. (The) geo-technical advice is only one part of the equation – that just tells you what you have to do, what the damage has been to the land and what you have to do to secure it, but the analysis is actually done by the government and it’s a cost analysis. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

Splintered leadership within governmental agencies make policy decisions difficult to track, and the blame falls upon the nearest scapegoat exposed to public scrutiny. Delegation of roles between the central government, its professional agencies and the local government were blurred due to the inherent “inconsistencies”(IPENZ, 2012, p. 10). Criticism of the Earthquake Commission is another case in point (Wright, 2012). Following a brief honeymoon period of optimism where up to 90 percent of those surveyed reported to being “not dissatisfied” with insurance arrangements (Kachali et al., 2010), post-February



communication bottleneck resulted in the commission withdrawing its contact details from the agency's website altogether (R. Potangaroa, Personal Communication, April 28, 2012), redirecting the pleas of Christchurch homeowners to call centers in Australia (Wright, 2012). Over-reliance on professional expertise (APNZ, 2011a) as well as its under-reliance (Brabhakaran, Davey, O'Riley, & Wiles, 2005) in the absence of directed leadership can ultimately lead to underserving the communities who depend on such expertise.

*We want good buildings and at the moment we don't have them, because the old plan had no design controls; because the architects back in the 90s didn't want any design controls; because they thought it limited creativity... Some horrible little things can go up quietly at the moment. It's sad. It's not going to help...there's reasons to not just approve everything quickly – just to be convenient. We want some quality, but it's tricky achieving that. (Lucas, D., Landscape Architect, February 22, 2012, Personal Communication)*

At the center of the Rittelian framework is the need to balance the “relentless optimism” about the future design potentials with a level of caution against “unforeseen and undesirable side and aftereffects” (H. Rittel, 1988, 2010). And, according to Protzen, “[despite] the impossibility of knowing all possible outcomes of a plan, [Rittel] did not advocate inaction” (Protzen & Harris, 2010, p. 14). Di Lucas, a local community leader with training in Landscape Architecture in Christchurch, warned that there are risks in both having too much control and not having enough. Delayed decisions can increase the likelihood for failures. In such a climate, Lucas suggested that the best way for professionals to work with communities was to decrease the communication barrier on both sides.

*When I ask people to come, I say it's just a community initiative... people did respond (but) they would have reacted differently if it had been an official thing, and I think some of the experts wouldn't have been so frank and humble and communicative with the community if it had been an official thing rather than a bottom up thing. (Lucas, D., Landscape Architect, February 22, 2012, Personal Communication)*

# 4. Methods: Contextualizing the Research

## 4.0 Overview

How can the Rittelian framework methodologically contribute to understanding urban disasters? The analytical framework as will be explained in this chapter is designed to assess the various theaters of post-disaster intervention, and to test the extent to which the framework can serve to illustrate how post-disaster spaces are conceptualized, inhabited, and constructed both ontologically and materially.

Research methods employed in this study takes an empirical approach of theory elaboration and constructivist grounded theory method that combines critical inquiry, and independent, cross-sectional case interviews. The broad scope of the questionnaire as well as the semi-structured interview process enabled the researcher to engage with experts from a wide range of disciplines that populate the post-disaster setting, and also provided some flexibility in leading conversations with each interview participant according to his or her specific expertise, making it possible to efficiently navigate a complex nature of disasters within the limited data collection period.

Critical inquiry of the architectural profession's relationship to urban disasters seeks an understanding of the decision-making processes of design rather than that of the designs themselves. Case studies are a common research method in architectural research, since architecture is a discipline grounded in practice (Snyder, 1984, p. 2).<sup>32</sup> Using a Grounded Theory approach—initially developed by Glaser and Strauss(1967)—applied by Vaughan (1992) through the concept of Theory Elaboration, the research combines the analytical methods of Grounded Theory with a mode of inquiry that resonates with Rittel's Wicked Problems design approach.

As illustrated in **figure 1-1**, this thesis is presented in eight chapters. The “Foundations” chapters establish the theoretical ground for the empirical study, and **Chapter 2**, surveys both the historic developments and current architectural practices relevant to urban disasters. In doing so, it establishes the critical research question and identifies research gaps that this thesis addresses. The empirical **chapters 5, 6, and 7** populate the outcome of 49 semi-structured, independent case interviews in response to these research questions. They extend the theoretical framework of Horst Rittel by exploring the architectural contribution to recent disasters, evaluating various strategies and tactics employed to assess whether the intentions of disaster agencies are matched in project execution. It focuses on the decision-making processes, attitudes, and intentions of designers to evaluate the success of rebuilding projects. The independent accounts of disaster work experience by individuals who have been active in field practices are central to understanding of urban disaster context. Such constructivist approach, according to Yin (2009) and Charmaz (c2011) can generate fresh insights into a given situation (Yin, 2009, p. 132; Charmaz, c2011, p. 513).

This chapter outlines the rationale behind ontological and epistemological position of the research, and the

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<sup>32</sup>Similarly, many of the literature on disasters comprise of field reports, which are a type of case study research(Stallings, 2003),(Drabek, 2005),(Rodriguez et al., c2007).

overall design procedure, data collection and interpretation techniques employed in the empirical study.

## 4.1 Plan versus the Ground

This research applies Rittel's Wicked Problems design approach by juxtaposing it with Vaughan's methods of "Theory Elaboration". Rittel provides an architectural framework to study the attitudes and intentions of architectural designers situated in urban disasters, while Vaughan provides a sociological strategy for evaluating the empirical research. Ontologically speaking, the nature of reality for Vaughan is the ground, while the nature of reality for Rittel is the plan.

### 4.1.1 Plan – Objectification

Rittel argued that the main purpose of design was to solve problems, and defined design as "an activity that aims at the production of a plan, which plan—if implemented, is intended to bring about a situation with specific desired characteristics without creating unforeseen and undesired side and after effects"(Rittel, 1968, as cited in Protzen & Harris, 2010). Rittel always understood planning as a set of actionable outcomes that always accompany consequences. This departs from the conceptualization of planning in the Deleuzian sense of a "plane of immanence" (Khalifa & Deleuze, 2003, p. 10) — in which a plan is a pure line on a plane, rather than a set of actions. Rittel argued that although people engage in different problem solving activities or activities of "planning", they are similar in the sense their actions have consequences. The Wicked Problems framework was conceived out of the difficulty of avoiding "unforeseen and undesired side and after effects" in many situations.

In his essay, *On the Planning Crisis*, Rittel (1972; 2010) problematized the process of attaining scientific objectivity in dealing with a *wicked* design problem because it presupposes that an outcome of a decision is independent of who carries out the task, when the subjective nature of most design decisions make this a near impossibility. Instead, Rittel argued for transparency of all knowledge available to decision stakeholders in making decisions, which he called "objectification". Objectification is distinct from the notion of scientific objectivity in that the person making a decision is responsible for objectifying the decision-making process to all those that are affected by the outcome, by stimulating doubt, sharing of information, delegating judgment, and most importantly, allowing others to participate in the democratic design decision-making (p.161). Rittel acknowledged that the process of deliberation is as important as "who" is involved; scientific objectivity is not possible because the outcome depends on the "deontic premise"—personal morals and attitudes over professional expertise. In other words, Rittel argued that the planner (the "who") cannot be separate from the plan (the "what"), as the plan does not exist without the planner, and vice versa.

### 4.1.2 Ground – Objectivism

Methodology, Rittel argued, is a byproduct of a crisis in society. Development of design methods was a response to the crisis within the design profession, in an effort to introduce systemic approaches to address problems that could not be resolved within the profession (H. Rittel, 1973, 2010, p. 317). Similarly, grounded theory was developed as a research strategy in an effort to introduce scientific rigor to qualitative research using a quantitative process. Developed during the similar era by qualitative researchers, Barney Glaser and Anselm Strauss, grounded theory was to sociological researchers as design methods was to the design profession. Initial grounded theory by Glaser and Strauss (1967) proposed that "all is data", but in order to

Anselm Strauss, grounded theory was to sociological researchers as design methods was to the design profession. Initial grounded theory by Glaser and Strauss (1967) proposed that “all is data”, but in order to maintain data objectivity, Glaser and Strauss argued against bringing any preconceptions developed outside of selected data for the purpose of qualitative analysis (Glaser & Strauss, 1967, p. 33). Their primary concern was to avoid “force-fitting” preconceived theories into data. Grounding theories within data allows the theories to be relevant to the phenomenon that is being studied, and allows for themes to “emerge” from the context through “sensitization” and “constant comparison”. It ensures that the resulting theories from the research are traceable back to the original source.

However, the “quiet revolution” (Denzin & Lincoln, 2011, p. xv) of qualitative research community challenged, contested, and blurred the methodological boundaries established by grounded theory in the similar way that Rittel developed the notion of the “wicked problems”. In the early years, many qualitative researchers reveled in the grounded theory approach because it offered “a template for doing qualitative research stamped with positivist approval” (Charmaz, 2011, p. 509). The method survives through the work of its founders as well as other theorists (Charmaz, 2000; Dey, 1999; Strauss & Corbin, 2003), but many also voiced its limitations. Some authors have criticized the romanticist tendencies of early grounded theory approaches because they rest on positivist, singular, and totalitarian assumptions, while the phenomenal reality is pluralistic, open-ended and subject to interpretation (Cooper & White, 2012, p. 57). Vaughan argued that the empiricist position of prohibiting previous theoretical knowledge assumes that a researcher can begin without preconceptions. Although Glaser and Strauss advocate for researchers to begin with a clean slate, which is essentially the ontological “ground”, both Vaughan and Charmaz explained that reality is subjective, and based on multiple perspectives. They both argued that empiricist principles of grounded theory can inhibit discovery and development of theories. Data cannot be “unfettered by bias or biography”(Charmaz, 2000, p. 522) since “we always begin a research project with an arsenal of preconceived theoretical notions”(Vaughan, 1992, p. 195). Thus, any researchers undertaking empirical research need to understand their own preconceptions influencing the research.

Whereas a key premise of grounded theory is to place the data on the “ground” and to treat it as an objective source from which theories can be derived, Vaughan argued that theory is elaborated through social construction rather than discovered from a raw state, as had been argued by Glaser and Strauss. In fact, Deleuze argued that, “In every respect, truth is a matter of production, not adequation” because a concept is the result of social construction (G. Deleuze, (1994), “Difference and Repetition”, p.154, as cited in Khalfa & Deleuze, 2003, p. 10). From this, it can be construed that Rittelian “plan” is data that is designed by a “planner”, hence also socially constructed.

As a research strategy, grounded theory offers useful structure for engaging in deep analysis of data, and the prevalence of this methodology to this day is a testament to its enduring relevance and appropriateness in studies involving human actors. Vaughan and Charmaz each developed a modernized interpretation of grounded theory via “theory elaboration” and “constructivist grounded theory”, which are both Deleuzian in principle in that they are philosophically “constructivist”, but remain insufficient for direct architectural application as they both depend on theoretical data. This research adopts the research processes of both Vaughan and Charmaz to undertake textual analysis of extant literature on architecture, but extends this by

using Rittel's constructivist framework to undertake empirical analysis of key actors of recent disasters.

Table 4-1: Theory Elaboration and Wicked Problems - Comparing the Methods of Vaughan and Lee

	Vaughan	Lee (based on Rittel, 1972, 1973)
<b>Methodology</b>	<b>Theory Elaboration</b>	<b>Rittelian Designer Approach</b>
<b>Ontology (What is the Nature of Reality)</b>	Sociology is about “grounding” theory; Adapted from grounded theory of Glaser and Strauss Theory elaboration makes explicit what is implicit	Design is about “planning” A plan is about “intentions” to bring “desired characteristics without creating unforeseen and undesired side and after effects”
<b>Epistemology (Relationship Between Researcher and Reality)</b>	Departs from traditional grounded theory by taking preconceptions as part of the ground.	Objectification is about transparency of knowledge A planner cannot be separated from the plan; they are interdependent
<b>Theory</b>	Empirical data via <u>observation</u> is in itself a form of “verification” Theories are “sensitizing devices” than “formalized propositions” Theories can make explicit which “biases” researcher brings into the practice	Empirical data via <u>action</u> is the form of verification Architectural designers are the study subject rather than the objects of their creation Non-architects are the control group The designer approach studies the designers rather than the design or the plan
<b>Objective</b>	Expanding questions and increasing variation in choice: To build & generate theory integratively, both within and between To break away from preconceptions To stimulate theoretical innovation	Extending wicked questions and employing multiple forms of engagement To study multiple cases between and within three urban cities of recent natural disaster To study how post-disaster design is undertaken
<b>Key Methodological Finding</b>	“A revised understanding about what the case is a case of” Becoming sensitive to preconceptions	A better understanding of researcher’s own desires and aversions Becoming sensitive to both new conceptions and preconceptions
<b>Research Bias Mitigation Strategy / To Avoid “Force-Fitting” of Data</b>	<b>Strategy 1. “collegial exchange”</b> – testing ideas with peers to seek alternative viewpoints	<b>Objectification</b> – the desired outcome is to reach objectification through multiple perspectives on a subjective topic
	<b>Strategy 2. “insiders and outsiders”</b> – to garner input from both insiders of research and outsiders; to heighten sensitivity to bias	<b>Data collection strategy</b> –attend multi-disciplinary conferences and workshops, as well as some field-specific conferences
	<b>Strategy 3. “case comparisons”</b> – to compare analysis with existing theory/literature on a similar topic; “systematic generalization”	<b>Case comparison</b> – to compare case with other real cases, i.e. Loma Prieta & Katrina; Napier & Christchurch; Katrina and Haiti
<b>Unit of Analysis: Characteristic</b>	Focuses on developing theories that span levels and units of analysis	Focuses on drawing rich sample of interview data that span multiple disciplines and world views
<b>Unit of Analysis: Purpose</b>	Making explicit what is implicit Introducing systemic ways to theorize from available data	Testing the “wickedness” of situations Introducing “designerly way” of knowing

### 4.1.3 Objective – What is This a Case Of?

While the development of a central question and subquestions are essential to a robust research design, the extent to which the research is shaped by the collected data is equally pertinent. Initial theories, concepts, and models provide guidance, but do not, in themselves, represent the outcome, just as the wicked problems provide guidance for identifying uncertainties and contradictions of a given situation, but do not provide a solution.

Ragin and Becker (1992) argued that many researchers do not know “what *it* is a case *of*” until near the end of research process, because “strong preconceptions are likely to hamper conceptual development” (p. 6). Vaughan (1992) also admitted that the main finding of her case analysis was a “revised understanding about what the case is a case *of*” (p. 192). A major focus of cases, according to Yin (2009), is to illuminate “decisions”—why and how they were taken and what the outcome was—in a given context (p. 17). This leaves the researcher to *interpret* the findings through “imaginative understanding of the studied phenomenon” (p. 126). Case study is a common research strategy in architectural research, as architecture is a discipline situated in practice (Snyder, 1984, p. 2).

In developing the *second generation* design methods, Rittel shifted the focus of design systems from being exclusively based on “operational knowledge” of the profession, to that which factored in both personal and political issues. Strauss and Corbin insisted that, “interpretations must include the perspectives and voices of the people whom we study”, as much as researchers are responsible for “interpreting what is observed, hear, or read” (2003, p. 275). The reasoning of Strauss and Corbin is also reinforced in *The Reasoning of Designers*, where Rittel postulated that, “the course of designing depends decisively and at every step of reasoning on the *world view* of the designer”, because ultimately, “design is subjective” (H. Rittel, 1988, 2010, p. 192). Rittel argued that knowledge needed to solve wicked problems is not concentrated in a single head, and in that sense, a designer is not an expert.

This research undertakes independent case interviews with architectural professionals practicing in recent disasters in urban areas of New Orleans, Port-au-Prince, and Christchurch. While the purpose of a case “is not to represent the world, but to represent the case” (Stake, c2011, p. 460), studying multiple cases by recognizing the uniqueness of each case can lead to theoretical insight that studying a single case may not reveal. Collectively, they can lead to a better understanding about larger number of cases, and, to some extent, theories (Yin, 2009, p. 156). This research takes the theoretical position shared among Ragin (1992), Vaughan (1992) and Yin (2009), in that cases can be used at multiple units of analysis subject to available resources, since most research “combines theoretical and empirical analysis”(Ragin & Becker, 1992, p. 11). By “alternating between units of analysis”, Vaughan argued that the researcher gains the ability to break away from “preconceptions about appropriate cases (that) can stimulate theoretical innovation”(Vaughan, 1992, p. 174). Extending this conjecture, this research seeks to elaborate Rittel’s theory of wicked problems through case analyses of architectural design practices by engaging the individuals involved in reconstruction activities. Forms of engagement varied subject to access, resources, and timing, and primary interview data were supplemented by secondary data, such as field reports and historical documents.

## 4.2 Research Methods

### 4.2.1 Theory Development

Going beyond the discipline is the crux of grounded theory that enables transdisciplinary design thinking. Grounding a theory involves validation through external sources, and theory generation can be attained through deep immersion in the relevant discipline (Dey, 1999, 250). Grounded theorists, led by Glaser and Strauss, cautioned against the “force-fitting” of researcher’s preconceptions to data analysis. Instead, they suggest attaining “theoretical sensitivity” through constant interplay between theory and data, both within and

beyond the discipline itself. Strauss and Corbin (2003) argued that, “theories are embedded ‘in history’”, and, as such, “historical epochs, eras, and moments are to be taken into account in the creation, judgment, revision and reformulation of theories”(p. 287). In this research, the literature review was a multi-phase process spanning the full duration of the research, but it also draws from earlier literature discovered through immersion in researcher’s own discipline as well as from personal and professional experience. Further to this, Dey (1999) argued that theory need not act as “prison guards” but rather as “guides”, and prior conceptions can inform data examination without becoming preconceptions (p. 251).

A broad thematic search of humanitarian architectural theories produced a dozen categories, including: urban informality, spatial commodification, displacement, heterotopia, design tactics, simulacrum, agency, and activism. These themes reflect a complexity that characterizes social, cultural, and political circumstances that accompany architectural activities in post-disaster contexts. Establishing an overall conceptual framework was an iterative process which was refined throughout the research period. Vaughan argued that elaborating theory is about making explicit what is implicit, and proposed introducing systemic ways to theorize from available data (Vaughan, 1992, p. 187). Successive cycles of further reading and evaluating deepened the base for developing theories about architecture’s relevance to urban disasters, out of which emerged the following critical research question:

*How does the Rittelian framework contribute to the critical design decisions in modern urban disasters?*

This broad research question then became a basis for populating subsequent questions, in order to understand the relevance of architects<sup>32</sup> in humanitarian endeavors, as well as to study the consequences of employing the architectural framework of Horst Rittel to develop an understanding of, and facilitate approaches to, wicked problems in disasters. In particular, it focuses on exploring (“how”) the extent to which the architectural argumentative strategy (“the Rittelian framework”) can be employed (“contribute”) to evaluate the post-disaster recovery processes (“critical design decisions”) within the urban context (specifically, “modern urban disasters”). Furthermore, the nature of “wickedness” in Rittelian terms hinges on whether architectural responses to disasters are understood from *within* architectural profession itself, or whether it is perceived from *outside* the profession, in the public realm. As such, the thesis endeavors to complement the views of those from inside the architectural discipline as well as from outside. The very notion of architectural relevance in disasters is challenged (“how”) and the profession’s contribution (relevant architectural problem solving strategy, in this case, the “wicked problems” framework) is reexamined. The six subquestions developed from the research question are:

1. What is the role of architects in urban disasters?
2. How can architects contribute to humanitarian endeavors?

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<sup>32</sup>In this thesis, the use of the term “architect” within the research questions refers to the collective of interview candidates who have some background in architecture, either through formal training and professional licensure or through relevant experience. These include architectural designers, urban designers, planners, engineers, design educators, and general building professionals who may not necessarily be licensed practitioners in architecture but have established credibility within the field through their participation in the building industry in some form. Within the specific references to individuals this distinction is made more clear, and where the term “architect” is used in reference to individuals, it explicitly refers to instances where they are acting in the capacity of licensed professional, to the best of the researcher’s knowledge.

3. How can community members participate in disaster relief?
4. What, if any, leadership roles do architects have?
5. How accessible are architectural services to local communities in need?
6. How do local designers facilitate or engage in the disaster recovery process?

#### 4.2.2 Methods of Disaster Research

Literature on disaster research was particularly useful in providing broader understanding of the phenomenon of disaster as well as the societal circumstances that affect its aftermath. Disaster is a complex, multidisciplinary field where Alexander (1997), a disaster sociologist, tallied as many as 30 disciplines operating actively (p. 289). The literature search followed the guideline proposed by Rodriguez, Quarantelli, and Dynes (2007) in *The Handbook of Disaster Research* to gather relevant resources from a range of sources, including professional and scientific literature, official literature, and popular literature. Particular attention was paid to the following:

1. Definition of terms used across different disciplines;
2. Gaps in literature, and existing research in the area;
3. Suggestions for further study; and
4. Statements of potential contention of research constructs

Casting a wide net for data collection served to safeguard the research against “force-fitting”. Data gathered from a range of sources were evaluated using the strategy above until saturation was reached. Theories emerged through the process of triangulation where multiple perspectives were present.

Theory sensitization is another core component of grounded theory. Vaughan suggested that theories (or models and concepts) are “sensitizing devices” rather than “formalized propositions”, and as such, they are conceptual tools that can make explicit which “biases” researcher brings into the practice (1992, p. 196). To safeguard the research from biases of researcher, Vaughan suggested three systemic procedures for reaching theory: “collegial exchange” which involves testing ideas with colleagues to seek alternative viewpoints; “using insiders and outsiders”, consisting of receiving research input from both insiders of research (such as research participants themselves), and outsiders who may have relevant expertise or interest in the research topic but are not directly implicated in research; and “case comparisons”, which is to compare analysis with existing literature on a similar topic. Vaughan called this “systematic generalization” (1992, p. 197) because it involves the need to integrate systemic mechanisms throughout the research process to enable the researcher to maintain safe distance and objectivity from generalizable biases that can go unacknowledged.

#### 4.2.3 Strategies of Empirical Research

For the empirical research phase, this research adopts Rittel’s framework on *wicked problems* to examine the impact of architectural design in urban disasters. Like “theory elaboration” method, Rittelian “transparency” approach makes explicit what has been made implicit in a given research situation. Rittel takes a constructivist philosophical approach similar to that of Charmaz (2000, 2006, 2011), who coined the



phrase “constructivist grounded theory” by extending the traditional<sup>33</sup> grounded theory methods developed by Glaser and Strauss, while making the distinction that both theory and data are “constructed” rather than “discovered”. Even though grounded theorists agree that multiple perspectives are necessary in theory development, Charmaz (2000) argued that traditional grounded theorists see its formulation as being inherently positivist. Constructivism, on the other hand, acknowledges that data and theory are co-constructed by researcher and research participants (p. 130), hence “constructivist”. Thornberg (2012) added that constructivist elaboration of grounded theory “rejects naive empiricism (that characterizes positivism), the impossible position of pure induction, and Glaser’s dictum of delaying the literature review” until after the data has been collected (p. 255).

Table 4-2: Positivist versus Constructivist Paradigms

<b>Paradigm / Theory</b>	<b>Positivist</b>	<b>Constructivist</b>
<b>Axiology (Values)</b>	Extrinsic Ethics do not influence the study Propositional knowledge is an end in itself	Intrinsic Ethics are an integral part of the study Propositional, transactional knowing as a means to draw out emancipatory values
<b>Ontology (The nature of being)</b>	External Realist - reality exists independent of researcher’s perception, according to natural laws characterized by cause and effect Single reality	Relativist Socially constructed - local and specific, ungoverned by natural laws Interpretive Multiple realities
<b>Epistemology (The nature of knowledge)</b>	Objective Researcher maintains distance and independence from study	Subjective Transactional - researcher is inseparable from study; interviewer and interviewee co-create understandings
<b>Criteria (for Validity)</b>	Traditional construction Internal validity, external validity, Reliability, objectivity	Extended construction Authenticity, credibility Trustworthiness, transferability Community-centered determinations of validity
<b>Methodology</b>	Quantitative Factual Large sample size (breadth) Surveys Interventionist	Qualitative Hermeneutical/Dialectical Small sample size (depth) In-depth interviews Interpretive

SOURCES: Denzil and Lincoln (2005), Guba and Lincoln (2005)

The positivist and the constructivist approaches to research exhibit significant polarity in their analytical approaches as can be seen in the table above. While traditional grounded theory has been met with the criticism for its positivistic inclinations, Glaser challenged that such epistemological categorization is a “rhetorical wrestle” that “are of no potential help to the actual doing of research”(Glaser, 2005, p.2, as cited in Thornberg, 2012, p. 248), and thus evaded the issue altogether. But if Glaserian grounded theory was seen to avoid epistemological argument, Rittel, in contrast, embraced and argued for “epistemic freedom” (H. Rittel, 1988, 2010, p. 192). Epistemic freedom is a condition whereby a designer may exercise his or her judgment over the course of design process because insufficient rules or epistemological constraints exist. Rittel inferred that such freedom comes with responsibility, but many opt to give up or reduce the epistemic

<sup>33</sup>Grounded theory method was originally developed by Glaser and Strauss (1967), but subsequently Glaser and Strauss parted ways in developing the method over the years. Both Glaser(1992, 1998) and Strauss(1987) valued the need for theories to be “grounded” in data, but they differed in how theories would be developed.

freedom through factual justification.

#### 4.2.4 Constructivism and Wicked Problems

Protzen explained that *tame* problems require a particular perspective, yet many problems, particularly of social nature, cannot be resolved using scientific approach, since “one cannot easily reduce the practical issues of scientific research into tame problems” (Protzen & Harris, 2010, p. 13). Multiple perspectives can exist on what constitutes a problem depending on what personal agendas people bring to the research, and what resources are available to solve problems. When Rittel, Protzen, and Grant (1973) considered the notion of *wicked problems*, they saw a need to introduce a generational separation from those (For instance, Donald Schön [1983]’s notion of “Technical Rationality” and Herbert Simon [1973]’s “well-structured problem”) who insisted that all design problems could be “tamed” using rationale and logic alone, by proposing a second generation design methods that take into consideration the “wicked” attributes of design problems.<sup>34</sup> The broad appeal for Rittel’s framework is evident in recent publications (Balint, Stewart, Desai, & Walters, 2011; Kolko, 2012) in fields diverse as business, nursing, environmental management, and political studies, but more notably in the way the Rittelian framework facilitates transdisciplinary collaboration across multiple sectors (Weber & Khademian, 2008 ; V. A. Brown et al., 2010).

Like Rittel, who posited that there is no singular answer to some problems because there are multiple ways of seeing it (1973, 2010, p. 161), Kincheloe (1997) asserted that, “neutral” or objective reality does not exist and that the world views held by people are ultimately subjective (p. 57). Constructivist approaches acknowledge that research represents a mixed voice between researcher and research participants, and Kincheloe further contended that the central concern of constructivism is the “researcher positionality”, that is, the extent to which objective reality is represented through a filter of subjective research (p. 58).

The interpretive orientation of this paradigm seeks to understand and recognize the epistemology and moral values of architectural designers actively involved in post-disaster recovery and reconstruction activities. It begins with the premise that these designers default to the role of community facilitator, which is that of “skilled understanders enabling people to work out their problems” (Ward, 1996, p. 17) between people and their dwellings. Emphasis on “pragmatism” and the “relative”, “multiple realities” of the research process makes constructivist approach well suited to the research that captures the worldviews of those professionals who practice without borders, across histories, and geopolitical boundaries (Jenkins & Forsyth, 2010).

### 4.3 Research Design

By interviewing “grounded” actors, who are actively engaged in the early design decisions of post-disaster urbanism, this research seeks to build an empirical picture of the critical question from multiple perspectives. To repeat, the critical question for this thesis is:

*How does the Rittelian framework contribute to the critical design decisions in modern urban*

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<sup>34</sup>Rittel’s notion of wicked problems were first outlined in his 1969 lecture, “Dilemmas of General Theory of Planning”

*disasters?*

In particular, it is understood that architects, engineers and professional urban designers in general are more inured or conscious about the intrinsic “wickedness” of post disaster urbanism therefore the questionnaire is more specifically directed at these people. The questionnaire is also specifically directed at designers whose field engagement appears to be motivated by their humanitarian values. This last consideration reflects the historical trajectory of the researcher, but it is also true to say that global humanitarian engagement in post-disaster urban construction is particularly and pointedly a wicked situation in Rittelian terms.

### 4.3.1 Developing Wicked Research Questions

Rittel’s Wicked Problems framework encourages a system of inquiry comprising of open and exploratory research questions that can foster understanding of a situation’s “wickedness” rather than to describe or explain the situation.<sup>35</sup> Similarly, constructivist approach to grounded theory embraces indeterminacy, calling for understanding rather than explanation (Charmaz, 2006, p. 126). Grint (2005), a sociologist, added that a given context or situation is often socially constructed by decision-makers, and that competing views can exist within the same context. The US invasion of Iraq was catalyzed, Grint argued, not under the premise of objective fact that Saddam Hussein possessed weapons of mass destruction (WMD), but rather because a particular subgroup of post war researchers were unable to prove or disprove the existence of WMD. Shifting the focus from “*what* is the situation” to “*how* it is situated” can offer new insights, since, “context is not independent of human agency, and cannot be objectively assessed” (Grint, 2005, p. 1471). By this logic, the social construction of phenomenal reality is neither solely dependent on the person, nor on the environment, but constructed by virtue of complex, interdependent factors present at the given time and space. In other words, it is a Wicked Problem.

As such, Rittel argued that wicked problems need powerful, open-ended inquiry that can untangle the “symmetry of ignorance”, which means that the level of ignorance on a particular wicked problem is equally distributed amongst all of the designers involved in decision-making, regardless of whether he or she is an expert on the subject matter. Wicked problems do not exist prior to the collective inquiry process, because “nobody knows better by virtue of his degrees or status” (H. Rittel, 1973, 2010, p. 159). Vogt, Brown, and Issacs (2003, p. 723) agreed that “powerful questions” are key to innovation, insight, and action.

The purpose of the interview guide (see **Appendix A**) was, firstly, to better understand the working environment of the interview participant, to evaluate the interviewee’s overall attitudes and motivations of both architectural designers and non-designers alike. A balanced theoretical sampling was achieved by selecting participants from targeted unit of analysis (i.e. architectural professionals who are known by their peer groups to employ democratic design) who can contribute to the research questions, as well as individuals from outside the target group (i.e. non-architects who are also accorded the title “designers” through their activity) as a research control group. 28 of the interviewees are professionals in the architecture

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<sup>35</sup>Conklin (2006) suggested that the descriptive nature of wicked problems served to sensitize observers to identify factors that may contribute to a problem’s “wickedness”, rather than to prescribe solutions(Conklin, 2006, p. 17).

sector, out of the total 51 interviews for the research. Creswell (1998) suggested that including “heterogeneous sample” group helps to verify “conditions, both contextual and intervening, under which the [theory] holds” (p. 155). Likewise, Vaughan surmised that the “discovery” of an empirical data is in itself a form of “verification” (1992, pp. 181-182). According to Vaughan, including the perspectives of both insiders and outsiders “heightens a researcher’s sensitivity to biases” (p. 198) by becoming aware of a range of world views on the same subject. Interview questionnaire was designed according to Creswell’s guideline (1998, pp. 140-141) on qualitative interviews:

1. Limit subquestions to between five and seven; be open to these questions evolving as the research progresses
2. Subquestions are a means to subdivide the central question into several parts
3. Keep similar interrogatives as the central question
4. Keep the subquestions open-ended
5. Use the subquestions as interview prompts

### **4.3.2 Reframing Wicked Research Questions**

The reliability and validity of interviews depend on conveying the purposes of the research topic to each individual by adapting the research question as per their various levels of involvement on site, rather than by asking the same questions word-for-word (Barriball & While, 1994, p. 330). The questions evolved over time as the research developed for three reasons: first, the questions themselves had to be rephrased according to the occupation and the experience of interview participants; second, the researcher’s own perceptions and attitudes on the topic evolved as more information was gathered and her own knowledge on the subject deepened; third, the framework of wicked problems require the research to be viewed from multiple points of view and thus more than one way of framing the research question.

This need to rephrase research questions is best illustrated by an example. The main function of the first thematic research question, “how accessible are architectural services to local communities in need?”, is to investigate the extent to which architectural design services have been made available to post-disaster community, but the value that such services presented to members of the local community depended on individual experience. For instance, when interviewing a local community leader who had no direct engagement with architects, the question was rephrased as, “how has the community engaged and responded to disasters?” to discern how communities coped without architects. In other instances where architectural participants were interviewed, the only times where such questions were omitted entirely from the interview questionnaire was when the researcher felt that the interviewee already answered the question as part of their response to another question.

Interview questions can also evolve from the initial set according to the evolving understanding of the researcher as part of the research process. The interview questions have been designed from grounded theoretical (and therefore secondary) data prior to empirical research, and as the researcher carries out empirical (thus primary) data collection through independent case interviews, the reality on the situated ground can be different from the imagined secondary data which the initial questions are developed from. Creswell anticipated that questions may evolve, and emphasized that questions must remain open-ended to accommodate for such changes. To return to the example of first thematic question, “how accessible are

architectural services to local communities in need?” it implies that architectural services are already accessible to communities, and thus it places emphasis on measuring its influence (i.e. “how”), without considering that it may be inaccessible altogether or inappropriate due to timing, resources, pre-existing conditions or other external factors that exempt architectural input in the first place. Potangaroa, a structural engineer who had been assisting in the relief efforts in Christchurch following the 2011 earthquake described the lack of architectural services on the ground from his perspective:

*“How accessible are architects to locals that are in need”? Well, where I was, not at all... (We) were working with communities that were very poor, that had been forgotten, that were ignored... architectural services weren’t available at all to anyone and never had been to any of these folks... and in fact, a lot of those folks wouldn’t know what a professional was. They would probably think a professional was a lawyer... (R. Potangaroa, personal communication, 13th March, 2012)*

Instead of taking “universal truths and generalizations” at face value, the realities presented are always “partial” and “situated” perspectives of a given context. Keeping the questions open also challenges and subverts what Clarke (2005) and Charmaz (2000) viewed as conventionally “positivist” framing of traditional grounded theory to what Clarke characterized as “constructionist” or Charmaz as “constructivist” approach to grounded theory (Clarke, 2005, p. 294).

There have been some cases where the interviewee challenged the framing of research question whereby the participant offered an alternative mode of interrogating and understanding the research topic. A case in point, the fifth thematic question, “What is the role of architects in international humanitarian aid?” had evolved and become rephrased as, “what are the ethical issues of working within the context of a disaster, and the role of architects in society”. Manus, an immediate past president of American Institute of Architects, responded by presenting a challenge:

*I’m not sure ethics is the right word, but it’s the commitment to an action that makes a difference. It’s not a good or bad thing, it’s rising to an opportunity to make a difference in the changing world... it’s not really ethics; it’s really an intent to focus on something that has meaning to everybody. This is again the representation of health, safety, and welfare. This is the role that architects need to embody in terms of whether they design the building or they’re there in an emergency, or to check that building is safe... (C. Manus, personal communication, April 12th, 2012)*

Manus articulated an ethical “commitment to action” for professional decision-making in urban disasters and the need to reconcile the role of architects in modern society. His response typifies the questioning mind-set of architectural designers. Interview questions were evaluated and reevaluated throughout the research process to reflect the open and exploratory nature of some of the responses, while remaining close to original questionnaire set as to not divert from the central research questions and research purpose.

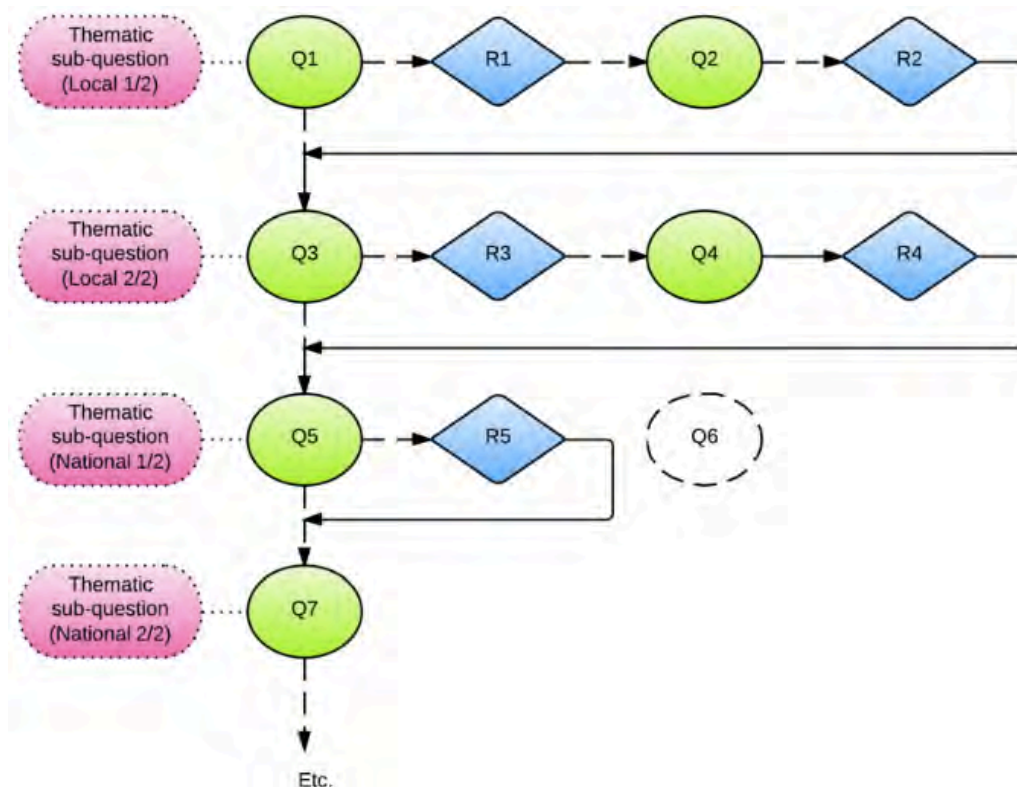
According to Strauss and Corbin (2003), grounded theory is concerned with “patterns of action and interaction between and among various types of social units (i.e., ‘actors’)”, and not theories generated about individual actors, but in “discovering process... of reciprocal changes in patterns of action/interaction... changes of conditions either internal or external to the process itself” (Strauss & Corbin, 2003, p. 284). As such, interviews are means to investigate how the theory may be elaborated through the experiences of the research participants.

### 4.3.3 Interview Strategy and Conduct

Interview questionnaire was also a research roadmap structured in three phases. Conceptually, these divisions were categorized in terms of local, national, or global questions, so as to maximize discovery by using multiple units of analysis. Vaughan argued that developing theories that span levels and units of analysis can help to “[refine] theoretical constructs and [clarify] their relevance for different organizational [units]”(Vaughan, 1992, p. 174). Moreover, Vogt, Brown and Issacs (2003) explained that pre-existing assumptions tend to be built into questions, but depending on how each question is framed, it can also provoke alternative viewpoints (Vogt et al., 2003, p. 9). Part of the standard interview protocol was to send the questionnaire to interview participants in advance, and in majority of cases, this process became a means for diffusing uncertainties about the research topic. In a small number of cases it gave the prospective interviewees an opportunity to understand what the research was about prior to giving his or her consent.

In terms of the interview structure, it follows what Keats (Keats) calls a conventional three-part structure consisting of questions and probes in the opening phase, the main body, and the closing phase.

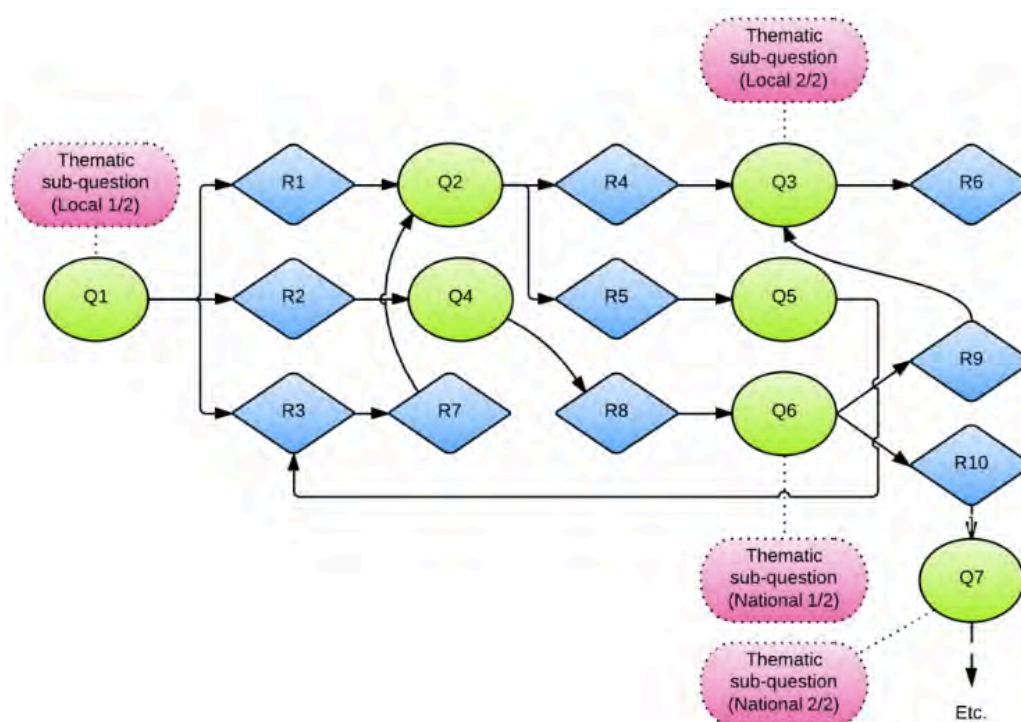
Figure 4-1: Keat (2000)'s Sequential Chain Model with Simple Feedback Loop



As the interviews progressed, however, the structure evolved and more refined in scope with individual participants, and the sequencing of questions varied according to the type of responses received. Keats explained that while many interviews can be planned ahead, if they involve probing, the structure can vary significantly as the interplay between questions and responses change as the conversation progresses (Keats, 2000, pp. 50-51). Some interviewees led the conversation to the point of adhering to supplied prompts verbatim, which is similar to the “sequential chain structure” model (p. 52).

This pattern emerged in two types of scenario. One was where the role between the interviewee and interviewer was seemingly reversed, and the other was when the interview itself was difficult to conduct. The role reversal situation was frequent during the pilot phase of empirical research, due in part to the inexperience of the researcher to conduct interviews effectively, but also due to the unequal relationship dynamics between the researcher and interview participant. In such instances, the interviewee would take the interview prompts given by the interviewer in advance, and use them to lead the conversation, which in some instances resembled a monologue where the researcher was not afforded any opportunity to steer the conversation. Difficulty also arose where interviews were made difficult, either due to time constraint or due to lack of cooperation. Keats reiterated that this is not uncommon (p. 136), and that where appropriate, emphasis should be placed on the research material rather than on the person’s feelings (p. 141). Acquiescence of interviewees is evident when the conversation seems to be forced, offer generic or oversimplified responses, and act aloof and uninterested. In some cases, they stated their reluctance to answer certain questions, and in some instances, went as far as retrospectively withdrawing the interview consent due to competing priorities or conflict of interest (whether through expression of disinterest or behaving in a distracted manner—leaving the room during the interview, engaging in small talks with those outside of the conversation). This was notably evident during subsequent data analysis phase as the transcripts from such interviews generated few useful concepts and theories.

Figure 4-2: Branched Interview Structure



Most interviewees, however, were courteous and highly engaged, but often digressed from the topic when given the chance, creating another challenge for the researcher. In such cases the interviewer was responsible for guiding the conversation back to the research topic. By far the most common interview structure employed by the researcher was the “branching structure with complex feedback loops” mode as illustrated in **figure 4-2** above (Keats, 2000, p. 55), where the interviewer encourages some digression from the topic based on the participant’s response and related aspects of the earlier response to later questions. This method enabled the interview to stay on topic while maximizing feedback and gathering relevant insights that may not have been captured by the original set of questions. The theoretical nature of some interview questions invited the participants to elicit and challenge underlying assumptions provoked by the research, which led to insightful divergence and alternative ways of perceiving the issue at hand. True to the critical constructivist framework, interviews offered multiple ways of seeing, which generated further questions, adding to the complex social, cultural, and historical elements unearthed from each site.

The purpose of these independent case-study interviews is to reveal the attitudes and behavior of respondents who have been recently involved with rebuilding in urban disasters. While majority of interviews were one-off interactions, many interviewees were interested in extending the conversation further. This often resulted in professional referrals to other experts within their network who were good candidates for interviews, personal tours of field projects, invitations to present at conferences, and even contributing to journal publications, which spurred on further discussion about the research. Some individuals, particularly academics, requested a copy of the audio file of the interview and the interview summary, while others offered additional material (such as working documents and field reports) that came up during discussion. The interviewer also initiated follow-up correspondence for clarification and more information where ambiguities emerged in the subsequent data analysis period.

### 4.4 Interview Design

From pragmatic perspective, expert interviews are seen as efficient means of gathering data. Because experts have extensive experience within a relevant subject, the researcher can circumvent time-intensive data collection processes such as surveys and focus groups (Bogner, Littig, & Menz, 2009). Another benefit to expert interviews is the opportunity to utilize the expert’s network to expand access to additional experts, as well as knowledge. Experts bringing with them many years of firsthand experience in a particular area, and those who hold senior position within an organization can shed additional insight to the research. This research benefits in particular from working with a range of experts who represent or work with communities in vulnerable situations following a disaster, which may raise questions as to whether the views of the experts are in fact representative of those in communities they work in. The following section critically evaluates whether focused expert interviews are legitimate means for gathering data about community behavior and the relevance of architects in society.

#### 4.4.1 What is an Expert?

Bogner, Littig, and Menz (Bogner et al., 2009) contended that what constitutes an expert need to be examined as much as the procedures and methodologies adopted for collecting information from said experts. Bogner et al. observed that there has been an evolving understanding within the scientific community about the social perception of experts over the years (**table 4-3**). First came the golden age for



the experts, whose esoteric scientific power was unencumbered by criticism and were given considerable authority over the public. Experts were an agent of “truth”, and authorities used positional power as a form of expertise over people. However, this initial period of positivism lost ground in the early 1970s<sup>36</sup> with the “second wave”, the age of democracy, out of which emerged the notion of social constructivism. Democratization of expertise made knowledge available to wider public (D. Alexander, “What is Disaster?” as cited in Perry, c2007, p. 33). Deciphering knowledge became a social activity amounting to “epistemic anarchy”. The final and third wave, which runs in parallel to the second wave of academic movement continuing on to current period, is a realist approach. In the third wave, both the scientific community and the public support “genuine expertise” based on expert knowledge, with limitations placed on the level of public participation. Access to knowledge is mediated to “reconstruct” the credibility of experts without muting out the voices of non-experts who serve as critics. Pfadenhauer (Pfadenhauer, 2009) contended that the purpose of expert interviews are to reconstruct explicit expert knowledge, and that a prior knowledge of the subject matter that places the researcher on an equal footing with the interviewee ensures the productiveness of the interviews. The reciprocation of knowledge prepares the expert interview participants to share their specialized body of knowledge, which may otherwise be withheld or diluted to general members of the public.

Table 4-3: Evolution of Technical Experts

<b>Era</b>	<b>Social Perception</b>	<b>Characteristic</b>
<b>First wave: 1950s–1960s A Golden age</b>	Age of authority - expert as agent of truth and authority; Positivism	Clear top-down division between “experts” and “lay people” Authority uses power to enforce expertise Access restricted Paradigm: Positivist movement
<b>Second wave: 1970s - now Social constructivism</b>	Age of democracy - expert as lay person with knowledge as a product of social activity	Change from downstream to upstream; epistemic anarchy Access open Paradigm: Relativist
<b>Third wave: 2000s - now Realist approach</b>	Age of expertise - expert as both an analyst and actor in the public sphere	Genuine expertise based on expert knowledge, extended to public sphere with some limits Access mediated Paradigm: Flexible

SOURCE: Bogner (2009), Collins and Evans (2002)

Interviews can generate factual, tacit, professional or occupational knowledge, requiring careful analysis as to distinguish between those that are specific knowledge and those that are habitual and routinized knowledge. The evolutionary framework of experts offer a useful validation tool prior to undergoing ethnographic analysis of interview participants, whose contribution to the research as primary discussion point is critical to this research. For the purpose of interviewee selection, experts typically fit under three categories: organizational expert, everyday expert, and external expert (Bogner et al., 2009, p. 220).

The organizational experts are the “highly visible” experts (or “elites”), who hold executive positions within

<sup>36</sup>This is a general estimate, as the constructivism and social constructivist era in Russia began in the late 1910s following the post WW1 revolution.

organizations and also the specific knowledge of organization’s system and structure. The everyday experts have primary subject matter knowledge of a specific project in which they have some first-hand field experience. The external experts are likely to be third parties or academics with broad, specialist knowledge of the industry representative of the generally accepted views on given subject. Inclusion of external experts in this research is essential for triangulation as well as to minimize bias in research. To enable cross-case comparisons, efforts were made to screen for interview participants in each of the case studies in senior positions but with similar level of expertise as one another.

Creswell (1998) recommended an average of 20 interviews for qualitative research (Creswell, 1998), although researchers tend to correlate quantity with quality (Denzin & Lincoln, 2003, p. 448). In this research, interviews were conducted until saturation was reached, with a balance of perspectives drawn from non-architects and external experts who had relevant professional experience but those who were not directly involved in the chosen case studies.

Table 4-4: Distribution of Interviewees

<b>Disaster</b>	<b>Architect</b>	<b>Non-Architect</b>
2010 Haiti earthquake	7	6
2005 Hurricane Katrina	5	7
2010 Canterbury earthquake and 2011 Christchurch earthquake	6	14
External experts	7	8

Note: The sum of interviewees exceeds the total number of interviewees because some individuals are experts in more than one location or they are disaster researchers with field experience.

The interview participants are from a range of organizations, some from within the same organization wherever time and resources permitted. Froschauer and Lueger (2009) contended that an insider view is valuable, if not highly desired, because “from an expanded observation perspective, they are in a position to provide qualified information on internal knowledge structures and constructions” (p. 11). Additionally, when conventional approach seeks to validate the accuracy of interview respondents in quantifiable means, the interpretive approach seeks validation through triangulation of multiple perspectives within and across different groups. If the former approach is scientific and broad, then the latter is qualitative and focused. The cross-pollination of perspectives from different experts within the same industry is insightful, particularly when they can collectively resolve uncertainties, inconsistencies and any tacit assumptions of the researcher.

#### 4.4.2 Expert Interview Selection Process

Whom to include or exclude from the interview selection process to ensure the research paints an accurate picture of the context has proved to be a challenge in itself. The priority for expert interview candidate selection was the prospective candidate’s seniority within the organization or representative bodies chosen, and where possible another member of either the same or similar organization as to be able to garner alternative viewpoints within the organization. The experts were then categorized in terms of the type of expertise: organizational, everyday, or external—as described above. Next step was to generate a preliminary shortlist of interview candidates for each case study, which would expand and contract

depending on access, timing, and availability. As with any person whose skills are in high demand, interviews are generally difficult to obtain without personal referral, as had proved to be the case with a number of interview candidates identified in the initial sampling process who declined the invitation to participate in the research. But once the data collection process began, expert referrals alone provided ample opportunities to make interview arrangement with professionals who meet the interview candidacy. There were some conflict of interest, which resulted in the candidate rescinding the interview invitation, but they tended to be imposed by institutional system rather than from attitudinal differences. This section explains the steps taken to select expert interview candidates.

While the case studies were selected on the basis of accessibility to interviewees through AFH, the formal engagement process with each interview participant was the same for all interviewees regardless of whether or not the prospective interviewee was previously acquainted with the researcher. Although many of the participants are long-term colleagues and friends by association with AFH, the screening process was consistent with other experts in the field who met the following criteria for inclusion:

1. The interview candidate has at least 5 years equivalent experience in their field of expertise.
2. There is no conflict of interest with respect to the research topic between the researcher and the interviewee on both personal and professional grounds.
3. The interview is carried out honestly without any hidden agendas, such as promotion, self-aggrandizement, or competition

Adhering to these criteria was challenging. Where any of the above criteria were not met, the candidacy was either aborted by researcher prior to obtaining informed consent, or retrospectively pulled from discussion. The first criterion is somewhat challenging to execute as the “5-year rule” reflects an arbitrary period for a non-expert to develop quasi-expertise in the field, given that there is unusually high turnover of personnel in the first two years, in part due to the changing needs of post-disaster context and the different set of skills that each disaster phase requires, but also due to the highly stressful work environment. A candidate could be moved to a different role to the one that he or she originally held which meet the interview criteria established in the first place. In reality it may take substantially shorter or longer period than 5 years to establish expertise depending on the nature of his or her role, and the intensity of his or her first hand experience. Pfadenhauer (2009) argued that “experts” are local rather than global elites who are persons responsible for solving problems and have privileged access to information, rather than a functional elite in the traditional sense. An expertise is determined on relative terms for the purpose of generating data that facilitates “the reconstruction of expert knowledge”.

The second criterion is also contentious as the conflict of interest may be established either by the researcher or by the interview candidate. Some prospective interviewees rescinded their initial interview acceptance upon learning the ethical conditions of the interview, as had been the case for many employees of the United Nations, which is known to enforce strict confidentiality regulations in matters concerning the institution.<sup>37</sup> McCleary (2009) attributes this institutional behavior as being driven by the global conditioning

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<sup>37</sup>The cholera outbreak in Haiti shortly after the 2010 earthquake, whose source tracked back to Nepalese soldiers of United Nations

of large humanitarian agencies in recent years to the growing commercialization of foreign aid, and in some cases financial dependency on federal governments, whether inadvertently or not, exert control over the behaviors of those it finances.

Refocusing the discussion to the interview process, the researcher acknowledged the sensitive context in which many of the interview participants are actively engaged in the disaster recovery processes and that such considerations always come before the needs of this research to interview them. The volatile circumstances of many humanitarian agents—prime candidates of this research—calls for realistic measures to produce research that is timely but unobtrusive to the recovery processes. Disaster scholars and humanitarian agencies remain divided on this issue, and it has been left to individual authorities to decide on the way forward. For example, the New Zealand Civil Defense authority instituted a ban on all “social research” for the initial months following the February 2011 Christchurch earthquake, deeming it unnecessary and disruptive to the emergency response operations (Potangaroa & Kipa, 2011). Still, many interview participants who were approached expressed strong interest and enthusiasm on the research topic, and circumvented any potential conflict of interest issues at institutional levels by opting to be interviewed as an independent expert (under the designated research participant category “individual”) rather than as an employee of the institution, in order to safeguard the interests of the agencies they were affiliated with. This intention was expressed at the time of signing the interview consent form. The tendency to accept interview invitation on the condition that the views expressed were personal rather than that of the institution—despite having the authority and permission to express the institutional views—suggests that either (1) there is an absence of firm institutional position with regards to the research topic, or (2) there is no institutional consensus on the subject. Having been made aware of these considerations during the data collection process, and not prior, the scope of research was reduced accordingly.

The third criterion was employed to determine whether there was any conflict of interest between the researcher and the interview participant. In order to main research objectivity, those individuals who worked closely with the researcher were excluded from the interview shortlist, and the researcher’s own projects were excluded from analysis.

But to what extent are the sentiments of interview participants a reflection of phenomenal circumstances rather than what Vaughan called “systemically generalizable” (1992, p. 197) reality? How are interview responses influenced by personal experiences that are not representative of a broader context? Studying the attitudes of people also imply that views expressed by those individuals are also necessarily personal. External variables, such as the changing circumstances of interviewees and uncontrollable disruptions to the context (such as aftershocks of an earthquake) also need to be considered. Against this uncertainty, Glaser and Laudel (2009) developed a set of validation criteria for expert interviews as follows:

1. Information is shaped by the “aspirational level” of the interviewee (whether the conditions of work influences statement)
2. Specific content of work due to specific performance level that might have shaped information (personal

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Stabilization Mission in Haiti (MINUSTAH) put the U.N. in the public spotlight, contributing to the challenge of securing interview consent from U.N. representatives.

experience)

3. Differences between performance levels accompanied by different self-images and valuations (personal background)
4. Whether an interviewee’s performance level affects reported causalities (external conditions)

In addition to the above checklist, the Rittelian framework acknowledges the collaborative generation of data between the researcher and the interviewee, as well as reinforcing the tension created between the research and the interviewees who may hold conflicting interests. The constructivist process is concerned with the validation of knowledge through the various social, cultural, and historical factors which can determine the power dynamics that privileges some and marginalizes others.

### 4.5 Data Collection

Primary data of this thesis relies on qualitative data gathered through semi-structured independent case interviews. Sampling strategy for interview participants also began with a broad set of criteria, adapted from Vaughan’s research method (Vaughan, 1992, p. 175):

1. Each interviewee can demonstrate expertise on the research topic
2. Interviewees may have, among them, expertise in a range of organizations of different sizes and complexity
3. Interviewees are chosen from a variety of positions along an organizational hierarchy or structure

This criteria informed the overall selection process and but the strategy was refined following new insights from the pilot case study.

#### 4.5.2 Fieldwork

The researcher’s background enabled access to many experts interviewed for the case studies, and had the researcher not been in this leadership position, it would have posed significant challenge to the completion of this research. The shared background and relevance of the work between the researcher and the interview participant increased the likelihood of consent, ability to build rapport, and enabled additional referrals to relevant experts (Bogner et al., 2009, p. 2).

Table 4-5: Fieldwork Timeline over 18-months

	Jan-11	Mar-11	Jun-11	Jul-11	Sep-11	Dec-11	Feb-12	Mar-12	Apr-12	May-12
Auckland / Skype										
Chch										
U.S. (various)										
Haiti										
<b>Concurrent Events</b>										
Chch EQ / Aftershock										
Conference / Events										

There was an opportunity to incorporate participatory component to the research<sup>38</sup> while the researcher was involved in the local recovery initiatives in Christchurch following the February 22<sup>nd</sup> 2011 earthquake. Phillips (2003) noted that concurrent research and practice can be valuable since, “observation also serves qualitative research well as a means of triangulating and strengthening other methods” (B. Phillips, *Qualitative Methods and Disaster Research*, as cited in Stallings, 2003, pp. ch.7, para. 32). But researcher resolved to omit the participatory component to keep the level of involvement across the three case studies consistent. Nevertheless, the professional involvement in Christchurch outside of research allowed the researcher to understand the phenomenon from being fully immersed in the environment, and the personal experience has contributed to building rapport with interview participants, not only in New Zealand, but also in Haiti and the U.S.

Site visits to other case study locations were not part of the initial research plan, but they became necessary for two reasons. First, the non-verbal, interpersonal information that can easily be obtained from face-to-face interviews are lost in telephone interviews. Second, in the initial round of data collection (between January 2011 and November 2011) the researcher was not able to reach theory saturation whereby adequate understanding of the cases could be established. Scholarships and university research funds enabled the researcher to visit the main areas of each of the three case study sites for concentrated periods in the second round of interviews conducted between January 2012 and June 2012. Many interview participants were reached through professional referrals or through public networking events<sup>39</sup>, conferences, and workshops. Where this was not an option, prospective interview participant were approached directly, but this method was less successful.

Table 4-6: Distribution of Interviewees by Sector

Sector	Number of interviewees*	Percentage
Architecture	28	40
Community Development	13	19
Planning	6	9
Government	6	9
Social entrepreneurship	6	9
Other (economics, education, law, urban design, sociology)	11	14

\*Number of interviewees by sector exceeds the total number of interviewees because some individuals identify with more than one sector, e.g. an architect working in a non-profit could identify him or herself as community developer; a planner may also consult for a government agency.

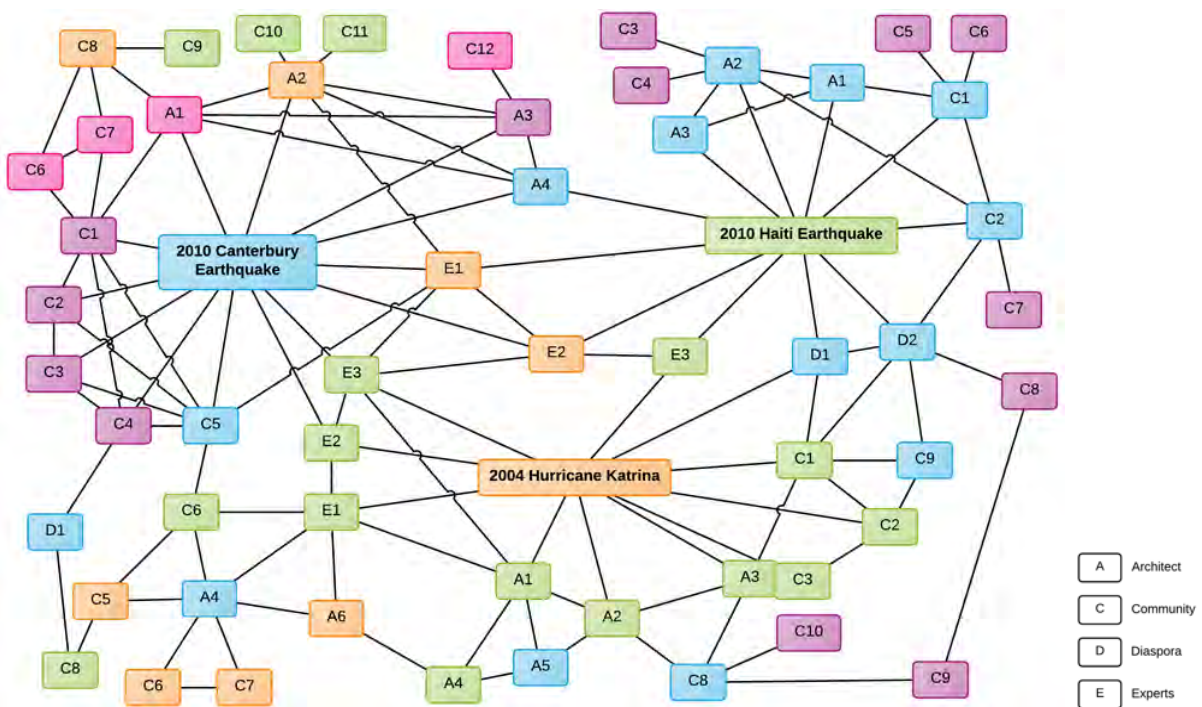
The conceptual social network diagram (**figure4–3**) represents the relationships between interview

<sup>38</sup>But for the Christchurch case study the researcher exercised additional means to safeguard the validity of research and stood down from the five-year management role at the Architecture for Humanity Auckland Chapter in June 2012 to limit the impact of research bias during the analysis. All data collected prior to this date were obtained outside of the designated work hours of the organization. At this time, the operative roles were delegated to other members of the organization to allow the researcher to take leave.

<sup>39</sup>The resource and time constraints led the researcher to plan the interviews around networking events and conventions with confirmed attendance by shortlisted interview participants. An example is Structures for Inclusion, an annual convention for architectural students and professionals who are self-identified Public Interest Designers in the United States. A public convention such as Technology Entertainment Design (TED) opened access to more general, non-architect experts. Where interview participants were unavailable in a given timeframe, a combination of telephone and Skype internet phone was used as an alternative.

participants, illustrating the interconnectedness across industries, cultures, and countries. The research began with an assumption that these relationships primarily exist through organizational ties, but this was not the case. The relationships were also based on ties that go beyond professional nature into personal and sometimes political connections beyond the three case events. Among individuals, some had professional experience in more than one of the case studies, and some had direct cultural ties across multiple sites. In the case of the latter, the challenges of humanitarian practice seemed an integral part of their personal as well as their professional lives.

Figure 4-3: Social Network Diagram of Case Studies



### 4.5.3 Secondary Data

The knowledge of interview participants were limited to personal experiences and institutional knowledge, which, in turn, is limited by the scope of the institutional practices. Creswell (1998) argued that in a grounded theory research, other forms of data “play a secondary role to interviewing” (p. 162), but in this research, field reports and white papers produced by governmental and non-governmental, private humanitarian aid agencies were invaluable means to triangulate and supplant gaps identified in interviews.

For the Christchurch case study, available published data on Christchurch earthquake was relatively scarce compared to literature on Haiti earthquake, even though the earthquakes in two cities were less than 9 months apart. Apart from the difference in scale of disaster impact between the two cases, and the fact that natural disasters like earthquake is more common in Haiti, one plausible explanation for the literature on Haiti earthquake is directly proportionate to the number of researchers involved, as the humanitarian agencies are institutionally mandated to produce reports to its international stakeholders.

#### 4.5.4 Pilot Case Study

Three pilot interviews were conducted in Christchurch in January 2011, some four months after the September 4<sup>th</sup> earthquake in 2010. According to Yin, convenience, access and geographic proximity are key elements of a pilot study (Yin, 2009, p. 93). No direct fatalities resulted from the event, the state of emergency in the area was lifted after its initial period of 2 weeks, and no research embargo was imposed for all types of sociological research by the government. A pilot was considered appropriate to proceed as the research posed no disruption to the area nor to the participants.<sup>40</sup>

These initial interviews assisted in formalizing the research design and establishing the overall data collection protocol for the main interviews, but further adjustments were made as new challenges emerged throughout the research process. The research process was as much *a priori* ground for testing the research proposition as it was a *posteriori* opportunity to unveil revelatory potentials of the research theories. It served to uncover assumptions and preconceptions about the role of architects in urban disasters and the relevance of the wicked problems framework in post-disaster context.

Table 4-7: Overall Research Protocol

Component	Strategy	Research Implication
<b>Cast Study Selection</b>	Viability of research is tested with regards to likely access to relevant field experts in recent disasters	Sites with AFH involvement – the U.S. Gulf Coast, Port-au-Prince, and Christchurch were assessed to reap quality data, accessibility and relevance to research scope; other speculative sites that were chosen initially proved to be less viable
<b>Alternative Case Studies</b>	Alternative case studies are explored for early feasibility as other disasters occur closer to home	The 2010 Chile earthquake near Santiago, Chile; the 2011 Tōhoku earthquake and Tsunami in Japan were all candidates for alternative case study in the case where access to selected case studies were denied; researcher kept abreast of reports and research in other disasters
<b>Interview Questionnaire</b>	Several strategies were explored during the research pilot - formal, semi-structured, and open - to determine an effective method for interviews	The interview questions were reviewed several times prior to submission to the University Ethics Application Review Committee (UAHPEC) and the interview protocol was further refined to accommodate different types of interviewees
<b>Interviewee Rapport</b>	Take queues from interviewee on where interview can take place; developed an optimum practice to enable fluidity between asking questions and establishing rapport with the interviewee	Interviews took place at most convenience to the interview participant, but at times were negotiated to a more controllable location with minimal noise and interruption for better audio recording quality; initially the interviews are structured to take between 1 – 1 1/2 hours in duration, but this was sometimes reduced to 30 minutes up to 4 hours depending on the availability of interviewee – the interview questions were adjusted in shorter interviews to ask only a handful of key questions relevant to the interview participant, and on longer interviews there were opportunities to extend them
<b>Field notes</b>	Practiced active listening and note taking, scanned and transferred to NVivo	Maintaining conversation flow was an effective measure to gain deeper insights from interviewee; note taking was useful in summarizing key information as well as raising points that require clarity during the interview but would be expanded later as to prevent the flow being interrupted
<b>Technology</b>	iTalk audio recorder Skype + Audacity	Several recording technologies were identified according to quality, ease of use, and stability, in order to optimize field

<sup>40</sup>However, following the February 22nd, 2011 earthquake, the six-month research embargo applied, during which the researcher suspended research in Christchurch and chose to support affected communities in Canterbury through AFH initiatives.



	NVivo	work; some recording methods, such as Skype, were difficult due to internet connectivity issues and occasional file corruption
<b>Training</b>	Ethics Support Workshop Certificate of Languages (French) NVivo Advanced User Workshop	Attended ethics support workshop and training sessions for NVivo to improve and refine the research methodology; the researcher also took advanced level classes in French, in order to facilitate field work in Haiti whose national language is Haitian Creole and French

Two key lessons from the pilot case interviews were (1) the changeability of research circumstances, and (2) the need to broaden the sample group to address the research proposition. From the pilot interviews with architects, it became apparent that voices of non-architects also needed to be included to balance out the disciplinary bias. Goldberg, a psychologist, argued that, “a paradigm shift occurs when a question is asked inside the current paradigm that can only be answered from outside of it” (M. Goldbert, “The Art of the Question”, as cited in, Vogt et al., 2003) and this position was reiterated as an essential component of qualitative research process by Vaughan (1992, p. 198), and Strauss and Corbin (2003, p. 287). Individuals may encompass various perspectives, but they may equally hold competing priorities. For instance, attitudes of locals involved in post-disaster activities can differ from those who have arrived from outside, because their views are shaped by different experiences, priorities, and understanding. A researcher, therefore, needs to understand a range of different positional knowledge and consider the idiosyncrasies within each discipline.

In refining the shortlist of interview candidates for the main empirical research, it was important to garner the perspective of non-expert “designers” who may be able to shed an outsider’s perspective about the impact of post-disaster architectural activities to evaluate the architect’s effectiveness in responding to local needs. Another group of outsiders this research interviewed are “generalists”—disaster field experts and architectural professionals who are not directly involved in the disaster sites selected. Vaughan saw value in perspectives of both insiders and outsiders, for insiders can offer “perspective on the biasing effects of their worldview”, while outsiders can offer alternative perspectives due to their own “ideology, occupation, or even in varied proximity to the event or setting” (1992, p. 198). At the same time, Vaughan cautioned that outsiders can also contain their own biases, but considered them to be useful because such biases are also learning opportunities in themselves.

## 4.6 Data Analysis

Multiple case studies construct a balance between the qualitative narratives of individual actors and the theoretical construct of “wicked problems” weaving throughout this research. The three disasters presented here—which cannot seem more different from one another in terms of its history, culture, social and political conditions—have recurrent themes and patterns that render their differences as strengths rather than as weaknesses. The results **chapters 5 to 7** discuss the key findings from the case studies, organized across five thematic categories. The conclusive chapter summarizes the results from the previous chapters, discussing the key themes at a meta level, outlining the implication of research in future disasters.

Architectural research frequently employs case study method for analyzing the built environment (Groat & Wang, 2002; Francis, 1999, as cited in Snyder, 1984 p. 2), but this research seeks to encompass cases as

part of a broader interdisciplinary debate by employing the constructivist grounded theory (Charmaz, 2006) and the theory elaboration method (Vaughan, 1992). A distinguishing characteristic of both approaches is that they employ the analytic process of grounded theory methodology without subscribing to the objectivist assumptions. Instead, it employs the interpretive paradigm using empirical research data to elaborate on the central theoretical inquiry about the role of the architectural profession in urban disasters.

### 4.6.1 Theory Development

Theory development is a key component of both Rittel's wicked designer approach and Vaughan's theory elaboration methods. It involves multiple stages and strategies of refining and categorizing collected data to lead to emergence or "discovery" of main themes. As such, the development of theory requires a technique that grounded theorists call, "constant comparison", which is enacted through iterative processes of comparing the similarities and the differences between theory and data. Analysis of qualitative research data involves the process of "coding", which is a sociological term for conceptualizing data. Corbin and Strauss (2008) indicated that the verb, "coding", is used over the noun, "codes" to emphasize the process of data "mining" over concepts, because concepts are in a constant state of flux throughout the research (p. 66). Yet Bazeley (2009) argued that "emergent themes are often remarkably similar to those in the literature" (p. 9), and this is where Vaughan's explanation of theory elaboration makes further contribution to the grounded theory. Vaughan contended that elaboration of theory through analysis and refinement can "stimulate theoretical innovation". Also, by situating the research "in the broader social structural context" a theory can be grounded within "empirical reality" rather than remaining a "nebulous concept". Finally, Vaughan leaves open the possibility of having a "revised understanding about what the case is a case of" (1992, p. 192).

### 4.6.2 Coding with NVivo

Interview duration averaged around one hour, ranging from half hour going up to four hours depending on the interviewee's limited availability in the case of former, and willingness to contribute to the research in the case of latter. 56 interviews were conducted in total, out of which 3 interviewees withdrew their support due to issues of confidentiality, further 2 interviews were withdrawn by the researcher, and 2 did not meet the criteria for inclusion in the research. Then out of 49 interviews that are used in this thesis, 43 interviews were fully transcribed and included in the qualitative data analysis. This includes 3 pilot interviews, but excludes 3 audio files of interviews that became corrupt and irretrievable during technical processing. For those interviews whose audio data was lost, the main ideas were captured from memory. The researcher also took extensive field notes by hand during interviews to capture key ideas and points for further clarification where needed. Each recording was then manually transcribed onto a word processor document and coded with its document track revision and comments tool. The size of such files became problematic as the word processor was unable to hold more than a dozen pages before the processing speed was affected and became unproductive. A one and half hour duration produced some 30 pages of transcribed text, with total processing time of about two days. About two months into the data collection period, the researcher employed the computer-assisted qualitative data analysis software (QDAS) called NVivo<sup>41</sup> version 9.

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<sup>41</sup>NVivo is an acronym for QSR NUD\*IST (Non-numerical Unstructured Data Indexing Searching and Theorizing) Vivo 9

The usage of a QDAS platform is becoming common among qualitative researchers for its ability to increase efficiency in data management and to assist data analysis, but the convenience of computer-assisted software has some misgivings. Strauss and Corbin (2003) deplored the claims of such softwares to accurately implement and mimic the procedures of grounded theory research, warning that it often results in “diffusion of methodology”. They argued that such all-encompassing data-processing platforms do not yet have the ability to effectively capture the conceptual richness in data. Also, the powerful data processing capabilities of a QDAS can tempt the users to risk overlooking some of the grounded theory’s core procedures, such as theory development, constant comparisons, and theoretical coding (pp. 280-282). However, Creswell (1998) explained that QDAS uses the same process for manual coding, and that it is only “a means for storing the data and easily accessing the codes provided by the researcher” (p. 201). The consensus among researcher seems to be that mechanical platforms such as QDAS are just another medium for managing data, and the researcher remains responsible for turning the raw data into useful theory. On a related note, Rittel argued that even a computer cannot replace human judgment (H. Rittel, 1973, 2010, p. 164), to which Protzen explained “the decision is inherently both personal and political” (Protzen & Harris, 2010, p. 168), and such computer programs cannot make decisions for humans.

For this research, NVivo QDAS was an invaluable tool not only for providing a central database for large quantity of data but for enabling richer interpretation through cross-analysis. Weitzman (2000) argued that QDAS needed to be complemented by manual data analysis process, and both techniques were used throughout the research duration, systemizing the constant comparison process. NVivo was selected amongst other established QDAS packages (such as other NUD\*IST packages, ATLAS.ti, and QDA Miner) for its suitability to mixed-method research, and in particular the grounded theory method research (Weitzman, 2000, “Computer Programs for Qualitative Data Analysis”, pp.803-820, as cited in Ozkan, 2004, p. 590). NVivo also has a wide range of options for data analysis, allowing the researcher to discern the macro, overarching themes from the transcripts, in parallel to locating and highlighting more nuanced information at micro, detailed level. NVivo did not substitute the need for the researcher to know the dataset intimately. The following section explains the coding process.

### **4.6.3 Qualitative Data Analysis**

Rittel’s Issue-Based Information System (IBIS), a mechanical framework for evaluating the rationale for approaching wicked design problems, uses similar conceptual process as grounded theory methods in that both approaches seek to generate a “plausible” theory among the available “set of concepts” (Strauss & Corbin, 2003, p. 283) and “reasoning” (H. Rittel, 1988, 2010, p. 185). This section describes the data analysis mechanism based on grounded theory that closely parallels the systemic processes of Rittel.

The standard procedure for theory generation, as proposed by Strauss and Corbin (2003, 2008), comprises of (1) “open coding”, where concepts are “discovered” from the raw data and organized according to its theoretical properties and relevance to research, followed by (2) “axial coding”, where the relationships among various concepts are categorized according to patterns and process of actions and interactions, their similarities and differences, and finally, (3) “selective coding”, where relevant narrative is drawn from among the categories to arrive at a substantive theory.

#### 4.6.3.1 Open Coding - Identifying Issues

The purpose of early coding process is to *identify* concepts that match key ideas from extant theories in the literature, in addition to new concepts emerging from the empirical data (Bezeley, 2000, p. 25). Following the standard procedure of grounded theory as employed by Strauss and Corbin (2003, 2008), elements of which are extended by Charmaz (2000, 2006, 2011) and Vaughan (1992), this research mined the raw data for relevant concepts, models, and theories that were each assigned to one or more nodes in NVivo. The etymology of *node* assumes that it is part of a wider network or branches of other nodes, hierarchically arranged in relation to each other. These in-place nodes are tagged at the original location for easier cross-referencing later. In this way, the key ideas retain the contextual information and can be searched by name, compared with other ideas, and analyzed based on its similarities and differences across other concepts. The coding at this initial phase generated over 3,900 node references from 49 interview participants, in addition to field notes, memos, and secondary data. Field notes are hand-written records generated at the time of interview which contain key observations and ideas that serve as mnemonic aid for the researcher, while memos are “rudimentary representations of thoughts” (Corbin & Strauss, 2008, p. 118) produced at the time as coding to capture ideas, relationships, and patterns that are pertinent to research.

#### 4.6.3.2 Axial Coding - Connecting Positions

Constant comparison between coded data and raw data is an essential analytic process that leads to discovery of patterns, processes, and potential “categories” that can be converted as theories. “Axial coding” method brings together similar group of nodes in order to aggregate them and to form provisional categories, by investigating its causal conditions, intervening conditions, the phenomenal context, strategies, and consequences (Creswell, 1998, pp. 195-196). Broader categories are developed based on its ability to capture multiple dimensions of related sub-categories, until they become encompassed within a single branch of a broader theme, which then grows to resemble a cascading tree of related categories and subcategories (Bazeley & Richards, 2000, p. 70). This strategy also helped to minimize duplications, variations and inconsistencies, while striving towards clarity and refinement of themes.

Figure 4-4: NVivo Main Thematic Nodes

Name	Description	Sources	References
Key Themes	Key concepts from data	50	3214
1. Build Back Bette		47	638
2. Politics		48	751
3. Equity		46	609
4. Spatial Continge		46	565
5. Design Thinking		46	651
Retired	Surplus concepts	48	713

#### 4.6.3.3 Selective Coding - Developing Arguments

The next stage is where the coding process *develops* concepts through sensitization and categorization of initial codes to generate themes that can summarize and synthesize the empirical data (Glaser & Strauss, 1967, p. 36). Surplus concepts and categories that do not contribute to the central research question are separated out of the main themes so as to keep development processes of theory focused. The proponents

of constructivist paradigm (Charmaz, 2000; Denzin & Lincoln, 2011; Bryant & Charmaz, 2010) insist that the researcher plays a pivotal role in delimiting the extent to which empirical data is interpreted through professional “sensitization”, but the systemic process of grounded theory ensured that this “sensitivity” did not preclude new concepts from adding to the overall research direction.

## 4.7 Synthesis of Results

*Nations and governments have never learned anything from history, or acted upon any lessons they might have drawn from it.- Georg W. Hegel, from Lectures on the Philosophy of History (1832)*

While Rittel’s work on the *second generation* systems approach to *wicked problems* remain unfinished, his ideas have since extended to disciplines outside of architecture and planning, as had been demonstrated by works of Conklin (2006), Weber (2008), Brown (2010), Ritchey (2011), Balint (2011), and Kolko (2012), to list but a few. Application of the Rittelian framework in multiple disciplines reinforces the relevance of an architectural approach to *wicked problems* that now pervade many parts of modern society.

This thesis discusses various factors that contribute to the *wicked problems* of modern urban disasters. **Chapter 3** has already set the scene based on the synthesis of key secondary data that was collected in tandem with independent case interviews, then in **Chapter 4** the methodological process of arriving at pertinent themes based on the primary data were discussed. From there the discussion of the empirical research outcomes are split into three chapters: **Chapter 5** grounds the research by analyzing the multiple nuances of expression, “build back better”, and comparatively analyzes its usage at three post-disaster sites. In **Chapter 6**, the research positions democratic architectural design at the center of post-disaster discourse under the theme, “design equity”, outlining how commodification of design is an essential part of post-disaster operation, in part because market forces are a product of social, political, and economic conditions on which design depends. Finally, **Chapter 7** analyzes the specific democratic architectural design strategies and tactics implemented in post-disaster sites by assessing the design impact from the perspective of architectural designers as well as other non-architect stakeholders. This research makes explicit the implicit ways in which current practices in post-disaster environments compare to the democratic *second generation* principles to *wicked problems* and extends Rittel’s argument by applying the framework to design problems of urban disasters.

# 5. Building Back Better

## 5.0 Overview of Theoretical Position: Challenges of “Building Back Better”

The urge to return home has been a defining behavior of displaced survivors, contrary to the advice given by some disaster experts who have found adverse consequences of doing so (Campanella, 2010; Potangaroa & Kipa, 2011; G. P. Smith & Wenger, 2005). Brunσμα, Overfelt, and Picou (2007) rationalized that the disaster survivor’s sense of attachment to the land—whether personal, social, commercial, historical—is only heightened by the stark absence of place that had forged their identity pre-disaster. In all three case studies there were instances where its residents fought to rebuild in what had already been established as the path of potential future disasters, because it is viewed as the last vestige of their *home*.

*The difference between the quantitative and qualitative is the difference between a “house” and a “home”. And while building shelter programs work to produce the first, it is the second that people desire. - (Potangaroa, 2006)*

Chang, Wilkinson, Seville, and Potangaroa (2010) observed that post-disaster reconstruction decision-making is one of the most challenging tasks, due to having to deal with both pre-existing problems and developmental issues (Chang et al., 2010). Disaster researchers called this phenomenon a “crisis time period” (Quarantelli, as cited in Stallings, 2003, Chapter 4), a “time compression” (Olshansky & Johnson, 2010, pp. 225-226) and “the tyranny of the Urgent” (Fordham, 2005, p. 240), where the *speed* of recovery is prioritized over the *form* of recovery. People who have been displaced by disasters are particularly vulnerable to inappropriate design solutions and housing arrangements in the absence of alternatives (Davis, 1978). In light of this, Potangaroa (2006) argued that architects, as building experts, should take leadership in considering ways to measure qualitative aspects of their projects as well.

### 5.0.1 Framing the Research Questions

The critical research question, “*How does the Rittelian framework contribute to the critical design decisions in modern urban disasters*” was narrowed to focus on the activities of architectural professionals in disaster settings. The first research subquestion, “*What is the role of architects in urban disasters?*” considers the relevance of architects in urban disasters, and the second subquestion, “*How can architects contribute to humanitarian endeavors*” considers the broader implication for the architectural profession.

This chapter investigates ways in which the architectural motto “build back better” has taken on a local, albeit controversial, identity. In Haiti, it became “Build Back Better Communities”; in New Orleans, it became “Bring New Orleans Back”; and in Christchurch, “Restore Christchurch Cathedral”. In each sub-chapter, it explores three elements of the tagline. First, it explores how the adage is used in the three cities, by examining the strategies offered by different agencies and individuals in different contexts. It takes an overview of social, cultural, political, and environmental elements that contribute to how dominant rebuilding strategies may have emerged. Next, it maps some of the key issues related to rebuilding as described by interviewees. Finally, the world views of architectural designers who are active in post-disaster activities are compared with those of the non-architects, to determine the overall impact that architects are making. In doing so, this

chapter examines whether or not the theory of *build back better* is appropriately being practiced in the field.

### 5.0.2 Interpretations of Building Back Better

*Build back better* has become a tagline for humanitarian assistance in the 21<sup>st</sup> century. Alam (2006), Kennedy (2008), and Schilderman (2010) have been able to trace its usage to the 2004 Indian Ocean tsunami, which began as a political slogan of the former U.S. President Bill Clinton that was incorporated into government agencies and humanitarian assistance organizations as a post-disaster strategy (Alam, 2006, p. 257). Kennedy explained that *build back better* implies “the need to place environmental hazards within the wider contexts of building sustainable communities and not re-creating or exacerbating vulnerabilities” (Kennedy et al., 2008, p. 25), while Schilderman suggested that its key purpose was to “[rebuild] in a way that is more resistant to disasters than [before]” (Schilderman, 2010, p. 30). The intentions of *build back better* is evocative of Rittel’s characterization of design as an activity which is “intended to bring about a situation with specific desired characteristics without creating unforeseen and undesired side and after effects” (Rittel, 1968, as cited in Protzen & Harris, 2010). However, whether the aims of *build back better* are fulfilled on the ground have been a subject of debate among disaster researchers (Kennedy et al., 2008; Williams, 2008; Lyons, Schilderman, & Boano, 2010; Turner, 1972; Schilderman, 2010). One school of thought sees this as part of short-term emergency response and relief strategy (Kennedy et al., 2008; Williams, 2008), and another group of scholars see this as a long-term developmental opportunity (Lyons et al., 2010; Turner, 1972; Schilderman, 2010).

From an emergency relief perspective, humanitarian aid organizations have interpreted “build back better” as “build back faster”, by focusing on outcomes and defaulting to “expert-driven” and “top-down” rebuilding approaches that can compromise the resilience of both people and their habitat. Kennedy et al. (2008) suggested that failure to adequately plan can damage livelihoods by weakening safety and security (p. 28), while Williams (2008) observed that inadequate planning can in turn lead to resource exploitation and environmental degradation (p. 1127). Such outcomes are likely to also increase the exposure to possible future disasters, and Kennedy et al. problematized the lack of benchmarks for building back better (p. 31):

*The word ‘better’ can have multiple interpretations... does ‘better’ mean more modern, more environmentally friendly, more aesthetic, more orientated towards livelihoods, more resistant to earthquakes and tsunamis, more resistant to all environmental hazards, or a combination? At times... trade-offs are necessary.*

By contrast, those who consider *build back better* from long-term developmental perspective see it as an opportunity for a paradigm shift <sup>43</sup>in the disaster reconstruction work. A case in point is New Zealand, where earthquake insurance is mandatory for all home owners, insurance companies have become major private sponsors of reconstruction following the 2010 earthquake in Christchurch. Many residents whose houses have been damaged by the event have had to postpone repairs on their property to wait for insurance

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<sup>43</sup>According to Lyons (2010), this paradigm shift is to move from understanding reconstruction as predominantly “donor-driven” (DDR) to being “owner-driven” (ODR) reconstruction (Lyons et al., 2010).

companies to process earthquake-related claims. While the users wanted to build back as soon as possible, delays from insurers have resulted in decisions being suspended with no end in sight. Interviewees observed that escalating social tensions since the earthquake have also manifested in negative social side effects such as increase in violence, increase in prescription of anti-depressants and other health problems. The Christchurch case alone suggests that misalignment between the intentions and practices of sponsors and users can stand in the way of *building back better*. Sponsor-driven housing projects, however well-intentioned, can be inadequate means to achieve effective community participation that are essential to any project’s longevity.

Table 5-1: Qualitative Coding Analysis on "Build Back Better"

Key Theme	Key concepts from data	Source	Aggregated Reference	Matrix Framework				Mean Ref Values				
				CH	GL	HT	KA	CH	GL	HT	KA	
Build Back Better		47	638	559	332	305	300	###	24	25	30	
	Nodes		Source	Reference								
	Challenges	43	261	109	77	75	76		5	6	6	8
	Child nodes		Source	Ref								
	Challenge - Architectural	35	111	39	40	25	39		2	3	2	4
	Challenge - Contextual	14	23	14	9	10	4		1	1	1	0
	Challenge - Social	22	55	26	10	18	17		1	1	2	2
	Challenge - Systematic	22	72	30	18	22	16		1	1	2	2
	Node		Source	Reference								
	Factors	53	121	38	16	18	9		2	1	2	1
	Child nodes		Source	Ref								
	Development	8	10	4	2	4	2		0	0	0	0
	disaster response	5	7	7	2	2	0		0	0	0	0
	Negative Lessons	17	34	19	12	7	11		1	1	1	1
	Positive Lessons	17	23	15	6	7	6		1	0	1	1
	Process	18	34	19	12	12	7		1	1	1	1
	Psychological	3	8	8	0	0	0		0	0	0	0
	Node		Source	Reference								
	Paradox	41	176	90	48	39	45		4	3	3	5
	Child nodes		Source	Ref								
	Compromise	10	12	3	4	4	3		0	0	0	0
	intention	20	38	16	12	8	5		1	1	1	1
	Perception	22	49	25	14	16	14		1	1	1	1
	Timing	16	31	21	11	6	10		1	1	1	1
	Uncertainty	5	6	5	0	1	0		0	0	0	0

The coding analysis above revealed that there are a number of recurrent issues that were reinforced by interview participants in response to the interview questions (denoted under “Source”). It highlights the pertinent issues across the three case studies rather than focusing on their differences in order to make comparative assessments, as well as revealing the recurrent patterns or strategies that can apply more widely to architectural professionals engaged in humanitarian activities. This research builds on Vaughan’s method of theory elaboration (Chapter 4.1), to systemically investigate the issues across multiple scales and situations that share *wicked problems* of similar nature.

Some 638 references related to the theme of *building back better* were found in 47 of 49 interviews (sources) out of which the key constraints were identified in one of three categories: some 47 percent (261 references) of the comments related to specific challenges, and architecture in particular (111 references); some 31 percent (176 references) of comments described paradoxical situations that were characterized by difference in understanding, such as mismatched intentions (38 references), perceptions (49 references) and concepts of time (31 references); and finally, some 22 percent (121 references) of comments related to lessons learned in the field.

The matrix framework table in the middle of the chart above shows a case specific breakdown of each concept, reflecting on the individual’s areas of expertise which can be specific to Christchurch earthquake (CH), Haiti earthquake (HT), Hurricane Katrina (KA), or other relevant global disaster knowledge (GL). Because the number of interview participants in each case site may overlap (where they demonstrate expertise in more than one site as a disaster professional, for instance), and since there are often



disproportionate number of interviewees, a third table was produced on the far right to produce the normalized mean reference values for each site. By taking a mean of the aggregate responses to control for the number of interviewees represented in each case site, it is possible to assess, in more simplified numerical terms, the relative importance of each thematic nodes. For instance, discussions about “architectural challenges” had been mentioned 39 times in both the Christchurch case study as well as in Hurricane Katrina case study, but by controlling for number of respondents, it is mentioned twice as more often in the latter case study than is the case elsewhere.

## 5.0.2 Applying the Rittelian Views to Disaster Narratives

Asking *wicked* questions in any post-disaster environment first involves understanding the nature of disasters, particularly as it relates to a particular event, at a particular time, within a particular place. Rittel proposed that one of the properties of *wicked problems* is that “every formulation of the WP corresponds to a statement of the solution” (H. Rittel, 1973, 2010, p. 156). In other words, how a *wicked problem* is situated within the field of inquiry determines what approach will be used, for better or worse, to address them. Rittel did not necessarily suggest a way of solving a problem directly (in the same way that one would approach tame problems through linear “first generation” thinking), but rather to approach *wicked problems* through a non-linear argumentative process (Rittel as cited in Protzen, 2010, p. 162) and to see it from a different perspective (2010, p. 169). Deliberating on a decision by weighing all the known pros and cons makes a problem’s “wickedness” more explicit and transparent, which can lead to better decisions in a state of uncertainty than otherwise. Implicit within Protzen’s interpretation is that the Rittelian framework can help those trying to make decisions to ask *better* questions, which would place the interrogator in a more likely position to arrive at a solution. While the ability to look at a problem from multiple viewpoints is useful for gaining new insight on a situation, having too many viewpoints can also stall the ability to solve problems. The latter can be problematic in post-disaster environments where human lives are at stake. To illustrate some of the challenges of approaching *wicked* design problems in urban disasters, this chapter explores the concept of *build back better* as a recurring *wicked* problem for all three case sites. It does so by juxtaposing the two extreme viewpoints of how *building back better* has been conceptualized in each case, and observing how designers have negotiated this environment.

## 5.1 Haiti: “Build Back Better Communities”

### 5.1.1 Challenges: Build Back Better Communities

The most publicized rebuilding initiative by the Government of Haiti (GoH) following the 2010 earthquake in Haiti was the “Build Back Better Communities” (BBBC) campaign. Jointly overseen by Michel Martelly, the incumbent Haitian President, and the former U.S. President Bill Clinton who also serves as the U.S. Special Envoy to Haiti, BBBC was an ambitious global campaign to solicit innovative ideas for new housing prototypes for Haiti (Ministry of Tourism, 2011). From some 360 submissions that flooded in from around the world, over 140 RFPs were shortlisted and invited to exhibit the full-scale prototype in the second stage: the housing expo. The four basic criteria for the housing prototype were that it had to be (1) affordable, but also be earthquake and cyclone resistant, (2) made of quality and durable materials, (3) capable of being delivered at scale, and (4) built by Haitian workforce. Bruemmer (2011) observed that while all of the exhibits would have been accepted on the basis of fulfilling the design criteria, many of the schemes fell short of the

competition's initial promises to *build back better* (Bruemmer, 2011) on almost all other accounts. The prototype houses were simply unaffordable for majority of Haitians. Based on the Ministry's website, the construction cost of the prototypes ranged from US\$6,400 (exhibit 662011) to US\$ 70,660 (exhibit 12A2011). In a country where 85 percent of the Haitians live below minimum living cost of US\$5 a day (Wearne, 2012, p. 85), even the cheapest prototype is unaffordable, thereby largely missing the campaign's focus on the Haitian communities. So where did the BBBC campaign go wrong? Why have designers failed to respond to the brief? What, who, or which number of things contributed to the lack of its success?

#### **5.1.1.1 Architectural Challenge: The Deep Valley of Innovation**

In asking what the roles of architects in urban disasters are, it was more relevant within the Rittelian framework to ascertain the argumentative processes of architects and rebuilding agencies, and to examine how they responded to specific challenges in the field, than it was to study the specific projects and outcomes that precipitated.



Figure 5-1: Roadside view of Haiti on the way to the capital with a view of informal housing in the distance

Two interviewees from this thesis were among the finalists of the BBBC competition, and their experiences shed some interesting insight into motivations and attitudes of those who undertake humanitarian endeavors as a core part of their professional practice. Martin Hammer, a Californian architect who had previously been involved as an architect in Pakistan following the 2005 Kashmir earthquake, said that working in the post-disaster environment was a core part of his personal and professional interest.

*I wanted to do work in places of need, for populations in need, and this certainly fit that description... and when the earthquake happened, I very quickly started thinking about reconstruction there... the sustainable reconstruction technologies and whether the work I did*

*in Pakistan could be applied to Haiti... there was no other way to know except to try it.  
(Hammer, M., June 28, 2011, Personal Communication)*

For Hammer, his motivation was two-fold: to try and advance alternative ways of building in addition to helping the vulnerable communities on the ground. Another participant of the BBBC campaign, Bruce King, a structural engineer by trade, shared a similar story. Voicing one of the challenges shared by other designers like him, King suggested that innovation is made difficult through the circumstances of a disaster.

*The problem I had... is that it's not technology, or (for the lack of) good ideas. The engineering that EBNet is doing in Haiti is not complicated, but making the scale... that is, getting in the culture, getting in where the Haitians own this, where there's Haitian businesses... building houses in their communities without the need for me to even be there... That's a long valley to cross. (King, B., July 5, 2011, Personal Communication)*

King compared the project he was undertaking in Haiti as having similar dynamics as social entrepreneurship. He used the analogy of the “valley of death” to illustrate what he deemed as a typical lifecycle of post-disaster design practice. The analogy is commonly used in the business world of startups, where the majority of new businesses do not survive the initial period of research and development. King explained that an idea needed to survive through a countless number of prototypes and adjustments that need to be made in response to issues that could not have been anticipated at the time of conception. The period from the initial prototype to the working product is the “valley” in which most ideas perish. Such ideas fail, not because they are not “good ideas” or due to inadequate “technology”, but because of “disaster fatigue” in terms of both motivation and funding.

King argued that the same dynamics apply when developing design projects abroad. The *deep valley* of negative cash flow period between initial design idea and a final product is a lengthy process that requires considerable patience, commitment, and investment in prototypes without the certainty of success. A case in point is the BBBC Housing Expo, which stalled while they were still in the *deep valley* of prototyping. Many architectural ideas proposed for Haiti—including those espoused by well-known architects such as Steven Holl, Thom Mayne, David Adjaye, and Mark Mack (Nordenson, 2011), or those by the students at Harvard and at MIT (Werthmann, Thompson, Weissman, & Braredon, 2011)—did not progress beyond what they were: ideas.

Aside from the good-will and motivation of uncompensated designers, which such international competitions largely depend on, Hammer emphasized the need to create culturally sensible designs and self-sustaining communities as the long-term vision for building back better in Haiti:

*You want to create long-term independence... if a short-term dependence is necessary in order to attain a long-term independence, then you're on the right track... and architecturally... what's culturally appropriate is very important. There are countless examples of building solutions post-disaster that have failed miserably because... those who brought that solution to*

*this place... brought their own cultural biases with it. (Hammer, M., June 28, 2011, Personal Interview)*

While design competitions offer a creative avenue and an opportunity to engage with the global community outside of the architectural professional's homeland, innovation is not always welcome in post-disaster environments, particularly where people are stressed and seek stability instead of change. King suggested that it is difficult to innovate in an environment that is not receptive to change.

*...in the construction industry you don't want to do anything that's too radically different than what people are already used to... We didn't try to do anything particularly exotic; we stuck with masonry, because that's what (Haitians) are used to. (King, B., July 5, 2011, Personal Communication)*

Architecture for Humanity (AFH), an international NGO that specializes in architectural services to communities in need, took a rebuilding strategy in Haiti similar in approach to aforementioned John Turner's preferred housing model, "users decide and sponsors provide". Despite AFH's early success, which includes partnership with local architects and establishment of *Bati Byen*,<sup>44</sup> a Haitian rebuilding center, AFH was not immune from the systematic difficulties that other NGOs experienced. Darren Gill, a UK architect at AFH explained that there is a gap between the technical capacity of locals and the rate at which the reconstruction was being undertaken. What AFH also experienced was the deep *valley* of development work that needed to be done before any progress could be made in architectural innovation.

*There's... millions (of dollars) that have been committed, (but) a lot of it hasn't materialized... As pilot projects come to a conclusion, there is staffing (issue) in the country... one of the biggest challenges you've got (is that), you've got a big, relatively cheap workforce, but you've got a very low level of skills within that workforce. (Gill, D., April 6, 2012, Personal Communication)*

As of September 2012, nearly half of the US\$12.32 billion allocated for Haiti in humanitarian and recovery funding since January 2010 has been disbursed (OSE, 2012c), yet there is little to show for it on the ground. For instance, Davis (2010) observed that the construction of 100,000 Transitional Shelters ("T-shelters"), which cost about US\$139 per square meter to build, have absorbed a significant amount of funding that could have been used to build permanent houses, which can be built for around US\$166 per square meter (pp. 16-18).

### **5.1.1.2 Contextual Challenge: The Cost of Independence**

Another analogy besides the valley of death that recurs throughout this thesis is a reference to a well-known Haitian proverb, "*dye mon, gen mon*", which translates to: "beyond mountains, there are mountains"<sup>45</sup>. The

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<sup>44</sup>Bati Byen, in Creole, translates to "Build Better"

<sup>45</sup>Kidder recalls a Haitian proverb that he learned from Paul Farmer, the UN Deputy Special Envoy to Haiti since the 2010 earthquake

phrase carries a dual meaning. In one sense, it means that opportunities are limitless in Haiti, but in another sense, it implies that there is one great obstacle after another. Oliver-Smith (2010), and Wearne (2012) note that Haiti has long endured a history of political instability, environmental degradation and neoliberalism (Oliver-Smith, 2010; Wearne, 2012); Haitians have faced many challenges from abroad as well as from within. Oliver-Smith argued that Haiti's struggle as a nation have begun from as early as 500 years ago, claiming that "a disaster is made inevitable by the historically produced patterns of vulnerability... Nowhere is this perspective more validated in Haiti" (2010, p. 33). In exchange for becoming the first African Republic in history, France, its former colony, demanded a compensatory debt which took Haiti 120 years to repay. And at one point, Haiti spent more than 80 percent of its national budget, draining itself of most of its own resources in the process (2010, p. 34). While the catastrophe of the 2010 earthquake in Haiti was an "unnatural disaster" by all accounts according to both Oliver-Smith and Wearne, the disaster was a culmination of a series of political misfortunes in Oliver-Smith's view, whereas for Wearne, it was the result of planned, "unadulterated neoliberal economics" (Wearne, 2012, p. 16). Wearne cited some thirty years of "unplanned" development of informal housing settlements in the urban pockets of Port-au-Prince in the absence of building codes and seismic strengthening were a perfect recipe for the disaster, and the cholera epidemic that broke out shortly after the earthquake were hardly a surprise because over a quarter of humanitarian agency-supplied camps were without toilets and over a third were without water (2012, p. 17).



Figure 5-2: View of an IDP campsite with tent add-ons by Haitians

While it is alarming that there are no building codes in effect in Haiti to regulate the housing sector, professionals involved in rebuilding were divided on how it could be instituted effectively. Clark Manus, a Californian architect who was the incumbent President of the American Institute of Architects during Haiti's 2010 earthquake, confirmed that in the two years since the earthquake Haiti "hasn't even made a dent" in terms of rebuilding in part due to inadequate skills:

*...Those people who are involved (in rebuilding) don't have the skill set: they're not trained in*

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and an American doctor who spent his life treating tuberculosis patients in rural Haiti (Kidder, 2003)

*visualization; they're not trained in planning in building types... (there is a need to) advocate for building codes to actually make a difference... they were building without (structural) reinforcing... So it's just a disaster that's going to happen, so it's the ability to advocate in the early stages of what will make a community safe and resilient and protect people's lives... (Manus, C., April 12, 2012, Personal Communication)*

During his involvement in Haiti, Manus observed that the main focus of NGO operations was on health rather than specifically about buildings. Nevertheless, Manus demonstrated that the health and welfare of the public are closely related to buildings because the issues of “[safety] and [resilience]” are at the core of the reconstruction activity. Whereas Manus advocated for the need for Haitian building codes, Gill held the view that introduction of building codes and certification process is only a partial solution and that they needed to be aligned with what was achievable in Haiti.

*There's no certification... from accountants to architects... so anecdotally every third Haitian male claims to be an engineer... (But) the risk is that it (becomes) all about standards and quality control... if you take on to do a project... you've got to ground it in the reality of what's achievable in the country and you've got to fight for it to be built... (Gill, D., April 6, 2012, Personal Communication)*

The 2010 Haiti earthquake was a turning point for many aid agencies. While urban disasters have been on the rise since the early 1980s (Davis, 2010, p. 47), previous disasters have not prepared international aid organizations for Haiti. However, Wearne (2012) argued that reports by aid agencies are skewed to demonstrate altruism because “the aim here is to show ‘results’ in closing down camps, not the consequences of such a strategy” (p. 15). A key concern for humanitarian agencies as they face larger and more destructive natural disasters in the future is in how the collective efforts of agencies could be better coordinated. The Haiti earthquake had been just as much a lesson for *building back better* the humanitarian sector communities as it was for the disaster survivors.

*All the NGOs have gone out to try and do what they normally do without coordination, and that's when it gets bad. Because everybody's got their little things and there's no big comprehensive view... (Manus, C., April 12, 2012, Personal Communication)*

In addition to the issue of coordination, the proximity of Haiti to the talented pool of experts from the Americas may have led to a significant presence of foreign NGOs. And it is no coincidence that Haiti has been dubbed the “Republic of NGOs”, in which according to research by Kristoff and Liz (2010) as many as 10,000 NGOs had reported presence even before the 2010 earthquake. In terms of the number of NGOs per capita, Haiti is second only to India (OSE, 2012b).

*...You've got a lot of organizations because of Haiti's proximity of the United States... You've got a huge number of those kinds of (donor) organizations, their people are actually based in the United States and they come down here for a week, and then go back, and it doesn't really*

*work... (but) there could be better interaction with the agencies if a lot of these agencies kept people on the ground full time... So the overall level of integration coordinates between agencies... suffer the most. (Gill, D., April 6, 2012, Personal Communication)*

Suffice to say, numbers do not equate to quality. Both Manus and Gill's anecdotes suggest that the geographical convenience of Haiti to the U.S. has stymied the level of NGO involvement on the ground, and, by extension, so too has the quality of rapport that NGOs may have built with Haitians. The next section explores a number of paradoxical conditions which are examined in the Rittelian light.

### **5.1.2 Paradoxes: Culturally Appropriate Intervention**

Architectural service in post-disaster environments can help to facilitate community engagement, but it can also be met with resistance, however well-intended at the beginning. It largely depends on the contextual circumstances in which they arise. The BBBC Campaign and its subsequent housing expo illustrated the challenges of building back better. Rittel advocated for shifting the locus of decision-making in order to make it more democratic by moving it away from an expert-centric model to one that was information-centric. As a part of the appraisal process, how the local community perceive architectural services can establish, to some extent, how much influence or contribution professionals actually have in urban disasters. To reflect on the second research question, "*How can architects contribute to humanitarian endeavors?*" the following section compares the world views of architectural designers with those of non-architectural designers.

#### **5.1.2.1 Culture of Architectural Practice**

The culture of architectural practice in a different country to the one where the architect is accustomed to work in can create adaptive challenges for both the architect as well as the client or users that they work with. From the business operations perspective, timely production of goods or services that is commensurate with market demand is a key driver for economic growth. In western industrial economies, business owners, and, sometimes, architectural practices, follow the mantra of, "time is money". In post-disaster environments, time is indeed a scarce resource that all other essential resources, such as medicine, food, and shelter, are contingent upon. In Haiti, however, Burtland Granvil, a Haitian-American architect at AFH operations in Haiti, observed that time does not equate to money:

*(In the U.S.), output and time is the same thing, but here (in Haiti)...time plays a critical factor in how a project is run... We want to make sure that they understand they're here to work and what their long-term goal is... and what their intentions are for themselves... in Haiti things are always changing. Something that's simple, straight-forward task typically may take a little longer here and we all understand that, but when every day you have an excuse for being late or coming in at noon when you should have been there at eight or eight-thirty... that's a problem. (Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication)*

When it comes to work ethics, Haitians seemed to be output-oriented rather than time-oriented; time is secondary, as long as the desired results are achieved. Granvil explained that the U.S. mindset, on the contrary, considers "output and time [as] the same thing", since a project's time management has a direct

fiscal implication for the business. Time and outcome are inseparable. But Jean-Rene Lafontant, a Haitian architectural design fellow at AFH Haiti, explained that the reason for miscommunication is due to misaligned expectations of work between AFH, which bring with it the U.S. work ethics, and the Haitian contractors, and equally between AFH and the client: the local community group that AFH has been working with:

*...most of the people (at NGOs) are foreigners. They come from different countries, different cultures. There are some 'reactions' that they do not understand... in terms of how they think a contract works... It's based on time and because here they have a mentality and when the contractor is doing something he expects you to pay him for time but here they expects to pay him for a result so that's the difference. (Lafontant, J., Haitian Architect, AFH Haiti, April 5, 2012, Personal Communication)*

The difference in how architecture is practiced in Haiti on daily basis also suggests broader socio-cultural challenges at national level. In a 2011 report by the U.S. Federal Government stated that the work in the construction sector in Haiti is “volatile” and is considered a “high risk” industry with high incidence of work-related injury (U.S. Department of State, 2011). Cameron Sinclair, the CEO of AFH, recalled that at one time his staff even had to shut down the work site mid-construction upon discovering that the local contractors arrived at work site without proper safety gear and they had no access to safe drinking water on site (Sinclair, C., CEO, AFH, July 27, 2011, Personal Communication).



Figure 5-3: A classroom construction project for UNESCO by AFH Haiti

As previously discussed, the main objective of humanitarian agency is to work itself out of the services they provide, when such organizations are no longer needed because its clients become self-reliant and resilient. Similarly, AFH's mandate in Haiti is to grow the capacity of Haitian builders and for them to take over the work that AFH started since the earthquake. Such organizations operate on the premise that capacity building in Haiti is a necessary trade-off that can subsequently make up for immediate delays and inefficiencies. Capacity building also entails building the technical skills of locals as well as understanding the wider context of Haitian culture of architectural practice. Measuring the success of humanitarian relief by the



number of shelters built or the speed at which they are no longer in use do not reflect on how they impact the existing culture code of the Haitians. The U.S. architects—in particular, King, Granvil, and Cesal—who have actively engaged with Haitian architects have come to describe this phenomenon in just two words: the “Haitian Way”.

*You don't want to be pompous and say, "I know what to do; I'll tell you what to do"... But if you're in a situation where... they don't know and maybe they want to know, then it's your duty to start trying to bridge the gap and to say so...I was watching them rebuild from collapses the wrong way, just doing the same thing over again. (King, B., U.S. Engineer, July 5, 2011, Personal Communication)*

*...there's always going to be that conflict... if you go and you tell them "Okay, I want this house to be built that way"... and the (Haitian) would say "No, you can't have that in the drawing because that's not the way to go and you can't build that house that way" (Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication)*

Even having observed the Haitians building back using the same building methods as before that had contributed to the mass collapse of the informal settlements, Eric Cesal, an architect at AFH Haiti, explained that one's aspirations to correct the “Haitian Way” had to be balanced with what was culturally acceptable. Building “the best school in Haiti”, according to Cesal, does not entail simply mimicking the cosmetic looks of the best American school, but building one that embodies the equivalent aspirations and functions that an American school would have in the American community:

*...when I say they want the best for their children it doesn't necessarily mean they want an American school for their children, but they want the school to reflect all those possibilities and be to the community what a school really can be. (Cesal, E., U.S. Architect, AFH Haiti, April 10, 2012, Personal Communication)*

Culturally appropriate reconstruction is a heated topic among disaster practitioners (Lizarralde et al., 2010) as well as researchers (Quarantelli, 1978; Hoffman & Oliver-Smith, 2002; Hoffman & Oliver-Smith, 2002; Hamad, Swarts, & Smart, 2003). Maguire et al. (1996) however, argued that, given the long history of NGO-driven neoliberalism, Haitians have developed a distrust for humanitarian professionals (p. 28). Rencoret (2010) argued that, while MINUSTAH peacekeeping forces have been effective in suppressing the civil instability and reducing crime in Haiti since 2004, whether they were restrictive to the extent of “hampering key humanitarian engagement with affected populations” remains to be evaluated (p. 38). Haitians were left to loot for survival following the January 2010 earthquake because they feared civil unrest turned back cargos of food and medical aids to make way for additional military forces to populate Port-au-Prince. Hallward (2010) reported that concerns over security diverted humanitarian aid away from the Haitians by prioritizing “military over humanitarian flights” (p. 2).

*Haiti is not really that different than the rest of the world. It has the same issues like the rest of*

*the world. The only difference is that it's concentrated in certain areas and those are the areas that people outside are starting to see and they think that's what all of Haiti is about. (Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication)*

The *Haitian Way* is as much a metaphor for how foreign workers arrive at premature judgments about locals as it is a reflection of Haiti as “the Republic of NGOs”. Many experts arrive at the site expecting to deal with the physical destruction of habitat, only to uncover historically repressed challenges that are socially, culturally and politically based.

### **5.1.2.2 Haitian Diaspora**

Most fervent advocates to rebuild Haiti among the research informants have been the Haitian diasporas. According to one research, Haitians living abroad account to about 20 percent of GDP, sending home about \$1.2 billion in remittances per year (Hsu & Aizenman, 2010). Gill reinforced the importance of Haitian diaspora because “their willingness to come back and work here is a critical part of the ability of this country to rebuild itself”(Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication). Leveraging the skills of Haitian diaspora is key to rebuilding Haiti, because the length of time required to train unskilled Haitian work force. This is particularly critical when there is only limited funding and the timeframe in which to mobilize the country’s recovery is also limited. Fortunately, many upper middle-class Haitian expatriates were returning to Haiti to contribute their skills as professionals. Gill explained that Haitian diasporas who bring with them their overseas experience can negotiate this complexity and offer balanced views:

*...(Haitian diaspora) understand what systems should be like, what business should be like, what quality should be like and not just being governed by what they've experienced here, but really being governed by what they've experienced elsewhere. That's just a wonderful opportunity and you meet so many of them. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

A prime example of Haitian diaspora is Yves François, a Haitian-American architect who runs a construction firm in Haiti where he upholds the equivalent work standard as those he had developed in the U.S. François brokered the AFH Haiti operations in Port-au-Prince by co-establishing the rebuilding center, *Bati Byen* within weeks of the January 2010 earthquake.

*Yves is somewhat of a different breed here because he brings the U.S. Mindset as well, and the U.S. Mindset tends to be very ambitious compared to Haiti. (Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication)*

In one interview, François illustrated two interrelated challenges of practicing in Haiti: corruption of government officials, and patience required to train the Haitian work force.

*One of my shipments sat at the port for six months. The government official saw my big equipment, and he said he just bought a piece of land and needed to use the machine. Being*

*[myself], I told him, “You can keep it. When you’re ready to give it to me, let me know.” I eventually got the call to come pick up my equipment... If you want to go that route, it can take months. Or you can pay the bribes and keep moving. People who have government contracts often want 25 percent.*

*We ought to take the time to train Haitians. The foreign companies will make a boatload of money and leave in a year or two, and the Haitian guys still are going to be untrained. I’m focusing on getting local people trained on best practices, so they can rebuild Haiti over the next 10, 20, 30 years (Yves François as cited in Jenna McKnight, 2010).*

Researchers remain divided on this issue. Some contend that NGOs have repeatedly proven to be ineffective and fell short on the promises of rebuilding more than two years after the earthquake (Edmonds, 2012), while others contend that Haiti will need the support for decades to come (Erikson, 2004; Hedlund, 2011). While Haitian diasporas understand that foreign nationals will eventually leave, that is not the only reason for training the locals to perform most of the work on the ground. Outreach work, in particular – everything from obtaining documentation to gathering community feedback – seemed to be handled more efficiently by a local than by outsiders. However, even the locals were leery of venturing into the worst affected, because often they were in high-crime neighborhoods. Lafontant conducts a lot of fieldwork for AFH Haiti’s Civic Art project, but “there are some trips I will not do... There are some places I would never go” (Lafontant, J., Haitian Architect, AFH Haiti, April 5, 2012, Personal Communication).

### **5.1.2.3 Opportunity for Architectural Innovation or Invasion**

One of the other key research questions had been to investigate the ways in which the architectural professionals could get involved. When it comes to the reality of working in the field, however, King explained that the opportunity to innovate new technology is limited.

*What I’ve observed happening in Haiti, and I guess this is common in a post-disaster situation... is that you don’t have a lot of time to innovate. You are not interested in innovating or trying something new; you just want to do what you are used to doing. (King, B., US Engineer, July 5, 2011, Personal Communication)*

Potangaroa, a structural engineer by training, offered another view that architects in fact have many opportunities to bridge the gap between the technical and the non-technical gap.

*...the gap between the technical and the non-technical is actually smaller than you think... you start talking and having discussions about... how people are cooking food... and you get into all sorts of discussions about social relationships... and how things are done... There’s this other aspect of “talking to buildings” which is quite an architectural thing to do... because the buildings will tell you what’s going on. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

In a similar vein, the infectious enthusiasm with which experts pour into disaster scenes sometimes leave many well-placed intentions to backfire in the subsequent stages of post-disaster reconstruction.

*Port-au-Prince is a hotbed of innovation and research right now because there's so many incredibly talented people working here; you name it. From industry to industry, some of the best practitioners in the world have had an involvement here... just the resources weren't available and now they are, so that's a huge change in terms of technical capacity and that's a really big difference. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Cesal observed the tendency of disaster victims to be overtly agreeable due to the post-disaster trauma, and the need for professionals to take this into account:

*People are scared and they've lost a lot, so you know if you say like, hey I designed this house for you and it is in the shape of a squid and I thought that was really appropriate for you because Haiti is an island nation... and people are like "yeah, I love squid. I can't wait to have my squid house" you know? So you really have to... listen and draw out of people what they really want and what they really need. (Cesal, E., U.S. Architect, AFH Haiti, April 10, 2012, Personal Communication)*

The multiple social, cultural, environmental, and political dimensions of Haiti revealed that the physical realities of disaster and the construction of "the Republic of NGOs" are closely interconnected, yet contradicts the aspirations of "Build Back Better Communities" international design campaign. Nevertheless, the earthquake served as a turning point for humanitarian aid agencies in that the international media "limelight" and subsequent deluge of talented disaster professionals have galvanized both the international communities and those who chose to engage with these international agencies. While the architectural interventions spearheaded by the GoH and the Clinton Foundation had limited success, it served as an important lesson in accountability for architectural professionals and NGOs operating in post-disaster contexts. The socio-economic challenges of unemployment, underemployment, and skills shortages, but also challenges of miscommunication stemming from cultural differences as they manifest in divergent work ethics, are all considered major hurdles for foreign internationals operating in Haiti. Some of these challenges are ameliorated by Haitian diasporas who bring the experience of both cultures to build stronger relationships between the internationals and locals. The success of the UN's cluster approach, which seeks to coordinate similar agencies and to avoid duplication has been limited in that project implementation and disbursement of donor funds remain siloed and unaccountable to the GoH, and by extension the Haitian citizens.

## **5.2 Katrina: "Bring New Orleans Back"**

### **5.2.1 Challenges: Gulf Coast, United States**

In the early days of post-Katrina, a three-year rebuilding plan for New Orleans was launched by the name "Bring New Orleans Back" (BNOB). Spearheaded by the then New Orleans City Mayor Ray Nagin, BNOP

was New Orleans' equivalent plan of action for *building back better* (Nagin, 2006). Consisting of eight subcommittees tasked with specific portfolios—such as land use, economic development, infrastructure, education, health, and social services—Nagin gathered “the best thinking” of a team of experts who could “turn our pre-Katrina dreams into post-Katrina realities”(Nagin, 2006). But apart from BNOB, a number of other design initiatives mushroomed throughout the city, from government funded projects to community-led projects, with the private sector supporting and serving both the public and community sectors. Unfortunately, everyone who felt responsible for or in some instances entitled to having a stake in post-Katrina New Orleans initiated some form of collective visioning exercise independently of each other, thereby unintentionally polarizing anyone who was included in the visioning process. Such planning initiatives followed an *ad hoc* manner, which Alexander (2006a) described as being problematic because they are “neither rigorously pursued nor consistently funded” (p. 8). Against this background, what the role of architects and planners were and how they have contributed to or were implicated in such human disasters become central points of concern for the Katrina case study.

#### **5.2.1.1 Planning: Bring New Orleans Back**

Campanella (2010) observed that majority of such planning endeavors from the local, the federal and the state level, BNOB commission notwithstanding, as a “plandemonium” (p. 161). Campanella explained that such initiatives were largely unsuccessful, not only because these plans were developed without adequate public support and participation, but more so because radical change is not welcome in urban disasters:

*History indicates that in the wake of urban disasters, the most ambitious and revolutionary rebuilding plans usually suffer the greatest likelihood of failure. Victims of trauma seek normalcy and a return to pre-traumatic conditions; the last thing they want is more change.*  
(Campanella, 2010, p. 161)

In the face of uncertainty, the Urban Land Institute (ULI), the subcommittee of BNOB, had released a report outlining the initial redevelopment plans in which they suggested that the low-lying districts should be decommissioned altogether in anticipation of future floods in the region. This plan, which Campanella conceded as an otherwise “compelling logic” infuriated the residents of the “condemned” low-lying areas who, despite the high risk of future flooding wanted to return to their homes as before (p. 155). The proposal to reduce the overall footprint of the city by rezoning the low-lying and flood-prone lands into green fields was too “radical” for the public. Despite the intention of BNOB to create a “socially equitable community with a vibrant economy... planned with its citizens and connect to jobs and the region” (Nagin, 2006), Mayor Ray Nagin’s proposal was far from being equitable in the eyes of those whose land was affected. Logan (2006) estimated that if the city were to “shrinking the footprint” according to ULI’s recommendations, New Orleans would lose over 80 percent of black residents in the city alone (p. 16).

The failure of BNOB demonstrated that *building back better* takes more than an intense discussion among the top experts in their field to re-imagine the post-disaster city’s future. Also, implications of post-disaster planning decisions are far reaching beyond the social, cultural, and political dimensions. Despite the rationality of correcting historically-rooted planning mistakes in the wake of a natural disaster, most homeowners are reluctant to relocate given that one’s property is a major life asset. Campanella explained

that the paramount urge to “return home” and to restore normalcy for disaster victims drive them to perceive any radical changes as, “at best, a misallocation of resources... or, at worst, as opportunistic scheming by sinister forces at their expense” (p. 161). However, Campanella also cautioned that, in the long term, “the geophysical realities of sea-level rise demand that we make mature decisions about where and how human inhabit deltas—or else they will be made for us” (p. 186). Johnson, a planner who was part of the Unified New Orleans Plan (UNOP), recalled that urban disasters can lead to some of the planners and architects engaging in a phenomenon she called “ambulance chasing”:

*...you have a lot of people who really want to do well... and what I would call the “ambulance chasers”... I think this is true of the architecture planning profession... (In) New Orleans, we had “starchitects” converge and emerge onto New Orleans. And you can actually see who’s had longevity and who’s been committed and stayed, and been involved in the community, and those who came in and left. And I think that process can be extremely valuable and it can also be extremely disruptive. (Johnson, L., U.S. Planner, July 12, 2011, Personal Communication)*

While one can argue that those professionals who are community-centered and committed to working with the locals long-term are logistically preferable to the ambulance chasing “starchitects” who linger for only a short duration, Johnson explained that both can be valuable in urban disasters:

*...for the most part they’re saying: ‘People are so traumatized; they’ve lost so much; they’re in shelters; they’re not ready to have that conversation’. In the other community, where they are engaging people, they’re saying: ‘People need this conversation; it’s a way to cope; it a way to heal; it’s a way to move on’. I think both are true. (Johnson, L., U.S. Planner, July 12, 2011, Personal Communication)*

The starchitects can provide substantial creative value in the post-disaster process by providing support on the “visioning process” that can ease the community’s transition from the state of devastation (wanting to *build back*) into that of hope and anticipation (wanting to *build better*), which can boost morale while also providing increased media coverage and solicitation of additional funds through their public status. The “community architects” can also boost community morale through more personal, long-term engagement than ambulance chasing professionals, providing the necessary developmental scaffolding for the affected community to rebuild in ways that are closely reflective of and aligned to their core values and needs.

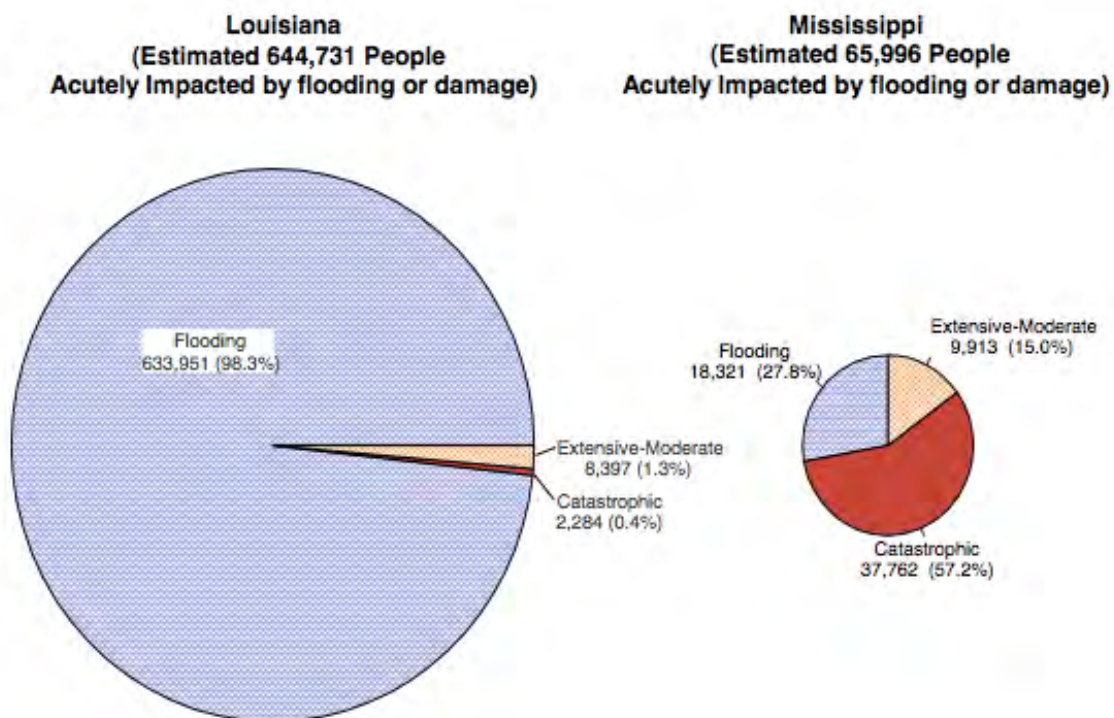
### **5.2.1.3 Systemic Challenge: Unlearned Lessons of Past Disasters**

Hurricane Katrina was the costliest tropical cyclone ever recorded in the U.S. history at the time (Amaratunga & Haigh, 2011), leading to the death of over 1,500 people. In the technical memorandum for the U.S. government, Blake and Gibney (2011) contended that Katrina remains a compelling reminder of the U.S.’s vulnerability to hurricanes (Amaratunga & Haigh, 2011, p. 6). This research looks in particular at the city of New Orleans, Louisiana but also focuses on the coastal city of Biloxi, Mississippi—the two areas where the architectural design professionals were most actively engaged in the post-Katrina rebuild. Logan (2006) also flagged these two regions as ones that “require the most concentrated attention in the recovery

process” (p. 4).

First, the extensive housing damage on the coastal city of Biloxi stand as a testament to Black and Gibney’s concern over the challenges of changing the public’s attitudes towards potential disasters, in part due to people’s overconfidence in advanced technology and its ability to forecast hurricanes (Amaratunga & Haigh, 2011, p. 6). According to reports by both the Congressional Research Service (CRS) (2005) and Logan (2006), Biloxi was identified as one of the worst affected neighborhoods along the Gulf Coast communities (CRS, 2005, p. 16; Logan, 2006, p. 4). Logan noted that the socio-economic disparities were pronounced among the affected neighborhoods except along the coastal cities including Biloxi “because many of the most desirable pre-Katrina locations were located near the shoreline and therefore exposed to both high winds and storm surge” (p. 8). The 2005 CRS report on Hurricane Katrina (2005) assessed that among those who were acutely impacted by flooding or some level of damage on the house, some 94 percent of the population that were affected by “catastrophic structural damage” resided in the state of Mississippi, compared to majority of those acutely affected by the hurricane in the state of Louisiana were through flooding (p. 16). Figure below explains why while most of the media publicity and rebuilding activities were concentrated in New Orleans, some of the architectural rebuilding agencies settled in Biloxi.

Figure 5-4: Hurricane Katrina - Comparative Impact of Damage in Louisiana and Mississippi



SOURCE: Estimates prepared by the Congressional Research Service (CRS) with assistance from the Library of congress Congressional Cartography Program, based on analysis of FEMA flood and damage assessments and US Census 2000 Summary File 4 (SF4) data files

Second, much of the flooding in New Orleans that had displaced some 645,000 of its residents may also have also been preventable but for the lack of preparedness on the part of its local authorities. According to Macdonald et al. (2012), the levee failures along the Mississippi River were inevitable, quoting the geologist Gilbert F. White who, in 1945, warned that “floods are acts of God, but flood losses are largely acts of man

[sic]. Human encroachment upon floodplains of rivers accounts for the high annual total of flood losses”. White’s warnings were in reference to the incapacity of artificial levees not only to keep the water out, but its potential to worsen the effect of flooding.

Campanella (2008) made a key observation in that, ever since New Orleans was founded, Americans have continued to fight the water instead of learning to live with it, even though “flood actually saves lives by cleaning city and reducing death rate” (location 275). Kates, Colten, and Leatherman (2006) referred to Hurricane Katrina as a human-induced disaster that had been almost 300 years in the making. As had been explained in the literature survey, the research takes the definition of disaster as being more than an isolated, “temporary” natural phenomenon, but rather a culmination of preexisting social, economic, political, and of course, environmental conditions that have risen to the surface.

### 5.2.2 Paradoxes: Architectural Intervention

In **section 5.1**, the research illustrated how the incapacitation of the national government following the 2010 earthquake led the Haitian leaders to look to the assistance of intergovernmental agencies, most notably led by the US government. But just 6 years earlier, when Hurricane Katrina swept through the U.S., its own government agencies were unable to respond in the same manner as it could mobilize its own humanitarian agencies abroad. So how is it that a nation that is a major contributor to global humanitarian aid could not efficiently manage its own disaster? What can be learned from the design decisions that were made or not made in response to Katrina?

Disaster scholars, Freudenburg et al. (2008) argued that the humanitarian and environmental damage caused by Katrina was a product of three factors or political “patterns” which consist of (1) spreading the costs, (2) concentrating the economic benefits, and (3) hiding the real risks” (Freudenburg et al., 2008, p. 1015). Dr. Regan Potangaroa, a New Zealand engineer who regularly works with humanitarian aid agencies in developing countries, observed that there has been a gradual shift in attitudes within the disaster research community because major urban disasters were no longer limited to developing nations.

*(People) used to give me a hard time... because I did humanitarian aid work that wasn't relevant to the sorts of responses they imagined New Zealand would be involved in, and then New Orleans came and that changed them (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication).*

Indeed, the extent of damage caused by Katrina was unprecedented in the U.S. history (Blake & Gibney, 2011). When the hurricane landed at the Mississippi River delta, the Gulf Coast communities—New Orleans in particular—were as unprepared and vulnerable as any modern coastal citizens could have been. It was “the perfect storm”: the federal government had recently stalled its emergency management agency by subordinating it under the DHS, the new anti-terrorist agency; the artificial levees which had been the city’s first line of defense against potential floods had long been underfunded and overdue for maintenance; even the latest FEMA reports which had outlined the city’s vulnerabilities to hurricanes were neglected. Grote, a local architect in both New Orleans and Biloxi explained that the government agencies made it particularly challenging to the rebuilding process.



*...after the storm... there's been way too much of this kind of paternalistic dictation from the federal government, from the local government, from the state government about what you should and shouldn't do. (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication)*

In a critical debate led by Jurkiewicz (2007), Irazabal and Neville (2007), Lukensmeyer (2007), and D'agostino and Kloby (2011) responded to some of the challenges that local communities faced in post-Katrina Gulf Coast, where the government agencies were seen as ineffective. In the next section, this discussion is interfaced with the experience of architectural designers who were actively engaged in this process, and their attitudes illuminate how architecture has facilitated the post-Katrina rebuilding process.

### **5.2.2.1 Building Trust from Inside Out**

While civil societies are built on the foundation of trust in their government officials and administrators having the necessary knowledge and skills to serve and protect the interest of the public, the Katrina case study demonstrates that once the society's trust in its leadership is lost, it is often not easily regained. However, in her analysis of the early planning processes that took place post-Katrina, Lukensmeyer (2007) highlighted the fact that highly interactive, inclusive, and participatory nature of the UNOP contributed to reinstating some of the trust that communities had originally lost in the early stages of the disaster (p. 4). Lukensmeyer stated that, "By design, both citizens and decision makers emerged from the Unified Plan process as co-owners of a concrete action plan" (p. 8). The UNOP consolidated the existing planning regulations and integrated key lessons and research outcomes of previous post-Katrina planning initiatives (figure 5-2), which Lukensmeyer characterized as a "second generation" planning process that went "beyond the decide-announce-defend model of one-way information flows" (p. 14).

But even beyond integrating the various plans that failed to garner public support, UNOP also "[raised] important questions about how to best design questions and provide facilitation that supports a variety of interactive styles" (Lukensmeyer, 2007, p. 8). Essentially, it was akin to the *second generation* design approach that Horst Rittel had proposed.

*...an underlying problem that New Orleans had as well is... (that they) really didn't trust outsiders... It looked too quickly within itself to solve the problem, and it's a really big problem, and you need to have experts advising you. You need to be open to what they have to say. (Johnson, L., US Planner, July 12, 2011, Personal Communication)*

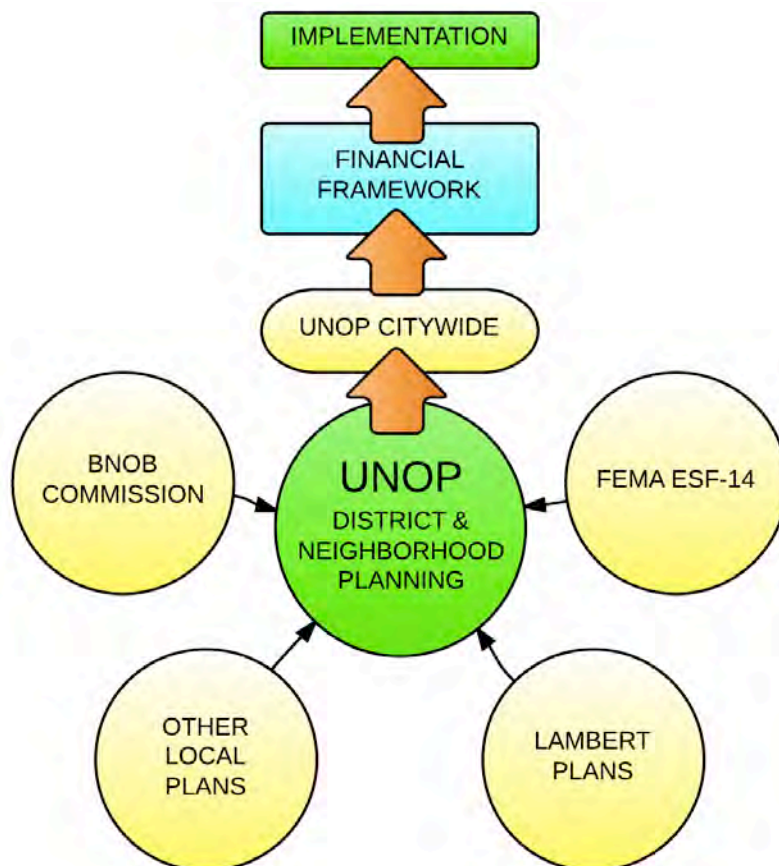
Although New Orleans residents were untrusting of professionals whom they considered as "outsiders", their limited means to rebuild on their own had left them with no choice but to work with them, albeit with caution. Grote, who is a lifelong resident of New Orleans and split his time between working as an architect in both New Orleans and Biloxi, believed that architectural design can often be a "burden" on the community.

*I live in New Orleans and I see what happens in the Ninth Ward and other places that we equate design with help. It is not... Oftentimes, it's a burden. (Grote, M., Architect, GCCDS,*

*March 29, 2012, Personal Communication)*

Professional support, when unmatched with adequate understanding of the local needs, can leave its beneficiaries more strained than before. Design can become a “burden” when the cost of running and maintaining donor-supplied housing exceeds the household’s earning capacity. The “Make It Right” campaign remains one of the most publicized rebuilding efforts in post-Katrina New Orleans to date, not least because it was spearheaded by an illustrious Hollywood actor, Brad Pitt. Make It Right Foundation (MIRF), whose projects Grote referred to above, focused their rebuilding projects exclusively on the Lower Ninth Ward, one of the worst hit neighborhood that was among the poorest areas in New Orleans prior to the disaster. MIRF solicited the help of some 21 architects from around the world and pledged to build some 150 homes for the residents of the Lower Ninth (Make It Right, 2013). It follows Shilderman’s “users decide and sponsors provide” model, whereby the foundation works with the users who are first selected through a needs-based screening process. The users are then guided through the re-housing process, from initial consultation, financing through to construction. At the time of writing this thesis, MIRF has completed the 100<sup>th</sup> houses in the area, and each home has been built to meet the LEED Platinum certification, which is the highest sustainable building standard in the U.S. While this is a testament to MIRF’s ability to corral much public support, there is also some criticism that it is also building dependence on the external bodies.

Figure 5-5: Integration Map of the Citywide Plan



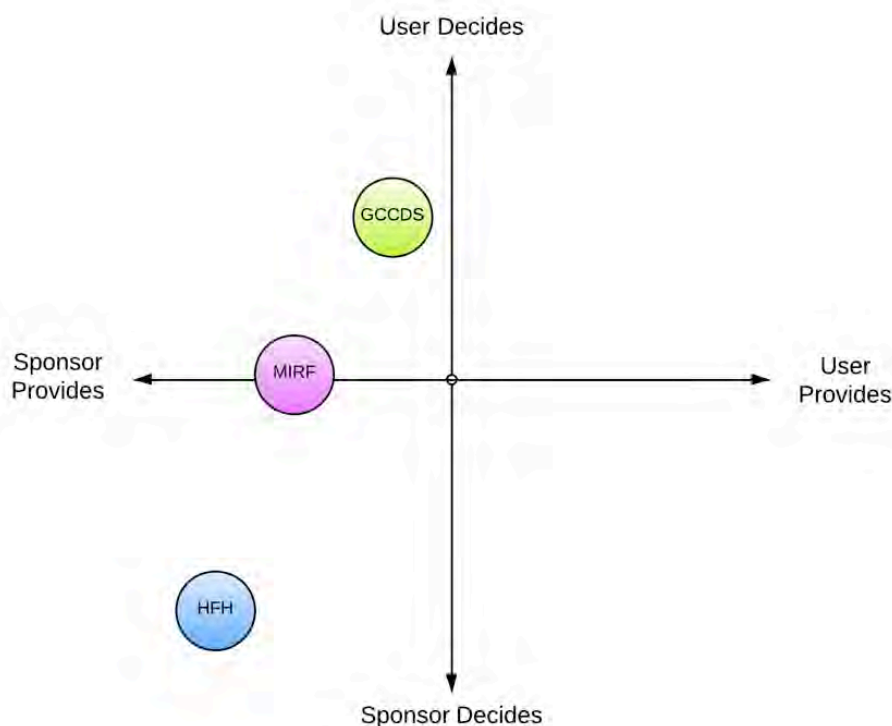
SOURCE: Based on The Unified New Orleans Plan: Citywide Strategic Recovery and Rebuilding Plan, figure 1.3 Integration of other planning efforts into the Citywide Plan, (April 2007), New Orleans, LA, p.17

Thomas (2009) argued that Hurricane Katrina has brought to surface the racial and economic disparities in New Orleans. The Lower Ninth Ward, in particular, had been repainted by post-Katrina tour operators from destitute and violent no man's land in pre-Katrina era to an important historic neighborhood (p. 757). While this can be seen as a positive outcome of the cyclone, Thomas contended that such "tourism narratives" only served to perpetuate "racial exoticism" (p. 762), because many such post-Katrina tour operators portray "African Americans as victims awaiting the action and expertise of whites to intervene on their behalf" by focusing on the "architectural innovations" and failing to acknowledge the efforts by local community organizations for "racial, economic, human rights, and environmental justice" (p. 758).

*...building some trust in the community was a real challenge. This is a group of people largely in New Orleans especially in a socio-ecologically, economically disadvantaged people that they've been abused by authority figures all their lives and so to suddenly trust Tulane University which many in the city see as a bunch of rich white people.. I mean we couldn't just walk in and do it. (Bernhard, S., Director, TCC, March 28, 2012, Personal Communication)*

Bernhard's anecdote from his role as an architectural professor at the local university illustrates the extent of the "history of racial and class inequalities" (Thomas, 2009, p. 758) that pervaded the city in the post-disaster environment. Even for the New Orleanian locals, establishing trust in neighborhoods beyond the "racial and class" barrier seemed to relegate them as outsiders to a community that had become estranged from each other over time. Operating in an environment where people had been "abused by authority figures all their lives" can obscure the ability for professionals to contribute in any meaningful capacity. Thus, rebuilding agents, whether they are from outside the city or from within, can bring a "burden" into a stressed environment, which can be "disruptive".

Figure 5-6: Positional Map of Architectural NGOs on Schilderman (2010)'s Model



### 5.2.2.2 Working with the Federal System

According to Irazabal and Neville (2007), people demonstrated extraordinary level of resilience and ability to mobilize when they realized that “their very survival, counting on state and private sector pledges is not guarantee enough” (2007, p. 13) and government agencies were not providing the necessary leadership for reconstruction. New Orleans’s Broadmoor district homeowners, in response to being stigmatized by BNOB planners, became “electrified” to “save their community” (2007, p. 12). Similarly, in Biloxi, a local official mobilized his own community:

*Bill (Stallworth) – he’s actually a member of the City Council here, but it was certainly not within his role of City Council that he started the coordination – in fact it was almost in spite of that... He really represents his community with a kind of fearlessness. (Perkes, D., Director, GCCDS, March 29, 2012, Personal Communication)*

In some ways, the leadership and courage that emerged post-Katrina seemed more prevalent amongst individuals rather than organizations and local authorities that were paralyzed by their own post-disaster protocols. Rebuilding without the government agencies, however, is not an option in the U.S., where informal housing is considered illegal (NLCHP, 2011). However, following Hurricane Katrina homelessness tripled between 2005 and 2009 in the state of Louisiana (NLCHP, 2011, p. 27). The challenge for the architectural profession then was to figure out how to reengage with the governing agencies. David Perkes, the founding director of Gulf Coast Community Design Studio (GCCDS) for one, explained that the disaster had shifted his world view as well as an attitudinal shift on how he ran his own architectural practice.

*...you have to think, ‘Okay, if architecture is important enough that we can say, “yes, this is something that really can make a difference in the world”, then we have to figure out how to liberate it or loosen up from being so dependent upon clients who have money to go out and hire an architect. (Perkes, D., Director, GCCDS, March 29, 2012, Personal Communication)*

Creativity was needed beyond the design stages of architecture in Biloxi. According to Grote, an architect who had been with GCCDS from the beginning, explained that GCCDS was initially financed through the Department of Housing and Urban Development (HUD) which helped the studio to “break ground” in the early days, then it reached an agreement with the Federal agency to finance the design services in ways that were independent of the funds allocated to recovery and rebuilding funds. As for the latter, there was an implicit understanding that if design services were funded from the same source as the recovery and rebuilding monies, design component would have quickly been cost-engineered out of the budget. Many architects have been decrying the exercise of cost-engineering as a major threat to the profession for decades (Gutman, 1988; Bernheim, 1998; Fisher, 2000; Till, 2009). Essentially, GCCDS operated within a hybrid model of Schilderman’s “users decide and sponsors provide” and “users decide and users provide” approach, enabling the organization to thrive through the economic downturn. From this experience, Grote suggested that the profession could benefit from revising its traditional business model:

*How does a practice like this begin to make itself worthy in a economically depressed region,*

*in an economically depressed country, on an economically depressed planet. Showing our worth, being more entrepreneurial and helping partners access funding will be our challenge. Its something regular architects don't do very much or very well, which is why we are suffering so bad in these times. (Grote, M., Architect, GCCDS, July 27, 2012, E-mail Communication)*

Perkes suggested that design process was also an integral part of the decision-making process for the local community. Implicit within such an argument is the recognition of the importance of Rittelian framework, and through such thought processes, GCCDS was able to remain an integral part of the rebuilding process by separating the financial cost of design from the material cost of rebuilding.

*...NGOs serve to fill gaps. They are emergent organizations, and so you can't necessarily judge the effectiveness until you understand the context in which they are working... (Johnson, L., US Planner, July 12, 2011, Personal Communication)*

Through “[entrepreneurship]” and “[partnership]”, GCCDS also became an effective conduit between communities and the government, while at the same time sparing the “liberty” of design from being easily engineered out of the project budget.

Indeed, D'agostino and Kloby (2011) found that citizen participation in rebuilding activities was restricted by their distrust of government officials and administrators, and in such cases professionals can bridge this gap. Yet Blomley (2005) contended that professionals, by their nature, cannot be uncoupled from undemocratic motivations of neoliberalism, since “neoliberal market logic impels NGOs to do the state's bidding in ways that do not always serve local needs”. At the same time, it is equally common for professional NGOs to work in partnership with community organizations as they consult government authorities. Katrina mobilized a number of public, private, and community organizations, who have formed as a reaction to an underperforming local authority. D'agostino and Kloby argued that “public's unprecedented engagement in the rebuilding efforts was rooted in residents' general lack of trust in government leaders and deep discontent in government-driven planning” (p. 756), which suggests that the increasing public participation in public forums may in fact represent lowered level of trust in governing bodies which could in turn impel people to action. Conversely, D'agostino and Kloby implied that efforts by professional organizations and individuals to partner with local community organizations may have been to overcompensate for “failed planning efforts and their diminishing effect on citizen trust in government” (p. 757). Perkes shared his insight on the issue:

*...what we're trying to do has to do with creating projects and methods of doing work that really strengthen stakeholder and community partners, and (to) develop a way of working where the decision making process is shared by a lot of people. In fact, I tend to talk about design as being a decision making process. (Perkes, D., Director, GCCDS, March 29, 2012, Personal Communication)*

Beyond employing design as a tool for building houses, Perkes emphasized the importance of using design

as “the decision making process” to “strengthen... community” as “partners”. In this case, the architect takes on the role of a technical conduit between the community and the project, and a facilitator who cajoles people towards a “shared” “decision”. Design, then, becomes a tool for communicating the needs and visions of the community for future development, but also a mechanism for communities to evaluate their situation in architectural terms. Active citizen participation in the rebuilding processes from early on is essential to integrating the needs of the community but more importantly it can help to reinforce the community’s values such as distinct customary social practices that could otherwise have been overlooked in rebuilding.

*We’re interested in being a stop gap between owners not knowing what to do and hiring professionals to do the work and inform and being that bridge to that place; valuing design, championing design, saying that there’s a real purpose for it and here’s what it is. (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication)*

Katrina may have exposed the weakness in the government officials and administrators to deal with catastrophe that was enshrouded in political and economic interest of a minority (the ruling elite) but simultaneously it has also brought to surface the best practices of grassroots based architectural professionals who have demonstrated courage, hope, and vision for the disempowered citizens of the Gulf Coast.

## **5.3 Christchurch: “Before After”**

### **5.3.1 Challenges: Christchurch (Ōtautahi), New Zealand**

*(Christchurch) is a complex environment in the true meaning of the word “complex” and the problem is wicked in its fundamental sense. It is not amenable to a technical solution or to a simple panacea. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

Many of the characteristics of Christchurch earthquake case study lend themselves to Horst Rittel’s definition of *wicked problems*. The extent of its complexity depends on each case and equally on how the situation is framed, because disasters often do not occur as isolated, one-off events but signal a start of a long chain reaction. Haitian earthquake was followed by a devastating outbreak of cholera; the U.S. Gulf Coast communities were deluged twice in the same year of Katrina, with equally devastating category 3 Hurricane Rita. Christchurch, too, had suffered from a series of consecutive high-impact aftershocks since September 2010. In fact the devastation in Christchurch is more vividly associated with its aftershock in February 2011, which took some 185 lives. Bruce Glavovic, a planner who also works for the government’s Earthquake Commission (EQC), explained that post-disaster periods are in a state of constant flux, noting that the focus of disaster recovery agents following the September earthquake had shifted completely in the February aftershock.

*Post-September, a lot of the concern about the recovery process was, how do we secure and retain the historic... building heritage that characterized the physical culture of Christchurch?*

*...architects in Christchurch had very special prominence and voice around... but that issue became much less significant in the aftermath of February 22<sup>nd</sup> when the nature of the event changed completely. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

The next section documents the contribution of New Zealand's architectural profession since September 2010.

### **5.3.1.1 Before After: An Architectural Lens**

The involvement of the Christchurch architects in the reconstruction phase had been bipolar, with the NZIA member activities defined by responses in two phases: a period between the first earthquake in September 2010 until the second earthquake in February 2011, then from February onwards. In the first phase, the city had only suffered what seemed to be a minor cosmetic damage to some of its character buildings, sparking discussion among the public and engagement with the local architects who were able to contribute to this discussion. The local branch of the New Zealand Institute of Architects (NZIA) centered its activities around discussion of issues related to the city's heritage buildings, local infrastructure, landscape, its urban environment, and issues around housing. It culminated in a public exhibition entitled "Before After", for which the architects assumed active roles to facilitate a discussion about the built environment with the public. Several local architects who were part of the organizing committee for the exhibition reported their experiences as "hopeful" and "engaging".

*(The exhibition) is intended to communicate with the public... the intention was to get the public involved, where we're not seen as a group from outside saying, 'you shall do this' (Van der Lingen, J., Architect, January 26, 2011, Personal Communication)*

At the national level, the NZIA responded by appointing a well-respected, Christchurch-born architect, Ian Athfield, to be the conduit between the community and the architectural profession. However, a series of miscommunication had led the public to believe that the appointment of Athfield was but a political gesture by the incumbent Mayor Bob Parker. Athfield expressed his frustrations in the early days as the ambassador:

*I felt I was useless... as time went by it seemed more hopeless. The city didn't talk to us... because they decided not to employ local architects, because they believed that architects were object driven... (Athfield, I., NZ Architect, February 10, 2012, Personal Communication)*

It had been less than ten days since the launch of the NZIA's "Before After" public exhibition, when Christchurch was hit by another devastating earthquake. All previous talks on heritage and culture of Christchurch's architecture was muted out by more urgent lifeline related services. There were human fatalities, liquefaction had deluged entire sections of residential neighborhoods, an international team of Urban Search and Rescue (USAR) were brought in to manage the emergency recovery, and for the first time in New Zealand's history, the national state of emergency was declared, which lasted some ten consecutive weeks (Radio New Zealand, 2011).

In the meantime, the local architects offered pro bono services to the city and its residents, inspecting damaged properties and advising tenants as well as landlords (Dalman, R., Architect, January 25, 2011, Personal Communication). At the same time, community-based initiatives also proliferated: the Sumner Community Master Plan was produced through a series of community consultation by the Sumner Urban Design Group; Peterborough Village initiative by a local landscape architect Di Lucas; and the Micro Architecture initiative by Sustainable Habitat Challenge team to name but a few. However, the ability of local architects to have a voice in Christchurch's future were severely constrained

*The thing that was most frustrating right from the start was our inability to get heard, and the architects' inability to have any say. Earthquake seemed to be about structure more than architecture. (Dalman, R., Architect, January 25, 2011, Personal Communication)*

Richard Dalman, a local practitioner, explained the frustration shared by many of his colleagues. In the meantime, the engineers and seismologists enjoyed an unsurpassed demand for their services, and were held in high esteem by the local residents for their work. Clifford, the president of the NZIA at the time, explained that the architectural profession were not able to intervene to the same extent as the engineers had, because the engineers, unlike the architects, were already actively involved in the Civil Defense and Emergency Management (CDEM) committees prior to the earthquake.

*A lot of these patterns are established in normal times and they're repeated in a disaster circumstance... one of the lessons out of this is... simply coming along afterwards isn't that effective... if you want to be really involved, get involved now. (Clifford, P., NZIA President, September 7, 2011, Personal Communication)*

But from outside the profession, the local community leaders were more hopeful. Vicki Buck, the former Christchurch mayor, explained that the high profile activities of the engineers in the early days of the earthquake had increased the public confidence to such a level that it became detrimental to the profession.

*Engineers after September were in huge demand and regarded sort of as gods. The engineers had very high reputations... in Christchurch, for a really long time... (But) the fact that the process of red stickering, green stickering engineering checks were so haphazard and so bad – bad from the City Council, bad from the engineers... we just don't trust them (anymore)... (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

Buck suggested that the skills that had brought engineers into the spotlight in the first place also became a reason for their downfall. Maire Kipa, a local community leader, explained the need for the profession to be heard, because the way professionals are treated by the local authorities is indicative of how other members of community would also be treated:

*They knew about the swamp and this land being soft... (yet) they were willing to risk it... the developers won a case against the council who was objecting to the developments...*



*everybody understands and wish we hadn't made that decision. (Kipa, M., Community Leader, March 5, 2012, Personal Communication)*

The role of New Zealand architects in Christchurch earthquake was complicated by the preexisting urban condition of the city. The *wicked* design problems of rebuilding Christchurch were overshadowed in many ways by politics of un-building, as the stigma of Christchurch's historic past resurfaced in the earthquake's wake. A case in point is the social impact of the earthquake on the city's minority population. According to Newell, migration expert, Christchurch experienced an exodus of young minority population over the past year, most likely from the lack of adequate social services to help those who generally lack in resources, resilience, and incentives to stay. (Newell, 2012; Stylianou, 2012). Newell also observed that school-aged Maori and Samoan children left at a rate three times more than that of Pakeha (European) children.<sup>46</sup>

Geographically, the Eastern Suburbs of Christchurch were the focus of media contention as New Orleans had been after Katrina. Potangaroa and Kipa (2011) argued that "the notion of being poor and that poverty exists in New Zealand and that it could be a factor in any disaster preparedness and response is lost on New Zealand", which is in reference to how government authorities neglected to acknowledge the correlation between socio-economic state of a community and their vulnerability to urban disasters.

Despite its young colonial history, Christchurch also suffered from poor planning decisions that both Port-au-Prince and New Orleans experienced. A case in point is the controversial 1856 "Black Map" of Christchurch, which was widely circulated following the earthquake to illustrate the risks of overdevelopment. When overlaid on top of the 2011 map of liquefaction areas, the 1856 Map traced the paths of former riverbeds and swamps that were since built over and partially reshaped to allow for irrigation of farmlands.

*How do you really look at the city... you actually have to look at where your mistakes were beforehand. What it was like... immediately before the earthquake? How do you compensate for the decisions you made on all those suburban shopping malls which are now thriving? (Athfield, I., NZ Architect, February 10, 2012, Personal Communication)*

Athfield contended that Christchurch's urban problems had started "five decades before these earthquakes and as a result the city was governed by dysfunctional end-use policies" (Athfield, 2012), and "[compensating]" for past decisions would mean that decision-making processes for the city's future also needed to be reevaluated.

### **5.3.2 Paradoxes: Architectural Response**

*...post-disaster experiences are fundamentally shaped by pre-event conditions... so the*

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<sup>46</sup>But Newell's observation overlooks two factors that potentially explains this coincidence: one is that the Maori and Pacific Island (including Samoan) population has a much younger age structure than the total population due to higher Maori birth rates and larger family sizes. By 2016, Maori ethnicity is projected to have a median age of 24.9, while for the total population it is 39.9 years (CCC, 2005). The second factor, which is related to the younger age structure of the Maori population, is that they are more mobile and transient than the Christchurch population, as a result of lesser housing affordability, job security, and general circumstances (CCC, 2003).

*relationship between key players pre-event manifests itself and shapes what happens after an event. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

### **5.3.2.1 Societal Value of Architects**

As mentioned previously, the level of involvement by the local architects following the February 2011 Christchurch earthquake had been minimal, and this had a negative impact on their confidence. In the early days, many architects hid their frustrations in their inability to “get heard: by local authorities yet remained optimistic about contributing their professional services to build back better. But many also suffered from the symptoms of “disaster fatigue”, exacerbated by their personal circumstances as well as from the reduced amount of work: “We’re starting to run out of steam and the ability to do things voluntarily” (Van der Lingen, J., Architect, January 26, 2011, Personal Communication). What had further demised the morale of the local architects in Christchurch is the fact that the local council employed the services of foreign architects in lieu of engaging the services of local architects.

*The notion that you parachute someone in from far away and redesign the city... and you can come up with nice pictures and nice visions, but turning that into reality is a product of the choices that individual business owners and individual citizens will be making on a day-to-day basis... Challenge is to find ways of embedding and integrating design professionals and others into collaborative partnerships that rebuild in geographically specific localities. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

From outside the architectural profession, the inability to have input into decisions about Christchurch also seemed problematic:

*A lot of people assumed that they will come and then they’ll rebuild towards the end. But by then all the decisions and by-laws would have already been made. (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

Buck suggested that the profession at large needed to be involved in early design decision-making processes with the authorities, but they were not being engaged. Jasper Van der Lingen, a local architect who also serves as the council’s urban design council explained the possible rationale behind why the local authorities may have been discouraged to engage professionals, let alone the public:

*They don’t tend to consult much because there’s some commercial sensitivities, like if it comes out to the public saying that they’re changing the zoning of an area and it was publicly announced, the ones who own the property or the ones who want to buy into that might take an advantage. So that’s why it tends to often be in-house. (Van der Lingen, J., Architect, January 26, 2011, Personal Communication)*

But attitudes about the roles that architectural profession and the wider building profession could play in post-earthquake Christchurch seemed contentious even within the profession itself. Some viewed that being

a building expert was a privileged position which accompanied great responsibility to “shape the future” (C. Sinclair), while others believed that the profession “relate things to fashion [and] trends” which has led to “distrust” within wider society “because they see [the building industry] as... not meeting... [nor] even understanding what their needs were” (I. Athfield). Such attitudes are complicated by the fact that the governance system in New Zealand remains “hierarchical” and the power structure is not equally distributed (T. Watkins). This has led to local authorities showing “inappropriate preference” to engage external building experts and frustrating local design professionals (B. Glavovic).

In light of such developments, Roberts suggested that it is important to have a broad understanding of the needs within society beyond one’s professional expertise.

*...you’ve got to not only be involved in the innovation, but you’ve got to also be involved in the sort of greater structure around it... (Roberts, C., Social Entrepreneur, February 28, 2012, Personal Communication)*

Roberts contended that any innovation on the ground, whether architectural or otherwise, needed to be supported by broader engagement with the larger ecosystem within which the innovation to the problem exists. Speaking from his first-hand experience of trying to address societal issues such as housing shortages and unemployment, Roberts had identified a larger systemic gap that produced these problems in the first place.

*The building industry itself is a very conservative industry... it’s very difficult for them to move out of very standard ways of operating... you can have the design right, (but) you’ve got to be able to win people over... the lesson to learn from that is... we concentrate on getting the design right, but haven’t really changed the culture. (Roberts, C., Social Entrepreneur, February 28, 2012, Personal Communication)*

### **5.3.2.2 Architectural Symbolism**

Even though the devastation of the February earthquake had set aside the discussions about building heritage at the early stages of disaster relief and recovery, one building in particular became a point of public contention: the Christchurch Cathedral.

The Cathedral had been the most prominent landmark in the city since its inception, but suffered significant structural damage from the initial earthquake in September and the subsequent aftershocks that followed. On the 4<sup>th</sup> of November, 2011, CERA issued an ultimatum to the Cathedral and Minister Gerry Brownlee recommended a “full deconstruction” (CERA, 2012), which was met with public protests and debate over the significance of the Cathedral as a symbolic identity for Christchurch.

The Cathedral became a contentious topic among those who, on the one hand, wanted to move on, and those who, on the other, wanted to see it reinstated to its former glory. Architecture became both a battleground for earthquake-battered Christchurch citizens who wanted to reclaim its “right to the city”, and a tool for democracy and resilience in the absence of certainty and transparency. The Cathedral became a

media poster child for the earthquake, and also a symbol of the Christchurch resident's identity, as Lianne Dalziel, a local politician, explained:

*...buildings are also part of our own personal histories, so they're not just about the history of the city, they're about our own personal stories... there are so many people who got married at the Cathedral, there are so many funerals we went to there, so many special occasions... that Cathedral in the Square does speak about our identity as a city... it's where our city got its status as a city from. We have, in order to become a city we had to have a cathedral. The Cathedral was built so we could be a city... the Cathedral really belongs to the people.*  
(Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)

The people of Christchurch had forged a relationship with the building, not as a religious monument, a destination or some symbol of power—which buildings of such monumental scale are ordinarily perceived to be (Iloniemi, 2004; Saint, 1983)—but rather as a reference point of one's own identity, and a repository of one's memories established over time through life-changing events, such as marriages and funerals.

According to Potangaroa and Kipa, however, the significance of buildings runs much deeper in the Māori tradition. The Māori, much like in other Eastern cultures, believe that their ancestors live through stories, photographs, and through architecture of ancestral significance, such as a Marae. As for the latter, it is accorded the same respect and care as a living person.

*...one of our big findings was to with the tagging, that the tagging of houses was all wrong and a lot of Māori were particularly upset because they wouldn't let them go back in and get their photographs of their ancestors and particularly Ngāi Tahu; they couldn't go back in.*  
(Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)

Potangaroa recalled that this presented significant ethical challenges during the evacuation phase where people were taken out of buildings to their safety, but were not given the opportunity to retrieve their prized belongings. Potangaroa and Kipa (2011) acknowledged that Māori had had to establish their own system of post-disaster response and recovery initiatives in ways that accommodated the cultural norms and behaviors that could not be adequately addressed through existing social services (Potangaroa & Kipa, 2011).

The Cathedral, from the perspectives of the local Māori, was a symbolic edifice of colonial history. By extension, then, the deconstruction of the Cathedral, whether in part or whole, signifies for the Māori an end of a legacy defined by Canterbury's colonial past while heralding a beginning of future that can be built back better to fully acknowledge and honor the city's ancestral history that incorporates the stories of *Tangata Whenua* (the people of the land). Indeed, in the latter stages of Christchurch's recovery, the local planning authority ensured that the narratives of *Te Runanga o Ngai Tahu*, the local Maori iwi, to be an integral part of Christchurch's future blueprint (CCDU, 2012).

## 5.4 Build Back Better Summary

A critical inquiry in terms of how the Rittelian framework contributes to understanding urban disasters has led to an assessment of how the tagline, “build back better” has been employed in each of the three case sites. The tagline implies the long-term aspiration of recovery agencies, which are in fact difficult to implement. The outcomes from this empirical study suggest that in order to build back better, the agents of disaster need to recognize, firstly, that such disasters have been years, and in some cases, centuries in the making. Secondly, the politicization of disaster recovery activities through disparate interests and priorities of stakeholders can stand in the way of achieving the humanitarian principles that build back better tagline espouses. Thirdly, the systemic gap between aspirations of disaster recovery agents and the practice of disaster recovery process explain the hitherto limited contribution of architectural design professionals in urban disasters.

Urban disaster recovery processes follow one simple rule, where the total recovery period only lasts for as long as there are resources available. This period is often referred to as “crisis time period”, “time compression”, and “tyranny of the urgent”, characterizing a time-poor yet resource-intensive nature of disaster recovery. Much of the social, political and economic aftershocks of a major disaster can persist for many years after the event, and the length of the recovery period has cost implications that, in turn, can affect the efficiencies of the recovery process. Unlike *tame* problems that have finite number of solutions and a linear decision-making process, Rittel suggested that *wicked* problems need to be considered from multiple positions and approached as an argumentative process (Protzen & Harris, 2010, p. 162). Decision-making processes within urban disasters share similar qualities as *wicked* problems, in that there are multiple stakeholders who may hold different, and sometimes competing, positions on a design problem. Like *wicked* problems, for such design problems there are no irrefutable “right” decisions, but only “good” or “better” decisions, which can shift according to the values espoused by each individual who is party to the decision-making.

The “Build Back Better Communities” international design competition by the Haitian government alienated its own people in the project delivery, which stopped short of paying a “tokenistic” lip-service to vulnerable communities, forcing upon them an armed transitional compound mimicking the Western ideologies fabricated overseas. Falling short of temptations that some experts have resorted to by dismissing this earthquake as just another Haitian tragedy, similar approaches were observed in other case studies: a few years earlier in New Orleans many ambitious planning initiatives initiated by government agencies toppled upon failing to reconcile the deeply inscribed identities of the community with radical reconstruction proposals; in early days of Canterbury earthquake in Christchurch the Council-led planning initiative focused entirely on the central business district, much to the dismay of the residents in the outlying suburbs. Lessons from the case studies suggest that *how* to build back better after a disaster depends on *what* building back better entails for all stakeholders involved. The research has found that while government agencies focus on restoration of key urban infrastructure and key economic activities, strengthening communities and their livelihoods are equally, if not more, important.

Building back, for many members of the local community, entails an impossible task of replicating a pre-

disaster city in a post-disaster environment, as many survivors displaced by the event yearn to return “home” and persist in doing so despite the number of setbacks stacked against them. It is not so much that people are resistant to change; they fear change when what they might lose outweighs the benefits of change. The key issue here, however, is for *whom* rebuilding can be considered *better*. For some, it means to “build back faster”, while for others it is to “build back to original state”. The three case studies demonstrated that architectural design interventions, while limited in scale, can contribute positively to urban disaster recovery processes.

# 6. Design Equity in Post-Disaster Environment

## 6.0 Overview of Theoretical Positions: Negotiating Barriers to Sustainable Reconstruction

“Design equity” is an overarching theme that emerged from investigating the psychosocial aspect of local architectural profession’s involvement in the post-disaster environment. Recovery strategies following a major disaster involve more than a careful coordination of available resources (physical, spatial, and temporal) and following established disaster management protocols. Recovery strategies, more importantly, involve coordination of people, to the extent that a compromise needs to be reached between likely different (and sometimes contrasting) needs and priorities among the affected population, including the civil society, governing agencies and relief organizations. The theme, design equity, conveys more nuanced meaning than the concept of equity alone, in the sense that *equity* reinforces a dialectic tension around the distribution of power amongst the private, public and community sectors within the post-disaster environment, but *design equity* implies that equity may be negotiated through creative means. This chapter explores the concept by contrasting the authoritarian, top-down approach to disaster response with the democratic, bottom-up response to disasters—that involve active community engagement and ownership of the recovery process.

Building on the earlier discussion, the hegemonic tradition of architecture is not conducive to social participation. Without first engaging in the democratic participatory process that empowers people through the medium of architectural dialogue, assisting people in urban disasters can be perceived as patronizing. According to Davidson (2007) even the well-intended architectural designs are commonly mistranslated as an expression of political manipulation and what Arnstein (1969) would call tokenism. In neither case can architecture assuage the situation, and in the absence of power equity, the longevity of any project is unlikely to last beyond the duration of its supervised construction and its initial period of occupation (El-Masri and Kellett, 2001, cited in Davidson et al., 2007, p. 102).

In arguing for the participatory process in disaster recovery, the role of architecture is seen as a creative process that facilitates the community engagement process, and the role of the architect is seen as a “community technical aid”. Jenkins and Forsyth (2010) advocate for a move away from “self-defined” and avant-garde characterization of architecture into wider social participation can reverse an “increasingly restricted role” of architects in the built environment, and argue that unless the competitive nature of the profession becomes more collaborative, their role will be limited in society (p. 168). The desired purpose of participatory design is to have shared responsibility between all stakeholders, and for everyone involved in the process to ensure that the outcome reflects the needs and interests of all. Process precedes outcome, and participatory design can instill an increased sense of ownership, responsibility and belonging, which in turn can foster architecture’s longevity.

### 6.0.1 Framing the Research Questions

Decision-making around physical reconstruction of cities is a highly politicized aspect following the urban disasters studied in this research. Politicization of architecture is an inevitable part of disasters, although the same cannot be said of the architectural professionals. The ability of professionals to engage government

agencies during a disaster depends on the receptivity of existing disaster management policy to facilitate this process. In response to the question, “*What, if any, leadership roles do architects have in urban disasters?*”, this thesis is interested in the political role that architectural professionals play with local authorities by documenting the activities of disaster architects, and validates this from the community perspective. To that end, this chapter also deals with interview responses to a subquestion: “*How can community members participate in disaster relief?*”

Irrespective of the efforts by the government agencies or humanitarian agencies to engage with the affected population, community members studied in this research tended to show more initiatives for participating in early design decision-making processes with local authorities than the vice versa. This suggests two trends: (1) it is a reflection of inefficiencies within the system of disaster management, or (2) it is a reflection of “emergent leadership” that can manifest in urban disasters. But the extent to which communities can participate in future design decisions remains largely dependent on the extent of the government agencies’ willingness to engage the community sector in the broader decision-making, planning, and development. As such, the top-down approach and the bottom-up approach necessarily depend on the power dynamics between stakeholders. In **Chapter 5**, this thesis placed an emphasis on critiquing the top-down approach to design problems in urban disasters, and this chapter extends the argument by studying the bottom-up approach as well as investigating how designers interviewed in this thesis mediate between them.

Table 6-1: Quantitative Coding Analysis on "Design Equity"

Key Theme	Key concepts from data	Source	Aggregated Reference	Matrix Framework				Mean Ref Values				
				CH	GL	HT	KA	CH	GL	HT	KA	
Design Equity		48	1181	723	404	317	269	33	29	26	27	
	Node		Source	Reference								
	Economics		40	158	88	41	31	40	4	3	3	4
	Child nodes		Source	Ref								
	Business mindset		14	24	10	3	8	6	0	0	1	1
	Finance		20	49	26	10	13	16	1	1	1	2
	Neoliberalism		9	19	17	5	1	2	1	0	0	0
	Recession		2	4	4	0	0	0	0	0	0	0
	Value		23	43	16	20	5	15	1	1	0	2
	Node		Source	Reference								
	Power		42	239	144	58	34	55	7	4	3	6
	Child nodes		Source	Ref								
	Control		20	30	19	8	2	4	1	1	0	0
	Corruption		10	23	13	4	9	3	1	0	1	0
	Media		27	61	34	14	10	15	2	1	1	2
	Politics		29	84	51	21	11	22	2	2	1	2
	Node		Source	Reference								
	Strategies		40	176	82	51	55	30	4	4	5	3
	Child nodes		Source	Ref								
	Adaptation		8	13	7	7	6	2	0	1	1	0
	Advocacy		2	2	0	0	0	2	0	0	0	0
	Capacity building		8	18	5	7	8	2	0	1	1	0
	Community empowerment		7	13	10	5	4	0	0	0	0	0
	Community engagement		34	116	49	28	34	23	2	2	3	2
	Momentum		3	5	3	2	0	0	0	0	0	0
	Youth engagement		5	9	8	2	3	1	0	0	0	0
	Node		Source	Reference								
	Sustainability		38	145	56	50	52	29	3	4	4	3
	Child nodes		Source	Ref								
	Environmental Sustainability		8	24	3	4	16	1	0	0	1	0
	Growth		3	3	2	0	1	0	0	0	0	0
	Ownership		15	22	9	6	9	7	0	0	1	1
	Resilience		8	24	11	18	5	4	1	1	0	0
	Resources		7	10	4	2	3	3	0	0	0	0
	Social Sustainability		18	30	13	11	7	6	1	1	1	1

Some 1,181 references around the theme of *design equity* were drawn from 48 interview participants. Out of some 721 references from the top 4 sub themes, some 33 percent (239 references) of the conversation centered on various power dynamics; 24 percent (176 references) focused on various strategies, particularly on those that relate to “community engagement”; 22 percent (158 references) of discussions dealt with economic aspect of post-disaster activities; and 21 percent (148 references) spoke about equity in terms of sustainability. Sustainability dialogues placed emphasis on the concepts of “community ownership” and “social sustainability”. The aggregated responses across the four case study categories highlighted the fact



that financial considerations are more prevalent in the Katrina case study than is the case elsewhere, by controlling for number of respondents. This chapter discusses the key concepts from the three case study sites, with each site evaluating the tension between the top-down (positivism) and the bottom-up (constructivism) approaches.

### 6.1 Case Study: Design Equity in Urban Haiti

Though the central role of participation by design as initiated by government agencies has been a distinct feature of development since the 1970s, humanitarian aid agencies maintain that “participation... is not necessarily the same thing as influence... [or] decision-making” (UNCHS–Habitat, 2001, p. 40). Potangaroa, who assisted the IFRC in the 2010 Haiti earthquake, explained that this event served as a tipping point for humanitarian aid agencies to shift their operational paradigm from one that was expert-centered approach to one that focused more on community-centered recovery (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication). The Haiti case study demonstrates that, while the expert-centered reconstruction appears to be less time-consuming and efficient in terms of decision-making and policy implementation, the short-term advantages gained from such approach can quickly diminish in time.

Table 6-2: Disaster Paradigm Shift Post-2010 Haiti EQ

Paradigm	Expert-Centered	Community-Centered
<b>Short-Term</b>	Time saving: easy to implement management protocol Resource efficient	Time consuming: difficult to implement reaching consensus Resource intensive
<b>Long-Term</b>	Remote monitoring; Limited	Self-monitoring; Continuous
<b>Ownership</b>	Dependent: project ownership with agencies Community needs may be fragmented/unmet	Independent: project ownership within community Community needs met
<b>Power Hierarchy</b>	Top-down Centralized	Bottom-up Decentralized
<b>Engagement Method</b>	Professional	Voluntary
<b>Project Driver</b>	Outcome driven	Process driven

#### 6.1.1 Expert Centered Recovery

Mobilizing post-disaster recovery and rebuilding processes involve multi-sectoral coordination, and the early design decisions made by policy makers can have long-term architectural implications. Given the earlier premise that many experts consider architects as the last responders of disaster, whether architectural professionals can have any political influence in rebuilding becomes a pertinent consideration for Rittelian designers. Weisenfeld (2011) argued that the legacy of any post-disaster operations is measured by the health of communities that remain behind (Weisenfeld, 2011). This section investigates the ways in which architectural experts—particularly those who represent local communities—relate to the power structures within the local government (GoH) as well as the transnational agencies such as the UN.

Overall, 70 percent of informants agreed that the responsibility for rebuilding Haiti does not rest solely in the hands of the government, although the perception that they indeed must drive the GoH to behave in such a

way that they tried to “take all the initiatives” (Theodore, M., Director EDC, AFH Haiti, April 5, 2012, Personal Communication). The government’s most important role, experts argued, was to broker the relationship between “privatized” NGO sectors and foreign investors, in such a way that they can become self-reliant. Haiti’s dependence on external support over the preceding decades have stilted their own development to the extent that foreign agencies have become an almost exclusive source of blame as well as help. Indeed, the consensus among experts seems to be that Haitians desire “[involvement] at every step” because they understand that foreign agencies will “eventually phase [themselves] out of the job” (Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication).

#### **6.1.1.1 Politics: Government of Haiti**

As of September 2012<sup>47</sup>, some two years since the earthquake, the UN Office of the Special Envoy for Haiti (OSE) reported that of some 49.2 percent of the total \$12.32 billion allocated in humanitarian and recovery funding to Haiti’s earthquake response, only 10 percent has been disbursed to the GoH (OSE, 2011). Though the Interim Haiti Recovery Commission (IHRC) effectively took over the GoH to broker the transition, and the Haiti Reconstruction Fund (HRF) was established with a mandate to consolidate funding between the GoH and international community, majority of the humanitarian and recovery funds continue to be funneled directly through largely unmonitored NGO-led operations and the UN.

#### **Mutual Distrust**

Vivid images of the collapsed presidential palace circulating amongst the world media was an early sign of the chaos within the GoH, but the dysfunctional characteristic of the Haitian government preexisted the earthquake for many decades, if not hundreds. The administrative remnants of the 2010 earthquake is but a byproduct of many years of economic and political turbulence which precipitated in erosion of trust in government by Haitians themselves, disengaging them further. This has led to the phenomenon of “10,000 NGOs”, which had outgrown the influence of the GoH long before the disaster.

*A great deal of what happens in Haiti is to have NGOs come in, do the bit the government would normally be doing... There was no mention of the government in any of the (disaster recovery) plans. (The) French government was putting in a highway, Cell phone companies were building cell phone towers. People were out there shopping for NGOs where they could get jobs. The middle-class (Haitians) were translating for the NGOs. (Bob Theis, Roundtable on “Natural and Unnatural Building in Haiti”, June 22, 2011, AIA San Francisco, U.S.)*

*Things here are so much more expensive than they should be or than anyone anticipated they would be. [The cost] is extortionate relative to a lot of other countries. Even fully fledged developed countries... It’s just effectively a monopoly. So that’s the saddest thing to me... when you make the effort to employ local contractors as we do, they’re not the ones making huge amounts of money, the ones making the money are the material suppliers and distributors and that money doesn’t even stay in this country because those guys are mostly*

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<sup>47</sup>This was the most recent published data available through OSE at the time of writing this thesis.

*based in the United States. So the money all just leaves anyway. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Consistent with OSE reports, the GoH exercised little influence over policies and recovery plans. Out of the total \$1.3 billion required for territorial rebuilding, some \$780 million was earmarked for reconstruction, but only \$125.57 million have so far been pledged; compared to some \$984.79 million pledged against \$180 million required for rebuilding the road network (OSE, 2012a). It is a stark reflection of the short-term focus of many recovery agencies. The political uncertainty and delayed disbursement of aid were swept into a vicious cycle of a *Catch-22*. Hammer felt that the transitional phase leading into recovery after a fairly “successful first 3-months” of emergency response was “underfunded” and “under-realized” (M. Hammer, Roundtable on “Natural and Unnatural Building in Haiti”, June 22, 2011, AIA San Francisco, U.S.). The GoH has struggled to elect a president through democratic process (Johnson, 2011; Gros, 2011) calling the legitimacy of state into question, while eroding the confidence of donors who withheld funds that they pledged earlier at the New York donors’ conference.

#### Lack of Planning and Legislation

The geographic region of Port-au-Prince was planned to accommodate 250,000 people, but it had some 2.6 million in it when the magnitude 7.3 earthquake tore through the city. In the absence of the institutional framework to manage its urban land development, informal settlements thrived without basic conditions of a dwelling such as tenure security and basic infrastructure (Joseph & Wang, 2010). In the absence of building standards, hand-built living quarters in *bidonville* were piled on top of each other without necessary structural reinforcements. Experts explained that none of what has been planned has ever been built, and most planners do not anticipate it will get built.

*Haiti is the first time that we’ve really had an urban disaster like this. You know, where basically the whole site is corrugated iron, the whole site is concrete, it’s all informal land. Everything is jammed in. There’s no planning as such or no planning that would follow the normal rules of planning and so we’re having to work through all of those. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

*...the planners who do get involved do so for the sake of getting work, not to see it built. For me that’s where the ethical dilemma sits... if it’s not going to be built what’s the point? (The big ethical dilemma is trying to make planning standards and understand and codes that reflect reality... There’s no certification of... architects... so anecdotally every third Haitian male claims to be an engineer, and that’s a huge challenge. The lack of codes and certification and enforcement of the trades and professional classes is just huge. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Gill explained that because Haiti has no building code, efforts to enforce any standards would have been futile leading up to the earthquake. This was exacerbated in the earthquake where over 75 percent of the civic buildings became inoperable, and the administration of the GoH lacked the institutional strength to deal with the influx of additional NGOs, UN agencies, bilateral and multilateral donor agencies. Paradoxically,

humanitarian agencies rely on the compliance of preexisting set of mandates in order to measure the impact of the monetary commitments to their field operations. In practice, however, Potangaroa explained that in many cases disaster experts are “running code-less, and we really do need to find out and see what is the justification for the stuff that we do” (R. Potangaroa, Personal Communication, June 4, 2010), suggesting that the operations of large aid agencies are equally marred by uncertainties.

The BBBC initiative, which was discussed in the preceding chapter (**Chapter 5.1**), culminated in a demonstrative public housing development called, “400 by 100” which today stands all but abandoned (Regan, 2012). The development was the final phase of the BBBC project which promised to build 400 houses in under 100 days to create a “model Haitian village”.

*Who was going to buy those houses? The Red Cross has money to do housing. World Vision has money to do housing. USAID has money to do housing. Maybe European Union, etc. They are the ones who should have come to the Expo... but the ones who have the money, where are they? They have their own housing [model] in their heads already... (Leslie Voltaire, Haitian architect, as cited in Regan, 2012)*

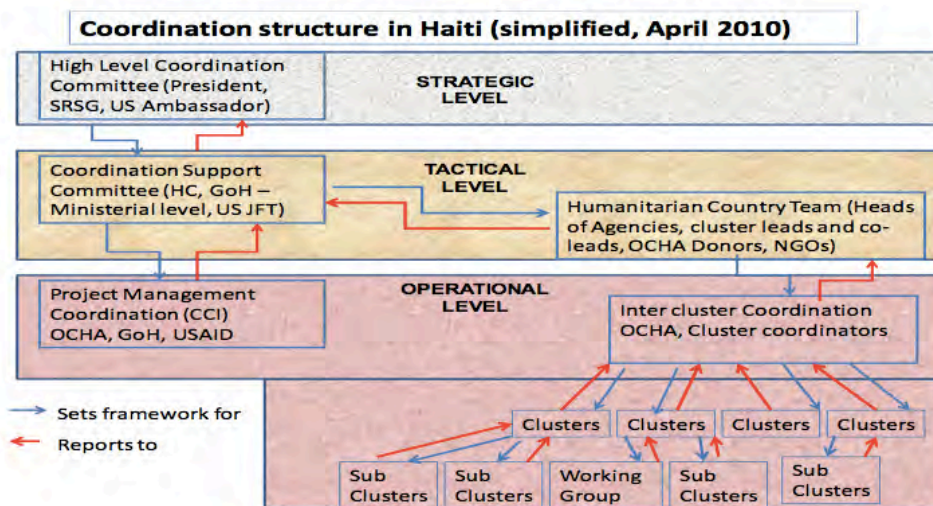
Voltaire, the architect of the initiative, admitted that even though the project was a “success” on the account of fulfilling the original intentions, it was fundamentally a “farce” in execution because the government agencies took no accountability in terms of how the project would be carried forward when the funding associated with the project had dried up.

#### **6.1.1.2 Control: Cluster Approach to Earthquake Response in Haiti**

NGOs are a major driver of Haiti’s economy. Yet many international NGOs (INGOs) work in isolation from Haitian civil society, and “*les excuses avancées sont nombreuses: pas de temps, pas d’acteurs locaux, pas de confiance*” (“various excuses are given: lack of time, lack of local agents, and lack of confidence” Benton, 2011, as cited in Hedlund, 2011). In September 2005, following the catastrophic Indian Ocean Tsunami, the Inter-Agency Standing Committee (IASC) germinated the concept of “Cluster Approach”, an ambitious proposal to streamline and coordinate the efforts of multiple UN agencies and key INGOs under nine identified discipline-specific streams. Their goal was to become “both a first point of call and a provider of last resort in all the key sector areas of activity” (IASC, 2006, p. 2). The Cluster Approach was an attempt by humanitarian agencies to take the *second generation* approach to disaster response. In Haiti, the UN agencies implemented the cluster approach at full scale for the first time.

**Figure 6-1** illustrates the decision-making tree for communicating across different levels of rebuilding that aid agencies are involved in. The arrows indicate the overall hierarchy of communication and the governance structure for agencies within each cluster.

Figure 6-1: Decision Tree Diagram of Cluster System in Haiti



SOURCE: (Grunewald & Binder, 2010)

However, even IASC admitted that proposing such “reform” is only useful for “[identifying] gaps in response and enhance the quality of humanitarian action” (IASC, 2006, p. 1). Indeed, institutionalizing communication pathways between aid agencies cannot be expected to replace the need to communicate broader disaster recovery issues, since each locale in which this system is being implemented is unique and different from other locales. Potangaroa suggested that while a robust system such as the UN or the Red Cross may be slower to change due to administrative hurdles, yet it also had an advantage over smaller agencies with limited resources in that within larger agencies, “once you get the organic ramps sorted in your head, you know who to call up, and you know how to dive around things... [and] get through the system quicker” (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication). In terms of an architectural role, Granvil reinforced the importance of creating a cohesive environment for people prior to working with them.

*A big problem is getting them to work together. And then, when you get them to work together, it's to get the message across... the role of an architect needs, in my opinion... to start with that. Understanding that they're there to solve problems, looking at all the problems and start figuring out how to... chip away at it. Because, no matter how complicated you make things, it still boils down to [communication]. (Granvil, B., Haitian-American Architect, AFH Haiti, April 5, 2012, Personal Communication)*

Fundamentally, such systems as the UN’s Cluster Approach (**figure 6–2**) are but “organic ramps” used to not only get the “message across” but to “understand” the problems before even “[touching] a block”. Cluster Approach reinforces the value of recognizing that *how* people work together are equally, if not more important than knowing *what* to work on.

Nevertheless, Haitians perceive the roles of aid agencies operating in Haiti as transient entities, despite the fact that many such foreign governmental and non-governmental agencies have had permanent presence in the country for several decades.

Figure 6-2: The UN Cluster System



SOURCE: "How the Cluster System Works" UNOCHA, 2013. Reprinted with permission.

Martine Theodore, a Haitian expat who had returned from the U.S. to assist in redevelopment of her homeland, observed that the Cluster Approach did not provide “a complete map” for coordinating the humanitarian relief operations on the ground. At the same time, Theodore acknowledged that it was secondary to getting work done on the ground, since some aid agencies can behave like private organizations with their own set of “pre-made agendas” and values independent of “what Haiti is about”.

According to research by Wearne (2012), while donor agencies tout their success in rehabilitating over one million Haitians from IDP camps, many of these Haitians in fact “returned to badly damaged, unsafe structures” (p. 15). ALNAP disaster researchers, Rencoret, Stoddard, Haver, Taylor and Harvey (2010), also observed that such camps were unsanitary and overcrowded, leading to increased exposure to violence, rape, and disease outbreak. Such observations suggest that Haitians left in search of safer, albeit less stable and volatile, environments. In a climate of mounting criticism by locals against such foreign aid agencies who seemed to be causing more harm than good, Theodore explained that Haitian news media can be “very abrasive” and a “basic misunderstanding” can backfire on those with good intentions, and some of the criticism can stem from hidden “political games” that are not related to NGO activities.

In humanitarian endeavors, the willingness to help can easily backfire, particularly when relationships are improperly managed. When accountability is not assumed by leading agencies who initiated the project in the first place, they can cause more harm than good for the intended disaster beneficiaries. Architecture can thus become entangled in local politics, regardless of whether or not the designers intend to.

### 6.1.2 Rebuilding the “Haitian Way”

A 2001 report by UNCHS (2001) found a growing need for citizen participation in early design decisions affecting their future, and acknowledged the need for community participation as a key measure of success in post-disaster housing contexts. Yet it also cautioned that participation “is not necessarily the same thing as influence, and certainly not the same thing as decision-making” and noted that decentralization of powers from central government was implemented “without parallel devolution of resources” in reality, it may lead to more inequality (UNCHS–Habitat, 2001, p. 40). Such findings have been echoed in other researches (Davidson et al., 2007), spurring researchers to question the existing consensus on the benefits of community participation (Lizarralde et al., 2010; D’agostino 2011).

A case in point, Potangaroa, a New Zealand structural engineer who is regularly deployed on disaster related field missions, described the disparity in resilience between Christchurch, a city from the Global North, and Haiti, the poorest nation in the Western hemisphere: “In a farm, at least you can go out and kill a chicken if you get hungry. In an apartment, you can’t” (R. Potangaroa, Personal Communications, March 13, 2012). He implied that although people in developed countries may live in physically more robust structures that can resist the forces of natural disasters, they can be less socially resilient compared to those from developing nations.

The same logic can be extended to urban and rural dwellers in each country. City-dwellers become accustomed to the convenience of man-made infrastructure, which requires constant repair and management. Everything from drinking water to sanitation, food, electricity, communication, and other components of urban livelihood depend on a well functioning metabolism of the city. But when a disaster strikes and the system breaks, people’s ties to such life support can be severed without warning. With limited access to resources, a city may collapse. By contrast, rural dwellers are inherently more resilient when infrastructure fails, because they are likely to have been living off the grid prior to a disaster.

Port-au-Prince consists of two urban forms: the formal city and the informal city. The areas most affected in the earthquake were the informal settlements that grew with the urban population of Port-au-Prince, which some argue as resulting from industrialization (Joseph & Wang, 2010), while others attribute it to unregulated building practices (Erikson, 2004; Weisenfeld, 2011). Both are symptoms that can be linked back to what McGuigan (2006) described as being a direct result of “agricultural liberalization” that had led to the “abysmal” demise of its own economy and political repression for several decades leading up to the 2010 earthquake.

*There should potentially be two planning codes for the country because there's two very different countries. There's the formal city and the informal city and the two things are very, very different... (But) building ethical responsibility is difficult: saying to people, “(If) you do this, you're responsible, whether or not you are directly affected by whether this thing falls down or not” (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

In the absence of robust governance framework, let alone the administrative wherewithal to establish

planning codes and structural building codes for the country, Haiti was subject to many attempts by inter-governmental agencies to institutionalize. Examples include MINUSTAH peacekeeping military forces and bilateral governing agency such as IHRC, but their efforts seemed to have had mixed impact on the ground, in part because the Haitians were not party to the decision in the first place. Such institutional frameworks ignored the reality of urban disasters. Yielding to the pressures from donor agencies to show results in the short term can cripple the very purpose of humanitarian services that assist disenfranchised “clients” in their recovery. The BBBC housing expo by IHRC demonstrated that such results-driven processes can produce houses without tenants, in places that can alienate the very people they were designed to serve. Such initiatives, when not properly monitored for fit with clients, can lead to creation of further slums and crimes.

#### **6.1.2.1 Ownership: Land Tenure Issues**

The subject of land tenure has been a double-edged sword in Haiti. Joseph and Wang (2010) observed that the “free market” economic policies led to unregulated land use and anarchy in recent decades (p. 128). The need for much needed social, political and economic reforms were counteracted by more corruption and property rights of citizens were forfeited in the name of redevelopment and security. Klein (2007) argued that large scale natural disasters present a blank slate on which to implement the political “shock doctrine” on affected territories, often at the expense of the disaster victims. Nevertheless, the 2010 earthquake also demonstrated the resolve of Haitians to spring back against such forces, and to rebuild in ways that no aid agencies on the ground could have anticipated.

*...people are almost religious in the belief they do own the land there, legally they do not, but psychologically they do. That community has moved, in two years, from tents and squatters to permanent construction which in the history of informal communities, globally, is just unprecedented. That's a process that normally takes thirty years and it took two because there was a belief that the fixture of tenure was actually there, that it was their land... if you can achieve security of tenure for people then they will take care of this, they will build it. It becomes so much easier... the scale question becomes so much easier. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Gill contended that “[scaling]” reconstruction becomes an easier process when there is security of tenure. The willingness and the motivation to build, Gill argued, stems from the “belief that they own the land”. Conversely, Gill implies that intervening humanitarian agencies can underestimate the resilient capacity of locals. It is therefore not surprising that disaster scholars argue that the most sustainable rebuilding is undertaken by the members of the community by themselves. Potangaroa opined that instilling ownership in the future inhabitants would lead to better results than when the task is given to aid agencies. Several challenges exist with implementing “participatory tools”, such as, the tendency of PCR projects to get “hijacked” by the local gangs; inherent difficulty of achieving equitable community representation; and consensus building (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication). Nevertheless, PCR approach remains promising strategy for rebuilding in urban disasters, because of the



accompanying incentives are incomparable to either DDR or ODR<sup>48</sup>. PCR strikes the balance between advantages of the latter approaches, by maximizing the use of existing community resources while not diminishing the capacity for external actors to support them.

### 6.1.2.2 Community Engagement: AFH Haiti

Disaster Accountability Project (DAP) reviewed 196 organizations that solicited donations for Haiti earthquake relief to ascertain the transparency of information and to promote accountability of the relief organizations (DAP, 2011). AFH was the only organization out of 196 organizations surveyed by DAP for transparency assessment to show acceptable level of activity disclosure report on its website.

Cesal, the program director of AFH Haiti, asserted that his office is “not just a party line or political talk...” but added that “we practice what we preach” (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication), which implied that this in fact was the NGO’s inherent party line. AFH’s founding CEO, Cameron Sinclair, introduced Cesal as “a rogue academic with 3 masters degrees, who carries 80 kilograms of carry on luggage between JFK<sup>49</sup> and Port-au-Prince” (C. Sinclair, Architecture for Humanity Lectures, The University of Auckland, July 27, 28, October 7, 14). Sinclair explained that the staff at AFH Haiti and its offices in other countries are gifted individuals who bring at least one non-design related talent in addition to basic architectural competencies. Desrosier, AFH Haiti’s design fellow, described the working environment as a positive “shock” because the practice offered opportunities to learn about “different people”, “cultures”, and “countries”. Gill, AFH Haiti’s program director, explained that the novelty of young, mid-sized NGO like AFH Haiti was its ability to quickly mobilize, because “it [is] not overly bureaucratic”.



Figure 6-3: Bati Byen, the collaborative rebuilding center in PaP

*Bati Byen* (Creole for “Build Better”) is the rebuilding center that AFH Haiti established in the town of *Pétionville* in partnership with Yves François, an American-Haitian architect-engineer who had established

<sup>48</sup>See section 2-4 for Turner and Schilderman’s reference to PCR, DDR, and ODR.

<sup>49</sup>John. F. Kennedy International Airport in New York, NY, USA

his own practice in Haiti before the earthquake. AFH has three focus areas at *Bati Byen*: architecture, urban design and economic development, collectively focusing on building “urban acupuncture” community centers instead of creating isolated solutions often seen in other post-disaster operations. However, the “growing pains” of running an organization, such as high attrition rate of volunteers and managing work pales in comparison to other challenges that lie ahead in Haiti.

*...take the example of the Villa Rosa project, the project encompasses about 2000 homes and there's going to be work on around 1000 of them. That's not really the challenge. The challenge is not really 1000, it's 100,000 and what do you need to do to be able to press the scale button, and nobody yet has pressed that scale button over here... A big part of it is the complexities of the situation which I think a lot of people underestimated... I would argue that one of the biggest challenges (is that) you've got a very low level of skill within that (local) workforce... there is definitely a huge amount of NGO fatigue, which is a huge killer of motivation. (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

Contrary to the robust short-term strategies of larger NGOs, the staff at AFH seemed resolved in the belief that an “exit plan” is not a viable option for agencies with vested long-term interest in the country’s recovery. For true sustainable development of a city such as Port-au-Prince, they argued, is a lifetime commitment.

## **6.2 Case Study: Design Equity in the Post-Katrina US**

Design equity, and the extent to which the residents of the Gulf Coast communities could participate in the recovery following the 2005 hurricane has been a highly contested issue. Not only was Katrina a real test of the U.S. democracy and its civil defense management system at state level, but it also reinforced the spirit of Public Interest Design (PID) movement at community level.

### **6.2.1 Hierarchy of Rebuilding Process**

Power dynamics among disaster stakeholders can significantly affect how architectural professionals operate. Post-Katrina emergency response is described by many disaster scholars as reactions against perceived “civil unrest and urban insurgency” (Williams, 2008, p. 9), “anarchy... insurgency... looting... and other crimes” (Camp, 2007, p. 698) in an effort to “keep the peace” (Adams et al., 2009, p. 626). Hunt et al. (2009) argued that such perceptions of threat can reinforce both racial and gender stereotypes as well as perpetuate inequality in mono-ethnic (particularly of minorities) neighborhoods (p. 442). Animosity against local authorities had built up over the years in neighborhoods who were subject to mistreatments by those who held power. As Jurkiewicz (2007) explained, “people acting alone or together outside the official channels they’ve learned not to count on to help each other. It’s as ingrained in the character of Louisiana” (p. 83). In New Orleans, interview participants expressed difficulties in establishing trust with members of the local community, because trust had been tarnished by local authorities over the years.

Apart from the official first responder emergency service operators—Coastal Guards, FEMA personnels, U.S. Army Corps of Engineers (USACE)—additional expertise was brought in by the government to develop both local and regional strategies that could deal with both the immediate recovery and the long term

rebuilding. Such additional support from the professional community became the stop gap for the existing capacities of the government to meet the needs of communities affected by the hurricane. In a struggle to provide solutions under the ‘time compression’ of post-Katrina chaos, however, members of the affected communities were rarely involved in the actual processes of developing policies and rebuilding strategies that directly affected them. It is hardly any wonder, then, that Freudenburg (2009) referred to Katrina as the most “anticipated” natural disaster in the U.S. history.

As illustrated in **Chapter 5**, the top-down framework of professional and NGO sector involvement in Katrina had only limited success in the public sphere, in part due to the perception that the scientific argument was abused for political leverage: in the case of USACE, the “scientific” oversight enabled the professional agencies to neglect routine maintenance procedures; and the ULI planners exploited the urban data to bypass democratic procedures, and obviated community participation. Grote contended that professionals hesitate leaving the early design decision-making power to people, because professionals “know better” (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication). John Cary, an American design advocate, contended that professional “fiefdom” can hinder collaboration between professionals and NGOs, which is creating tensions within the architectural profession in the US:

*...we have a whole licensing system that creates a market monopoly that basically says we are the only ones who can do certain things. And I think as long as you say that, you have a responsibility to make those things accessible to people that couldn't otherwise afford them. You're creating a market that increases market value and the cost of services and that kind of thing, and we've not figured out a way to remedy that... (Cary, J., Design Advocate, April 18, 2012, Personal Communication)*

Although the profession is not opposed to having a broader client base, another informant, Manus, the immediate past president of the American Institute of Architects (AIA), explained that members of the profession do not get excited about conversations about what they “should do” (Manus, C., Former President, AIA, April 12, 2012, Personal Communication). On another end of the spectrum, Agnos, the former San Francisco mayor whose background is in social work, went as far as suggesting that professional associations could be “replaced with unions”, so as to shift the prevalent competitive mindset that professionals hold “to undercut each other” (Agnos, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication).

#### **6.2.1.1 Starchitecture in the Lower Ninth - MIRF**

Make It Right Foundation (MIRF) led one of the most visible architectural interventions in New Orleans following Hurricane Katrina, to the credit of its celebrity founder and Hollywood actor, Brad Pitt. Over a hundred pink blocks were laid over the vacant sites of the Lower Ninth Ward as stand-ins for the number of ecologically sustainable homes that Pitt intended to rebuild through MIRF (Feireiss & Pitt, 2009). By leveraging his media clout, Pitt was able to solicit the help of well-known “starchitect” practices from around the world to contribute to the design and construction of innovative and sustainable housing, and chose to focus his efforts on the residents of the Lower Ninth—one of the first area to have been flooded in the storm, and also the poorest residents of New Orleans.

*What, I think, has made Make It Right work is that they took an approach of making the person's life full again. Getting the house is a part of the transaction, but they also do the 'gap financing'... I think it's the whole helping that person holistically... is what you're getting out of that sustaining element. That's where the physical aspect is important. I think it's motivating. What I think it's useful for is that early period. But I think if you're going to stay involved, it has to be much more tied to the community. You need to be helping the community be sustainable long term. (Johnson, L., US Planner, July 12, 2011, Personal Communication)*

The gap financing, in addition to rehousing the Lower Ninth residents ensured that MIRF's beneficiaries were not just receiving duplicate aid but receiving adequate amount of aid where needed. MIRF's philosophy went beyond simple distribution of humanitarian handouts to creating "holistic" and "sustainable" infrastructure to help achieve long term social sustainability.

*(It's) often very unfair to people, because... something will change, for everybody... I think it sets up an unrealistic expectation that you can get back what you had. And I think it also closes the opportunity for betterment. Then, on the other hand, if they go really extreme and draw all these glorious pictures... that's unrealistic, too. (Johnson, L., US Planner, July 12, 2011, Personal Communication)*

For all the positive publicity that MIRF has received, it has also received its fair share of criticism for the very element of its initial success: the "Hollywood" factor. Alexander (2006b) explained that disaster myths are often perpetuated through Hollywood films, but in the case of Katrina, the line between the film reel and the real life had become blurred.

Johnson also contended that the involvement of high-profile agents can be valuable but they can be equally disruptive, depending on the nature and the depth of their involvement. Some persist in recreating the former city, which can debilitate the community because it establishes "unrealistic expectation" that may not be followed through. The "gap financing" helps the community "holistically" in order to mitigate dependency. The outcomes of widely publicized, well-funded initiatives such as the MIRF hammer home the reality that these projects are an inadequate defense against underlying issues of race, culture, and economics that remain unresolved to this day.

#### **6.2.1.2 Activist Community Designers - GCCDS**

*You can't just be all grassroots. You can't just have all alternative systems of practice and alternative kinds of structures. If you want to make a bigger impact, then you kind of have to work at the, work your way up the food chain a little bit, you know, and talk to the people who are working on the basic fundamental decisions before the RFP<sup>50</sup> is even issued for a project.*

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<sup>50</sup>RFP is an acronym for: request for proposal

(Patel, A., President, ADPSR, April 16, 2012, Personal Communication)

Shifting the focus from the traditional protagonist who single-handedly saves the city before the armageddon, as often portrayed in Hollywood movies about disasters, this research also reveals that there are many “emergent” heroes in communities. They are everyday citizens who remain relatively invisible from the media spotlight. Gulf Coast Community Design Studio (GCCDS), an architectural design NGO based in Biloxi, Mississippi, is a case in point. The reality of how GCCDS operate subverts the observations by disaster researchers (Luft, 2011);(D'agostino & Kloby, 2011), who dismissed the impact of post-Katrina grassroots organizations who employ *first generational* approach to humanitarian assistance as marginal.



Figure 6-4: Mike Grote (L) and David Perkes (R) feeling right at home at GCCDS, MS

Both David Perkes and Mike Grote of GCCDS demonstrate an appetite for empowering the local community through a core value they call “design equity”. Perkes argued that “technical progress” in reconstruction is a means to make “social progress” that recognizes the value of setting aside any self-interest in favor of broader community interests. According to Perkes, the design process was synonymous to inclusive decision-making, as well as being a learning tool for all stakeholders, including the designer, the community and the funder. Protecting the interests of the locals also means that the design decisions are made in the best interest of those who will be affected most by those decisions, as well as resisting the inclinations to cut costs and reduce the quality of the project. On the whole, community-based organizations such as GCCDS operate like for-profit private architectural firms, but were able to thrive through the recent economic downturn for having established a strong alignment with the vision of rebuilding the community, whose needs are constant and are therefore less vulnerable to regional, national, and even international economic volatilities. As such, having a community-centered focus does not suggest that the design profession has no influence on broader issues such as societal changes that would otherwise continue to create unsafe neighborhoods and dysfunctional infrastructure.

However, Johnson suggested that design equity only partially addresses more broad, systemic societal challenges that face communities. She proposed that “there's a professional conundrum and ethical

question, but simultaneous to that... what we're doing is, we're lulling our society into a place of complacency and ignorance". A large part of this "complacency", Johnson argued, was a direct result of modern societies having "lost our sense of community at some level, [because] the modern society doesn't feel as much of a interconnectedness or responsibility for the whole" (Johnson, L., US Planner, July 12, 2011, Personal Communication).

*Cultural awareness of risk is missing in modern societies, and puts many communities at greatest risk, by neglecting signs - starting with the building code and the culture of not admitting the 'worst case scenario'... our building codes are not designed to... those higher standards. So, the average building, it would be cost-prohibitive... information is a commodity no matter what. But I think in disasters, that's one of the things we say in the book... ("Clear as Mud") there's two currencies in disasters, one is money and the other is information. (Johnson, L., US Planner, July 12, 2011, Personal Communication)*

Nevertheless, there is also a lot to gain from a community. Johnson surmised that, contextual information discerned from such cultural interactions can be invaluable data that can often be overlooked and is generally not tapped into by aid agencies due to the highly technical focus of activities in disaster recovery situations. Local knowledge is an integral part of a community's social capital that can be leveraged by its own members, which can also be used to negotiate with local authorities and other external powers who may be placing the community priorities second.

### **6.2.2 Strategies of Post-Katrina Citizen Participation**

The informants of the Katrina case study demonstrated that their professional training and experience had equipped them with the necessary tools with which they could approach the multitude of *wicked problems* that accompany post-disaster environments. Many of the social, cultural, political, and environmental challenges that emerged post-Katrina turned out to be pre-existing conditions that need work over multiple generations to be addressed. Disasters tend to amplify the extant characteristics of society through increased media coverage as well as through systemic crisis induced through pressure either from the top (the administrative bottlenecks) or from below (through civil resistance and uprising). From the public perspective, Katrina crippled people through physical and psychological trauma as much as through misinformed rhetoric in media coverage and political mistreatment of the poor. Those who were unable to flee the city under emergency evacuation orders were portrayed as criminals rather than as survivors, and the media spared no empathy in vilifying New Orleans as a savage place (N. Smith, 2006, Brickhouse, 2007 #522, Camp, 2007 #526). And this has come at significant social cost.

The lack of community participation in making future design decisions following urban disasters is symptomatic of unequal distribution of power within the society. In "A Ladder of Citizen Participation" (1969), Arnstein employs a metaphor of the ladder and its rungs to represent the power hierarchy within political and economic processes of society, wherein the degree of citizen participation is a determinant of appropriate distribution of power. Arnstein explained that the concept of "citizen participation" can conceal "the gamut of confusing responses" from the "powers that be", which can, in turn, make many forms of community engagement into "an empty ritual of participation".



Figure 6-5: Habitat for Humanity Musician's Village in the Upper Ninth ward of New Orleans

When reflecting on the post-Katrina responses, projects with higher component of “citizen power” are more likely to be viewed as success due to higher likelihood of follow-through in part due to the sustained momentum among the citizens themselves. For the most part, however, many projects fall under the cluster of “tokenism” and thus had limited success. From the perspective of emergency management scholars, the lack of citizen control in post-disaster context is inevitable, given that the event necessitates an autocratic response in the emergency phase of the disaster recovery. But what this does not acknowledge is that the “first responder” that the US DHS defines does not take into consideration the reality that many *first responders* are ordinary citizens themselves (Tierney, c2007).

*It's not what they asked for and it's not really what they want but they can use it and now make it work but it's because of the designers didn't listen and the designers built what they wanted to build or designed what they wanted to build and they're also building it... (It) still happens to this day that there's this fear that you'll be accused of being ungrateful if you disagree or if you say you don't like something. (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication)*

Disaster victims in survival mode are accustomed to taking anything from anyone who offers support without considering its implications. A case in point is the government's treatment of internally displaced residents of the Gulf Coast. Within the first six-months of Katrina, some 98,000 FEMA trailers were deployed to temporarily house returnees to Gulf Coast, in camp-like conditions rife with violence (Verderber, 2008); the combined effect of the region's humidity and formaldehyde-lined walls of the trailers themselves led to many respiratory problems in its occupants (Shehab et al., 2008; Adams, 2009, p. 527). The FEMA incidence is an example of “nonparticipation” that relegates the level of citizen participation at the authority's mercy (N. Smith, 2006). Communities affected by a disaster can view outsiders with suspicion because outsiders are seen as opportunists who want to advance their own self-interest rather than helping as advocates of the community, and this sentiment is only perpetuated through bad prior experience.

*...it's not an opposition; it's not resistance... they figure that... after a while you'll leave them alone – and that's the way it is – we've done some work in Gulfport where still even after I spend a lot of time over there... still the community just... put up with us... It's a challenge.*  
(Perkes, D., Director, GCCDS, March 29, 2012, Personal Communication)

Participation without distribution of power, and in this case the broken promises from the government agencies and prolonged absence of means to take control of their own lives can leave communities scarred from establishing trust in anyone in authority, professional or otherwise. In light of this, Perkes from GCCDS asked: *“How do you make a practice where equity is one of your main driving forces... What does that practice look like?”* (Perkes, D., Director, GCCDS, March 29, 2012, Personal Communication). Post-disaster politics can tarnish the trust within affected communities, and Perkes discovered that design is an ultimate “equalizer” with potential to empower communities that were struggling to restore their sense of belonging and identity. One community leader has learned that “design gives us choice” (M. Cox, Former City Councilor, Charlottesville, Virginia, March 13, 2012, Personal Communication). However, this sense of equity and empowerment arrives after much hard work.

Indeed, “it is very important that the rhetoric not be confused with intent”, cautioned Arnstein (1969). Blind delegation of power can be counterproductive, whereby citizens are handed the “absolute control” under premature circumstances that can generate the very conditions that communities are advocating against. Similarly, the individuals at GCCDS experienced that while design can empower communities, it can also balkanize small neighborhoods where people do not understand the value of the services that professionals can provide; the opportunities for civic engagement can be hijacked by “loud” “hustlers” who have hidden agendas; and the professional image can be tarnished by coming across to the community as opportunists who are out to “entertain [oneself]”. Community participation in post-disaster recovery goes beyond the public consultation that can leave citizens feeling heard but not listened to, and when done properly and successfully, it can be a considerable feat.

### **6.3 Case Study: Design Equity in Post-quake Christchurch**

The management of civil protection differs across three case study contexts. The way in which they differ can shed deep insights into the local recovery efforts. In the U.S., emergency response to natural disasters remain the responsibility of the local government, wherein the mayoralty has the statutory authority and accountability over the civil military activities within his or her jurisdiction (Col, 2007), and civil protection measures in Haiti are largely governed by MINUSTAH, the multinational military agency led also by the U.S. government (Taft-Morales & Margesson, 2010). By contrast, in New Zealand the “civil defense” remains the responsibility of the central government (Britton, 2007), conducive to a top-down disaster response and reconstruction.

#### **6.3.1 “Munted”: Militaristic Intervention**

*(The) police power role (in Christchurch) has been one of the most aggressive I've ever heard of... the news of it has travelled around the world. You go on the internet and you can see a*



*mini-riot take place, and all the people who were gesticulating were businessmen – they weren't homeless Haitians; they were businessmen who were restricted from going into the town, ostensibly to protect their lives. But there's a balance that may have not been found there.... There's a very strong tendency in disaster management for professionals to take the police power approach – to be the 'Tzar'. (Langenbach, R., U.S. Architect, July 6, 2011, Personal Communication)*

The nature of civil defense operation lends itself to autocratic measures during the national state of emergency period for civil protection, but the extent to which the militaristic approach in Christchurch drove “businessmen” into “mini-riots” took some by surprise. “Munted”, which was an expression often used by the Christchurch City mayor Bob Parker, aptly describes the city’s response to the 2010 earthquake.



Figure 6-6: Becker, Ross (2011) *Eight of these small bolts were all that held up the heavy roof bridging 2 buildings.* [photograph] Retrieved on 16 Aug 2013 from Picasa commons: <https://picasaweb.google.com/114788127440201076357/2011April27IntoTheChristchurchRedZone?noredirect=1#5602376034129673330>  
Copyright 2013 BeckerFraserPhotos. Reprinted with permission.

A range of political tactics employed by the local authorities were described by community members as “[scapegoating]”, “hiding”, “excluding”, and “[not] communicating”, which seemed to reflect the way in which the authorities have managed uncertainties and recurrent aftershocks. Such reactionary tactics, in turn, obstructed the community’s ability to contribute to early design decisions. To make matters worse, professional tensions emerged between the city council’s in-house planners and those who were general practitioners because they held different views on the city’s rebuilding. The local council’s idolization of planning ideas by foreign practitioners, and the mayor’s public endorsement of the nationally appointed “architectural ambassador”, rather than stimulating inspiration, fueled the discontent of communities who felt that decisions were being made “behind closed doors”, and that better ideas could be developed from within. Overall, the interviewees were reluctant to make generalizations on the sectoral approaches to the disaster response in Christchurch, given the lack of professional consensus on the situation. The attitudinal survey formed the basis of discussion on what leadership roles architects demonstrated in Christchurch.

### 6.3.1.1 Central Government and CERA

Without the world media to hold the country's government agencies accountable, progress by the central government's disaster response had been slow.

*(If) you just rely on the politicians... it doesn't really work, because they've got to have some go forward amongst the electorate to actually make some changes themselves. They're followers, not leaders... they don't initiate... unless there's a groundswell for it. (Roberts, C., Director, Social Policy, Salvation Army, February 28, 2012, Personal Communication)*

Roberts characterized the leadership by government agencies as “followers, not leaders”, although they had the statutory ability to override any existing protocols or laws during the state of emergency (CERA, 2012). Brookie (2012) observed that the Canterbury Earthquake Response and Recovery Act (CERR Act), which was instituted shortly after the September quake, awarded its managers with “unlimited” powers to bypass existing national and local policies without any proviso for how they may be executed (Brookie, 2012). The level of power that CERR authorities could exercise was “unprecedented”, which made people uneasy about the possibilities for its abuse. Interview participants echoed this concern, and were unanimous in their view that this was exacerbated by the lack of transparency in the government agency decisions from the public view.

*The public don't know this... it seems to me that the whole purpose of the announcement process to the media has been about communicating how great the government has been making decisions, getting offers out and how no other country in the world would deal with this, you know, and this is unprecedented. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

*...it's not about blame. It's not about saying that this city's leadership is not working hard and desperately wanting to see a good outcome... I think that that's important to be explicit about recognizing incredible hard work that people are doing across the board with the greatest of good intention, but in terms of how effective some of this work is being done, in terms of building meaningful partnerships, there's a long way to go. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

*I always used to think government agencies were about public service, and people were there because they were committed to that goal... I just think that they're... slow and ponderous. (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

While the “good intentions” demonstrated through “meaningful partnerships” and collaborations did not go unacknowledged by its citizens, the role of the government in post-disaster response fell short of public expectations. Early delays in action had stalled to become inactions, risking further stagnation and mistakes that could have been avoided through early intervention. Buck argued that the “slow and ponderous” governance was a product of stagnant progress in disaster management which is predisposed to

disorientation, where “anything [that] goes in there just goes into a whirlpool and it does not have a plug” (V. Buck, Personal Communications, March 5, 2012).

Brookie (2012), also argued that the establishment of CERA only had “the appearance of community engagement but the reality of ministerial control” characterized by a top-down method of communication. CERA appointed some 38 members of local community from diverse cultural, social and economic backgrounds, but collectively they were limited in their influence and capacity to represent the views of the entire city. Lucas, a member of Peterborough community surmised that “you’d probably get muzzled... You’re at a table with 38 people and I don’t know how much say you’d get” (Lucas, D., Landscape Architect, February 22, 2012, Personal Communication). Moreover, when the government began receiving criticism from the public about the role they played in disaster management, some of the criticism was deflected on to the professionals that the government agencies engaged, because it was their technical expertise that government agencies had based their decisions. But Potangaroa observed that in rare cases the professionals themselves can engage in unethical practice as well.

*I’ve never seen in all the time in New Zealand having to... check fourteen meters down with a bore for a house! You know, a single story house! And they were drilling each one fourteen meters down and then charging for it! It’s just obscene... That’s just immoral... (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

Paranoia over the stability of land following the discovery of liquified land below the Canterbury Plains had Christchurch residents going to some extreme lengths to assess the integrity of the subsoil conditions on which their houses sat. Potangaroa called out on some of the “immoral” practices of geotechnical engineering firms who appeared to be taking advantage of the vulnerable population, rather than trying to help them and applying their expertise to address the larger environmental problems.

Such instance of post-disaster “gouging” aside, a larger controversy in Christchurch post-disaster recovery centered on the system of tagging<sup>51</sup>, which was intended to evaluate the safety of buildings following a major earthquake. The February 2011 earthquake sparked a tension in the onlookers as well as amongst the inspectors themselves, because one of the two buildings where majority of casualties occurred in the February quake was found to have been improperly tagged, meaning that it was already structurally unsafe for occupation at the time of the second earthquake.

*The trouble is that they’ve used different colors for different meanings, so a lot of people think that the land in the red zone is unsafe, but it’s not. It’s that it’s uneconomic to repair. So there are challenging issues and most of it is to do with communication. Very poor communication. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

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<sup>51</sup>The colored tagging system was first introduced in San Francisco following the Loma Prieta earthquake of 1989 shortly after the document, “Procedures for Postearthquake Safety Evaluation of Buildings” (ATC-20) was used for rapid assessment of buildings damaged in earthquakes (Cocke & Bonneville, 1992). The implementation of tagging was inconsistent due to varying standards of assessment used by structural engineers, USAR members, and building inspectors, according to Potangaroa.

*(The tagging) means crap. It means somebody might have put their head inside of a building. It doesn't mean that they've been inside all the rooms. It doesn't mean there's been any real engineering assessment and it doesn't mean that the person who looked inside the room knew anything about it, nor do they check on historical records. We've seen it over and over again. (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

Moreover, the Royal Commission hearings revealed that experts from GNS Science, the government agency on earthquake research, had held back predictions for the February quake for the fear of “traumatizing the public” (APNZ, 2011a).

*...the poor performance of buildings and the way engineers have handled it ...meant that the politicians and the community in general, I suspect, are extremely skeptical about professionals. (You) can get whatever answer you want depending on which professional you hire and I think that's the government's attitude now and to some extent was the government's attitude before the earthquake but... it seems to have been reinforced by that. Which is why so few of the disaster community that can really help have actually been engaged to do any work down there. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

However, Glavovic maintained that the work by the government agencies were not all bad. “It's really dangerous to make sweeping generalizations... it's not a static situation” (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication). Indeed, disaster scholars (Stallings, 1995; D. E. Alexander, 2006b; Scanlon, 2007) concede that some of the negative views and “paranoia” about disasters are fabricated by the media, which reflects the prevalence of largely unscientific, populist views and sensationalist footages designed to ramp up viewership and corporate profitability.

But irrespective of the position that disaster agents take, reluctance to acknowledge the social, cultural, political, and environmental problems preceding disasters, and arguing every context is “always a little different” can be problematic. The authoritative, top-down position of the central government has demonstrated that any extreme position, however well reasoned, can overlook the opportunity for addressing the *wicked problems* of dealing with disasters. A disengaged, isolationist approach of government agency can lead to equally disastrous outcome as the pre-emptive strategy often acted out by Hollywoodified post-apocalyptic humanitarian heroes.

### **6.3.1.2 Local Government and CERA**

Under CERA, which came into effect on May 1st, 2011, the Christchurch City Council (CCC) effectively forfeited their lead on emergency recovery to CERA, which is the central government agency (Brookie, 2012). Instead, the CCC turned its focus on the long-term recovery planning and reconstruction of the central city. The main criticism of CCC remains its tunnel vision focus on the CBD to the detriment of outlying parts of the city, including the Eastern suburbs which suffered the most damage. Dalziel contended that CCC could be doing a lot more.

*That's all the legislation tells them that they're supposed to be leading on, but it actually isn't the only thing they should be doing. And they need to actually take ownership of the whole city, which they actually are entitled to do under the legislation in my view and they need to lead the way, but we're just not getting any leadership from anyone so it is a serious problem that we have and so legislation is part of the problem, the government control of CERA is part of the problem, the Christchurch City Council incompetence is part of the problem and in the middle are the people who feel that no one really cares about them at all. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

Siloed operations of both the CCC and CERA were detrimental for both in Dalziel's view. CCC relied on the government agencies for leadership, and while the latter "replaced an independent body with no power" Dalziel explained that they were merely a straw man agency, "a powerful body without independence" (Dalziel, 2011). Government agencies at both local and national level, by deferring leadership responsibilities to each other, had missed out on opportunities to engage the constituencies whose interests they are instituted to protect.

*...policy in New Zealand is one that does require engagement because... otherwise you continue to provide services at a service level... if policy is going to change, then you've got to build a base for that politically... no responsible investor is going to put money in on the basis of government policy only to find in two years time the policy doesn't exist and they've invested in something that's not going to work now. (Roberts, C., Director, Social Policy, Salvation Army, February 28, 2012, Personal Communication)*

Roberts was troubled that people within the CCC who have "never got anything built" are deciding how to rebuild a whole city. Moreover, the "service-level" mindset of three-year term cycles for government agencies can promote short-term and populist agendas that compete with policy decisions for sustainable reconstruction, which may be a minimum of 10 up to a 100-year process. Amendments to the CDEM Act (2002) enacted in March 2012 introduced some changes that prevent automatic discharge of the CDEM Groups—which include local representatives and councilors, as to "[remove] the need for all member local authorities to pass resolutions prior to triennial elections" (CDEM, 2012). These amendments served to lessen the pressure of making premature design decisions in a limited election cycle by separating the matters of emergency from the social, economic and political agendas (Brookie, 2012). Considering the CER Act passed the select committee process in less than 24-hours, the privileges of CERA—and CCC by extension—remain "frightening" despite its promises.

### **6.3.2 Tactics: Disrupting Power Through Community Response**

*(Planning) at the kind of metropolitan scale is important... but fundamentally, planning in your community before, during, and after an event, and working with your community is a way in which local architects, local planners can be engaged and are being engaged now in a number of localities and in a number of situations aren't being engaged and are frustrated at not having*

*the opportunity to be able to give effect. Some of that is a product of the fact that there are many places that are characterized as sprawling, you know, non-communities, rather than geographically identifiable communities. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

Christchurch earthquake became a catalyst for galvanizing communities, and the overall improvement in social resilience has been a valuable outcome of the disaster. Following the earthquake, leadership issues of who is in charge became more pertinent in Christchurch as anxiety grew in an environment lacking certainty. Carr (2011) observed that the most common style of disaster management adopted by most organizations was business as usual, but Carr opined that that “business as usual is unusual”. Access and availability to resources determined the level of community resilience, which in turn depended on reciprocation of action because many are “resistant to change” and adapting to new ways of looking at the situation. A broader discovery in the absence of unified recovery efforts across Christchurch was the need to “disaggregate down” the recovery efforts in urban settings with disparate needs and circumstances. Avoiding the one-size-fits-all approach that can end in a disaster in itself, localized response to local needs can best draw from the rich diversity of communities, making it possible to foster community-based mentorship and entrepreneurship, and further increase ability to take on risks that government agencies cannot alone shoulder.

*(The) good things are stronger sense of community. I have seen people step up to the plate that I would never kind of guessed... that's been a great part of the story to see people emerge as having all these leadership characteristics in the communities... people quite often find their own answers too, because they're sharing information with each other in a much more direct way than they were before... Trusted relationships define a community more than just about anything else... co-location of houses doesn't make a community... that's the suburb. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

*...the rules of engagement have changed. Sometimes roles can be an impediment. My belief is that each one of us is immensely powerful. Sometimes we just don't realize just how powerful. I don't think you need title, government agency... There's a lovely quote from the woman who founded Body Shop – Anita Roddick, which goes something like: “if you think you're too small to have an impact, try going to bed with a mosquito”. (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

The “[emergent] community leaders” in neighborhoods have been a critical component of emergency response, as has been self-reliant elements of communities “[finding] their own answers” and “sharing information” to mobilize towards a “stronger sense of community”. The following examples demonstrate that successful community development, collective response, and empowerment are a product of trust.

### **6.3.2.1 Suburban Community Response**

Even though the earthquakes affected everyone in Christchurch, the extent of physical damage was widely discrepant at suburban level. Some neighborhoods, particularly those on the inland to the west of the CBD

survived the disaster relatively unscathed, while the CBD, the Port Hills area to the south, and the Eastern suburbs bore the brunt of the damage. Potangaroa, who had observed many natural disasters in his 30-year career, drew a parallel between the social impact in the worst affected areas with pre-existing hardship.

*Earthquakes aren't equal opportunity employers. They pick who they are going to hurt, and when they hit, it's the most vulnerable, and in this case it was the Māori and Polynesian community in the Eastern suburbs... Although looking at it now you've got to say that a lot of the middle class families must also be as badly hurt. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

Indeed, the “three different worlds” of the east, the west, and the center are further polarized by the social, cultural, economic, political, and environmental disparities that preexisted the disaster: environmentally, the different subsoil conditions affected by earthquake forces created weak pockets prone to liquefaction (IPENZ, 2011); politically, the age of buildings and accompanying materials and structures affecting the ability to carry earthquake forces (BRANZ, 2009); economically, the community assets and their inherent resilience differed according to socio-economic lines (Potangaroa & Kipa, 2011); socially, the ATC sticker system led to stigmatizing those who inhabited in neighborhoods with red stickers (Bond & Moricz, 2012) because they were seen as uninhabitable and were thought to be candidates for eviction at short notice. Such vast disparities in emergency management between suburbs made citywide recovery strategy difficult. The disaster had polarized parts of Christchurch, but it also served as a catalyst for uniting certain communities.

*Sumner and Lyttelton... two communities which were strongly affected, but before the earthquake had a relatively balanced community in a geographical position of which was understood by the people that lived there... so the community is balanced, and before the earthquake it was a community which could identify themselves at the face, and its really interesting to see those two communities are getting on with their lives relatively quickly. (Athfield, I., NZ Architect, February 10, 2012, Personal Communication)*

In the case of the suburbs in the Port Hills, Sumner, and Lyttelton, they exhibited a strong sense of local identity, solidarity, but perhaps most importantly, economic resources which enabled them to bounce back more quickly compared to those in suburbs which were more impoverished.

*One of the things that any disaster shows is that the power of the community is incredibly diffuse. Like, if you were in the suburbs, and you didn't see anybody for three or four days, from any of the authorities – the Red Cross or the St John's or something – you just had to survive. So you had to know your neighbors; you had to check on your neighbors, and do all of those things. It's actually a really powerful thing. (Buck, V., Former Mayor, Christchurch, March 5, 2012, Personal Communication)*

Disaster scholars acknowledge that communities with strong networks affect the ability of individuals to

activate informal ties following disasters (Hurlbert, Haines, & Beggs, 2000), as had been demonstrated in New Orleans after Hurricane Katrina (Aldrich & Crook, 2008), where “higher levels of social capital facilitate recovery and help survivors coordinate for more effective reconstruction” (Aldrich, 2012). Knowing one’s neighbors, Aldrich argued, exceeded the benefits of governmental support and economic resources. Conversely, the government’s decision to “red zone” entire suburbs increased the likelihood of communities being displaced and made them less resilient.

### 6.3.2.2 The Māori Recovery Network

The media coverage of post-disaster recovery in Christchurch has been flooded by a litany of local politics struggling for power, contentious handling of the disaster by central government, and recurrent aftershocks yielding a parody of Mayor Bob Parker’s reaction: “munted” (R. Brown, 2011), but the disaster also gave rise to non-governmental bottom-up community initiatives via social entrepreneurs, community leaders and non-profit organizations. In the two months following the February quake, the NZ Landcare Research center documented 92 new community-based activities in Christchurch with web presence geared toward earthquake response (Fitt, 2011). Some of the celebrated efforts by community sector include the University of Canterbury Student Volunteer Army (UC SVA), Canterbury Community Earthquake Recovery Network (CanCERN), and the Māori Recovery Network (MRN).



Figure 6-7: Becker, Ross (2010) Police & soldiers keep a keen eye on abandoned properties. [photograph] Retrieved on 17 Aug 2013 from Picasa commons: <https://picasaweb.google.com/114788127440201076357/2010SeptemberCanterburyEarthquake?noredirect=1#5516304344900941202>  
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The Māoris in the Eastern suburbs of Christchurch mobilized independently from the operations of CDEM in the immediate aftermath of the February earthquake, having experienced communication challenges with local agencies following the September earthquake. The Māori Recovery Network (MRN) was set up to support both Māoris and non-Māoris by monitoring the needs and centralizing communication between the government agencies and affected communities with high concentration of Māori population in Christchurch, which was also located among the worst affected suburbs.

*[It's] about advocating for the weakest, for the poorest, for the ugliest, for the least likely to earn some bread. And sometimes when you're working with that...You're working from the*



*bottom of the barrel. People don't want to work with these people because they've tried to and [it's] too hard. For us, that's our bread and butter...it's about: "we know you; we probably know your uncles and aunties, and we're interested in how they are and you and we're interested in how the rest of your whānau [family] is working and how we can get in there and help support that"... the experience of the health workers/nurses perhaps underlines that there will be sections of the community that disaster professionals seek to assist but may not be able to because of ..."the gap" (Potangaroa & Kipa, 2011).*

At the core of the MRN operations was the Māori Wardens Association, the group of voluntary mediators in the Māori community set up under the 1945 Act of Parliament to facilitate communication with the local ethnic community. Despite the voluntary aspect of the group, the Wardens “represent formal agents of social control whose authority is conferred and legitimated by the power of the State” (Fleras, 1981), given that the group’s operational powers resemble the Police. The Wardens operate on principles of “rangimarie” (peace), “aroha” (compassion), and “korero” (persuasion). This set the Wardens apart from other disaster management approaches by being more community-based and accessible. The Wardens engaged in daily door-knocking exercise on each affected household, while serving as a conduit to the government agencies to communicate the community’s progress and needs (Potangaroa & Kipa, 2011). This case exemplifies how traditional wisdom, and strong cultural identity, coupled with sensible approaches to both community-based outreach and top-down communication can ensure communities can work through and respond to natural disasters.

*(The) public sector has been colonized by business for years and then they try to colonize the thinking of the community sector and you can tell a colonized group when it defines itself by its problems or by what it's not. Right? That's one of the definitions of a public colonized group. (V. Hutchinson, Personal Communications, April 20, 2011; (Hutchinson, 2011))*

Vivian Hutchinson, a social entrepreneur, argued that the public sector has been relegated to the “third sector”, and defines themselves by what they are not: non-governmental. But he also noted that community driven activities in Christchurch post-disaster defy the common perception of non-governmental organizations.

*(We) are under no illusion that one can transform the thinking through creativity alone, but it can be used as supporting structures for broken communities. It won't be businesses and central government that builds back Christchurch, but social entrepreneurs and local residents. (V. Hutchinson, Personal Communications, April 20, 2011; (Hutchinson, 2011))*

CanCERN is another such example. The group resists to be seen as a “lobby group” as its motivations are not adversarial to the government agencies, and seeks instead to operate in partnership with authorities (CanCERN, 2011). CanCERN utilizes a model for citizen engagement based on Arnstein’s ladder of citizen participation, reframing the hermeneutics from the perspective of citizens, rather than that of the authority. CanCERN’s engagement ladder describes the active participation through “leading”, “owning”, and

“contributing” as leading to more “responsible”, “engaged”, and “empowered”, while passive observation through “endorsing”, “following”, and “observing” as resulting in passive or apathetic outcomes characterized by “tokenistic consultation”, and “disengaged” and “disempowered” communities. In the original framework, Arnstein (1969) explains that citizen participation can be seen from varying degrees of perceived and actual power, but the semantic used in the rungs of the ladder in Arnstein’s model emphasizes disempowered hierarchy rather than empowerment. The semantic tone of community engagement is value-laden in that it leads the outcome which it espouses, which can equally seem self-fulfilling.

Table 6-3: Ladder of Community Engagement in Christchurch

<b>Arnstein (1969)</b>	<b>Impact</b>	<b>CanCERN (2011)</b>	<b>Impact</b>
Citizen Control	Citizen Power	Leading	Active
Delegated Power		Owning	
Partnership		Contributing	
Placation	Tokenism	Endorsing	Passive
Consultation		Following	
Informing		Observing	
Therapy	Nonparticipation		
Manipulation			

The national state of emergency was declared<sup>52</sup> for the first time in the history of New Zealand following the February 2011 earthquake. Trotter argued that the decentralized governance and “unclear leadership” between the “three bosses: one elected, one appointed, and one imposed” (Trotter, 2011), left the residents of Christchurch dismayed, but a number of informants also suggested that such crisis also precipitated in communities stepping up to fill this leadership gap. Not surprisingly, such improvised community leadership phenomenon is a core component of disaster recovery in disaster management literature (Potangaroa & Kipa, 2011; Kendra & Wachtendorf, 2007; Drabek, 2007).

*In a disaster people get away with more decentralized decision making because if people understand the urgency... or just the need to act... My dream is just to help people realize the possibilities around what can be done with a few people who are keen to make something happen. If more community groups could just get together and just start building stuff that they need without the 10 levels of oversight that stifle any action. (Bishop, T., Social Entrepreneur, February 11, 2012, Personal Communication)*

The apparent success of community sector, however, does not preclude the need to engage businesses and government agencies in the private and public sectors that still play essential roles in midwifing the reconstruction processes. Individuals argued that decentralization of responsibilities and ownership of post-disaster activities would have limited success without having citizens participate at all levels of future design

<sup>52</sup>The national state of emergency suspended “business as usual” from February 23 until April 30, 2011, until CERA took over the disaster management role from CDEM (Radio New Zealand, 2011).

decision-making. But this was difficult particularly since the extent to which communities engage in the consultation process depended on, at the very least, the perception of *equity*.

*(When) I ask people to come I say it's just a community initiative and people did respond and they would have reacted differently if it had been an official thing and I think some of the experts wouldn't have been so frank and humble and communicative with the community if it had been an official thing rather than a bottom up thing. (Lucas, D., Landscape Architect, February 22, 2012, Personal Communication)*

*They need to work together in a way that is complementary – the private sector will only get involved if there is some profit, the public sector must be able to meet the costs of capital and infrastructure, and ultimately there needs to be an overall approach, from where the strategies can be developed and met by the different sectors collectively. (Roberts, C., Director, Social Policy, Salvation Army, February 28, 2012, Personal Communication)*

Tokenism is an anathema to community engagement in disasters, and while no sector has all the solutions to *wicked* disaster problems, deficiencies in the system can quickly polarize sectors instead of bringing them together. An institutional focal point such as CERA is a double-edge sword: while it is mandated to galvanize the sectors through efficiency and timelines, its inefficiencies can exclude the vulnerable and at-risk communities that it is intended to serve, but it can also inspire those very community members to rise up to the leadership challenges.

## 6.4 Chapter Summary

Reconstruction of urban cities necessarily involves politics. In response to the central research question, “*How can the Rittelian framework contribute to the critical design decisions in modern urban disasters?*”, this chapter evaluated the extent to which disaster professionals, including architects, negotiate the power structure of government agencies in crisis-mode to move towards “design equity”. This chapter investigated processes by which different disaster agencies and stakeholders of urban disasters co-exist.

Firstly, it found that in the event of a disaster, government agencies solicit the help of professionals who can supply policy makers with on-demand technical knowledge on which to base urgent decisions, but the inherent subservience of professionals to governing agencies can further polarize the stakeholder interests. As per Arnstein’s theory on citizen power, even professionals can become disempowered in their interactions with local authorities, and such “tokenistic” consultation can limit the extent to which the technical knowledge influences policy decisions. While this is not to suggest that such practices are rampant in urban disasters nor to except the possibility that professionals carry no political agendas of their own, but it serves to illustrate some of the challenges that professionals are presented with at the face of disaster politics. As for the architectural expertise, the designer’s skills and knowledge need to be evaluated against the existing social and contextual circumstances, as an application of untested model in a stressed environment can exacerbate rather than alleviate challenges in disaster zones. Taken to extremes, when professional knowledge is politically instituted without public support, the credibility of the profession is

threatened because its skills are seen to be an instrument of political agendas of those in a position to exercise them.

In evaluating the nature of leadership that architects demonstrated across the three sites, the central role of government agencies could not be ignored, even though it was suggested that too much politics can sometimes be counterproductive to the goals of risk promotion (Stallings, 2003). The Haiti case was an exception, where due to the national government's historical instability and unregulated environment made the involvement of professional agencies, including architects, pivotal. It also found that efforts by humanitarian agencies to improve communication and to better coordinate the efforts of multiple agencies were still no replacements for improvisation by many professionals in the field; in the US, proponents of Public Interest Design practice were torn between the need to instigate policy change and the need to become more politically oriented in practice. Activities of GCCDS following the 2005 Hurricane Katrina illustrated that both are possible. GCCDS stepped outside of their professional role as designers by brokering a relationship with funding agencies. In doing so, GCCDS successfully tested alternative means for funding both public and private building project all the while without compromising their own values and those of their clients.

However, the militaristic intervention in response to the Christchurch earthquake demonstrated that technical expertise can also be bought for political gain, rather than to educate and inform the public. In a climate of urgency and distress, the trust of professionals is easily gained but it is just as easily lost when their performance falls short of expectations. But in all three case sites, the lack of confidence in professionals and governing bodies catalyzed communities to become empowered, resilient, and resourceful.

This empirical research suggests that neither the top-down approach nor a bottom-up movement offers a panacea for complex inter-cultural and multinational spatial geographies observed in urban disasters. Evaluation of the roles taken up by the architectural profession in such contexts reinforces a need to suspend judgment on ideological differences and instead to embrace the common values of humanity embedded in each culture. Participation of disaster victims in rebuilding projects remains a major challenge in disaster recovery as well as in architectural practice situated within this contested domain, because community engagement is a resource-intensive activity, both monetarily and in terms of time—the two resources that all post-disaster nations already lack and need most. While there is a considerable difference in the outcome of the two approaches, the engagement process on the surface is hardly distinct from one another and the results typically do not materialize for many years down the track, posing challenges for all post-disaster stakeholders.

A Latin adage, *nihil de nobis, sine nobis*, which translates to, “nothing about us, without us, is for us” often emerges as slogans in post-disaster community organizations to reinforce an understanding that empowerment is obtained not by having problems solved by others on their behalf, but by being supported to tackle many of the challenges themselves. Interview participants, Johnson, Potangaroa, Agnos, and Manus, all argued that when it comes to leadership, an adaptive one that is responsive to the needs of the community and also the needs of the time are essential in disaster recovery, where both management style leadership and inspirational leadership have a role in dealing with the physical chaos afoot and the ability to

mobilize the resilience that is largely dormant within affected communities.

Solving problems according to the values of the communities, which may not necessarily be the values of the profession or that of an individual, is an ethical consideration for professionals engaged in disaster recovery projects, and also an opportunity to challenge the existing mores of professional practice. Design is an equalizer that has the potential to re-empower communities struggling to restore their sense of belonging and identity. As in the words of John Ruskin, work of good architect is, “not a question of how much we are to do, but of how it is to be done; it is not a question of doing more, but of doing better” (Ruskin, 1998, p. 44).

# 7. Design Thinking in the 21st Century

## 7.0 Overview of Theoretical Position: Design Thinking in the 21<sup>st</sup> Century

Official first responders of disasters attend to urgent civil emergency services and activities that have direct implication on human lives, although Tierney (2007) argued that many disaster management literature fail to acknowledge the “ordinary citizens” as the key agents of humanitarian assistance. While disaster is hardly an ordinary event by any means, earlier discussion in **Chapter 5** established how, given the choice, many people desire to return to the pre-disaster conditions. What this reinforces is the critical role of reconstruction and the need for design decisions around rebuilding to begin as early in the recovery phase as possible.

The role of architects and more broadly architecture in post-disaster environment remains a contentious issue for architectural researchers. Sanderson (2010) argued that architects are considered the last responders of disasters, because their “traditional role” is as “designers of buildings in places of relative certainty” rather than as “facilitators of building processes that involve people in places of uncertainty and change” (Sanderson, 2010). Indeed, other building professionals such as engineers and planners have, at least in the U.S. and NZ, established a professional role and influence in the wider democratic decision-making process in the early stages of disaster by being part of the civil defense response and mitigation efforts. Engineers often lead the post-disaster reconnaissance work alongside other official first responders such as Urban Search and Rescue (USAR) workers and the local military personnel to assess the extent of initial disaster damage; planners consult with government agencies early on to help direct the strategic policy decisions. Although **Chapter 6** illustrates some exceptions where architects responded in a similar capacity to other building professionals in demonstrating post-disaster leadership, the lack of wider professional engagement in disaster recovery process, as Sanderson pointed out, suggests the general acceptance of the role of architects as the last responder. Yet contrary to this view, Boano, Lamarca, Hunter, Leclair-Paquet, and Wade (2010) contended that “architecture has significant power to reconstruct social networks, raise solidarity, empower communities and encourage partnerships”, and deeming architects as preoccupied with building as a product rather than the process of community engagement oversimplifies architecture. Popularization of the concept of “design thinking” in wider disciplines in recent years has created opportunities for professionals to be more active and environmentally aware.

In this chapter, the concept of “Design Thinking”<sup>53</sup> is evaluated to further understand, on the one hand, the adaptive challenges that face the architectural designers who engage in disaster architectural activities, but also the future direction of the architects that this empirical research suggests. Boano et al. called for “a total shift of the ‘professional’ approach, towards one of critical anthropocentric post-disaster practice”, which is to suggest that Sanderson’s conception of architects as the last responders is merely symptomatic of the “results-based model that demands deliverables” that has thus far dominated the humanitarian sector.

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<sup>53</sup>The concept of “design thinking”, which was coined by Peter Rowe in 1987, “meant reflection on the ‘situational logic and the decision making process of designers” (Protzen, 2010, p. 2). Protzen suggested that the concept had since evolved and spread virally across multiple disciplines, but its current usage no longer reflected its original meaning.

### 7.0.1 Framing the Research Questions

A key test of how the interview participants each perceived the extent of architect’s role in urban disasters centered on their responses to a variation of these two independent case-specific questions: “How accessible are architectural services to local communities in need?” and, “How does the local professional community facilitate or engage in this process?”

Both questions are similar on the grounds that, when initially designed, implied that the level of access to, and engagement with, architectural services rested upon the professional, who may control, manage, and even dictate the process. The questions also rested on the assumption that communities for whom such services are rendered were unconditionally receptive to such expressions of good will. However, the empirical study revealed that design service was a medium of exchange between one party and another, and that it depended on a reciprocal willingness of both the architectural designer and the design client to engage with each other. By reframing the question in terms of how the local community groups perceive architectural services rendered in post-disaster situations, it has been possible to consider whether or not the design services achieve the intended outcome proposed and agreed upon by both the professionals and the beneficiaries. The table below illustrates the similarities between the communication principles of design and the patterns of communication as observed in successful<sup>54</sup> reconstruction projects. It reinforces the notion that there is hardly any difference between good communication principles of traditional architectural practice and disaster architectural practice.

Table 7-1: Design Communication Principles

	Design Communication (in Disasters)	Design Stages (in Non-Disasters)
<b>Stage 1</b>	Building trust (through conversation)	Community engagement
<b>Stage 2</b>	Finding common ground (through dialogue, using logic)	Brief development
<b>Stage 3</b>	Developing a shared understanding	Schematic design
<b>Stage 4</b>	Creative breakthrough <sup>55</sup> - creation of uncommon understanding	Design development

SOURCE: (Nelson & Stolterman, c2003)

What also emerged from the empirical study is that, while many architects lead community-visioning activities, these architects rarely dominate the process. Such architects would argue that collective design decision-making is vital for instilling a sense of ownership and responsibility in community participants because these same individuals will ultimately inherit and maintain the projects.

Some 651 references were collated under the theme of design thinking, from 46 interview participants. From the top 3 sub themes, some 55 percent (355 references) of the conversations centered on the notion of the role of the architect; 25 percent (160 references) of the conversations centered on adaptive challenges; and

<sup>54</sup>Although, by success, the research is referring to a specific and perhaps specialized architectural practices. Architectural organizations operating in post-disaster settings serve a myriad of roles in disaster response, but take specific approaches to community engagement depending on the objectives and mandates of the organization. Some prioritize community empowerment through engagement processes while others focus on the outcomes (such as the number of beneficiaries and buildings)

<sup>55</sup> Nelson and Stolterman also described it as “diatomic graphologue” which in Greek means, *dia-themo*: to show through or let a thing be seen through; and *grapho*: image (Durkheim, 1992)

the remaining 13 percent (82 references) dealt with the paradigm shift within the space of social disaster architecture. Aggregating the responses across the four case study categories did not return significant variance in results as the previous theme in **Chapter 6** did.

Qualitatively speaking, the conversations that populate the theme of *design thinking* served as useful discussion points for evaluating the extent of transformational thinking that the Rittelian framework enabled within a field that is widely researched across many disciplines.

Table 7-2: Quantitative Coding Analysis of "Design Thinking"

Key Theme	Key concepts from data	Source	Aggregated Reference	Matrix Framework				Mean Ref Values											
				CH	GL	HT	KA	CH	GL	HT	KA								
Design Thinking		46	651																
	Node		Source	Reference															
	Adaptive Challenges		37	160															
	Child nodes		Source	Ref															
	Decision making		10	27															
	Education		24	55															
	Grand child nodes		Source	Ref															
	Democratic design			1	1														
	Generational Difference			6	14														
	Innovation			22	40														
	Child nodes		Source	Ref															
	Ego			7	10														
	Problem Solving			10	14														
	Wicked Problem			22	40														
	Node		Source	Reference															
	Roles of the Architect		43	355															
	Child nodes		Source	Ref															
	Professionalism			16	34														
	Responsibility			20	32														
	Alternative roles			25	100														
Virtues			32	94															
Grand child nodes		Source	Ref																
Empathy			3	4															
Passion			2	3															
Patience			1	1															
Teamwork			15	29															
Transparency			5	7															
Trust			12	14															
Truth			5	7															
Vision			9	27															
Node		Source	Reference																
Paradigm Shift		31	82																
Child nodes		Source	Ref																
Architecture of empowerment			16	23															
Motivation			24	39															
Pro bono			10	20															

### 7.0.2 Empowering Architecture: Moving from Consumption to Production

*An ultimate consumer is somebody who can produce nothing, or a neighborhood that produces nothing... By "citizen" I mean somebody who is powerful – the consumer is not powerful, the consumer is dependent. The client is not powerful, the client is dependent. The citizen is the opposite of a consumer. The citizen has a vision and can power the producer.*  
 (McKnight, J., *Social Entrepreneur*, March 28, 2011, Personal Communication)

Community engagement is a necessary link between the local community and the government agencies whose strategic role is to guard the interests of the former. Rawls (1971), an American philosopher, contended that social and economic inequalities may be tolerated if professionals serve the least advantaged members of society and if professionals reach their social status under equal opportunity, but John McKnight, a Co-Director of Asset-Based Community Development (ABCD) Institute in the U.S., implied that this is not possible.<sup>56</sup> Professionals, by their virtue, are “producers” whose operations depend on the

<sup>56</sup>Nevertheless, McKnight asserted that one area in which the consumer economy has not yet taken over is the “associational life”, which he defined as a group of people “who come together by choice and mostly without pay because of a common interest”(John



relegation of communities to “consume”. In parts of the U.S., the Good Samaritan legislation exempts architects and engineers from lawsuits on pro bono services undertaken in good-will during the state of emergency period of a disaster (Scheneidawind, 2011). In McKnight’s description about urban citizens being in limbo between a helpless state of “consumption” and an empowered state of “production”, he paints a picture of post-industrial American society as an unhealthy one that privileges consumerism over production and self-reliance.

Spector (2001) asked, “from what does ‘professional conscience’ derive, if not from the commitment to serve and protect the public as it wishes to be served and protected?”, calling on architects to become more conscious of Rawlian morality. Professionals are producers by virtue of communities depending on their services as a commodity, but the chain of dependency ensures that this link does not break. By contrast, a citizen is an ultimate producer, who consumes nothing by virtue of having inexhaustible resources to dispose of in community interest, in what McKnight calls “associational life”. In humanitarian disasters, it is in the best interest of architects to be citizens, or “citizen architects”.

*Mega cities, which reach between 20 to 30 million... how they can be called to ransom by someone who says we are going to provide you with food? In that 20 million there is no-one actually producing food... So those cities become quite vulnerable in the future. (Athfield, I., NZ Architect, February 10, 2012, Personal Communication)*

If we extend Athfield’s logic about cities in McKnight’s terms, a city is an “ultimate consumer” that “produces nothing” and its vulnerability is a direct result of its lack of resilience and ability to be self-sufficient.

### **7.0.3 Paradigm Shift – Strategies for Wicked Problems**

Disasters often displace communities from their habitat, and what results from any major natural disaster—hurricanes, earthquakes, floods, fires—is a mass destruction of habitat which needs to be rebuilt and restored in order to rehabilitate its former residents. What follows in many cases is a mass reconstruction projects instigated by government agencies (and, in some instances, with the support of NGOs and occasionally, the corporates). Unfortunately many of these projects run into similar challenges as seen in the low-cost government housing projects (Davidson et al., 2007, p. 101). Mass produced and prefabricated shelters often associated with disaster reconstruction are abhorred by some architects, who have long held prejudice against the concept of prefabrication, due to “the erroneous view that fabrication implies standard and mass production, with no space for individual choice” (Colin Davies, 2005, as cited in Jenkins & Forsyth, 2010, p. 75). Significant failure rates for reconstruction strategies that exclude the end-users in the reconstruction calls for a participatory design process where the architect cannot act as a sole agent in determining the outcome of the building project (Davidson et al., 2007, p. 102). But the economic constraints of post-disaster reconstruction, coupled with the need to integrate community input in the reconstruction process make this especially challenging *wicked problem* for any architect.

Like any conventional architectural practice, the way in which many government agencies undertake post-disaster reconstruction seldom engages the users in the process. In **Chapter 6** we have seen that many disaster reconstruction projects that are kick-started by government agencies seldom offer opportunities for its beneficiaries to participate in the process, yet the responsibility for the actual construction and maintenance were left in the hands of the beneficiaries. There is a need to establish a balance between short-term goals and long-term outcomes, but enforcing universal, one-size-fits-all design standards seem inappropriate given the divergent social, political and cultural contexts of each situation. Nevertheless, there is no shortage of disaster researchers that attempt to establish a set of principles that can be used as a guideline (Haas, Kates, & Bowden, 1977);(Kreps & Drabek, 1996);(D. Alexander, 2005);(Potangaroa, 2006),(Davidson et al., 2007);(Drabek, c2007);(Rodriguez et al., c2007);(Kayser, Wind, & Shankar, 2008). The *wicked problems* approach offers a possible reprieve by offering an evaluative framework for how such principles play out.

While major progress has been made in recent years in the U.S. with the AIA leading the charge with Good Samaritan statute, the citizen architects movement, and more recently establishing a strategic partnership with AFH to help train professionals in disaster recovery, professional institutes are generally risk-averse to uncertain situations and distance themselves from those who can make the organization liable. Architects engaged in humanitarian endeavors often work closely with local communities in innovative ways to achieve a high level of local satisfaction, but are seldom acknowledged publicly as their results are nullified by negative implications of more visible, large-scale, quick-fix solutions that Sinclair (2010) amicably refers to as the “microwave architecture” that create future slums and ghettos. These designs, when implemented in life beyond prototypes, leave humanitarian designers with negative public image. Without the appropriate expertise, architectural services can quickly be rendered as contemporary imperialism masquerading as socially conscious responses to the environment. Thus it can sometimes be unethical for architects (but also planners and engineers) not to be involved early on in the disaster response.

An understanding of professional vulnerability in post-disaster practice, as well as the extent to which architects can contribute at community level remains an area where professional institutions can play a key role, by encouraging relevant training and providing professional support to their members.

## 7.1 Case Study: Future of Haiti

### 7.1.1 Adaptive Challenges for Rethinking Humanitarian Assistance

*There are two types of people who are not well-suited for work in disasters: one is a kind of person who has a lot of passion and desire ‘to just jump in and help’, but has no relevant experience, and the type who has a lot of technical skills but no heart. (R.Potangaroa, Personal Communication, June 4, 2010)*

The disaster professionals interviewed for this research had first begun their career as volunteers of one. They fall in the first category of what Potangaroa referred to above: those with “a lot of passion” but are inexperienced. Such volunteers first arrive at the scene without any prior training specific to the disaster context, and are often turned away. That technical types have “no heart” may be an oversimplification, since

such individuals are trained to give rational, evidence-based responses so as to not break under the pressure of a crisis. Klein (2007) described the paradoxical existence of humanitarian workers in Sri Lanka following the 2004 Indian Ocean tsunami by criticizing “the brand-new white sports utility vehicles. All the aid organizations had them... All day long they went roaring past the camps, forcing everyone to eat their dust, their logos billowing on flags in the breeze... as if they were visitors from a far-off NGO World” (p. 510). As the scale of humanitarian assistance has globally increased since its establishment post-WWII, the nature of its operations also evolved from being voluntary to one that was more professionalized. Lee, Buse, and Fustukian (2001) accorded this a label, “humanitarian industry”. Yet *humanitarian industry* is inherently oxymoronic because “industry” implies dehumanization via the mechanized efficiency of an otherwise human process. Ignatieff (1998) casted a different lens on such global campaign on human rights, which he contended as essentially based on the idea of “modern moral universalism” (p. 18).

What Klein and Ignatieff failed to acknowledge is the element of power and the extent to which the informal disaster responders contribute to disasters in significant ways. Harvey, Stoddard, Harmer, and Taylor (2009) argued that “permanent disaster volunteers” form the backbone of established aid agencies and disaster response. Within the umbrella of NGOs, there are finer distinctions in terms of scale, funding model, scope of activities and the extent of local, national and international engagement. While Boano et al. (2010) argued that architectural development in disaster contexts had been on par with progress in development studies, the history of international humanitarian efforts in architecture is a relatively recent phenomenon, and the history of architectural humanitarian agencies is even shorter.

The disaster experts interviewed for the Haiti case study are a mix of professionals (full-time career disaster workers) and volunteers. Some are local bystander-turned-experts, while others are experts-turned-volunteers. But what they all seem to have in common is the Rittelian mindset of *second generation* approach to *wicked problems*, that is to say, they operate on the premise of learning as much as they can from the field and placing as much effort on minimizing disturbance on local communities. For instance, Hammer, a U.S. architect, said that he approached each design decision by first asking, “is this going to create a long-term dependency?” where any design decision-making processes ultimately came down to ascertaining what would be an acceptable level of change for the locals.

*You want to create a long-term independence... Architecturally, in terms of building solutions, the whole question of what's culturally appropriate is very important. There are countless examples of building solutions post-disaster that have failed miserably because those who brought that solution to this place, they brought their own cultural biases with it and it just didn't work out in that circumstance... So that just goes back to understanding the place and the culture. (Hammer, M., U.S. Architect, June 28, 2011, Personal Communication)*

King, who was involved in making sustainable building technologies available to developing countries like Haiti, suggested that outsiders must first listen to the locals for what they need, rather than telling them what they need:

*They have seen hundreds of people like me come with good ideas come through but they are*

*desperate, they do need shelter, they do need, they know they need help, but they would much rather be assisted to get up on their own feet rather than just be given hand outs. (King, B., U.S. Engineer, July 5, 2011, Personal Communication)*

Urban disaster scene is flooded with volunteers, many of whom enter the scene with good will and passion but not much else. As one of the senior advisors at the United Nations remarked, too many people arrive in Haiti with no basic understanding of the country's history or know how to apply themselves in practice. So what then are the alternatives if Haiti is to rebuild sustainably? Gill offered some ideas which both involve the long term capacity building of Haiti's future residents.

*...either you spend the next few years training people... or you bring the diaspora or international staff in to do it in the short term. (But) if you wait to train people the funding would have gone away, so... it has to be with diaspora or international staff, embedded in the ministries and then allow the training to go on so that in five... ten years from now you have the technical staff who can actually do it... (Gill, D., UK Architect, AFH Haiti, April 6, 2012, Personal Communication)*

These findings suggest that trained professionals are best placed to fill the technical void that currently exists in Haiti between the autocratic disaster management in early post-disaster emergency recovery phases and the democratic urban development of the reconstruction phase.

### **7.1.2 Roles of the Architectural Profession in Haiti**

*I was a humanitarian a long time before I was an architect and I would not get into a profession or be in a profession that asked me to suspend my ethics between the hours of 9 and 5 in the morning... (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication)*

If post-disaster sites were the new frontier of architectural opportunities, Haiti is a challenging place for architects. Foreign architectural professionals operating as disaster experts in Port-au-Prince confirmed this, irrespective of their experience, size of the organization they work for and position they were in: Haiti was King's first brush with a major natural disaster, while for Sinclair it was a part of his 14-year career in architecture of humanitarian assistance.

Homogeneity of INGOs have been troublesome for Haiti. Cesal, a young architect at AFH, described the failures of international humanitarian aid and development industry in the last few decades as reflecting a trend towards "superficially beneficent colonization", and criticized the humanitarian agencies that imposed their first world views "on a very different context merely because you have the money to do so" (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication).

*...there are only two kinds of architects: there's citizen architects and there's bad citizen architects. Because, to me, the idea of attaching the word citizen or humanitarian to the word architect basically implies that architect as a word is morally neutral. ...to me even the title*

*Architecture for Humanity is kind of redundant, you know, I mean I think 'humanity' should be subsumed within the word 'architecture'. (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication)*

Young professionals like Cesal are part of the new generation of humanitarian agents who acknowledge the “enormous amount of wisdom tied up in the ground”, and prioritize the local community’s needs, locate the service gaps, and capitalize on existing resources of the locals.

*...whether you're an architect or a dentist or a mechanic, your ethics should be not something that you check at the door between nine to five when you do your work, it should be a part of everything that you do. Obviously you have to make cultural adjustments when you're in Haiti, certain things that ethically we take very seriously in America they don't take very seriously and visa versa, so you have to open yourself up to the idea that life is different and people hold different values... (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication)*

Ethics, Cesal argued, is an extension of the individual’s identity rather than tied to the profession. Unlike a profession, ethics is not a career that one “[suspends] between nine to five” but rather “a part of everything [one does]”. In other words, to be a leader is to be ethical, because to practice leadership one needs to set aside one's private desires and interests, and instead look to what benefits the wider community. While Cesal contended that “architect as a word is morally neutral”, and that moral values ought to be attributed to “citizenship” rather than to architecture, the research suggests that the practice of architecture in urban disasters necessarily accompany moral responsibilities because the context in which architects operate is laden with decisions that entail value judgments with ethical implications. However, Cesal and other architects remained optimistic about the contribution of foreign architectural designers who were filling the large developmental gap that needed to be addressed.

*...for a volunteer architect to come over from the first world and fly to Haiti, which is perceived as a... country where nothing ever goes right and devote... their time for working for free... chances are that person is coming with an open mind... to begin with. (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication)*

Those who approach post-disaster contexts with an open mind do so with the willingness to listen first before offering professional advice, to hear the concerns of the locals and in doing so they succeed in establishing a power equilibrium that paves the way for design leadership.

## **7.2 Case Study: Post-Katrina Design Activism**

### **7.2.1 Professionalization of Pro Bono Design in the U.S.**

Architectural humanitarian agencies are becoming more professionalized in similar ways that medical and legal profession have for many years. There are now few but distinct bodies of architectural design

practitioners that have formed non-profit entities in the U.S. and have contributed to this thesis. Such organizations target their services to communities that could benefit significantly from them. Given that their approach is far from the mainstream, individuals who spearhead such projects often operate in political capacity to garner support within the emergent sector. To maximize their influence, some argued that architects ought to more actively participate in creating policy change, while others argue that architects need to be political in their practice. Even though such architectural non-profits are united in their altruistic intentions, differences in how they approach and implement the organizational goals also create healthy tension between them that serves to improve how they each practice. Bryan Bell, the founder of Public Interest Design Institute<sup>57</sup> (PID institute), is a strong advocate of politicizing architecture. Bell argued that architects are led to believe that its “licensure was a monopoly. We thought, ‘We’ve got this monopoly. People have to deal with us’, and we stopped thinking about what value they have” (Bell, B., Director, PID, March 22, 2012, Personal Communication). Sinclair, by contrast, believes in making architecture “open source”, by making design processes more transparent and accessible to the general public.

*When you're the bank you can be the activist. We can be a little bit more ballsy because we raised the money. If I've raised the money to build a project in a country where sexism is rife I'm not beholden to just the community, I'm beholden to my investors, which are my donors... The client is the community on the ground, but you also have some level of responsibility to those who are funding the project. (Sinclair, C., CEO, AFH, July 27, 2011, Personal Communication)*

Sinclair maintained that being “the bank” was a key to getting projects built. Through strategic corporate and community partnerships, AFH leverages its international profile to grow its operations, as well as to raise awareness of the power that architectural design can give its beneficiaries. Sinclair often ends his public presentation with a motto: “Follow your heart. Break the rules. Get it built”. In practice, however, Cesal, who heads the AFH operations in Haiti, suggested that the role of an architect requires a delicate approach when involving clients in post-disaster situations.

*...our process is very community driven... the way we train our designers to listen and not speak... Typically, in a post-disaster context, people tend to say yes to everything, and I've seen that in the US and in Haiti... People are scared and they've lost a lot, so if you say, “hey, I designed this house for you and it is in the shape of a squid, and I thought that was really appropriate for you because Haiti is an island nation and there's lots of sea life around... Would you like this squid house?”, and people are like, ‘Yeah! I love squid. I can't wait to have my squid house’... So you really have to you know listen and draw out of people what they really want and what they really need. (Cesal, E., US Architect, AFH Haiti, April 10, 2012, Personal Communication)*

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<sup>57</sup>Bell is also the principal instigator of Social Economic Environmental Design (SEED) – a new certification process for architectural projects on the merit of social equity (which may exist in parallel to its more widely established counterpart in sustainable building practice: Leadership in Energy and Environmental Design, “LEED”)

One dilemma that incendiary organizations such as AFH often face is the need to satisfy the interests of donors as well as that of the client, who may not always share the same interests with each other. AFH Haiti has had to circumvent a lot of guesswork in the process of project execution, “which sometimes means making a mistake because until you make a mistake you don't really know what is right” (Cesal, E., U.S. Architect, AFH Haiti, April 10, 2012, Personal Communication). The perceived gap, whether in policy or in practice, is ultimately a technical gap. But Potangaroa proposed that bridging this gap is not as daunting as many perceive.

*The gap between the technical and the non-technical is actually smaller than you think... you get into all sorts of discussions about relationships and social relationships within families and how things are done. You talk about how things get built in some of these places and that's another interesting discussion. (Potangaroa, R., NZ Structural Engineer, March 13, 2012, Personal Communication)*

Potangaroa posited that architects are not major players in disasters because they do not “show the connection between the design and the output”. When lives are at stake, Potangaroa explained that the quality of life measures are more persuasive and easier to demonstrate, and are thus easier “sells”, than design alone. Post-Katrina case study on GCCDS illustrates how design services can become democratic agents and how it is possible to use the Rittelian framework to establish value for qualitative services such as design through social equity measures.

### **7.2.2 Wicked Design Problems: Systemizing PID in the Gulf Coast**

Whether communities have access to architectural services in post-disaster environment is also a direct product of the architectural profession's involvement in rebuilding. Thorpe (2012) and Cary (2012) described Public Interest Design (PID) as a grassroots architectural movement in the U.S. that spawned in the last two decades (Thorpe, 2012; Cary, 2012), beginning in the late 90s with the resurgence of the international human rights movements and a greater focus on multi-disciplinary approach to global environmental chaos in an increasingly connected world. However, architects are still considered the last responders in disasters, for reasons already discussed in **Chapter 3**, but also because the first responder is reserved for uniformed personnel in the U.S. (Tierney, 2007). Cary argued that few architects have worked for or with large humanitarian agencies that often oversee both short-term recovery and long-term reconstruction processes.

*Historically, architects have always tried to offer something – whether it's relief housing or some other contribution – but it's been really difficult... architects have not figured out a way to work with the big aid organizations that are literally the first responders. And they're not just first responders; they're the short and mid-term, sometimes even long-term solution and we have no relationship with them whatsoever. They have very few architects, designers on staff. (Cary, J., Design Advocate, April 18, 2012, Personal Communication)*

Although architects are perceived by the general public to be the last responders in disasters, disasters are becoming increasingly urban. But because disasters are problems that affect people and their physical

environment, architectural profession's involvement in post-disaster contexts have been on the rise. The motivations of such experts vary, but they broadly fall into two categories. For some it was a product of circumstance—they were either survivors of a disaster themselves or indirectly involved through personal connection. For others it was ideological—they had “found a calling” by learning about it through others or felt morally obligated to help the disenfranchised. As for the latter, Bell found in his research that some 30 percent of the students entered architecture schools across the U.S. to practice public interest design (B. Bell, Personal Communication, March 22, 2012). In both cases, architectural designers involved in post-disaster professional service expressed that it was unethical to not respond, and felt a deep sense of personal responsibility to which their professional contribution is an extension.

Individuals devoted to public interest practice in post-Katrina context who were still around some 8 years since the hurricane remain committed to the local community and the ongoing work opportunities that aligned with their values. The desire to “make a difference in the world” had converged in the community where they have established a strong social connection. One of the major criticism of this way of practicing is the proliferation of “bad design” due to the absence of design peer review process and monitoring of design standards on par with the mainstream practice in the rest of the U.S., “because nobody objects”, and “because nobody demands something greater” (Bell, B., Director, PID, March 22, 2012, Personal Communication). But Perkes argued that the more pressing concern for the future of public interest practice was the lack of commitment by those in the mainstream professional practice:

*There certainly is not in that code of ethics... (a) statement that says, “as architects, we believe that design and being able to have a well-designed environment is a human right” – that’s not in there at all. It never said anything like that and it could... it can take a position like that. It could say that, “we, as a profession, feel that having a healthy, livable house in a healthy, livable neighborhood... that is well-designed, and people then have a part in that design”, and that, “we feel that is something that is entitled to everybody and we’re going to work towards that aim”. (Perkes, D., Director, GCCDS, March 29, 2012, Personal Communication)*

It is possible to argue that what qualifies as a *bad design* in post-disaster environment need to be evaluated against different set of criteria to a *bad design* in the conventional sense. But the main culprits of *bad design* practices tend to be from those agencies that are misinformed or underinformed, rather than by virtue of whether they are from outside or from within the existing community. The multiple theaters of design interventions across the three cases that this research has studied thus far validate that good design can equally emerge from outside agents as from those within. From this we can conclude that it boils down to miscommunication between the designer and the future building inhabitant, rather than due to mismanagement of resources, deadlines, design or technological competence.

For instance, design agencies that operate from remote locations, such as those who were directly commissioned by the MIRF foundation to develop LEED platinum single family homes in the Lower Ninth may have overlooked the cultural appropriateness of the house in order to achieve the green certification amid other priorities of the design brief. In doing so, they may not have given as much attention to whether



the house adequately reflects the lifestyle of the inhabitants; the need to provide generous outdoor gathering space for the Creole family that likes to spend most of their time outdoors; the degree of socio-economic appropriateness of houses built for occupants who may not be able to afford its subsequent upkeep, which can thus lead to rapid deterioration and abandonment. Such mistakes are easily avoidable with better communication between the designer and the client but they became the grounds for criticism against MIRF houses in the Lower Ninth. The level of aesthetic assimilation within the locale is also an important factor, as building a radically different building that stands out from the rest of the community can breed feelings of alienation and grief within the community, particularly between those who received assistance and those who did not.



Figure 7-1: Some of MIRF's innovative housing designed by architects in the Lower Ninth

The perception of design can also change over time. Scott Bernhard of Tulane City Center (TCC), who had stepped in as an Interim Dean of the School of Architecture at Tulane following the Hurricane Katrina, established TCC to build dozens of community housing led by the school's architecture students. Bernhard noticed that "students always want to twist everything at funny angles and make lots of complicated shapes", and would often end up with a project that would stand out.

*...we were not welcome at the beginning. I thought we'd go into the community, build a house and everyone would say, "Thank you, thank you", (but) that's not how it goes. People were not eager to have do-gooders come in and tell them what they should do. (Bernhard, S., Director, TCC, March 28, 2012, Personal Communication)*

But eventually the residents of New Orleans warmed up to the work of TCC, and their success serves as a testament to the value of staying committed to building trust and establishing strong partnership with the local community. Bernhard described the tipping point of their work, which helped in lessening the perception of socio-economic disparities between neighborhoods.

*People who live around this think we're doing a great thing in their neighborhood not trying to*

*displace them and people who live here think we're helping to rebuild their neighborhood.  
(Bernhard, S., Director, TCC, March 28, 2012, Personal Communication)*

What characterizes the successes of both TCC and GCCDS is that both organizations are multidisciplinary. TCC team has both professional builders and an ecologist who ensures that their projects would be sustainable long term, while GCCDS employs an economist in addition to general building professionals such as architects, planners, landscape architects, and designers as integral members of the core team. Yet in spite of their success, Grote from GCCDS explained that building a generation of “[do-gooder]” PID architects, while a noble undertaking, can also place a burden on an already stressed environment.



Figure 7-2: TCC's Grow Dat Youth Farm project built from shipping containers

*It's a drain on me, trying to teach them how to do drawings, teach them how to detail buildings, teach them all those sort of things and then they leave and then I am back to square one again... (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication)*

Overall, the PID-oriented practice is still in its infancy (Cary, 2012). In the absence of robust process for training designers who desire to make PID one's career, many practitioners perceive this as a burden due to the perceived difficulty of committing to an area that has financial implications on an already lean business model that most architectural firms operate on. But individuals like Perkes and Grote, whose practice had scaled up in times of economic recession, proved that a non-profit community design practice can be sustained. Perkes contended that GCCDS operates no differently to a traditional architectural practice, and the only difference was the type of stakeholders. According to GCCDS, the “mechanisms for how work happens” was essentially the same between a non-disaster disaster practice and a post-disaster design

practice.

A departure from traditional practice also shifts the decision-making power, redefining the building client from a “sponsor” to a building “occupant”. Post-Katrina architects emphasized the need to establish trust through commitment. In a disaster, non-architectural decision-makers tend to perceive architectural design element to be surplus to their needs, and sees design as a commodity that can be culled early to save costs. But GCCDS was able to retain its services by separating the architectural fees from the fees for construction, and this was the beginning of many innovations that the practice brought to Biloxi. The outlook of GCCDS developed beyond the initial singularity of their housing projects, to community-wide issues that not only contribute to the city but a broader contribution “to the larger conversation about where architecture is right now and design is” (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication).



Figure 7-3: GCCDS's outreach initiative includes educating the future generation of local residents about the bayou ecology and sustainable development

### 7.2.3 Alternative Roles of Public Interest Designers

The social, cultural, political and environmental dichotomies in post-Katrina New Orleans and the Gulf Coast can open up broader questions about the ethical roles of design professionals in communities.

*We're in a place that has expanded the scope of architecture. I think the Architecture for Humanity... is a modern version of architecture; they're almost like social workers (like myself) as well – they don't see themselves as just doing the plans, they see themselves as building a community with what they do. (Agnes, A., Former Mayor, San Francisco, April 10, 2012, Personal Communication)*

Agnos suggested the need to diversify the professional archetype in order to better serve a community. The effects of Hurricane Katrina were neither sequential nor causal but interdependent. The socio-cultural and socio-economic tensions extend beyond the geographic boundaries of the Gulf Coast into trans-American narratives of diplomatic relations between the U.S. and the Republic of Haiti, but the residues of Haiti's neoliberal struggle reemerge in the U.S. as hostilities against the Creole-descent citizens of New Orleans. In his book, *In the Scheme of Things: Alternative Thinking on the Practice of Architecture*, Fisher provoked the architectural profession to think about its core values:

*To remain silent about the values represented in what we do, either out of mistaken believe that professionals must remain ethically neutral or out of a romantic dismissal of all normative values, is to eliminate one of the main reasons for the profession's very existence. (Fisher, 2000, p. 30)*

Architectural humanitarian agencies such as MIRF, TCC, and GCCDS had all emerged in direct response to Katrina, and they were each all but "ethically neutral". Grote implied that taking a political position is necessary, and that it can best be demonstrated by action:

*These days, we are now in need of a new way of practice, one that is outside the umbrella of the disaster funding. How does a practice like this begin to make itself worthy in an economically depressed region, in an economically depressed country, on an economically depressed planet? Showing our worth, being more entrepreneurial and helping partners access funding will be our challenge. It's something regular architects don't do very much or very well, which is why we are suffering so bad in these times. I think we are on to something and hope to show more of how this can be done for communities around the country. (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication)*

The perennial dilemma that plagued the profession since its institutionalization in the 19<sup>th</sup> century has been to make architecture a financially viable and independent enterprise without seceding from an economically oriented society. GCCDS demonstrated that design *can* bring equity, where communities had become alienated and worn distrustful of authority; its commitment to innovation threatens to make economic development more impactful within the wider context of the Gulf Coast. Moreover, the practice of GCCDS demonstrated value, by giving people choice without compromising on quality. MIRF proved that a new model for post-disaster reconstruction can exist, by bridging the gap the disaster victims need to get back into order, instead of hindering their progress by confining them into trailer parks. Despite its regional success and growth, the number of players in this culture is limited, which can be a direct result of the absence of systemic map for the profession and educational gap<sup>58</sup>.

*The nature of holding an architectural license has got three pieces to it: health, safety, and*

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<sup>58</sup>In 2012, the American Institute of Architects (AIA) awarded a research grant to four architectural scholars and practitioners to undertake further research on the phenomenon (source: AIA, 2012).

*welfare. That's what your license requires you to do; to look after those things... This whole issue of disaster and resilience is about 'design thinking'. How are you approaching the problem to enable your community and other communities to take advantage of a robust resource and the issues that you think of before your community and every one of them is different. San Francisco's different from New York, that's different from New Orleans or Texas. (Manus, C., Former President, AIA, April 12, 2012, Personal Communication)*

Cary contended that impediments to scaling the impact of the PID are manifold, but mostly center on the issues of funding, capacity building, architectural education, and the reality that successes of a “few small scale projects” are difficult to replicate (Cary, J., Design Advocate, April 18, 2012, Personal Communication). Fisher (2000) was more optimistic about the place of design in a world where “everything can be approached as a design problem, in which new solutions must be sought to meet particular needs and specific contexts” (Fisher, 2000, p. 4), reminiscent of Rittel’s definition of design as being something that everybody engages in at least some of the time. Yet Fisher explained that earning the respect of the public by proof of this concept remains a challenge for architects:

*Professionals are defined by the setting up of boundaries... that set the knowledge and skills of their members apart from the general public. However, in a world that elevates the marketplace, value is defined, not by the degree or license one holds but by the effectiveness of one's actions and the outcomes. Professionals who pay little attention either to the needs of clients, or to the consequences of their decisions, risk losing their professional credibility. We see this in the hostility of some clients toward the design professions, as they turn to outside... to implement the jobs (Fisher, 2000, p. 3).*

Diversified income stream to finance architectural projects is an increasingly valuable skill, as the PID project partners typically cannot finance their own projects. The range of pro bono service extends beyond that of design and documentation, to fundraising, facilitation of community consultation, referrals, and even advocacy. GCCDS runs its office on a range of government and corporate grants, fee-for-service contracts with partner agencies, and experimenting with fee structures that separates design fees from construction fees as to obviate the value-engineering of design in projects with limited budget. Where GCCDS diverges from the PID argument is its resolute alignment to the tradition of architectural practice, rather than distinguishing itself from the mainstream practice. The value proposition advanced by architectural NGOs post-disaster is the ethical responsibility to the public at large in addition to the communities and families they serve, but not at the expense of overextending one’s skills.

*...you need other people to do the wrap around services that someone needs when they are victims or survivors of a disaster... It's a lot of other things and we're not trained for that...and it's a waste of our resources to do something that we're not good at and allow other partners to work on those ...everybody pitches in and helps bring the community back. There's a lot of architects that does this: the archetype. (Grote, M., Architect, GCCDS, March 29, 2012, Personal Communication)*

Defying the heroic, self-imposed archetypes that the profession tries to live up to—which can be patronizing in both outlook and approach—Grote argued that architects ought to listen rather than impose their ideas on the community they are working with. The public design practice is built on the foundation of equity, and an understanding that the shared knowledge, experience and skills of the collective would leave the community in a better place than when designers initially found it.

## 7.3 Case Study: Christchurch Blueprint

### 7.3.1 Adaptive Challenges: Architectural Priorities

The professional involvement in post-earthquake Christchurch had been a battleground for professionals, much in the same way that Haiti earthquake catalyzed an NGO “land grab” and Hurricane Katrina was deluged by sponsored village developments. Christchurch earthquake was a galvanizing force for the community but it also amplified the ideological divisions between individuals, ethical divisions between professional organizations, and socio-economic divisions between neighborhoods. Such are adaptive challenges, the type of challenges that require a transformational change in society, which can be difficult to reconcile. There is much to be learned, or rather un-learned, from both architects’ and engineers’ past responses to natural disasters. The 1931 Napier earthquake highlights a tension between the two building professionals that otherwise have complementary skills.

The 1931 earthquake in Hawkes Bay was the most significant natural disaster prior to Christchurch, and the professional response that followed remains an important turning point for how architects and engineers engage in post-disaster contexts in New Zealand. The extensive structural damage caused by the earthquake had resulted in architects relinquishing their exclusive stewardship over the construction of civic buildings to the structural engineers (Noonan, 1975, p. 133). Architects’ prior efforts to become recognized as an expert in disasters had gone largely unnoticed.<sup>59</sup> Architectural profession’s ability to influence policy for the built environment at State level has been inconsistent over the years, despite efforts by individual architects and interest groups to mitigate this in its 120 year history. But the real problem, Noonan suggests, was “the increasingly complex nature of building and the increasing role of engineering services in any major construction work” (Noonan, 1975). The construction industry has become a new frontier for architects and engineers to vie for authority, in this case the privilege of reporting directly to the Government Department, which then was the Ministry of Works. Given the growing influence of engineers in the public sector, the research raises a question of whether the state of NZIA might be different today, had it remained a joint organization of engineers and architects.

It was through the work of local architects in post-earthquake Napier that brought the Art Deco style buildings to the city, which have since become a celebrated national attraction and given a distinctive cultural identity to an otherwise humble, regional city. In the early days following the 1931 earthquake, the local architects joined the Napier Reconstruction Committee and instigated the Napier Architects Association—perhaps the

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<sup>59</sup>It has been documented by NZIA’s earthquake report (co-authored with the Government Seismologist in response to the 1929 earthquake in Murchison), and authoring *Earthquakes and Building Construction*: one of the earliest books on earthquakes and architecture in New Zealand

two most influential grassroots volunteer groups founded at the time. The purpose of such organizations was to share information, resources as well as to ensure that most of the reconstruction commissions would stay within the existing workforce in Napier rather than being outsourced to contractors outside. Noonan described Louis Hay, who spearheaded both groups, as “the official conduit of information between these two important groups” who was intimately involved in many aspects of the design decisions of the city’s reconstruction (Noonan, 1975). The building industry in Napier thrived, because of strong collegiality and cooperation amid local building professionals.



Figure 7-4: Athfield addressing the public at the inauguration of Before After exhibition

Louis Hay—perhaps the most influential architect at the time in Napier—enjoyed intense influx of work following the earthquake, yet when it came to key civic projects (such as the Municipal Theatre), Hay was passed over in favor of the Borough Architect (employed by the Government), J. T. Watson. Shaw (1999) noted that the initial budget for the proposed construction that was given to Hay was less than half of a similar project from two decades ago, but the theatre was built by Watson was twice over this budget. Such double standards continued in Napier at the same time as Hay’s relationship with the Government waned. Noonan’s records show that the then Napier Mayor, C. O. Morse tried to downplay Hay’s dominance in securing architectural commissions. Many subsequent rebuilding projects were awarded to construction firms such as the Fletcher Brothers Limited (present day Fletcher Construction), and on this Walker (1992) contended that the presence of large corporations in Napier reflected an alignment of corporate and state interests that “the interest of private capital (was) directly aligned with the national good, such that they undertook directly to advise the government as an equal party” (pp. 25-43). Despite the level of successful, cooperative activities in Napier, there emerged a kind of “paternalistic” corporatism which Walker describes as fundamentally undemocratic recovery process founded on technocratic competence. Hay’s anecdote suggests that the position of the architects within the reconstruction efforts in Napier hinged on the ideals of elitism based on social relationships than on meritocracy of skills.

In Christchurch, Patrick Clifford, the incumbent President of the NZIA (2010-2011), attributed the early success of the engineering community in the aftermath of September earthquake to the well-established

relationship with CDEM preceding the disaster, and contended that “[getting] architects heard” in the media had consequently been a major challenge (Walsh, 2011). There were some misunderstanding from the media which bred public contempt for an otherwise well-intending architects, such as when the Warren and Mahoney stood in during the national state of emergency period to prematurely announce to “lead the redesign” of Christchurch (Warren and Mahoney, 2011); appointment of Athfield as Architectural Ambassador to Christchurch was interpreted as a political bid for reappointment of the City Mayor (Conway & Greenhill, 2010); and the brave, if somewhat ill-timed launch of the Before After exhibition just days before the February earthquake (NZIA, 2011b).



Figure 7-5: Signage about Before After exhibition outside the Christchurch Art Gallery

Architects were much more successful outside of the media limelight. At the national level, the NZIA leadership assisted the government’s Department of Building and Housing (DBH) to help develop strategies for mass-housing post-earthquake; Athfield gave over 50 public talks in his first year of appointment as the Architectural Ambassador to improve the public’s understanding of architecture; and individual architects worked diligently with insurance companies to assess the damage of heritage buildings. Dalman explained a key benefit of engaging architects to perform the same task that non-architectural building inspectors on damaged historic buildings is the architect’s ability to exercise more sound judgment based on the cost-benefit analysis:

*...there was an engineer there and he started talking about engineers signing demolition permits and demolition companies lining up, ready to knock buildings over... historic buildings even though they don't really have permits to be knocked over... I went out to have a look at the church down in Beckenham which was pretty damaged but could be saved... I could see a number of ways of keeping it. But the owners wanted to knock it down, because they wanted*



*insurance money to build a new church... I didn't give him the answer that he wanted – he wanted me to say to knock it down so he could go and build a new church. (Dalman, R., Architect, January 25, 2011, Personal Communication)*

The main point of difference between the assessment strategies of engineers and architects seemed to be the special affinity that architects had for a building's heritage, and the lengths they may go to try to preserve it, sometimes against the building owner's interests. It goes without saying that the structural soundness and the safety of a building ought to remain the key priority for deciding whether or not a building should be retained, retrofitted, or rebuilt. But beyond the recovery phase and as the city moves into reconstruction, finding creative ways to retain heritage buildings even if the owners just "[want] to knock it down" can add value to the city in the long run by minimizing unnecessary demolition cost that can be redistributed elsewhere.

Clifford stated that "no professional person thinks their opinion's valued high enough", echoing the concerns shared by other local architects interviewed in Christchurch. Those who felt compelled to assist did so quietly at their own expense while the engineers were extolled on the front pages of *The Press*<sup>60</sup>. However, the veneration of engineers in Christchurch was short lived. The Royal Commission of Inquiry into the causes of the February 2011 earthquake found that local engineers had not properly tagged the buildings, endangering lives, and moreover, that seismologists withheld information on possibility of major aftershocks of September 2010 earthquake. Potangaroa and Buck both explained that this had led to questioning the intentions and the credibility of professionals who advised government agencies.

In *Shakey Grounds*, Walker presented two paradoxes facing modern institutes: one is that of whether professionalization model at the end of the 19th century is still valid in the 21st century, and whether the direction of modern architectural practice can keep in tune with a rapidly developing construction industry. Although these are highlighted as practical considerations, they also raise the question about the ethical role of architects in the new urban terrain, especially since "the gap that exists now between the specialized discourses of planning, architecture, political process and the public realm has never been so great".

### **7.3.2 Roles of Architectural Designers in Governance**

*it's easy to know... after the fact... they say that the only 20/20 vision is hindsight; when you're looking back, it's really clear what should have been done. (Dalziel, L., Christchurch Politician, March 5, 2012, Personal Communication)*

How government authorities and professionals approach the *wicked problems* of post-disaster environment can set the pace of recovery as well as determine the direction for how a city rebuilds. In Christchurch, new opportunities have risen among the vacant spaces that were created along the liquefied grounds of least resistance, offering the citizens a second chance to conceptualize its future.

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<sup>60</sup>The regional newspaper of Christchurch

The earthquake had also tested the city's leadership and people's capacity to respond, as much as it tested the built structures both above and below the ground. The leadership among the Christchurch residents manifested in part as a reaction to the incapacitation of the local leadership authorities but mostly in response to the top-down, exclusionary leadership from the central government. This research has employed architectural lens of Rittel to evaluate the long-term social, cultural, economic and environmental impact of design decisions since the 2011 earthquake, primarily through the empirical anecdotes of the people in the field.

*The delay to the recovery process is a product of ongoing events which... take us from the beginning of recovery back into response and so in some ways you could argue that the recovery hasn't really begun yet, or that it has begun multiple times and then has switched back into response. (Glavovic, B., Planning Consultant, EQC, March 2, 2012, Personal Communication)*

As the February 2011 earthquake, from seismologic point of view, was an aftershock of September 2010 Canterbury earthquake, it reinforced the harsh reality that an earthquake is not an isolated event. As citizens watched the leadership of local authorities falter before early design decisions, some interviewees suggested that what Christchurch needed was a "whipping boy" or a "benevolent"<sup>61</sup> and "benign dictator"<sup>62</sup> who had courage to take the blame but also able to press on with progress.

Architects have a range of roles that they can, and, to some extent, already play in disasters. In Haiti, architects assumed a role of "building sociologists" in the early days of recovery, by building the technical capacity of unskilled locals. Following Katrina, architects in Biloxi began as volunteer "cartographers" in a town where street signs were swept away in the storm. In Christchurch, the local architects delivered a medium for Christchurch residents to imagine the city with the view of the past and future in an exhibition, "Before After". Many architects can be described as nimble-bodied jack-of-all-trades in the building industry, who can and must, by virtue of their profession, acrobatically adapt, at a drop of a hat, it seemed, to many different archetypes in an increasingly complex reality of modern construction process. But this empirical research has shown that the culture of architecture at large does not lend itself well to disaster relief. Ideas developed in what Sinclair called, the "microwave" incubators, do not bode well without first demonstrating an intimate understanding of the local needs, views and the context.

*...people are emotionally attached to what happened and they've seen the disaster and they just want to have this 'microwave' architecture; they just want it quick and instant and they say, "that's okay" because these people are poor and they're not used to adequate house anyway. And what you're doing essentially is creating future slums and ghettos, which then become riddled with crime and have high unemployment and then become a burden to the state. It certainly wouldn't happen in somewhere like Christchurch but in Haiti there are NGOs that are*

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<sup>61</sup>Sinclair, C., CEO, AFH, July 27, 2011, Personal Communication

<sup>62</sup>Boult, J., CEO, Christchurch Airport, March 5, 2012, Personal Communication

*in the process right now of building future slums unknowingly, because they're not thinking realistically about the design. So, in a way, on the flip side, the idea of not having an architect, not having planners involved can be unethical as well. (Sinclair, C., CEO, AFH, July 27, 2011, Personal Communication)*

Involving architects and planners from the beginning is a double-edged sword. When such professionals move in without adequate information and strategy, acting on the impulse can leave what Horst Rittel characterized as “unintended after effects” of design. The main danger of such approach, Sinclair suggests, is the potential to create slums and ghettos which can “become riddled with crime and have high unemployment and then become a burden to the state”.

But not having them from start can also leave the task to the less experienced, which can also be unethical. If architects and planners do not intervene and just wait for the market to generate building commissions, they will be subject to further marginalization. By not being involved, designers are relegating the task of rebuilding to government agencies and businesses that are inexperienced builders of cities. The latter had already emerged in Christchurch, where the Christchurch Blueprint is viewed as a disguised “land grab” between those with only financial incentives (McDonald & Sachdeva, 2012). By the same token, Sinclair cautioned against a “shotgun wedding” that often occurs between agencies that rush in to assist the locals. He explained that “open period of development” during the emergency phase of a disaster is necessary prior to committing professionals to the “matrimony” of post-disaster reconstruction, where the team has the opportunity to socialize with the locals and can identify, from the community perspective, what services are needed:

*What we usually tend to find is four months after the disaster it's a good moment where architects can set up operations, but between month one and month four is a lot of relationship building. I mean you're about to enter a two to four year working relationship with people you've never met before, with communities you've never taught before. It's a bit like dating, right? You don't have a shotgun wedding; you've got to figure out – is this somebody who we can work with who follows the same sort of culture and ethics as us? And so there is a kind of open period of development before you even start working together. That's kind of the time frame of it, and in a way it's kind of a slow movement into the rebuilding. (Sinclair, C., CEO, AFH, July 27, 2011, Personal Communication)*

Christchurch has been wary of outside influences since the earthquake, due in part to the autocratic disaster management, serving as a painful reminder of the national economic setbacks of the 1970s that forced the regional asset sales. When the residents remained divided over the fate of the Christchurch Cathedral—in spite of the Anglican Church already having decided to demolish the building—Shigeru Ban’s temporary “Cardboard Cathedral” tended the wounds of citizens reeling from the loss of the city’s “perennial” 150 year-old landmark (Moore, 2012). Ban began practicing disaster relief architecture in the mid-90s out of desire to use his architectural knowledge and design skills for the general public, and as a personal reprieve from being engrossed in producing monumental architecture for the rich (Ban, 2011). Ban directly challenged the

delineation between the permanent and temporary architecture. He contended that if a building is loved by its occupants it will outlast those built for short-term profit, regardless of the material it is made from (Ban, December 3, 2012).

*Architecture... will gradually become impermanent... the frequency of architecture is becoming shorter... architecture does not have to exist permanently anymore. Environments are changing around us; we can work anywhere... In such an age, there is no difference between temporary and permanent architecture... something temporary can have a permanent existence, as when the Paper Church in Kobe was taken down and moved to Tao-Mi Village, the mountainous disaster-affected area in the middle of Taiwan. In that sense, whether something becomes permanent or not isn't decided by architectural materials. Whether people come to love it or not determines if it can become permanent or remains merely temporary (Ban, 2010, p. 65).*

Ban recalled the first paper church he had ever designed and built following an earthquake in Japan, in which his local church had burnt down to the ground from a fire. When Ban finished the construction, the church's pastor, Hiroshi Kanda, was remembered to have memorably said to Ban, "I feel like we have become a real church now, only after we lost the physical building", because the "church is not a building but rather wherever people gathered to pray in unity" (Hiroshi Kanda, as cited in Ban, 2010, p. 7). In a similar vein, the potential absence of the Christchurch Cathedral proved to be much more poignant for the Canterburyans compared to other churches in Christchurch which faced a similar fate, and the CERA's announcement of the Cathedral's official deconsecration served as a major turning point in how the locals related to the city. It would remain a Christchurch before and after the Cathedral.

### **7.3.3 Architecture as Tool for Democracy**

Those in favor of democratizing architectural design do not believe that it will diminish the quality of the collective building stock nor adversely affect the role of architects in society, which are the main concerns shared by the wider profession.

*Architecture is a language that should be universal to a much greater society but still is held by few. (Athfield, I., NZ Architect, February 10, 2012, Personal Communication)*

*Our responsibility to the community is to make the best buildings we can to meet the community's needs. If as a profession we reach a platform of well made things, the art of architecture will flourish. On that base it is not strictly our responsibility as a profession to tell the community what it ought to build. We participate in that debate as any other informed member of the community with more to offer than most. - Sir Miles Warren, (Warren, 1973)*

Above commentaries by Sir Miles Warren ("Sir Miles") and Athfield position the architect as an agent of social change, in which they can enable architecture as a spatial tool for democracy in Christchurch. Because architecture can influence through ownership, orientation, and environmental impact, it can also

include or exclude those for whom the building is designed or for whom it is designed without. Athfield also suggested that architectural practice in current form was unsustainable.

*Architecture is an elitist position. It stems from the respect of the master mason type situation and so traditionally you were the top of the tree... Now we have, I suppose, a building industry who... relate things to fashion or to trends... So people are very confused what architecture is and I think there is a general distrust amongst society for architecture, and a general misunderstanding; distrust because they see [architects] saying quite a lot of things that they don't quite understand, and... not even understanding what their needs were... Christchurch earthquake polarized people. (Athfield, I., NZ Architect, February 10, 2012, Personal Communication)*

Athfield grounds his observation on the role of architects as having devolved from positions of power with inherent importance, into a distrustful building industry that is misaligned with the practical needs and values of society. The public distrust of the profession resulted from misunderstanding<sup>63</sup> rather than through inflicting harm.

*The system is not open, it's geared around people making money... it's geared around power; it's geared around disabling people... because governance is seen, at the moment, as a hierarchical model... Our worst possible thing at the moment is... we assume the world is an economic question... and that means poor quality architecture. (Watkins, T., Co-Director, Sustainability Work Programme, UIA, January 11, 2012, Personal Communication)*

Watkins, who leads the sustainability program at the International Union of Architects (UIA), also agreed that disaster contexts can amplify societal issues. He argued that the “hierarchy” of governance had systemically limited democratic access to “quality”, which by extension implies that making architecture more accessible to local communities can be the first step towards increasing resilience. Watkins argued that a project’s quality will significantly improve when there is a meaningful engagement with the people, but he also conceded that enabling access to design is often confused with surrendering of designer’s intellectual property which is their main professional asset. Sinclair made a similar argument, in defense of the developmental work of AFH.

*We also get pushed back when people are saying we're helping engage a lot more people in the profession who are not professionalized... There is this fine line where we're engaging the profession but we're also engaging non-professionals and trying to get them to be more architecturally minded, but we're not giving them degrees or we're not licensing them. We're just, giving them a kind-of 'architecture-lite' experience. (Sinclair, C., CEO, AFH, July 27, 2011, Personal Communication)*

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<sup>63</sup>While not a consequence of the September 2010 earthquake, the NZIA launched a month long campaign to “Talk to an Architect” in November 2010 in efforts to boost awareness of the architectural profession to the general public (NZIA, 2011a).

This debate is not new for the architectural profession in New Zealand. Already in 1969, architects identified a need to “re-examine the nature of architects’ services to the community”, prescribing ethical conduct that privileges the community first, the client second, and the architect third (Hoogerbrug, 1969). It was also a year in which the duty of architects was defined as “an implied contract to serve society over and beyond all special duty to client or employer” (Bishop, 1969). In 1973, Sir Miles acknowledged that “New Zealand must be one of the few countries where most people can make what they damn well like to live in... [which] does not make for architectural order” but simply rather what “makes for a happy community” (Warren, 1973). In 2011, in the wake of the earthquake, Sir Miles lamented that architects are nowhere to be seen:

*One of the extraordinary things in the post-earthquake Christchurch is that the architects aren't there, have not been asked to the table, have not been consulted... now buildings are built by developers and leased to tenants. The process... affects how architects can contribute in the post-disaster context. It needs to be reframed and the right skills applied appropriately, rather than proposing that architects simply take over from other experts on the field. Find a gap and a niche, rather than replace or challenge the status quo. It is not a diversification of roles, but reapplication of the same role in a different context. (Warren, M., as cited in McGowan, Marshall, & Johnston, 2011)*

Sir Miles’s remarks, though almost 40 years apart, testify his enduring support for the idea that can be summed up as the democratization of architecture.

*Of all the professions and the arts surely we are the most public performers. We stand in full view with our architectural pants up or down. A musician’s poor performance is soon forgotten... but our successes and disasters are there for a lifetime... It is absurd to complain that the public do not know what we do, they know only too damn well. - Sir Miles Warren (Warren, 1973)*



Figure 7-6: Becker, Ross (2011) Locksley Avenue. [photograph] Retrieved on 16 Aug 2013 from Picasa commons: <https://picasaweb.google.com/114788127440201076357/EastChristchurch?noredirect=1#5725261347424036242> Copyright 2013 by RossFraserPhotos. Reprinted with permission.

What Christchurch needs, according to Sir Miles, is the courage to face up to the reality “in full view with our architectural pants up or down”, because architects are “the most public performers” whose “successes” or “disasters” are both immortalized in history. True democracy, according to Watkins, was about empowering the public, but also about taking “responsibility” for design decisions made.

*If you've got true democracy, it actually is unstructured. And by democracy, by the way, I don't mean a vote. I mean people taking responsibility for their own lives... every decision should be taken at the lowest possible level at which it can be taken. (Watkins, T., Co-Director of Sustainability Work Programme, January 11, 2012, Personal Communication)*

Dally (2012a) noted that the housing shortfall that was created in Christchurch from the earthquake cannot be resolved by the central government alone. These include the unintended side effects of the disaster, including the overinflated rental market (Dally, 2012b), construction material inflation (Wood, 2012b), and unstable supply of builders (Dally, 2012a). On the other hand, post-earthquake Christchurch has given rise to a number of ambitious proposals: mixed-tenure affordable homes (McDonald, 2012); international design competition (Cairns, 2012a); plans to build 20,000 homes over five years (Wood, 2012a)—which suggest that Christchurch citizens are embracing design opportunities to *build back better*.

While the rebuilding of Christchurch will take many years, the long-awaited “Blueprint” for Christchurch (Christchurch City Recovery Plan) that was recently released bears a remarkable resemblance to the city’s 1850 plan for the “garden city”. The main lesson that Christchurch has contributed to this discussion is the courage to un-build the vulnerable present and to build back better by looking into the past.

### **7.4 Summary**

How the Rittelian framework can facilitate early design decisions in urban disasters can also be ascertained from two interrelated questions of how accessible architectural services are to local communities, and how the local professionals engage in disaster recovery process. This chapter evaluates the ways in which architects have responded to the adaptive challenges of urban disasters, outlining a number of anecdotes where an implicit use of the Rittelian approach has led to creative solutions.

Historically, the architectural profession rose out of the impulse to distinguish the learned master craftsman from ordinary builders, reserving their skills for the exclusive use by the “elite” patrons. Put differently, the profession of architecture exists due to the culture of patronage. However, the definition of architectural patronage is being challenged in this thesis as the disaster context calls for a redefinition of prospective patrons to include the wider disaster community, many of whom do not have the necessary resources to engage the professional services of architects. Nevertheless, many of the architects interviewed in this research followed the Rawlian logic of using their expertise for the public good rather than to serve the interests of few. Urban disasters have largely been left to haphazard market devices, yet the findings from this thesis implicitly challenge the view that architectural profession are the last responders in disasters.

Following the Hurricane Katrina, planners led the consultation process with the public and the private sector

as well as the local communities to produce the blueprint for New Orleans's future development. In Port-au-Prince, design professionals from INGOs worked closely with people on the ground, filling the technical void between the dysfunctional national government and the vulnerable local population. In both instances, the projects' success can be attributed to the planning process that reflects high level of participation by the locals. The beneficiaries of humanitarian assistance are likely to take greater ownership and better management of new development if they are involved in the process of rebuilding from early on.

However, the current undersupply of architects in urban disasters mean that for many, architectural services are still an aspiration rather than a reality. A key mandate of humanitarian assistance is to support disaster victims until they can be self-reliant, but the reality is that post-disaster housing largely remains limited to emergency shelter and transitional housing, rather than permanent reconstruction, which, by extension, systemically precludes the need for architectural input at early stages. In response to the research question, "*How can architects facilitate or engage in disaster recovery process?*", this thesis profiled a broad range of interventions, from urban planning and policy development, to grassroots housing projects that have transformed vulnerabilities of urban disasters into acts of courage.

In Haiti, architects assumed a role of "building sociologists", as "cartographers" in Biloxi, and as "story tellers" in Christchurch. While some viewed architecture as being "morally neutral", its dependence on society entails moral responsibilities that require value judgments with ethical implications. In Katrina, a grassroots design agency innovated a way to serve disaster patrons through diversified income stream. The case studies highlighted a number of *wicked problems* as adaptive challenges, the type of challenges that require a transformational change in society, which can be difficult to reconcile. As such, there is much still to learn, or rather to un-learn in this regard.

The role of architects, thus, needs to evolve with the changing needs of people. Challenging the assertion that architects are the last responders of disaster does not aim to threaten the existing professional structure, nor to criticize the work of first responders, and nor to compete with them in the crowded space of emergency response and recovery. Rather, it challenges the default mindset held by design decision-makers and stakeholders—including emergency operators, humanitarian agencies, building professionals, and some members of the public—and subverts the general resistance to thinking about architecture as an inclusive domain of the people rather than as an exclusive domain of professionals and government authorities. The Rittelian framework is a useful tool for democratizing critical design decisions and mitigating societal vulnerabilities when natural disaster is afoot. This thesis illustrates ways in which the role of architects can be diversified to constitute community empowerment as an end-goal, and proposes a reconceptualization of architecture as a by-product of their activities.



# 8. Conclusion

## 8.1 Evaluation of Research Questions

The critical question, “*How does the Rittelian framework contribute to the critical design decisions in modern urban disasters?*” served to investigate how Horst Rittel’s conceptual strategy for approaching the *wicked problems* of modern society can be employed within the context of urban disasters. Specifically, the research used the Rittelian framework to understand and evaluate the critical design decisions in three recent events: the 2005 Hurricane Katrina, the 2010 Haiti earthquake, and the 2010 Christchurch earthquake. The outcomes of the empirical research extend the existing literature on the relationship between architecture and urban disasters by applying the Rittelian framework to urban disaster research. This thesis proposes that architects are not the last responders to humanitarian endeavors, and that architectural problem-solving strategies are of more value in addressing the *wicked problems* of urban disasters than previously thought.

The objectives of the thesis were (1) to evaluate the critical design decision-making processes in post-disaster environments, in order to understand specific constraints and “pathologies” that may limit the involvement of architects in the area of humanitarian assistance, and (2) to assess a number of instances where, despite the aforementioned limitations, architectural contributions have been made by the Rittelian designers. The latter was done by surveying the actions and attitudes of architectural and non-architectural designers who were actively involved in such urban disaster strategies and tactics. In other words, this empirical research explored how the Rittelian framework can enhance an understanding of complex situations, and it offered ways in which the Rittelian approach can facilitate critical design decisions in future urban disasters.

Six thematic subquestions were produced with the intention that they will help to address the critical research question. Again, they are:

1. What is the role of architects in urban disasters?
2. How can architects contribute to humanitarian endeavors?
3. How can community members participate in disaster relief?
4. What, if any, leadership roles do architects have?
5. How accessible are architectural services to local communities in need?
6. How do local designers facilitate or engage in the disaster recovery process?

The Rittelian framework of *wicked problems* and the *second generation* approach to design problems made it possible for the socio-aesthetic convergence of architecture as both an end-product and as a decision-making process. In investigating the first subquestion, “*What is the role of architects in urban disasters?*”, this thesis questioned whether the service of architects was relevant at all to the well-established field of humanitarian assistance within disaster research. Secondly, it asked if architectural interventions (in the traditional sense of providing professional building services), in the urban disaster context ought to be reassessed. This line of interrogation, along with the second question, “*How can architects contribute to humanitarian endeavors?*” were the focus of the discussion in Chapter 5. These questions led to the suggestion that *how* a city builds back better after a disaster also depends, in part, on *what* the appropriate

*definition* of building back better is. While the restoration of key urban infrastructure upon its collapse is vital to making a place accessible and habitable again, restoring communities and their resilience are equally if not more important.

“Building back better”, in one sense, can entail an impossible task of replicating a pre-disaster city in a post-disaster context, as many survivors displaced by the event yearn to return and persist in doing so despite the number of setbacks stacked against them. Campanella (2010) suggested that it is not so much that people are resistant to change, but rather that they fear change when the uncertainty of what they might lose outweighs the benefits of change. In employing the Rittelian framework, the key issue becomes a matter of considering for *whom* rebuilding can be considered “*better*”. Architectural interventions have limited success without strong engagement with the community throughout the recovery process, from inception through to completion. The value of architecture in disaster recovery is measurable through long-term post-occupancy evidence of thriving communities, which this thesis has found to be only attainable through early engagement with and input by the intended occupants. While the principle of “building back better” invites architects to advance avant-garde concepts upon a clean slate, the evaluation of the position on “*what the role of architects is in urban disasters*”, and the social reality of post-disaster complexities prohibit such approaches, as they can undermine the original intention.

In response to the question, “*How can community members participate in disaster relief?*” this thesis also reviewed the recent trend of humanitarian workers shifting from professional-led or expert-centered to ones that are more community-centered. The field of humanitarian assistance has become an “industry”, a product of commitment by disaster research professionals and government entities that have both contributed significantly to assuaging the distressing effects of disasters on human habitat by increasing knowledge and awareness about disasters. But disaster researchers recognize the continuing need for improvisation by agents on the ground, and in particular the active involvement of local communities who are also the “first responders” of disasters. Indeed, the attitudinal survey of both architectural and non-architectural designers has found that, given the intrinsic and extrinsic qualities of both approaches, the advantages of the community-centered approach far outweigh the short-term advantages gained by the expert-centered approach, calling into question the relevance of humanitarian agencies and professionalization of the humanitarian sector in the 21<sup>st</sup> century.

By extension, the thesis outcome has reinforced the previous research (Kreps & Drabek, 1996; Stallings, 2003; Aguirre, Dynes, Kendra, & Connell, 2005) that considers disasters as “catalysts” for enhancing the overall resilience of an affected community. But it has also validated the initial research assumption that disasters can amplify a given community’s vulnerability. While the case studies demonstrate that urban disasters can engender environment where “emergent community leaders” and heroic grassroots movements can thrive, which, in many cases, can lead to even stronger community cohesion than before the disaster, such environments are also subject to what Klein (2007) characterized as “disaster capitalism”. The research has found that even architects can become inadvertent instruments of disaster politics. In the absence of firm, purposeful leadership by governing authorities, the “state of emergency” can be hijacked by hegemonic political-interest groups advancing neoliberal ideals. Such “disaster capitalists” try to implant radical changes using neoliberal tactics under the guise of “asset sales”, “urban development”, and

“gentrification”, at the expense of disaster victims.

While the Rittelian framework is no panacea for the *wicked problems* of modern urban disasters, it offers a constructive approach for evaluating the critical design decisions within them. The formulation of the next thesis question, “*What, if any, leadership roles do architects have in urban disasters?*” serves to investigate and become acquainted with key actors in urban disasters. The framework also offers a theoretical anchor for the architectural profession to assess their architectural strategies and tactics in practice, which is useful, since the legacies of architectural projects will likely outlive those of most other disaster professionals involved in humanitarian assistance, including the official first responders of disasters. By asking, “*How accessible are architectural services to local communities in need?*”, this thesis directly challenges the question of whether architects are the last responders of a disaster, and it proposes that architects should, in fact, work alongside first responders, because the groundwork for the last responders cannot wait until after the design decision-makers and key stakeholders of disaster have left the room.

Horst Rittel suggested that design decision-making processes can be democratized through “objectification” (transparency in making available all design decisions), and through acceptance of a “symmetry of ignorance” (where there are no experts in a better position than any other decision-makers), but held that the design facilitator was still responsible for ensuring that this process is judiciously carried out. These Rittelian principles are applied to the field of disaster research in assessing the extent to which professionals have engaged with community members, and they establish an argument for democratizing professional services.

The next thesis question, “*How do local designers facilitate or engage in the disaster recovery process?*” prompts an evaluation of how local designers have facilitated the democratic design and decision-making processes in urban disasters. This is discussed in more detail in **Chapters 6** and **7** under themes of “design equity” and “design thinking”. These chapters evaluated the key architectural contributions by examining the urban disaster strategies and tactics implemented by both architectural and non-architectural designers; these strategies are rephrased in terms of *tame* or *wicked* design approaches. *Tame* approaches are characterized by a top-down, autocratic design decision-making strategy that uses positional power and authority as the primary means for instigating change, whereas *wicked* approaches are characterized by a bottom-up, democratic design decision-making strategy formed on the basis of collaboration and equitable participation as a way to achieve wider consensus.

The critical research question and accompanying subquestions have ignited a discussion about the role of architects in the 21<sup>st</sup> century. Humanitarian architecture is not an antithesis to traditional practice but rather an integral catalyst that serves to broaden its public reach, which is valuable in light of the recurrent threats<sup>64</sup> to the profession’s core values of firmness, beauty, and delight. Concerns over the premature involvement of architects in urban disasters have been reified through identification of societal factors that contribute to the persistence of such views, and they are reinforced by the views of the 49 individuals who represent diverse perspectives on how professionals respond to disasters.

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<sup>64</sup>It is not about discrediting the profession and their inclination towards production of objects of consumption, or as political instruments of society, but it becomes an alternative outlet for the profession to engage society.

Application of the Rittelian framework on the recent disasters in Haiti, the United States, and New Zealand has been discussed primarily from the viewpoint of architects involved in reconstruction activities. This discussion asks questions that illustrate key issues, and identifies the risks and opportunities from an architectural perspective. Disaster research is an interdisciplinary field polarized on the one hand by a technical approach defined by “statistical determinism” and on the other by amorphous sociological perspectives on the other (Stallings, 2003). The reconciliation of these two approaches through the intermediary binding agent of architectural discourse has been a part of its remit over the course of this research. The attitudes and behaviors of disaster agents were manifested through their discussion of key theaters of architectural interventions, but equally revealed through what was missing in empirical observations and analysis.

## 8.2 Methodology Critique and Delimitations

This research set out to survey attitudes and opinions of disaster field agents who employ the Rittelian approach to wicked design problems in urban disasters. The following section outlines a number of methodological concerns and delimitations that can be considered for future research.

### Interviewee Sampling

A biased sampling strategy for selecting individuals who were qualified to give constructive responses to research questions was made explicit from early on as part of the research design. Implicit within this decision was the need to interview participants who could speak about not only the *wicked* design problems in their workplace, but have demonstrated, through their actions, a non-linear approach to such design problems, namely, the Rittelian framework. In practice, a majority of interviewees were found through personal and professional contacts to populate the initial shortlist. The sampling filter was only applied to the final shortlist of interviewees, rather than predetermined as initially suggested.

During the data collection process, an interesting pattern emerged wherein the interview participants expressed a preference towards being interviewed as an “individual” participant rather than as a representative of an organization, irrespective of whether they were CEOs who had the authority to represent the organizational views, or were employees of an organization. It suggests that interview participants view the ethical nature of interview questions to pertain to personal experiences rather than being representative of an entity that they are a part of.

### Actions before Attitudes

Dynes, Tierney and Fritz (1994) argued that, in disaster research, behavioral studies are more important than attitudinal studies because attitudes are not reflected in behaviors of people (Dynes & Tierney, 1994, p. 9). This thesis takes the position that attitudinal studies, while they may change over time, are equally rich and credible source for gauging behavior, since the nature of the research question is *evaluative* rather than *descriptive* or *explanatory*. Even so, the attitudinal studies need to be carefully considered in light of findings such as those by Chang, Wilkinson, Seville, and Potangaroa (2010), who observed that post-disaster reconstruction decision-making is one of the most challenging tasks, due to having to deal with both pre-existing problems and developmental issues (Chang et al., 2010). People who have been displaced by

disasters are particularly vulnerable to inappropriate design solutions and housing arrangements in the absence of alternatives (Davis, 1978), and can be skewed by anxiety and trauma that follows any high-stress event (Stallings, c2007, p. 65). This thesis has obviated such issues by placing the emphasis on the analysis of urban disaster projects that matched the expressed motivations and intentions of interviewees, rather than on evaluating the responses to interview questions solely on their own merit.

### **Knowledge Culture**

Much of the existing literature on disaster research reflect North American perspectives based on government-funded field reports of urban disasters that take place in North America. Such works form the basis for internationally adopted manuals on emergency management, mitigation, response, and policy, despite an increase in the availability of disaster research literature written from the perspectives of people in developing countries and the community sector. Van Maanen (1988) contended that culture is only made visible through its representation and through the agency of its members, where the principal researcher interprets the visible information by decoding it from one context and records it into another medium—written or otherwise. While this research endeavored to present a balanced view of the research topic by surveying the perspectives of architects with non-architectural individuals, the role of the researcher as a designer of key discussions also needs to be acknowledged.

### **Interview Validity**

The interview material used in the results section was drawn from those that presented strong positions on the research questions. In cases where strong positions were not available but were clearly identified in the literature survey, opinions from secondary sources were introduced in order to supplement the interview data. It also enabled the primary data to be more critically analyzed, because the secondary sources that contrasted with or complemented the primary data helped to reinforce key ideas. It also meant that secondary sources could provide adversarial perspectives, and, by extension, helped to address the inherent bias in sampling methodology as discussed earlier. Another consideration for analysis was the frequent overlaps in expressed opinions about particular subject in question, such as when the research question, “what is the role of architects in urban disasters” yielded similar responses between individuals with divergent outlooks in other areas. While such instances presented additional interpretive challenges—particularly during the interview data coding stage, in which the researcher nearly abandoned the use of NVivo altogether—they also led to significant discoveries about the importance of matching intentions to actions, as discussed in **Chapter 5**. It suggests that attitudes and opinions are more reflective of personal values rather than being organizationally-based or industry-specific.

### **Conflict of Interest**

Another factor that may contribute to unexpected levels of homogeneity or discrepancies in responses to the interview questions is the extent of interview participant’s involvement in the field. Most of the interview participants fit into one of two categories: an everyday, field expert (architectural designers) and an external, genre expert (non-architectural designers). Both groups employ the Rittelian approach to wicked problems of disasters, but with one caveat: those individuals who are actively involved in disaster field are more strongly opinionated than those who are not. Their views are shaped by the contextual events than for those individuals who are less actively involved in projects on the ground. Those in the latter group are still

considered as experts by this research's standards. However, both group's viewpoints can be useful and complementary. Field experts can provide an accurate picture of the phenomenal reality at micro-level, but they may be unaware of considerations outside of his or her immediate expertise, while the genre experts provide meta-level conceptual and sociological framework that may be less useful from the point of applicability in practice, but provide invaluable insight for understanding the data.

### **Proximity to Data**

While the research takes the default critical constructivist position in that the researcher is as much involved in the research process as the interview participants in the co-creation of interviews, the level of influence has been carefully self-monitored to minimize distraction and to maximize insight. Familiarity with many of the interview participants was a potential challenge since it can increase the likelihood of diversions. Pfadenhauer (2009) posited that some interviews can be oriented towards "habitual" rather than towards "implicit" process, but argued that the goal of interviews is to carry out a quasi-normal conversation while aiming for the latter. There is an inherent risk that the interview dynamics can change depending on the prior acquaintance between the researcher and interview participant, and the quality of collected data may be compromised as a result. On balance, however, familiarity was more beneficial to the research. The quality of interview data was richer in interviews with candid and enthusiastic interview participants than those with reserved and indifferent participants.

Conversely, the lack of familiarity with some of the participant's expertise and subject matter also presented methodological challenges for the researcher, particularly when the participant was an expert from a different discipline to the researcher. While the interview questions were reframed to be relatable to each individual interviewee, some still misinterpreted the interview intentions, which may be a direct product of one's disciplinary bias. A case in point is when the researcher summarized the purpose of research prior to formally conducting the interview with an American community development professor, he pointed out that "development" in his research field referred to "physical disability" rather than "urban development". According to Pfadenhauer, experts have a tendency of either playing down or dramatizing their speech when engaging in conversations with non-experts, exhibiting an inherently paternalistic behavior. Pfadenhauer also explained that the nature of information given by experts to the general public are different from those that are exchanged between fellow experts, because the non-expert is assumed to be an incompetent judge of the expert's discipline. Inclusion of experts from a diverse range of disciplines was thought to bring complementary perspectives to the research and to reach quicker research saturation. In fact, the empirical data gathered was rich and reflective of the diversity within the interview pool. The key emergent ideas were also reinforced through shared values rather than through disciplinary differences. In some cases, perspectives between colleagues who were closely aligned in professional practice exhibited more divergent views than between those from competing organizations or different disciplines. Overall, the research decision to venture outside of the architectural profession into previously unfamiliar territories, and the decision to incorporate the perspectives of other disciplines were valuable lessons in themselves.

### **Disaster Timeline**

Another methodological challenge to this thesis has been working within the reality of "in vivo" post-disaster context. Selecting the case sites that were recent enough for conducting field reconnaissance meant that the

researcher also had minimal control on the interview conditions. Over the course of the empirical research period, the researcher experienced several aftershocks of up to magnitude 5.2 on the Richter scale.

Conducting “in vivo” research about urban disasters also left open the possibility that interviewees can express different perspectives at different times that are emotionally influenced by recent events. An individual’s attitudes can change in 3, 6, or 18-months from when the interview was undertaken, and this was a consideration for Christchurch case interview which spanned the full 18-months of the empirical research period, including the pilot research. Over this time, there were four moderate-to-high aftershocks above magnitude 6.0, multiple changes in the civic leadership, and shift from a period of national state of emergency to early reconstruction stages of post-disaster recovery phases. According to Van Maanen (1988), interviews in ethnographical research typically adopt multiple methodologies—such as focus groups, surveys, and follow-up interviews—so as to be able to build the most accurate picture of the social context being studied. However, because this research is a study of critical decision-making processes rather than of individuals, it captures a specific moment in time at a post-disaster recovery crossroads, rather than a longitudinal study of individual’s development over the same research period. As such, this research did not extend invitations for follow-ups with interviewees unless there was a need for clarification on a particular point raised during the interview.

This thesis presents an attitudinal survey of humanitarians, who, implicitly, employ the Rittelian approach to the *wicked* problems of urban disasters. The findings reinforce the fact that multiple perspectives can coexist, according to the given context, organization, and individual circumstances. The relativistic approach that critical constructivist research paradigm carries does not try to circumvent the responsibility of committing to specific views. Instead, by bringing multiple views of Rittelian designers forward, this research embraces the possibility for transactional and alternative interpretations of reality.

### 8.3 Key Findings and Implications

While there is abundant research in the field of disaster recovery—including in the areas of planning, disaster mitigation, emergency relief, reconstruction, and post-disaster development—the literature from the architectural perspective has been minimal. Key design challenges of urban disasters, that may be of interest to architectural researchers in particular, are structured around common findings discovered over the course of the empirical research period. These findings are amplified due to their recurrence across the three case studies that, at first glance, cannot seem more different from one another. This research provides an understanding of the current practices and motivations of designers who are involved in making critical design decisions in urban disasters, which also has implications on all those who are involved in humanitarian endeavors. From the disaster research perspective, the Rittelian lens of this research validates the complementary roles of the scientific and sociological perspectives. While the agenda of this research has been to assess the attitudes of disaster architects based on their professional experience in recent disasters, there are a number of ways in which this research could be extended.

#### Building Back Better

The spirit of *building back better* can seem stilted without a careful consideration of all factors that support the disaster recovery design decisions. The empirical research has shown that top-down rebuilding

strategies that failed to take such factors into consideration can easily backfire on the disaster recovery agencies, irrespective of their good intentions. Such strategies can exacerbate the effects of the disaster itself. A case in point is the “Build Back Better Communities” campaign in Haiti, in which the government agencies alienated its own people in the project delivery. While some experts dismiss the earthquake and the resulting mishaps as just another Haitian tragedy (Schuller & Morales, 2012), this research has found evidence that such failed design projects were not isolated events. Similar approaches were observed in other case studies: In post-Katrina New Orleans many ambitious government-backed planning initiatives failed, in part, because they were radical (Campanella, 2010), but mainly because the initiatives did not adequately incorporate the needs of the community. Similarly, in the post-earthquake Christchurch, the local city council led a citywide planning initiative, which, in its early phases, focused only on redevelopment strategies for the central business district.

The case studies in this research revealed three different approaches that architects employed in their work with national governments. In Haiti, architects advised the government on the future direction of rebuilding; in the Gulf Coast of the U.S., architects lobbied FEMA to subsidize community reconstruction projects; and in Christchurch, the NZIA appointed an architectural ambassador to educate the general public about the impact of the earthquake on architecture and the city’s heritage. Since the majority of architects interviewed worked predominantly at the community level, further research could be undertaken to explore how architects in positions of authoritative power—at local governments or large humanitarian agencies—contribute to the institutional effectiveness and their approaches to wicked design problems in urban disasters.

### **Design Equity**

This thesis evaluates the position of early design decision-makers who are under pressures to make expedient design decisions between two equally unfavorable choices (that nevertheless ought to deliver favorable outcomes). These difficult choices can debilitate decision-makers to the point of paralysis (Stallings, 1995). However, the negative cost-benefit that accompanies delayed decisions, or worse, inactions, can be fatal to communities affected by disaster (D. E. Alexander, 2007). In urban disaster recovery process, there is hardly any room for failure in early design decisions, let alone trial-and-error by authorities. Where there are failures, effective publicity campaigns and statistical omissions have played important roles in dismissing the possibility of human error.

Another perspective that this thesis evaluates is the general perception of architects as a disaster’s “last responders”. Quarantelli (1978), and Olshansky and Johnson (2010) characterized the disaster recovery period as being burdened by “time compression”, which explained why architectural input—considered to be prohibitively expensive and extraneous—needs to be deferred until the very last phase of disaster recovery. The empirical research has found that designers who contribute to disaster recovery activities at critical, earlier stages do so under circumstances that test their professional creativity, resilience, and leadership. The Rittelian approaches to *wicked* design problems seemed prevalent among those designers who frequently use improvisation and risk-taking. Applied to the disaster recovery field more widely, the research has found that risk-aversion is common among government administrators and professionals with political influence and decision-making power, in part because risk-taking in a climate of uncertainty can impair their



most valued political currency: their credibility. Nevertheless, this research contends that accepting responsibilities and failures go hand in hand.

This thesis has also found that Rittelian designers, unlike the aforementioned political agents, have the flexibility to work across all sectors: the public, the private, as well as the community sector. What this means, as has been demonstrated in the three case studies, is that design leaders are not scrutinized to the same extent that those in the public spotlight are in the early days of disaster. The study has highlighted the need to embrace creative leadership that recognizes when lessons from the past may not apply in the present, and that enlists non-disaster professionals to contribute to the process with transferable skills from another field.

For architects in particular, the professional training in architecture has implicitly provided the architects with skills that are essential but are currently in undersupply in urban disasters. These include (1) technical competency—the ability to balance the roles of a specialist and a generalist, (2) flexibility—the capacity to work on the details while seeing the big picture, (3) communication skills—the ability to work in interdisciplinary context with experts from different fields, and (4) empathy—the ability to maintain of working closely with the clients and their needs while exercising responsible stewardship over the environment, to list but a few. Disaster architects perform work that is similar to non-disaster mainstream practice, but their work is differentiated by a stronger orientation towards social justice and community engagement as the main *modus operandi* and philosophical currency.<sup>65</sup>

Further research could apply the Rittelian framework to the practices of the wider sample of non-professionals, particularly those who this research identified as “emergent community leaders”. Disaster researchers Davidson (2007), Kendra (2007), and Olshansky (1988) consider community engagement as resource-intensive activity, requiring considerable time and money—two resources that all post-disaster nations already lack and need most. This thesis suggests that non-traditional “emergent community leaders” who have been closest to the field of action and who have a vested interest in the successful reconstruction of their city may be in the best position to accurately represent the interests of wider constituents. While, for the most part, the extent of citizen participation remains dependent upon the stances of the authoritative agents in power (in terms of whether the authorities choose to work with people or choose to exert power over people), it would be worthwhile to extend future analysis to incorporate the views of everyday citizens, in order to balance the professional view.

### **Design Thinking**

The Rittelian framework has helped to critically engage with the empirical data, particularly since the rebuilding projects undertaken in response to major disasters are generally well-intended and difficult to distinguish from another, and given the fact that their effects typically do not materialize for many years down

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<sup>65</sup>Social justice and community engagement as a main focus of a design practice that works with disenfranchised communities are similar to those who work with low-income housing and underfunded community organizations. Rather than invalidate other forms of practice, this research proposes that disaster architectural practice is one of many forms of architectural practice in the 21st century. In a similar vein to how the parametric design may be the defining characteristic of a practice that values mass fabrication and efficiency in building systems, vernacular design may be the values advanced by a firm that advocates for sustainability.

the track. For instance, it is simplistic to assert that community-focused agencies always act in the best interest of the communities they serve, or that and those who work against the interest of communities only do so in order to pursue some political or economic agendas at the expense of the people they are serving. But the phenomenal reality suggests that equitable citizen participation requires leadership from all sides; that is, leadership that is not limited to traditional roles such as politicians, policy makers, and technical experts, but includes leaders nurtured within those communities affected by disasters. One of the key observations from the empirical study in New Orleans was the fact that communities that were poorly connected—particularly those without access to private vehicles—bore the brunt of the disaster impact, which coincided with the lower socioeconomic neighborhoods. Such observations lead the research to reinforce the assertion<sup>66</sup> that pre-disaster societal inequities persist, if not amplify, in the post-disaster environment.

Further research could focus on the impact of gender roles in urban disasters. Research by Fordham (2005), Massey (Massey, 1994), and Rodriguez (Rodriguez et al., p. 130) revealed that disaster recovery is a highly gendered arena, where women often play pivotal roles as dominant community mobilizers, and as primary wage earners and decision-makers in households but whose voices are muted in public forums and whose needs are overlooked in policy development. Future research could explore the gendered domain of disaster recovery research, as reflected in domestic architectural scales, and engage with women architects and community leaders to reveal “herstory” as a way to learn how communities effectively mobilize in disasters. Research into gender role is underrepresented in the field in architecture, which architectural theorists such as Saint (1983) and Burgess (Burgess) explained that, architecture, as a profession, originated as a “gentlemen’s club”, even though many women have since joined the profession.

### **Concluding Remarks**

Striving for *design equity* through the strategies of *design thinking* to achieve the principles of *building back better* is as much about making professional services available to communities in need as it is about democratizing the recovery process by thinking more critically about the impact of how buildings, systems, and decisions are designed. A Latin adage, *nihil de nobis, sine nobis*, which translates to “nothing about us without us” often emerges as a slogan in post-disaster community organizations to reinforce an understanding that empowerment is obtained not by having problems solved by others, but by being supported to tackle many of the challenges themselves. This research proposes that solving problems according to the values of the affected communities (which may not necessarily be the values of the profession or that of an individual) is an ethical consideration for professionals engaged in disaster recovery projects, and also an opportunity to challenge the existing mores of professional practice. Design is an equalizer that has the potential to re-empower communities struggling to restore their sense of belonging and identity.

In conclusion, design leadership in the context of urban disasters and humanitarian endeavors often implies intervention through design, but this research demonstrates that highly successful post-disaster interventions

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<sup>66</sup> However, because the observations are grounded in only three disaster sites of contrasting environments, the assertion cannot be generalized to apply to other situations that are not discussed within the same context, let alone be extended to other disasters.

are more about rebuilding communities through discovering shared competencies and values than they are about rebuilding architecture as a destination. With careful application, architecture can strengthen the social capital as an instrument of empowerment. The recent development in Christchurch brought together the schools of design and architecture from across the nation to recreate the city for one night through pop-up high-rise installations and light projections demonstrating that architecture can be both a form of equity and hope.

## Appendix A: Interview Guide

This interview guide was produced as part of the ethics application.

Nature	Type of Question	Interviewer Prompt
Open	Introductory	How did you come to be involved in your work (and your organization)?
Open	Introductory	Can you describe your typical day at the office?
Closed	Direct	Can you tell me about your involvement in project X?
<b>Specific</b>		
Level	Thematic Research Questions	Interviewer Prompt
Local	How accessible are architectural services to local communities in need?	In project X, how were the professionals involved?
		What would you do differently?
		What are other ways in which the professionals could get involved?
		In project X, what kind of input did the architectural professional have?
		Did you receive any feedback from the community on this process?
	How well does the local professional community facilitate or engage in this process?	Request for clarity as needed; follow up questions as appropriate
		In project X, how was the community engaged?
		What were their successes and/or weaknesses?
National	What role do creative professionals play in governance?	How much awareness does the community have, before and after project X?
		Request for clarity as needed; follow up questions as appropriate
		What do you think is the role of governance, with respect to international NGOs?
		How are the architects and other creative professionals currently involved in governance?
	In what capacity can a community truly participate in disaster relief?	Are enough being done and if not how do you think this could be improved?
		Request for clarity as needed; follow up questions as appropriate
		How can communities participate or be better supported by central administration?
		What would you do differently?
Global	What is the role of architects in international humanitarian aid?	What kind of leadership is required and what are the ways of facilitating this?
		How much awareness does the community have, and what are the possible barriers, if any?
		Request for clarity as needed; follow up with second questions as appropriate
		What role do you think architects play in this sector currently, and what role should they play, if you think there are better alternatives?
	What skills shortage or opportunities for creative professionals exist in humanitarian aid sector?	What would you do differently?
		What kinds of incentive currently exist or do you think are needed?
		Request for clarity as needed; follow up questions as appropriate
		Do you think architects, or any other creative professionals are doing enough in this field?
	What opportunities do you think there are for people who want to get more involved?	
	If you could be anyone in the field, what kind of role would you take and how is that important to this field?	
	Where do you see as being the future for architects in this field?	
	Request for clarity as needed; follow up questions as appropriate	

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General		
Nature	Type of Questions	Interviewer Prompt
Open	Wrap-up	Summing up and closing remarks

## Appendix B: Interview Data

Forty-nine semi-structured in-depth interviews totaling more than 46 hours of recording (55 minutes on average) are presented in the following table along with the names of interviewees, their self-assigned role at the time of the interview and the interview location.

Interview Order	Name	Title	Affiliation	Site	Notable Event	Event Date
1	Dalman	Director	Dalman Architects, Canterbury Branch of NZIA	CH	Field work: Chch	25/01/11 - 26/01/11
2	Van der Lingen	Director	Director, Sheppard and Rout; Chair, NZIA Canterbury Branch	CH		
3	Johnson, S.	Founder, SVA	Founder, University of Canterbury Student Volunteer Army; Board member, Riccarton/Wigram Community Board	CH		
Christchurch - Aftershock Mw 6.3						22/02/11
4	McKnight	Co-Director, Professor of Communication	Asset-Based Community Development Institute; Professor, Northwestern University	US	Conference: Structures for Inclusion	25-27/03/11
Christchurch - Aftershock Mw 6.4						13/06/11
5	Greene	Project Manager	Earthquake Engineering Research Institute	US	Field work: US	01/06/11 - 21/07/11
6	Ogbu	Senior Associate	Public Architecture, Design Fellow, IDEO org	US		
7	Hammer	Director	Builders Without Borders, EERI, Martin Hammer Architect, ADPSR	US		
8	King	Director	Ecological Building Network	US		
9	Langenbach	Consultant	Founder, ConservationTech	US		
10	Johnson, L.	Principal	Johnson Consulting	US		
11	Sinclair	CEO	Architecture for Humanity	AKL		
12	Clifford	President of NZIA (2010-2011)	New Zealand Institute of Architects, Principal of Architectus	AKL		

Interview Order	Name	Title	Affiliation	Site	Notable Event	Event Date
13	Macer	Director	Regional Advisor in Asia and the Pacific, UNESCO; Director, Eubios Ethics Institute	CH	Conference: Looking Beyond Disasters	09/12/11 - 12/12/11
Christchurch - Aftershock Mw 6.0						23/12/11
14	Watkins	Architect, Planner, Urban Designer, Author, International Peace Activist	Co-Director, International Union of Architects Sustainability Work Programme; Co-Founder, ADPSR, ARC-PEACE	AKL		
15	Athfield	NZIA Architectural Ambassador for Christchurch (2010-2011)	Founder of Athfield Architects, New Zealand Institute of Architects	AKL		
16	Bishop	National Co-ordinator	Sustainable Habitat Challenge	AKL		
17	Hutchinson	Consultant, Facilitator	New Zealand Social Entrepreneurs Fellowship	AKL		
18	Matheson	Co-ordinator, Youth Advocate, Social Entrepreneur	Founder of Regeneration, Principal Advisor in Social Entrepreneurship, Community and Cultural Strategy Unit, Auckland Council	AKL		
19	Allison	Consultant, Architect	Fellow, New Zealand Social Entrepreneurs Fellowship; Architect, Earthsong Eco-neighbourhoods	AKL		
20	Lucas	Director	Lucas Associates	CH	Chch EQ anniversary	22/02/12
21	Carr	Vice-Chancellor	University of Canterbury	CH		
22	Roberts	Founder, Director	Social Policy Research and Parliamentary Affairs Unit, Salvation Army	AKL		
23	Glavovic	Associate Director, Professor	Earthquake Commission (EQC)	Skype		
24	Boult	CEO	Christchurch International Airport	CH	Field work: Chch	5/03/12
25	Dalziel	MP	MP for Christchurch East	CH		
26	Kipa	Co-Director	Seaview Resilience Centre	CH		
27	Buck	Founder, Former Mayor (1989-1998) Christchurch	Unlimited Paenga Tawhiti, Discovery School, Christchurch	CH		

Interview Order	Name	Title	Affiliation	Site	Notable Event	Event Date
28	Potangaroa	Associate Professor	United	AKL		
29	Bell	Founder, Executive Director	Design Corps	US	Field work: US / Haiti	21/03/12 - 19/04/12
30	Vittori	Co-Director	Centre for Maximum Potential Building Systems	US		
31	Fisk	Co-Director	Centre for Maximum Potential Building Systems	US		
32	Bernhard	Director	Tulane City Centre	US		
33	Perkes	Director	Gulf Coast Community Design Studio	US		
34	Grote	Project Manager	Gulf Coast Community Design Studio	US		
35	Granvil	AIA USGBC Sustainability Design Fellow	Architecture for Humanity	HA		
36	Lafontant	Graduate Architect	Architecture for Humanity	HA		
37	Theodore	Director of AFH Economic Development Centre	Architecture for Humanity	HA		
38	Lutz	Architecture Professor	University of Minnesota, MN	HA		
39	Desrosiers	Design Fellow	Architecture for Humanity	HA		
40	Gill	Program Manager	Architecture for Humanity	HA		
41	Agnos	Consultant	Former Mayor of SF	US		
42	Cesal	Acting CEO	Architecture for Humanity	US		
43	Manus	Principal, Immediate Past President of AIA	Principal, Heller Manus Architects; 87th President of American Institute of Architects; Board of Directors, Architecture for Humanity	US		
44	Palleroni	Director	BaSiC Initiative	Skype		



Interview Order	Name	Title	Affiliation	Site	Notable Event	Event Date
45	Culvahouse	Editor	Architecture California	US	Field work: US / Haiti	21/03/12 - 19/04/12
46	Patel	Architect, President of ADPSR	Architects, Designers, Planners for Social Responsibility	US		
47	Cary	Consultant	Public Interest Design	US	Field work: US / Haiti	21/03/12 - 19/04/12
48	Moore	Professor	University of Texas	Skype		
49	Cox	Consultant	Immediate Past President, Union of International Architects (UIA)	Skype		

## Appendix C: NVivo Data Analysis

The table below shows the breakdown of multi-level coding structure for the three emergent themes (first-level nodes), focused categories as key concepts (second-level “parent” nodes), and initial codes (third-level “child” nodes) in terms of the number of sources and references coded.

Key Theme	Key concepts	Source	Aggregated Reference		
Build Back Better		47	638		
	<b>Nodes</b>		<b>Source</b>	<b>Reference</b>	
	Challenges		43	261	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Challenge - Architectural		35	111
		Challenge - Contextual		14	23
		Challenge - Social		22	55
		Challenge - Systematic		22	72
	<b>Node</b>		<b>Source</b>	<b>Reference</b>	
	Factors		53	121	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Development		8	10
		disaster response		5	7
		Negative Lessons		17	34
		Positive Lessons		17	23
		Process		18	34
		Psychological		3	8
	<b>Node</b>		<b>Source</b>	<b>Reference</b>	
	Paradox		41	176	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Compromise		10	12
		Intention		20	38
		Perception		22	49
		Timing		16	31
		Uncertainty		5	6
Key Theme	Key concepts	Source	Aggregated Reference		
Design Equity		48	1181		
	<b>Node</b>		<b>Source</b>	<b>Reference</b>	
	Economics		40	158	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Business mindset		14	24
		Finance		20	49
		Neoliberalism		9	19
		Recession		2	4
		Value		23	43
	<b>Node</b>		<b>Source</b>	<b>Reference</b>	
	Power		42	239	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Control		20	30
		Corruption		10	23
		Media		27	61
		Politics		29	84
	<b>Node</b>		<b>Source</b>	<b>Reference</b>	
	Strategies		40	176	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Adaptation		8	13
		Advocacy		2	2
		Capacity building		8	18
		Community empowerment		7	13
		Community engagement		34	116
		Momentum		3	5
		Youth engagement		5	9
	<b>Node</b>		<b>Source</b>	<b>Reference</b>	
	Sustainability		38	148	
		<b>Child nodes</b>		<b>Source</b>	<b>Ref</b>
		Environmental Sustainability		8	24
		Growth		3	3
		Ownership		15	22
		Resilience		8	24
		Resources		7	10
		Social Sustainability		18	30

Key Theme	Key concepts	Source	Aggregated Reference			
Design Thinking		46	651			
	<b>Node</b>		<b>Source</b>	<b>Reference</b>		
	Adaptive Challenges		37	160		
		Child nodes		Source	Ref	
		Decision making		10	27	
		Education		24	55	
			Grand child nodes		Source	Ref
			Democratic design		1	1
			Generational Difference		6	14
			Innovation		22	40
		Child nodes		Source	Ref	
		Ego		7	10	
		Problem Solving		10	14	
		Wicked Problem		22	40	
	<b>Node</b>		<b>Source</b>	<b>Reference</b>		
	Roles of the Architect		43	355		
		Child nodes		Source	Ref	
		Professionalism		16	34	
		Responsibility		20	32	
		Alternative roles		25	100	
		Virtues		32	94	
			Grand child nodes		Source	Ref
			Empathy		3	4
			Passion		2	3
			Patience		1	1
			Teamwork		15	29
			Transparency		5	7
			Trust		12	14
			Truth		5	7
			Vision		9	27
	<b>Node</b>		<b>Source</b>	<b>Reference</b>		
	Paradigm Shift		31	82		
		Child nodes		Source	Ref	
		Architecture of empowerment		16	23	
		Motivation		24	39	
		Pro bono		10	20	

## Appendix D: Transcription Information

Interviewee	Case Study	Characters	Duration	Nodes	Characters Referenced
Agnos, A.	GL, HK, CH	32,151	0:58:39	104	431
Allison R. and Matheson, B.	CH	12,569	0:26:00	77	187
Athfield, I.	CH	36,704	1:07:30	160	984
Bell, B.	GL, HK	11,385	0:18:42	107	355
Bernhard, S.	HK	39,256	0:56:17	121	676
Bishop, T.	CH	29,563	0:56:18	175	1073
Boult, J.	CH	34,900	0:55:42	114	477
Buck, V.	CH	39,483	1:14:56	146	874
Carr, R.	CH	22,057	0:29:22	90	445
Cary, J.	GL, HK	36,681	0:55:56	137	866
Cesal, E.	HA	28,193	0:42:44	106	553
Clifford, P	CH	31,888	0:59:45	103	464
Culvahouse, T.	GL, HK	25,911	0:54:30	97	324
Dalman, R.	CH	30,086	1:06:10	87	887
Dalziel, L.	CH	29,151	0:54:01	173	985
Fisk, P.	GL, HA	24,041	1:00:18	69	172
Gill, D.	HA	42,996	1:08:16	129	974
Glavovic, B.	CH	29,390	0:50:41	132	559
Granvil, B. and Desrosier, N.	HA	35,168	0:51:40	136	656
Greene, M.	GL	43,316	1:12:42	119	952
Grote, M.	HK	72,912	1:46:00	170	1160
Hammer, M.	HA	52,217	1:55:28	141	1557
Hutchinson, V.	CH	28,991	0:52:23	133	627
Johnson, L.	GL, HK, CH	69,822	1:40:20	178	1279
Johnson, S.	CH	33,362	0:48:59	130	1142
King, B.	HA	28,897	0:45:06	92	751
Kipa, M.	CH	31,853	1:18:02	128	740
Langenbach, R.	GL, HK	43,155	1:31:16	106	858
Lafontant, J.	HA	10,819	0:22:35	90	270
Lucas, D.	CH	24,543	0:46:02	182	969
Manus, C.	GL, HK	49,251	1:20:45	237	2311
McKnight, J.	GL	27,479	1:05:37	117	703
Moore, S.	GL	18,619	0:42:00	111	481
Ogbu, L.	GL	29,964	0:44:57	127	999
Patel, A.	GL	27,689	0:50:56	119	508
Perkes, D.	HK	49,248	1:12:00	182	1178
Potangaroa, R.	GL, CH, HA	55,107	1:15:26	245	1802
Roberts, C.	CH	48,889	1:27:17	173	1045
Sinclair, C.	GL, HK, CH, HA	38,590	0:57:53	168	1681
Theodore, M.	HA	20,511	0:35:26	162	1056
Van der Lingen, J.	CH	33,524	1:07:09	89	783
Vittori, G.	GL, HA	27,271	0:45:00	141	702
Watkins, T.	CH	91,305	3:01:03	143	1042

## Appendix E: Ethics Application

The initial research ethics proposal for this thesis was reviewed by The University of Auckland Human Participant Ethics Committee (UAHPEC) on the 13<sup>th</sup> of October, 2010. The formal ethics approval was granted on the 20<sup>th</sup> of October, 2010. The relevant sections of the approved ethics application are reproduced below. The full application is available upon request at UAHPEC.

Section A: Overview

Section B: Human Participants

Section C: Research Procedures

Section D: Information and Consent

Section E: Storage and Use of Results

Section G: Other Cultural Issues

Section I: Risks and Benefits

Supporting Documents

Participant Information Sheet (Individual)

Consent Form (Individual)

**SECTION A:****1. Project title**

Architecture for Humanity: Towards a Transdisciplinary Design of the Built Environment within Post-disaster Relief and Development

**2. Aims/objectives of project**

(Describe in plain language that is comprehensible to lay people and free from jargon.)

My research examines the role of architects in the humanitarian aid sector. The research objectives are to test common assumptions held by both the public and the international aid agencies with regards to the value of architectural services in the humanitarian relief field. Also, the research seeks to find the common thread between designers and policy makers, by way of discovering the untapped potential for design professionals to contribute in the humanitarian aid industry.

**3. Research background**

(Provide sufficient information to place the project in perspective and to allow the significance of the project to be assessed.)

When more than 70 percent of the world's population live on less than two dollars a day, and more than half of the world's population now living in cities,<sup>1</sup> the ethics of designing for the disenfranchised is a double-edged sword: the industry proponents call it Architecture for Humanity, and its skeptics call it New Imperialism. When the repercussions of any actions by the humanitarian aid sector involve human lives, the issue becomes even more laden with ethical questions for humanity, some of which I hope to address in my research, to the extent that it applies to architecture.

The humanitarian aid industry is replete with examples of inappropriate solutions to post-disaster dwellings, and opportunities to build back better have often been missed due to perceived complexities and difficulties of providing housing beyond the bare minimum.<sup>2</sup> This thesis serves as a manifesto to present the untapped capacity of today's architects to make significant contributions in the humanitarian aid sector.

This research deals with global humanitarian issues that are in fact positioned locally, as the *global* is becoming increasingly *regional* in pursuit of more sustainable development.<sup>3</sup> Selected case studies located abroad illustrate conditions applicable to New Zealand due to our geographic isolation. This is in spite of the phenomenon of social media and our growing

<sup>1</sup> United Nations, The Millennium Development Goals Report 2008, New York, 2008, p.41

<sup>2</sup> The bare minimum level here refers to a level of provision that is not fit for long-term inhabitation, such as tents and shelters without ablutions and electricity, given as a temporary measure until more permanent housing is provided.

<sup>3</sup> Sustainable Development uses a broad definition given by the World Commission on Environment and Development in 1987 as: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Brundtland Commission, Our Common Future, the World Commission on Environment and Development, Oxford: Oxford University Press, 1987

dependency blurring the traditional geo-political and cultural boundaries that previously separated us – no longer is it possible to turn a blind eye to global humanitarian disasters, knowing that the repercussions of actions in developed world are felt almost instantly by those in developing world.<sup>4</sup> Community development through leadership, social entrepreneurship, and capacity building have gained currency amongst aid agencies who have come to recognise that the best solution often lies within the community. As per Foucault's argument that, "technology must be social before it is technical"<sup>5</sup>, self-sufficient communities can be further empowered with support from industry experts.

Architecture for Humanity is a global grassroots movement.<sup>6</sup> More than a simple pro-bono organization, it embraces an open-source model of business, enabling those in developing countries to implement design solutions while protecting the rights of creative professionals from developed countries. Architecture for Humanity is headquartered in San Francisco and has around 70 affiliated chapters in 13 countries, each operating autonomously in varying capacities. With organizational growth, however, comes a challenge of having to adapt a relatively ad-hoc modus operandi to a more structured one as most other INGOs have done for years. This is also a personal challenge, as the researcher is the founder of the Auckland Chapter of Architecture for Humanity. As the chapter is growing both in membership size and experience, it is no longer a one-man band and issues of succession planning and organizational sustainability naturally emerge. However, as far as the research is concerned, my familiarity with the organisation won't affect the objectivity of the study, and Architecture for Humanity has been identified as having a unique role within this sector that merits its study. The research question, thus, is a multi-faceted enquiry that is both looking outward and inward.

#### 4. Identify the ethical issues arising from this project and explain how they can be resolved.

(For example: confidentiality, anonymity, informed consent, participant's rights to withdraw, conflict of interest, etc.) (UAHPEC expects applicants to identify the ethical issues in the project and explain in the documentation how they have been resolved. The application will not be considered if this is not answered adequately. A "Not applicable" response is not acceptable.)

Ethical Issues	Control Measure(s)
Direct approach	The interview participants will each be approached by me directly. While I understand that an indirect approach to solicit interview consent would be preferred, the participants are either a public figure or are in high-profile positions of organisations and they would be inaccessible otherwise. The credibility of knowing them previously cannot be

<sup>4</sup> "(One) wonders whether the word natural is always accurate. Sixty-one percent of all "natural" disasters from 1980 to 2001 were linked to global warming, mostly a human-made disaster. What we have not made, we exacerbate..." Bergman, Carol, ed. *Another Day in Paradise: Front Line Stories from International Aid Workers*. London: Earthscan, 2003. p.16

<sup>5</sup> Foucault, Michel, *The Order of Things: An Archaeology of the Human Sciences*, New York: Routledge, 1989, p.82

<sup>6</sup> Sinclair, Cameron, during his talk on open-source architecture at TED Conference, 2004. [http://www.ted.com/talks/cameron\\_sinclair\\_on\\_open\\_source\\_architecture.html](http://www.ted.com/talks/cameron_sinclair_on_open_source_architecture.html) viewed on 2010-08-25 @ 1146

	substituted by a third party, so if I was to use an indirect approach it would hinder my ability to access these participants.
Confidentiality of high profile 'elite' participant	The organization will be identified and there is a high possibility of the participant being identified because of the small number of people in the industry matching his/her profile. Because the anonymity cannot be guaranteed, his/her name will be identified in the research and the interview will be on the record. No information outside of my research objectives will be sought, thus any participation or non-participation should not affect the participant.
Confidentiality of staff	Where I have selected participants who are staff of an organisation, the permission to approach participants will first be sought from their employer, after which I will approach the individuals directly for their consent to be interviewed. Every effort will be made to maintain the participant's anonymity but the organization will be identified and so there is some possibility of the participant being identified as well due to the small number of people in the industry matching the participant's profile. The participant's name will be replaced with a pseudonym and the interview will be off the record. Since no information outside of my research objectives will be sought, any participation or non-participation should not affect the employment status of the participants. As a result, no information will be reported back to the staff or his/her employer.
Recording of interviews	The interview will be audio recorded. The original recording will be stored as a computer file, which will be secured and only be accessible to me for the purpose of this research only. It will subsequently be transcribed (converted to text), and analysed to form the basis of my dissertation. The original recording will be destroyed by the end of the project.
Anonymity	Anonymised transcripts derived from the original recording may be published or retained by the researcher for future analysis.
Informed Consent	Research participants are fully informed about the research, its procedures and risks and give their consent. This will be bound by the participants signing the consent form.
Participant's rights to withdraw	The participants are under no obligation to take part and do not need to give any reason for not doing so. They are free to withdraw from participation at any point and any data that has not yet been published at any point following the interview. In case of total withdrawal, the recording will be destroyed.
Risk of Harm	Researcher will not put participants in any situation that may be harmful as a result of their participation in the research.
Conflict of Interest	The researcher is involved at personal capacity in many, if not all of the organisations and projects, but best efforts will be made to ensure objectivity and minimise researcher bias due to familiarity when conducting formal interviews and discussions. Any potential for misinterpretations or misuses of data collected/ disseminated will be counteracted by carefully considering the consequences it would have on 1) the participants, and any third parties affected, 2) the researcher, and, of course, 3) the University.
Familiarity	At first glance, the research may appear to be located in an area too familiar to the researcher's own interest. While this is true to the extent that it fuels my passion and motivation for embarking on the research in the first place, the manner in which I am going about investigating this is as objective as any organisation worthy of study in this sector. The participants selected for interview, while many of them are long-term colleagues and thus friends, were not chosen due to my familiarity with them personally, but rather due to their position within the organisation and the level of expertise and knowledge they offer in addressing my research questions.

## SECTION B:

### 1. Who are the participants in the research?

(Delete those who do not apply)



Adults	Own colleagues
Own students	Persons aged less than 16 years old — indicate age frame
Persons whose capacity to consent is compromised	Other (Explain)

**2. Explain how many organisations, departments within the organisations, and individuals you wish to recruit.**

(Attach any letter of support you may have had from an organisation.)

Broadly speaking, the researcher will recruit participants from the three NGOs – Architecture for Humanity, World Bank, UN-HABITAT – who are working in the relevant fields of architecture. The researcher at her discretion, may interview fewer individuals than listed if she feels that her research questions are addressed adequately with the number of individuals already interviewed.

Refer to **Appendix A** for further breakdown of the participants to be approached.

**3. How will you obtain the names and contacts of participants?**

(If by advertisement or email, attach a copy to the application. If through an agency holding these details, attach a copy of support letter.)

The names and contacts of participants of this research has already been identified as per **Appendix A**

**4. Who will make the initial approach to potential participants?**

(For example: will the owner of the database send out letters?)

In majority of cases where the researcher knows the participant first-hand and where the participant is an individual (not an employee of an organisation which is the subject of the research), the researcher will approach the individual participants directly. i.e. the founder of Architecture for Humanity

Where large NGOs, such as UN-HABITAT and World Bank are concerned – even though the researcher is already acquainted with the subject – the researcher will first approach the relevant heads of the organisation via telephone or e-mail, through his/her secretary or PA. Where the general staff under the management of the CEO or President of NGO is to be interviewed, permission will be sought from the person at the highest chain of command, then approached thereafter.

Refer to **Appendix A** for further breakdown of the participants to be approached.

**5. Is there any special relationship between participants and researchers?**

YES (Please explain. For example: student/teacher.)

The researcher is already involved in personal capacity in many, if not all of the organisations and projects. The author is a founding director of the Auckland chapter of Architecture for Humanity, therefore has a direct relationship with the interview candidates at the headquarters in the States as well as those in Haiti. Otherwise, the researcher has met with several of the potential interview candidates at professional conferences and networking events, but no formal pre-existing relationship exists outside of that.

All efforts will be made to ensure objectivity and minimise researcher bias due to familiarity when conducting formal interviews and discussions. Familiarity is a precondition for gaining full access to the research data, thus this is a strategic advantage in my research rather than a downside.

NO

**6. Are there any potential participants who will be excluded?**

<p>YES (Please explain and state the criteria for excluding participants.)</p> <p>The potential participants are selected because of their expertise and knowledge in the field that this research is concerned with. Consequently any potential participants who has been determined by researcher to not add substantially to enrich the research topic and its set of questions will be excluded from the study.</p>	<p>NO</p>
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## SECTION C: RESEARCH PROCEDURES

1. **Project duration** (Dates during which data needs to be collected for this study and requires ethics approval.)

<p>From <u>1 November 2010</u> to <u>1 November 2012</u></p>
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### 2. Describe the study design.

(For example: If it is a longitudinal study, explain what a longitudinal study is and provide the details.)

<p>I propose three levels of research: <b>local, national, and global</b>, using <b>multiple methodologies</b> appropriate at those levels. Micro scope research is undertaken at local level, and macro scope research is undertaken at national and at global level.</p> <p>Specifically, the <b>local</b> level research in New Zealand will directly engage the stakeholders of New Zealand's Civil Defense and Disaster Management for sustainable development of our own communities using architectural interventions. To that end, I will conduct <b>action research</b> through Architecture for Humanity Auckland Chapter, evaluating its projects and responding to calls from local community for service. At <b>national</b> level, I will look at comparative <b>case studies</b> at locations abroad that are noted for having strong social capital and, like New Zealand, are characterised by a particular form of isolation.<sup>7</sup> The case studies serve to ascertain resilience<sup>8</sup> and vulnerability to disasters in New Zealand. Finally, at <b>global</b> level, I will look at systematic and structural composition of three international organisations, the United Nations and the World Bank chosen for their multilateral approach to aid, and Architecture for Humanity, as an independent grassroots organisation acting as an advocate of socially responsible design.<sup>9</sup></p> <p>This tripartite research culminates in six theses statements that challenge the general perception about architectural input as being surplus to the requirements of survival, by validating how architectural interventions can transform the humanitarian aid industry. As such, my central research question is to investigate whether the role of contemporary architects in the humanitarian aid sector is more effective and sustainable as a social anthropologist, rather than as a design technician.</p>
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<sup>7</sup> Isolation could be geographical, social, or political

<sup>8</sup> Seville, Erica, *Resilience: Great concept but what does it mean for organisations?*, Tephra, Vol 22, pp9-15

<sup>9</sup> Shevchenko, Olga, "Nationals" and "Expatriates": *Challenges of Fulfilling "Sand Frontières"* ("Without

**3. List all the methods used for obtaining information.**

(Delete those that do not apply)

<del>Questionnaires (attach questionnaire)</del>	Interviews (attach interview questions)
<del>Focus groups (attach focus group questions)</del>	Observations (Explain) All data acquired by the researcher for observation or interpretation are limited to those already available in the public domain, and where there may be some that aren't, consent of its original author and its relevant publisher will be sought.
<del>Other (Explain)</del>	

**4. Who will carry out the research procedures?**

The investigator: JaYeun (Alexandra) Lee
--

**5. a) Where will the research procedures take place?**

(Physical location/setting)

On-site, in meeting rooms of head offices at organisations and firms selected for study. Outside of New Zealand, the study will be conducted in India, Haiti, and the U.S. as indicated in 5 b) below, in appropriate locations at selected organisations.
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**b) If the study is based overseas, which countries are involved?**

(Provide local contact information on the PIS.)

Kutch, Gujarat, India; Ahmedabad, India	San Francisco; Port-au-Prince, Republic of Haiti	Washington D.C. United States of America	Auckland, New Zealand
VASTU-SHILPA FOUNDATION Sangath, Drive-in Road, Opp. Yogi Complex Ahmedabad - 380054 INDIA  T+91.079.27451555 F+91.079.27452006 vsf@sangath.in	Architecture for Humanity 848 Folsom, Suite 201 San Francisco, CA 94107-1173, USA  T. +1.415.963.3511 F. +1.415.963.3520 barb@architectureforhumanity.org	World Bank Headquarters The World Bank 1818 H Street, NW Washington, DC 20433 USA T. 1+202.473.1000 F. 1+202.477.6391	The University of Auckland, Private Bag 92019, Auckland 1142, New Zealand. T+64.9.373.7599 extn. 87710 a.lee@auckland.ac.nz

**c) If the study is based overseas, explain what special circumstances arise and how they will be dealt with? Explain if there are any special requirements of the country (e.g. research visa) and/or the community with which the research will be carried out?**

<b>SPECIAL CIRCUMSTANCES</b>				
Location	Circumstances	Hazard (s)	Risk (s)	Control Measure (s)
All	Environment	Adverse weather	Sunburn, heatstroke, hypothermia, Frostbite	Appropriate clothing, environmental information consulted and advice followed. Seek advice from local contact/organisations on harmful plants, animals & substances that may be encountered.

	Health	General fitness; Local endemic disease(s)	Inability to perform tasks due to being unfit; Contracting disease(s)	Stay fit by exercising regularly and undertake full medical examination prior to site visit, take out medical insurance, update inoculations, establish emergency procedures such as first aid provisions and contact details in case of physical harm.
	Dealing with Public	Personal Attack; Causing offence/intrusion; Misinterpretation; Political, ethnic, cultural, socio-economic differences	Psychological harm to self; Psychological harm to others	Training in interview techniques and avoiding/defusing conflict, following advice from local organisations, wearing of clothing unlikely to cause offence or unwanted attention, conducting interviews in neutral locations, seeking information on social/cultural/political status of fieldwork area; General training will be received through RedR on: 1)Essentials of Humanitarian Practice, 2)Personal Security and Communication
	Other	General risks associated with travelling	Transport breakdown/delay; accommodation; fire; injury; mugging	Take general precautions, travel insurance, emergency contact details

**SPECIAL REQUIREMENTS**

Location	Requirements	How they will be dealt with
Haiti	Research visa is not available	On the advice of the ground staff of NGO (interview participant and host), tourist visa (valid for 90 days) is obtained and the researcher will not extend her stay beyond this period
India	Research visa is very difficult to obtain	On the advice of the local professor (interview participant and host), tourist visa is obtained through High Commission of India in New Zealand and the researcher will not extend her stay beyond this period
U.S	Research may extend beyond initial 90 day visa waiver period	Obtain 12 month student work visa through US embassy prior to field research commencement in the unlikely event the scope may extend beyond 90 days

**6. If the questionnaire is web-based, explain how anonymity can be preserved.**

(Indicate this on the PIS.)

N/A
-----

**7. How much time will participants need to give to the research?**

(Indicate this on the PIS.)

The interviews will generally take between 1 hour to 1 ½ hours.
---

**8. Will information on the participants be obtained from third parties?**

<p>YES (Explain, and indicate in the PIS. For example: participant's employer, teacher, doctor, etc.)</p> <p>Although information on all of the known participants are available on the public domain (websites), permission to contact and find further information on those employed at large organisations – particularly those who were previously unidentified to the researcher for selection but are considered to be valuable for the study – will be acquired through proper channels, i.e. the employer or the relevant person in charge, i.e. CEO or President</p>	NO
---	----

**9. Will any identifiable information on the participants be given to third parties?**

YES (Explain, and indicate in the PIS.)	NO
---	----

**10. Are you intending to conduct the research in University of Auckland class time?**

YES (Include approval from the Course Coordinator.)	NO
---	----

**11. Is deception involved at any stage of the research?**

YES (Justify its use and describe the debriefing procedure. Attach the debriefing sheet.)	NO
---	----

**12. Is there any koha, compensation or reimbursement of expenses to be made to participants?**

YES (Explain the level of payment and indicate in the PIS.)	NO
---	----

**13. a) Does the research involve the administration of any substance to participants?**

YES (Explain, for example: eye drops or food, and indicate in the PIS.)	NO
---	----

**b) Does this research involve potentially hazardous substances?**

YES (Explain, for example: radioactive materials, and indicate in the PIS.)	NO
---	----

**SECTION D: INFORMATION AND CONSENT****1. By whom and how will information about the research be given to participants?**

(For example: in writing or verbally – a copy of information to be given to prospective participants in the form of a PIS must be attached to this application.)

In writing by e-mail
----------------------

**2. a) Will the participants have difficulty giving informed consent on their own behalf?**  
(Consider physical or mental condition, age, language, legal status, or other barriers.)

YES (Explain)	NO
---------------	----

**b) If participants are not competent to give fully informed consent, who will consent on their behalf?**

(For example: parents/guardians)

N/A
-----

**3. a) If a questionnaire is used, will the participants have difficulty completing the questionnaire on their own behalf?**

(Consider physical or mental condition, age, language, legal status, or other barriers.)

YES (Explain)	NO
---------------	----

**b) If participants are not competent to complete the questionnaire, who will act on their behalf?**

(For example: parents/guardians)

N/A

**4. Is informed consent obtained in writing?**

YES	<del>NO (Explain, justify and indicate in the PIS.)</del>
-----	---

**5. Is access to the Consent Forms restricted to the Principal Investigator and/or the researcher?**

YES	<del>NO (Explain, justify and indicate in the PIS.)</del>
-----	---

**6. Will Consent Forms be stored by the Principal Investigator, in a locked cabinet, on University premises?**

YES	<del>NO (Explain, justify and indicate in the PIS.)</del>
-----	---

**7. Are Consent Forms stored separately from data and kept for six years?**

YES	<del>NO (Explain, justify and indicate in the PIS.)</del>
-----	---

**SECTION E: STORAGE AND USE OF RESULTS****1. Will the participants be audio-taped, video-taped, or recorded by any other electronic means such as Digital Voice Recorders?**

(Explain in the PIS and CF. Consider whether recording is an optional or necessary part of the research design, and reflect this in the CF.)

YES (Please indicate the types of recording.) The interview will be conducted in person and recorded using an audio digital voice recorder. In case the interview is conducted remotely online (via VOIP platforms such as Skype), it will be recorded with an appropriate software	<del>NO</del>
--	---------------

**2. a) Will the recording be transcribed or translated?**

YES (Complete 2b to d and indicate in the PIS and CF.)	<del>NO</del>
--	---------------

**b) Who will be transcribing the recordings?**

(If someone other than the researcher is the transcriber, attach a copy of the Confidentiality Agreement and indicate in the PIS and CF.)

RESEARCHER	OTHER (Explain) In the unlikely circumstance the researcher may not transcribe the recordings herself, she will nominate a third party to transcribe the recordings.
------------	---

**c) If recordings are made, will participants be offered the opportunity to edit the transcripts of the recordings?**

<del>YES (Explain in the PIS and CF. Where participants are asked to make a choice, this should be shown in the CF.)</del>	<del>NO</del>
--	---------------

**d) Will participants be offered their tapes or files of their recording (or a copy thereof)?**

YES (Explain in the PIS and CF. Where participants are asked to make a choice, this should be shown in the CF.)	NO
---	----

**3. If a questionnaire is used, please explain if there is any coding.**

Yes (Explain the coding procedure in the PIS.)	NO
--	----

**4. a) Explain how and how long the data (including audio-tapes, video-tapes, digital voice recorder, and electronic data) will be stored.**

(Indicate this in the PIS. The period data is to be kept will be commensurate to the scale of its research. For peer reviewed publication that might be further developed, the University expects six years.)

The original recording will be stored as a computer file, which will be secured and only be accessible to me. The original recording will be destroyed by the end of the project, no later than 1 <sup>st</sup> November 2012. However, anonymised transcripts derived from the original recording may be published or retained by me for future analysis, for the maximum of 6 years, or no later than 1 <sup>st</sup> November 2016, whichever is earlier.
--

**b) Explain how data will be used.**

(Indicate this in the PIS.)

It will subsequently be transcribed (converted to text), and analysed to form the basis of my dissertation, academic journals and research papers relevant to this research.
--

**c) Explain how data will be destroyed.**

(Indicate this in the PIS.)

The original recording will be destroyed by the end of the project, no later than 1 <sup>st</sup> November 2012. However, anonymised transcripts derived from the original recording may be published or retained by me for future analysis, for the maximum of 6 years, or no later than 1 <sup>st</sup> November 2016, whichever is earlier.
--

**5. Describe any arrangements to make results available to participants.**

(Explain this in the PIS.)

The results will be made available to the participants at the end of the project at the participant's discretion. <del>Participants are free to withdraw from participation at any point and any data that has not yet been published after the interview</del> Participants are free to withdraw from participation at any point and to withdraw any data that has not yet been published at any point following the interview, traceable to me up to 1 <sup>st</sup> November 2012. In case of total withdrawal, the recording will be destroyed.
---

**6. a) Are you going to use the names of the research participants in any publication or report about the research?**

(The PIS must inform the participants, and be part of the consent obtained in the CF.)

YES Every effort will be made to maintain anonymity but due to the small number of people in this section the participants may be identified as well as the organisation. In the case of the latter, the participant will be identified. In the case that the anonymity cannot be guaranteed, the name(s) of the research participant(s) will be identified in the research and the interview will be on the record.	NO
---	----

**b) If you don't use their names, is there any possibility that individuals or groups could be identified in the final publication or report?**

(This is a problem either when one is dealing with a small group of participants known to a wider public or when there is to be a report back to participants likely to know each other.)

YES (Explain and describe in the PIS.) Every effort will be made to maintain anonymity but due to the small number	NO
---	----

of people in this section the participants may be identified as well as the organisation. In the case of the latter, the participant will be identified. Where there is low possibility of identifying the individual(s), their name(s) will be replaced with a pseudonym(s) and the interview will be off the record. This will be explicitly stated on the PIS.	
---	--

**SECTION F: TREATY OF WAITANGI****1. Does the proposed research have impact on Māori persons as Māori?**

<del>YES (Complete all questions in this section and ensure the Pro Vice Chancellor (Māori) Nominee within your Faculty has signed off the application.)</del>	NO (Go to Section G.)
--	-----------------------

**SECTION G: OTHER CULTURAL ISSUES****1. Are there any aspects of the research that might raise any specific cultural issues?**

<del>YES (Explain)</del>	NO (Go to Section H)
--------------------------	----------------------

**2. What ethnic or cultural group(s) does/do the research involve?**

While the research involves a context in which various ethnic groups are present in the locality, the research itself has no impact on them directly. The ethnic groups involved are: - Permanent residents of India, in the state of Gujarat - Permanent residents of Haiti, in Port-au-Prince - Permanent residents of the U.S
---

**3. Identify the group(s) with whom consultation has taken place, describe the consultation process, and attach evidence of the support of the group(s).**

The research has no direct impact on the aforementioned groups, thus no formal consultation has taken place.
--

**4. Describe any on-going involvement the group(s) consulted has/have in the project.**

See G.3. above	
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**5. Describe how information will be disseminated to participants and the group(s) consulted at the end of the project.**

See G.3. above	
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**SECTION H: CLINICAL TRIALS****1. Is this project a Clinical Trial?**

<del>YES (Attach ACC Form A or B — see Applicants' Manual.)</del>	NO (Go to Section I)
---	----------------------

**SECTION I: RISKS AND BENEFITS****1. What are the possible benefits to research participants of taking part in the research?**

The findings of this research will offer new insights into contributions of architects and their services in humanitarian aid sector. The outcomes of this research may assist in increasing the profile and visibility of the humanitarian aid sector, with possible enhancement in ability to work across different disciplines, in particular with the architectural profession. The researcher cannot guarantee or promise that participants will receive any personal benefits from this project.
--



**2. What are the possible risks to research participants of taking part in the research?**

(Make sure that you have clearly identified/explained these risks in the PIS and CF(s).)

There are some possibilities of participants voicing opinions during the interview that are not popular with their employer – be that their organisation, the governments or the role of the humanitarian agencies.

There is some possibility of participants being identified because of the size of the industry, but since no information outside of the research objectives stated in the application will be sought, any participation or non-participation should not affect the employment status of the participants.

There is likelihood that participants will be providing information that criticises the employer. Where this is a possibility, the employer is asked for assurance that this will not affect the employment status of participating staff. Additionally, no information will be reported back to employers or their staff, but a summary of findings will be made available to them at their discretion.

**3. a) Are the participants likely to experience discomfort (physical, psychological, social) or incapacity as a result of the procedures?**

YES (Describe what provisions are in place for these persons in the PIS.)	NO
---	----

**b) What other risks are there?**

--

**c) What qualified personnel will be available to deal with adverse consequences or physical or psychological risks?**

(Explain in the PIS.)

--

**SECTION J: FUNDING****1. Have you applied for, or received funding for this project?**

YES (Acknowledge it on the PIS and answer either 2 or 3 below.)	NO (Proceed to Section K)
---	---------------------------

**2. From which funding bodies? (Quote the contract reference number.)**

--

**3. Is this a UniServices project?**

YES (Quote the contract reference number.)	NO
--	----

**4. Explain investigator's financial interest, if any, in the outcome of the project.**

--

**5. Do you see any conflict of interest between the interests of the researcher, the participants or the funding body?**

YES (Explain.)	NO
----------------	----

## SECTION K: HUMAN REMAINS, TISSUE AND BODY FLUIDS

### 1. Are human remains, tissue, or body fluids being used in this research?

<del>YES (Complete this section and explain in the PIS. Provide a copy of the information to be given to the Transplant Coordinator, and state the information that the Transplant Coordinator will provide to those giving consent.)</del>	NO (Go to Section L.)
---	-----------------------

### 2. How will the material be taken?

(For example: at operation, urine samples, archaeological digs, autopsy.)

--

### 3. Is the material being taken at autopsy?

YES	NO
-----	----

### 4. Is material derived or recovered from archaeological excavation?

YES (Explain how the wishes of Iwi and Hapū (descent groups), or similar interested persons, or groups, have been respected?)	NO
---	----

### 5. Will specimens be retained for possible future use?

YES (Explain and state this in the PIS.)	NO
--	----

#### a) Where will the material be stored?

--

#### b) How long will it be stored for?

--

### 6. a) Will material remain after the research process?

YES (Explain and state this in the PIS.)	NO
--	----

#### c) How will material be disposed of?

(Explain how the wishes with regard to the disposal of human remains of the whanau (extended family) of similar interested persons will be respected.)

--

#### d) Will material be disposed of in consultation with relevant cultural groups?

YES (Explain and state this in the PIS.)	NO
--	----

### 7. Is blood being collected?

YES (Complete this section and state in the PIS.)	NO
---	----

**a) What is the volume at each collection?**

--

**b) How frequent are the collections?**

--

**c) Who is collecting it?**

--

**d) Explain how long it will be kept and how it will be stored.**

--

**e) Explain how it will be disposed of.**

--

## SECTION L: OTHER INFORMATION

**1. Have you made any other related applications?**

YES (Provide approval reference number.)	NO
--	----

**2. If there is relevant information from past applications or interaction with UAHPEC, please indicate and attach.**

--

**3. Are there any other matters you would like to raise that will help the Committee review your application?**

YES	NO
-----	----

## Interview Design

**Interview Proposal:** (consistent with Section A-3)

This research examines the role of architects in the humanitarian aid sector. My central research question is

---

*to investigate whether the role of contemporary architects in the humanitarian aid sector is more effective and sustainable as a social anthropologist, rather than as a design technician.*

**Interview Purpose:** (consistent with Section A-2)

The objectives are to test common assumptions held by both the public and the international aid agencies with regards to the value of architectural services in the humanitarian relief field. Also, the research seeks to find the common thread between designers and policy makers, by way of discovering the untapped potential for design professionals to contribute in the humanitarian aid industry.

### **Inclusion/Exclusion Criteria for Recruitment of Research Participants**

Given that there are three levels of research – global, national, and local - the potential interview candidates identified for this research reflect their ability to adequately answer those research questions. Not only must the candidates be qualified in terms of expertise and knowledge in the field of humanitarian aid, but their area of expertise must also be congruent with the specific aspect of the research which is most relevant to them. This is an essential criterion for selection since the interview questions have been specifically tailored for this purpose.

The main objective for selecting participants in this way is to ensure that the research data reflects viewpoints that are fair and representative of the industry. While participants will be from a range of organisations, and sometimes even from the same organisation, an interpretive organisational research method<sup>10</sup> has been applied to select the experts. The cross-pollination of perspectives from different experts within the same industry will be insightful, particularly when they can collectively resolve uncertainties, inconsistencies and any tacit assumptions of the researcher. Typically there are three types of expertise (Bogner: 2009, 220):

1. Organisational expertise
  2. Everyday expertise
  3. External expertise
- 

<sup>10</sup> Foschauer, U. and Lueger, M. "Expert Interviews in Interpretive Organizational Research" in Bogner, A. (Ed.), *Interviewing Experts*, Palgrave Macmillan: NY, 2009. I have adopted the research strategy outlined by Foschauer and Lueger.

The “organisational experts” are the highly visible experts - or *elites* - in public, who hold executive positions of organisations having specific knowledge of the organisation’s system and structure. On the other end of the spectrum are the “everyday experts” who have subject matter know-how specific to projects which they are most likely to have, or *have had* (in which case they become “reflective subject matter experts”) some first-hand field experience. Finally, the external experts are likely to be third parties or academics with broad, specialist knowledge of the industry which is representative of the generally accepted views of the subject. Inclusion of external experts in this research is a key measure to avoid biased research outcome. For comparative purposes, participants chosen for the research in each of the organisations within the research levels outlined before, ideally will hold very similar position and level of expertise as another.

So generally, all candidates would demonstrate primary or secondary experience in the humanitarian aid sector, and, where possible, familiar with the architectural profession of their locality. While the default criteria for selection is by expertise, the selection process is not influenced by such attributes as culture, religion, race, sexual orientation, mental or physical disability. Conversely, any potential participant who had been deemed not to contribute constructively to the research topic will be excluded from the study.

Accessibility of participants is usually of major concern to any research involving high-profile participants. For this research, the interview participants will be approached by me directly. While I understand that an indirect approach to solicit interview consent would be preferred, the participants are either a public figure or are in high-profile positions of organisations and they would be inaccessible otherwise. The credibility of knowing them previously cannot be substituted by a third party, so if I was to use an indirect approach it would hinder my ability to access these participants.

All efforts will be made to ensure objectivity and minimise researcher bias due to familiarity when conducting formal interviews and discussions. Familiarity is a precondition for gaining full access to the research data, thus this is a strategic advantage in my research rather than a downside. It is important to distinguish this as being a purposeful, rather than a convenient sampling method.

Upon being granted the ethics approval by UAHPEC, the interview candidates identified in the attached list of participants will be contacted and a time will be agreed upon to conduct the interview. While best effort will be made to interview candidates selected in the initial screening of participants identified in the attached list, where the participant is unavailable (due to termination of office, lack of accessibility, or some other unforeseen circumstances) another candidate will be selected based on the same criteria as outlined above, through peer reference or by expert advice.

#### **Interview Structure:**

General non-specific questions will open and close the interview to warm up the participant. At the core, there are three levels of research: local, national, global, in my research broken down into further six research questions, which are then translated into more specific interview questions. Generally, the interview participants will be asked questions relevant to the research level relevant to the participant. Please refer to the separate list which has a list of interviewees identified and the level they have been assigned to for the

purpose of this research. Depending on the flow of the interview, the questions may not be verbatim.

**Literature Consulted:**

Bogner, A. (Ed.), *Interviewing Experts*, Palgrave Macmillan: NY, 2009

Campbell, John, *Methods in Development Research*, Rugby: ITDG Publishing, 2005

Flick, Uwe, *The Sage Qualitative Research Kit*, London: SAGE, 2007

Iphofen, Ron. (Ed.) *Ethical Decision-Making in Social Research*, Palgrave macmillan: NY, 2009

UAHPEC, Applicants' Manual 2010, University of Auckland, January 2010

<http://www.auckland.ac.nz/uo/re-uahpec> viewed on 2010-09-10 @ 1200

<http://www.ethicsguidebook.ac.uk/> viewed on 2010-09-12 @ 1428

<http://scholar.harvard.edu/jlhochschild/publications/conducting-intensive-interviews-and-elite-interviews> viewed on 2010-09-12 @ 1534

**List of Participants and Type of Participant Information Sheet Assigned:**

1. Head of NGO – consent to interview staff
2. Head of NGO – direct interview consent & consent to interview staff
3. Staff of NGO – direct interview consent
4. Individuals – direct interview consent

Case Study	Person	Position	Type of PIS letter assigned:
<b>GLOBAL</b>			
AFH	Cameron Sinclair	Co-founder, CEO	2
	Kate Stohr	Co-founder, Managing Director	2
	Nathaniel Corum	Director Outreach (Haiti)	3
	Frederika Zipp	Program Manager (Haiti)	3
	Erik Cesal	Project Architect (Haiti)	3
World Bank	Robert B. Zoellick	CEO	1
	Sarah F. Cliffe	Director of Strategy and Operations (Asia Pacific)	3
	Rakesh Nangia	Director of Strategy and Operations (Human Development Network)	3
	Saroj Kumar Jha	Program Manager	3
UN-HABITAT	Joan Clos	Executive Director	1
	Gulelat Kebede	Director, Training and Capacity building	3
Other	Jennifer Barenstein	World Habitat Research Centre, SUPSI	2
	Gonzalo Lizzarale	Founder, I-Rec	4
	Unspecified	Individual	4
<b>NATIONAL</b>			
India	Sandeep Virmani	Director, Hunnarshala	4
	Nandan Balsavar	Director, Artes, Human Settlements Development Centre	4
Haiti	Architects	(See Global)	3
	Unspecified	Individual	4
New Zealand	John Hamilton	Director, Ministry of Civil Defence Emergency Management	2
<b>LOCAL</b>			
AFH-Auckland	Unspecified	Individual	4
NZIA	Patrick Clifford	President	4
Private	Architects	Individual	4
RedR NZ	Jane Lodge	Chair, Board of Trustees	2
Redcross NZ	John Ware	CEO	2
Habitat for Humanity	Ian Hay	Founder, President	2
Social Innovation Investment Group	Vivian Hutchinson	CEO	2



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Auckland, New Zealand

## **PARTICIPANT INFORMATION SHEET**

### Individual

Project title: Architecture for Humanity:  
Towards a Transdisciplinary Design of the Built Environment  
within Post-disaster Relief and Development

Researcher: Ja Yeun (Alexandra) Lee

I am a PhD student in Architecture at the Department of School of Architecture and Planning in the Faculty of National Institute of Creative Arts and Industries at The University of Auckland. The University requires that ethics approval be obtained for research involving human participants and this letter explains the purpose and scope of the research and your involvement.

My research examines the role of architects in the humanitarian aid sector. The research objectives are to test common assumptions held by both the public and the international aid agencies with regards to the value of architectural services in the humanitarian relief field. The research seeks to find the common thread between designers and policy makers, by way of discovering the untapped potential for design professionals to contribute in the humanitarian aid industry. The findings of this research will offer new insights into contributions of architects and their services in humanitarian aid sector.

You are invited to take part in this study, because of your expertise and knowledge in the field. If you choose to take part, you will be asked some questions and this will take 1 to 1 ½ hours of your time. You will be asked to comment on the work of the organisation, how you came to be involved in the organisation, and your thoughts around what the role of creative professionals is in humanitarian aid industry. I would also like to know about specific projects you were involved in, and any other thoughts, feelings, or perceptions that you have of the current practice of the organisation and its work.

With your permission, the interview will be conducted in person and recorded using an audio digital voice recorder. In the case that the interview is conducted remotely online (via VOIP platforms such as Skype), it will be recorded with an appropriate software. During the interview, you may refuse to answer any question and terminate the



interview at anytime without giving any reason. You can turn off the tape at any time during the interview, should you wish to go off the record. The original audio recording will be stored as a computer file, which will be secured and only be accessible to me. It will subsequently be transcribed (converted to text), and analysed to form the basis of my dissertation, academic journals and research papers relevant to this research. The recordings will then be transcribed by a third party who has signed a confidentiality agreement, but only in the event I am unable to do it myself. The original recording will be destroyed by the end of the project, no later than 1<sup>st</sup> November 2012. However, anonymised transcripts derived from the original recording may be published or retained by me for future analysis, for the maximum of 6 years, or no later than 1<sup>st</sup> November 2016, whichever is earlier.

The organisation will be identified and there is a high possibility of you being identified because of the small number of people in the industry matching your profile. Because your confidentiality cannot be guaranteed, your name will be identified in the research. No information outside of my research objectives will be sought. As a result, no information will be reported back to you, but a summary of findings will be made available at your discretion.

This study is entirely voluntary. You are under no obligation to take part and do not need to give any reason for not doing so. You are free to withdraw from participation at any point and to withdraw any data that has not yet been published at any point following the interview, traceable to me up to 1<sup>st</sup> November 2012. In case of total withdrawal, the recording will be destroyed.

For further information you can contact either myself, the supervisor or the department head of department, as detailed below.

Ms. Alexandra JaYeun Lee  
*Researcher*

PhD Candidate, School of  
Architecture and Planning,  
The University of Auckland,  
Private Bag 92019, Auckland  
1142, New Zealand.

Telephone  
+64 (9) 373 7599 extn. 87710

Email:  
[a.lee@auckland.ac.nz](mailto:a.lee@auckland.ac.nz)

Dr. Michael Linzey  
*Supervisor*

Senior Lecturer, School of  
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Dr. Sarah Treadwell  
*Head of Department*

Associate Professor, School of  
Architecture and Planning,  
The University of Auckland,  
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1142, New Zealand.

Telephone  
+64 (9) 373 7599 extn. 88681

Email:  
[s.treadwell@auckland.ac.nz](mailto:s.treadwell@auckland.ac.nz)

For any queries regarding ethical concerns you may contact the Chair, The University of Auckland Human Participants Ethics Committee, The University of Auckland, Office of the Vice Chancellor, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 extn. 83711

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS COMMITTEE  
ON 2010/10/26 for 3 years, Reference Number 2010/485



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Auckland, New Zealand

## **CONSENT FORM**

Individual

**THIS FORM WILL BE HELD FOR A PERIOD OF 6 YEARS**

Project title: Architecture for Humanity:  
Towards a Transdisciplinary Design of the Built Environment  
within Post-disaster Relief and Development

Researcher: Ja Yeun (Alexandra) Lee

I have read the Participant Information Sheet, have understood the nature of the research and why I have been selected. I have had the opportunity to ask questions and have them answered to my satisfaction.

- I agree to take part in this research.
- I understand that my organisation will be identified in the final publication or report about this research, and that I may also be identified.
- I understand that I am free to withdraw participation at any time, and to withdraw any data traceable to me up to 1<sup>st</sup> November 2012.
- I agree / do not agree to be audiotaped for the duration of the interview. (1-1 ½ hours).
- I wish / do not wish to receive the summary of findings.
- I understand that a third party who has signed a confidentiality agreement may transcribe the tapes.
- I understand that data will be kept for 6 future analysis, for the maximum of 6 years, or no later than 1<sup>st</sup> November 2016, whichever is earlier.

Name \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

APPROVED BY THE UNIVERSITY OF AUCKLAND HUMAN PARTICIPANTS ETHICS  
COMMITTEE ON 2010/10/26 FOR (3) YEARS REFERENCE NUMBER 2010/485

## Appendix F: Consent Forms

The following section contains the interview consent forms that were gathered from the independent case interviews. As explained in **Chapter 3: Methodology** section, many interviewees opted to be interviewed as individuals irrespective of their industry affiliation or rank.

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