MOBILIZING SUSTAINABLE URBANISM: INTERNATIONAL CONSULTANTS AND THE ASSEMBLING OF A PLANNING MODEL

ELIZABETH RUTH RAPOPORT

Thesis submitted to University College London for the degree of Engineering Doctorate

Centre for Urban Sustainability and Resilience

Department of Civil, Environmental and Geomatic Engineering

September 2014

DECLARATION OF AUTHORSHIP

I, Elizabeth Ruth Rapoport confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

ABSTRACT

Recent years have seen a growth in proposals around the globe to develop new urban areas incorporating ambitious sustainability objectives. These projects are often planned by a small, elite group of international architecture, engineering and planning consultants, the Global Intelligence Corps (GIC). This dissertation describes and conceptualizes how and why urban planning ideas travel internationally, using sustainable urbanism as a case study. The dissertation draws on qualitative research conducted between 2010 and 2012. The data is interpreted through a conceptual framework grounded in assemblage thinking, that provides a way of understanding how a model can crystallize in a particular form, but still remain dynamic and flexible.

The research found that sustainable urbanism, as it is applied by the GIC, has three key objectives: the creation of "good", high-performance and integrated urban places. The GIC have a substantial influence on international conceptions of sustainable urbanism, in part as a result of their close involvement in the development and application of some of the key devices for coordinating the model's travels. Sustainable urbanism's international success is linked to two factors in particular: its flexibility, which allows it to be expressed in ways that speak to the key drivers of individual urban development projects, and the ease with which the model can be deployed in an entrepreneurial climate. The GIC encourage the take-up of sustainable urbanism in new environments through the use of materials and experiences to introduce their ideas.

For practitioners, these findings point to the importance of developing a broad awareness of how the objectives of sustainable urbanism can be achieved, to think critically about where their ideas come from, and to look widely for examples and inspiration. Practitioners also need to apply a pragmatic and iterative ethical frame to guide decision making in the planning process.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

1MDB	1Malaysia Development Berhad
ANT	Actor network theory
BREEAM	Building Research Establishment Environmental Assessment Methodology
BRT	Bus rapid transit
CR	Corporate responsibility
GFA	Gross floor area
GIC	Global intelligence corps
HU	Hermeneutic unit
K.A.CARE	King Abdullah City for Atomic and Renewable Energy
KPF	Kohn Pedersen Fox
LEED	Leadership in Energy and Environmental Design
LEED ND	Leadership in Energy and Environmental Design for Neighbourhood Development
POV	Point of view
PPP	Public-private partnership
PRT	Personal rapid transit
SOM	Skidmore Owings & Merrill
TRX	Tun Razak Exchange
USGBC	United States Green Building Council
VIDIFI	Vietnam Infrastructure Development and Finance Investment Joint Stock Company

nb - Many design firms discussed in this dissertation (e.g. HOK, AECOM) are known purely by acronyms and are therefore not included in this list.

ACKNOWLEDGEMENTS

I made up my mind… That I would never try to reform man – that is much too difficult. What I would do was try to modify the environment in such a way as to get man moving in preferred directions.

Buckminster Fuller

1 INTRODUCTION

1.1 Setting the scene

In the first decade of 21st century, amidst growing concerns about the environmental impact of the world's urban transition, a spate of proposals for sustainable, "eco-", and low carbon urban projects emerged. Among them was Dongtan Eco-City, designed in 2005 by the British engineering firm Arup for a site near Shanghai in China, and billed as "a global template for sustainability in urban planning" (Bullivant 2007: 127). While the plans for Dongtan languished, the Tangshan Caofeidian International Eco-City, planned with the input of the Swedish engineering firm Sweco, is currently under construction (Joss and Molella 2013). This trend is not limited to China. In 2001, developers appointed by the local government commissioned the New York architecture firm of Kohn Pederson Fox to develop a masterplan for Songdo City, Korea, now being promoted as an "ubiquitous eco-city" (Shwayri 2013). In India, along the new expressway between Mumbai and Pune the privately developed sustainable city of Lavasa, master-planned by the American firm HOK, is currently emerging (Datta 2012). In the desert outside Abu Dhabi, the zero carbon Masdar City, masterplanned by the British architecture firm Foster and Partners is also taking shape.

All of these projects have two things in common: ambitious sustainability objectives and a planning team that includes prestigious international private sector firms. Such projects are representative of the increasingly international nature of urban planning practice, in which client and consultant are geographically dispersed. Practitioners from many private sector architecture, engineering and planning firms are now accustomed to boarding long-haul flights in order to meet with their clients. Concurrently, property developers and government authorities working on large-scale urban projects do not place geographic restrictions on their search for expertise.

Globetrotting consultants and the policies and models that they travel with have attracted a great deal of interest from academics in recent years. Yet as Harris and Moore (2013) and Clarke (2012) have recently pointed out, such mobilities are not new. As the work of observers of earlier transnational planning histories demonstrates, planners and planning ideas have long flowed across borders (King 1980; Ward 2005). In the contemporary and historical literature on this topic there are two significant

gaps. First, the implications of the fact that many of the actors mobilising ideas work in the private sector are rarely explicitly addressed. Secondly, theoretical conceptualizations of how planning, rather than policy ideas travel are lacking. How are we to conceptualize the contemporary travels of urban planning models, and in particular the role played by private sector practitioners in these travels? Answering these questions is the central purpose of this dissertation. It does so through a study of the international travels of what will be defined as the planning model of sustainable urbanism.

The international nature of planning for sustainable urban projects is the starting point for this research. My interest in this topic began when I was working as an international strategic planning consultant. I began to wonder about the ethical implications of our work, as private sector consultants based in the United Kingdom (UK), traveling and sharing our knowledge around the world. This was in the late 2000s, at a time when the ambitious proposals for eco-cities described in the opening paragraph were emerging. Most of the planning work for these projects was done by consultancies like the one I worked for. Yet in the vast literature on cities and sustainability I found little mention of how much of the work on planning new sustainable urban places is being carried out by international private sector consultants. In addition, to date little critical attention has been paid to the way in which ideas about how to plan and design more sustainable cities are developed, gain acceptance, and travel. This dissertation seeks to contribute to our understanding of these critical issues and their implications for planning practice. Specifically, it is a study of how sustainable urbanism, as a planning model, is formed and how it travels. In doing so, it looks in particular at the role that private sector consultants play in these processes.

The primary research questions that this dissertation sets out to answer are as follows.

1. *What characterizes sustainable urbanism as a planning model?*

2. *How and why is it moving around internationally, and what is the role of private sector consultants in this mobility?*

3. *What are the broader implications of the global spread of this model, and the role played by these consultants, for urban planning practice?*

In answering these questions, this dissertation draws on qualitative research into the international travels of sustainable urbanism conducted between 2010 and 2012. The research was carried out largely from London, with short research trips to several North American and Western European cities. The geographical scope of the research was expanded through telephone interviews with research subjects in Asia. The research methods employed included interviews, participant observation and content analysis.

As an engineering doctorate (EngD) project, this research project differs from a traditional PhD in two ways. Firstly, the research was carried out with the support and collaboration of an industrial sponsor company, Happold Consulting and its parent company, Buro Happold. Secondly, the purpose of the project is to contribute to knowledge in a way that specifically brings benefits to the industry I collaborated with. My ability to conduct this research was significantly enhanced by its collaborative nature, as this afforded me an excellent level of access to my research subjects. As a researcher, my position was affected by my close links with the industry I was studying, and the fact that one of the objectives of my research was to produce knowledge that would be valuable to them. I had a degree of affinity with my research subjects. From my time among them I had an understanding of the challenges and pressures they face in carrying out their work. Given Happold's sponsorship of my research I was conscious that I needed to make my work relevant to them. However I was also driven to undertake this research in part because of my concern about the ethics of globetrotting consultants peddling ideas around the world. To this end, a guiding principle for me in conducting this research was something Patsy Healey once wrote: "it is easy to be critical. What is more difficult is to be critically constructive" (Healey 2010: 16).

In exploring the international travels of sustainable urbanism, this dissertation seeks to contribute to contemporary debates on the international mobility of urban policy and urban planning ideas. Specifically, it will look at how urban planning models, as something distinct from urban policies, travel internationally, conceptualizing sustainable urbanism as a relationally constituted assemblage. Above all, this dissertation aims to tell a story about how and why ideas about planning and designing sustainable urban places are moving around internationally. In telling the story, the dissertation will focus in particular on the role of a relatively small, elite group of

international practitioners and how they have come to play an important role in shaping global understandings of what constitutes a sustainable urban place. As the story is not centred on a geographically bounded case study, it does not have a traditional narrative, with a beginning, middle and end. Rather, in telling the story of sustainable urbanism's travels, the dissertation will weave together a number of different narratives about the model and the people, projects, and plans that contribute to its formation and travels.

This introductory chapter defines and contextualizes the three main focal points of the remainder of this dissertation: the international industry in urban planning and design, the masterplans they produce, and the model of sustainable urbanism that they develop and spread as they travel. The next two sections of this Chapter focus in turn on the industry and the masterplan as an urban planning and design tool. The Chapter then considers the way that the concept of sustainability has evolved and come to be an important driver in contemporary planning processes. It then proposes a way to conceptualize traveling planning models before concluding with an overview of the structure and format of the remainder of the dissertation.

1.2   The international planning industry

> For most of my early career… it was all about doing planning pretty well in London, or around London. The second half of my career, it could be any city in the world.
>
> Managing Director, Multi-national architecture firm

Studies of the internationalization of the built environment industry have, to date, focused largely on architecture (Faulconbridge 2009; 2010; McNeill 2005; 2006; 2009). Like professionals in many other industries, during the second half the 20th century architectural practices increasingly began to work abroad. By the 1980s and 1990s a class of architecture firms with an international presence emerged (Faulconbridge 2009; Knox and Taylor 2005; McNeill 2009). Over time these firms began to develop the global networks needed to establish themselves in a variety of new markets (Knox and Taylor 2005; McNeill 2009).

Today, many of the most prominent international firms working in the built environment industry, from large multidisciplinary companies like AECOM to smaller "starchitect" practices such as Foster and Partners have their headquarters and largest offices in North America and Western Europe. In their study of the international expansion of architectural practices, Knox and Taylor (2005) found that London is the preeminent city for global architecture internationally, followed by New York. This may reflect the dominance of English as the international language of business, which gives firms from Anglophone countries an advantage.

To study the internationalization of urban planning and design as opposed to architecture, this dissertation looks at the wider spectrum of firms involved in the built environment industry. Most high profile architecture firms do planning and urban design work. On large, complex urban projects, however they almost always work within multidisciplinary consortiums. For example, they are likely to partner with engineering, planning and landscape architecture practices. While these types of practitioners may be less visible than high-profile architects, they have also established an international presence in recent years. Some of these companies internationalized on the back of their own work, others through acquisition of other firms, still others through their role as sub-consultants to internationalizing architecture firms.

Today, the international exchange of ideas in urban planning and design does not simply follow former colonial lines of domination. Rather, there is a complex and multidirectional flow of ideas. Companies from Asia and the Middle East, such as Lebanon's Dar al Handasah and Singapore's RSP have an increasingly global reach, with a number of offices and projects outside their home regions. All that being said, currently the group of actors working on high profile urban projects internationally remains relatively small and elite. The status of this elite group of practitioners gives it a disproportionate influence on large-scale urban development projects in major cities (Ward 2005). To better understand the group of actors at the heart of this research project, it is useful to look at some of the ways small communities of professionals with a high level of influence in their field or discipline have been conceptualized.

Perhaps the most well-known description of such communities is Haas's (1992) conception of "epistemic communities". Epistemic communities are networks of

professionals "with recognized expertise and competence in a particular domain and an authoritative claim to policy – relevant knowledge within that domain or issue – area" (Haas 1992: 3). They are characterized by a shared knowledge base, set of interests and understanding of cause and effect. Epistemic communities can be transnational, but need not be. They are distinguished from a professional discipline through their common pursuit of a limited set of activities.

The group of practitioners studied for this research lacks the degree of coherence and collaboration that Haas argues characterize epistemic communities. Additionally, this conceptualization does not adequately incorporate the transnational dimension of the international industry in planning and urban design. An alternative is Sklair's (2000; 2005) conception of the transnational capitalist class. Sklair defines this group as:

> "people from many countries who operate transnationally as a normal part of their working lives and who more often than not have more than one place they call home. This reflects their relationships to transnational social spaces and new forms of cosmopolitanism... (that) encourage both local rootedness and transnational (globalizing) vision" (Sklair 2005: 486).

This definition describes a group that is perhaps too transnational. While some people within the international planning industry doubtless fit this description, few design firms could afford to have all of their staff members be members of this globetrotting elite.

A third conceptualization, and that which best fits the actors that are the focus of this dissertation, is the Global Intelligence Corps (GIC). This term was first used by Rimmer and Black (1983) in reference to international consultants in the built environment industry who travel around the world in search of new markets. The use of the term "Intelligence Corps" implies a greater structure and cohesion than actually exists among international architects, engineers and planners (Ward 2005). Nevertheless this term does seem to have stuck, and some of those who have observed this phenomenon most closely use it in their work (Olds 2001; Ward 2005). Olds (2001) uses it to describe the small community of property developers, architects, planners and academics, working within transnational architecture, engineering and property development firms, who draw upon each other's work in planning and building urban megaprojects around the world. Olds provides perhaps the most clear and concise definition of the GIC: "the very

small number of elite architectural and planning firms that aspire for prestigious commissions in cities around the world" (Olds 2001: 42).

One focus of this research project then, is what can be described as the Global Intelligence Corps in urban planning and design. GIC firms include large multinational companies with offices around the world, smaller, boutique "starchitect" practices, and a range of firms that fall in between these two. What differentiates GIC firms from the many other built environment consultancies that exist is the breadth of their international work, something that will be discussed in detail in Chapter 6. Throughout the dissertation GIC firms and consultants will often be referred to as "global" or "international". These terms are used to distinguish these firms and people from their counterparts that focus on national or regional markets.

Who are the individuals who make up the GIC? For simplicity, throughout this dissertation they will often be referred to as "planners". However planning is a task undertaken by people from a wide variety of backgrounds, many of whom would not necessarily label themselves "planners". The GIC includes architects, engineers, planners, landscape architects, surveyors, economists and professionals from other disciplines. The cross-section of professionals interviewed and observed for this research reflects this disciplinary diversity. Take, for example, the career trajectories of three people interviewed for this research: Carl, Henry and Dan (their names have been changed to protect their identities).

Carl trained as a town planner in Britain. He spent 10 years in the London office of Skidmore, Owings and Merrill (SOM), a large American multinational architecture firm where he worked on a number of large urban projects in the UK. He then moved to the British multinational engineering firm Arup, where he again focused on UK projects. He was then approached to join another American multinational architecture practice in order to set up their London planning team, which focuses primarily on international work.

Henry trained as a civil engineer at Imperial College London. He worked for both Arup and Buro Happold after graduating, and then went on to do a Master's degree in engineering for sustainable development at Cambridge University. After his Master's degree he joined Buro Happold's sustainability and alternative technologies team. He

later moved to the company's New York office where he joined the sustainable infrastructure team. His team works almost entirely internationally, and he travels frequently, largely to Asia and Africa.

Dan trained as an architect at Stanford and Harvard universities in the United States. For several years he served as Chief Architect for a large city in California. In the mid-2000s he moved to China (Dan's parents are Chinese) to run the Shanghai studio for SOM. Shortly after this he became general manager for one of China's largest property developers, which also happens to be a frequent SOM client. Most recently he was hired to run the Chinese business for a large Australian property and infrastructure developer.

As Carl, Henry and Dan's career trajectories demonstrate, the GIC are highly internationalized group. Members of the GIC also tend to move between firms, and, such as in Dan's case, sometimes go to work for former clients. This research focused on this small, elite group because they occupy a privileged position in terms of the resources that they command to promote their ideas about what sustainable urbanism means. The international influence of this group can be linked to the growing demand for systems to structure urban development (Olds 2001). Such systems are required to manage the increasing number of large-scale urban development projects internationally that integrate urban development and infrastructure. The growth in this type of project is linked to the so-called "entrepreneurial shift" in the way urban planning is carried out. This shift and how it has created a market for the GIC's services is taken up in the next section.

1.3   Urban entrepreneurialism and the resurgence of masterplanning

Today, the primary products produced by the GIC in urban planning and design are strategic land-use masterplans that guide the development of urban projects. Masterplans have long been used as a tool in planning, adapted to serve the aims of different approaches. There are two main types of masterplans: the strategic area masterplan, and the site development masterplan (Bell 2005). A strategic area masterplan sets out the development vision for a large area, sometimes an entire city. A site development masterplan focuses on "a specific property development proposition

on a single site, or contiguous sites" (Bell 2005: 85). Unless otherwise indicated, when masterplans are discussed in this dissertation, I refer to the latter.

In the middle of the last century masterplans became an important tool in the modernist approach to planning. Modernist planning reflects one of the central tenants of the modernist worldview, that there is a single, universal pathway to development. As such, it is characterised by a top-down approach grounded in a belief that there was a 'right' and 'scientific' way to plan and order urban development (Scott 1998). Modernist masterplans were usually prepared by or on behalf of the state. They could fall into either of the two categories described above, and were generally very prescriptive. They set out the development vision for a piece of land over a long time period of time. In doing so they attempted to plan for the spatial implications of projections about the way that an area would grow and change, but also to direct these changes. Strategic area masterplans, in particular, are also often statutory tools. They establish among other things permissible land uses, building heights, street widths and floor area ratios.

As it was applied in the modernist tradition, masterplanning has a number of drawbacks. Modernist masterplans provide a static vision of future development from the vantage point of when they were created. In many cases, their prescriptions did not take into account the availability of resources for implementation, an issue that made them particularly poorly suited to cities in the global South (Balbo 1993; Sanyal 2005). In places with rapid urban growth rates, masterplans could end up being redundant almost as soon as they were completed (Friedmann 2005). Beginning in the 1970s modernist planning was critiqued both from the right as an example of excessive state intervention in the market, and the left for being insufficiently participative (Albrechts 1991; Beauregard 2003; Sandercock 1998).

In this context, large-scale planning projects guided by site-based masterplans fell out of favour. However, in recent years the site-based masterplan has experienced a resurgence. One survey of press reports found that in the United Kingdom "between 1986 and 1998 an average of only five masterplans per year were being reported compared to an average of over 20 per annum between 1999 and 2001" (Bell 2005: 81). The global resurgence of masterplanning has also been linked to the worldwide

construction boom between 2000 and 2007, which brought a re-emergence of large-scale urban planning projects (Bullivant 2012).

This boom occurred in a climate where the role of urban governance has shifted from managerialism to entrepreneurialism (Harvey 1989). Under the new regime of entrepreneurialism, "the task of urban governance is…to lure highly mobile and flexible production, financial, and consumption flows into its space" (Harvey 1989: 11). For planners, this meant an increased focus on attracting investment, and the resultant pressure to 'sell' a city as a location for activity (Albrechts 1991). One of the implications of the entrepreneurial turn in urban governance and planning was a shift in urban development towards creating urban attractions and "placemaking." The result was a focus on physical and design led planning (Harvey 1989). Success in urban development came to be measured by a project's ability to create a place that would attract visitors and investment to a city. In this context, masterplans came to be appreciated by property developers, government officials and others, who began to recognize the economic value of urban design (Bell 2005). By integrating a development with the wider context and creating good quality public realm, masterplans came to be seen as a powerful means to bring economic benefits to property developers (Bell 2005).

One hallmark of the entrepreneurial era has been the retreat of the state from the provision of services to citizens. Urban development is among these. Today, the conception and management of large-scale urban development projects are often outsourced. Sometimes this is done by creating quasi-governmental but largely autonomous development corporations to oversee large urban projects. In other instances, land is simply sold off or leased to property developers, or a public-private partnership (PPP) is created to manage the project. One result of this trend is that in countries such as the United States and the UK, the role of public sector planners is largely limited to setting the parameters within which development occurs (Fainstein 2001). Because in the entrepreneurial paradigm their task is to attract investment to their cities, planners and developers are often no longer foes but partners in the quest to attract investment (Fainstein 2001; Hall 2002).

The entrepreneurial turn has increased the role of private sector actors in the planning process in two ways. Firstly, as referred to above, the role of private sector entities in managing urban development has grown. This has led in many places to the dominance of what can be described as a property development model of planning. In a state-led planning model, public finances might be used to subsidize an urban development project. By contrast property developers seek to extract profit from urban development. Because the financial bottom line is always a concern, planning done within a property development model must focus on the economic value that can be extracted from a piece of land. Masterplans, which have come to be seen as valuable tools for coordinating large, complex urban projects can help. They can coordinate the objectives and actions of a wide range of actors and interests and help reduce development risks (Bell 2005; Carmona et al. 2002).

The actors in charge of managing urban development projects are usually not in a position to undertake planning work themselves. This then leads to the second way that the entrepreneurial turn has increased the role of private sector actors: private sector practitioners, such as those in the GIC, are hired to develop plans for urban development projects. Because planning work is outsourced, at the heart of the planning process now is a transaction in which private sector consultants are commissioned to produce a product, usually a masterplan.

The emergence of the entrepreneurial paradigm in planning and urban development is often linked to the increasing dominance of the political and economic doctrine of neoliberalism. Neoliberalism is the:

> "theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets and free trade" (Harvey 2005: 2).

As a normative economic doctrine, neoliberalism advocates minimizing government intervention in the market and the retreat of the state from the provision of a wide range of services. In this context the neoliberal ideology does play an important role in the international travels of sustainable urbanism. Neoliberalism has contributed to the widespread acceptance that private sector actors can and should play leading roles in urban development processes, and that urban development should be a profit-making

activity. However, as will be discussed in Chapter 2, the idea that neoliberalism is an all-powerful, homogenizing force in urban planning and development can be contested from a number of perspectives. This dissertation will build on a poststructural, relational ontology to argue that neoliberalism is not sufficient to explain how and why sustainable urbanism has evolved as an internationally mobile planning model. Simply referring to neoliberalism vastly oversimplifies the complex processes by which traveling ideas are assembled and reassembled by actors with a variety of motivations.

The actors who commission masterplans are referred to throughout this dissertation as clients. These clients may be public sector bodies, quasi-governmental development agencies, public-private partnerships or private sector property developers. The development of a masterplan is usually initiated when a client who owns or has been given the task of developing a piece of land commissions a GIC firm to advise them on how to develop the property. This is the transaction referred to above – the GIC are paid to produce a product. The transactional nature of the planning process will be a recurring theme throughout this dissertation. It substantially influences the way that the GIC work, and the relationship and power dynamics at play between consultant and client.

The site-based masterplans referenced in this dissertation are usually created at an early, speculative stage of project development (Bullivant 2012). As a result, they are often pitched as high level, strategic and visionary documents. While they rarely end up being a precise blueprint for future development, masterplans play an important role in establishing the objectives and basic parameters of an urban development project. Contemporary masterplans are lengthy documents, or sets of documents, usually produced in the early stages of project conception and development. For many masterplans, architecture firms will produce what they call a "book" which is, in fact a bound volume (or volumes) that they present to their client as a final deliverable. They set out how physical design and construction will be organised and directed in order to achieve a set of objectives for the future development of a territorially defined area.

Masterplans are a critical element of the GIC's work. Studying these plans and the processes by which they are produced reveals the way that key planning concepts, such as sustainability, are defined and applied by the GIC. Of course, the focus of this

dissertation is not just on large-scale planning projects and the masterplans used in their development, but on the international spread of sustainable urbanism as a planning model. Ideas about how to plan and design sustainable urban places travel through the work of the GIC not because they are eco-warriors, proselytizing around the world about sustainability. For them, sustainability is an integral part of contemporary planning practice. How and why this has come about is the focus of the next section.

1.4   Sustainability and planning

1.4.1   The rise of sustainability

To understand the way sustainability has permeated the planning discipline it is useful to return briefly to the origins and meaning of the term. Sustainability is often used interchangeably with the concept of sustainable development. While there are some differences between the two, in the context of this research they have essentially become interchangeable. This is because in planning, the dominant conception of sustainability is usually based on a mainstream conception of sustainable development. To support this argument, this section will begin by tracing the evolution of sustainable development. The widespread use of the term sustainable development is generally considered to have begun with the publication in 1987 of the report *Our Common Future*, prepared at the request of the United Nations by the World Commission on Environment and Development. Often referred to as the Brundtland Report after the Commission's chair, this document defined the concept of sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987: 43).

This definition represented a significant break from earlier discourses on environmental issues. These were dominated by radical environmentalists on one side, and those advocating regulatory responses on the other. Despite their differences, these two groups had in common the belief that ecological needs set clear limits to economic growth (Hajer 1996). Thus while popularising the idea of sustainable development, the Brundtland Report also contributed to the marginalisation of these previous discourses of sustainability. Development, rather than conservation or limiting growth, became the key concept (McManus 1996). As envisioned in the Brundtland Report, the development

element of sustainable development focused on poorer and less developed nations. In the development field, sustainability was already a common discourse prior to the Report (Mitlin 1992). The Report built on these roots—among its core premises was that development and environmental issues are inseparable, and that poverty and the environment form a feedback loop (Adams 1993). However, by the time of the 1992 United Nations Conference on Environment and Development in Rio de Janiero, Brazil, the environmental concerns of wealthier nations were beginning to receive greater emphasis (Grubb et al. 1993; Middleton et al. 1993).

The concept of sustainability, particularly in the guise of sustainable development, has proven remarkably durable (Allen and You 2002). Its inherent 'goodness' has become almost unquestionable (Gunder 2006). There are a number of different arguments for this success. Two of these have been important factors in the rise of sustainability's influence in planning: its inherent promise that sustainability does not mean sacrificing economic growth, and its vagueness. The first factor is the positive message inherent in the concept of sustainable development. Prior to sustainability's entry onto the scene, the environmental problematic was dominated by a fairly gloomy and sometimes neo-Malthusian collection of works such as Meadows et al.'s (1974) *Limits to Growth* and Ehrlich's (1968) *The Population Bomb*. The idea of implementing changes based on these arguments was daunting for policymakers. McManus (1996) argues that the shift in the Brundtland Report to a discourse of development rather than conservation was a deliberate strategy on the part of the Commission. Their goal was to find a way to make sustainability acceptable within the parameters of neoliberalism. Those on the Commission, he believes, must have known that advocating limits to growth would not be acceptable.

McManus further attributes the fairly rapid international adoption of the idea of sustainable development to the ease with which 'development' could simply be interpreted as growth. Adopting this understanding of the term meant that environmental protection and economic growth no longer had to be mutually exclusive. It is this feature of the Brundtland definition of sustainable development that has led some to argue that it is fundamentally based on the theory of ecological modernisation. This theory advocates technological advancement and industrialization as a win-win way to solve environmental problems (Fisher and Freudenburg 2001). According to its

advocates, "environmental damage is not an impediment for growth… it is the new impetus for growth" (Hajer 1996: 250).

It is easy to see the practical appeal of an approach to sustainability rooted in the optimistic idea of ecological modernisation. This optimism is possibly why sustainable development as defined by the Brundtland Commission was rapidly adopted and became the 'mainstream' understanding of sustainability (Adams 1993; Mitlin 1992). This idea of sustainable development provided a vision of a way economic growth could continue without ruining the environment—in essence, a way we could have it all (Adams 1993; Dryzek 2005). Sustainable development appears to offer "a middle way, reconciling environmental priorities with the pressures for economic development" (Ward 2002: 308).

The second argument for the success of sustainability is its vagueness and subsequent ability to mean different things to different people (Redclift 1991). From this perspective, sustainability's strength is not in the dominance of one particular understanding of the term, but in its ability to encompass many different understandings. Kirkby et al. (1995) argue that because it can be interpreted in so many different ways, sustainable development is something that essentially everyone can agree with. It carries a "unifying promise" which seems to "transcend ideological values of the past" (Ratner 2004: 51). The openness of the term means that people are able to choose an understanding of sustainably that fits in with their own beliefs (McManus 1996).

1.4.2   Urban planning, governance and entrepreneurial sustainability

The rise of the entrepreneurial approach to planning led to a questioning of the traditional role of planners. The emergence of sustainability in the late 1980s offered planners a new focus. Gunder traces the shift in this way:

> "for many, the displacement of planning's traditional purpose and role subsequently has been recovered via the discipline's response to the increasing emphasis being focused on the importance of the quality of the environment in many planning-related discourses… This gave rise to planning's adoption of a new transcendental ideal: sustainability" (Gunder 2006: 208-9).

Gunder and Hillier (2009) argue that mainstream sustainable development is now planning's dominant narrative. This argument was validated by the research

undertaken for this dissertation which found that sustainability has become increasingly mainstreamed in urban planning internationally. One engineer described how when he started working in Abu Dhabi 10 years ago, his clients dismissed the very concept of climate change. Yet by the late 2000s, the Emirate was staking its claim as a leader in sustainable urbanism and renewable energy technologies with the Masdar Initiative and their Estidama sustainability assessment and rating system. Other interviewees also mentioned seeing this trend of a rapid take-up of sustainability principles in the Middle East as well as China.

How does sustainable development fit within the entrepreneurial planning paradigm? Though the objectives of sustainability and entrepreneurialism might seem to be mutually exclusive, in planning the discourse of sustainable development is often used to support an entrepreneurial, economically focused approach to urban governance (Gunder, 2006). Research in Europe has demonstrated that in many cities the two discourses are used to reinforce one another (Jonas and While 2007; While *et al.* 2004).

While et al. (2004) building on Harvey's (1982) idea of the 'spatial fix' argue for the existence of what they call an "urban sustainability fix" in which sustainable development is part of a spatio – institutional fix safeguarding a place's growth trajectory. In the search for this fix, urban governments selectively incorporate ecological goals. Not only this but:

> "dominant interpretations of 'sustainable development' and perspective such as 'ecological modernization', are not just attempts to promote economic reinvention in the face of evidence of global environmental change, but can also be read as attempts to neutralize environmental opposition by projecting a value free vision of 'win – win – wins' between economic growth, social development and ecological protection" (While *et al.* 2004: 554).

The vision that While et al. describe could be called "entrepreneurial sustainability". It has been within the climate of entrepreneurial sustainability that the GIC emerged as important players internationally. The challenge of their work is to apply the principles of sustainable urbanism in masterplans for large urban projects in a way that those projects can also achieve the economic objectives of their creators. It is within this climate that the model of sustainable urbanism is being developed and applied.

Despite the widespread acceptance of sustainability as a primary objective for planners, a broad debate exists on what constitutes the sustainable city and how to achieve it (Allen 2009). When applying the principle of sustainability to planning, its ability to mean everything and nothing at the same time can become more of a weakness than a strength. The idea of the sustainable city appeals; what it might look like and how to get there remains unclear (Bulkeley and Betsill 2005; Williams 2009). In the academic literature, attempts to prove scientifically the sustainability credentials of particular urban planning or design interventions or urban forms often descend into endless debates. The compact city debate in the 1990s is an example of this dynamic (Breheny 1992; Gordon and Richardson 1997; Jenks et al. 1996; Newman and Kenworthy 1989).

Policymakers and practitioners, unable to wait for an ever elusive academic consensus, continue to develop and apply ideas on how to make urban places more sustainable. Evidence that a particular urban planning or design intervention promotes sustainability goals will be eagerly jumped upon by practitioners. Ideas range from passive design features such as building orientation to cutting-edge energy generation technologies and large-scale initiatives such as public transit systems. These ideas are then incorporated into the masterplans for large urban projects described in the last section. As this dissertation will argue, certain ideas are repeated time and again in masterplans, and incorporated into actual projects. Over time this leads to a broad consensus on what constitutes a normative model of sustainable urbanism. This model is the third primary focus of this research project. The penultimate section of this introduction will consider how to conceptualize a planning model. Before this, the next section introduces some of the projects that were observed for this research, to illustrate how sustainable urbanism is applied in an entrepreneurial planning framework.

1.5   Sustainable urbanism in practice: four cases

This dissertation looks at the international masterplanning industry and the work they do with a particular focus on sustainable urbanism. As outlined above, their work in sustainable urban planning and design is carried out in the context of an entrepreneurial planning paradigm. The impact of the climate of entrepreneurial sustainability on urban governance has been the focus of a several studies (Jonas and

While 2007; Krueger and Gibbs 2007; Temenos and McCann 2012; While *et al.* 2004). Works such as these demonstrate the political nature of the way sustainability is incorporated into urban governance regimes.

Less well understood is the way sustainable urbanism as a normative planning model, rather than sustainability or sustainable development as a governance objective, interacts with the different places where it is implemented. This dissertation will attempt to do this, albeit at a high-level given that it is not based on an in-depth case study. One of the ways it will do this will be through discussions of four projects observed for this research. This section introduces each of these projects. They will be referenced and discussed throughout the dissertation.

The King Abdullah City for Atomic and Renewable Energy (K.A.CARE) is a proposed development on a site of over 1000 hectares 40 kilometres outside Riyadh, Saudi Arabia. K.A.CARE is planned to be a highly sustainable new city focused around research and innovation in the production of atomic and renewable energy. The land is owned by the national government and the planning process for the city is being overseen by a group of "City Leaders" appointed by the central government. The first phase of the project was a design competition in 2010. The City Leaders invited 12 international firms to submit proposals. In 2011 five teams were invited to submit more detailed masterplans in a second round of competition. The three teams that did so were all led by American architecture practices. These were SOM, based in Chicago; Gensler, based in San Francisco; and Koetter Kim, based in Boston. Each firm created a multidisciplinary team by subcontracting with other practitioners. Each of the teams chose to work with engineers from a different Buro Happold office. In early 2012, the teams submitted their proposals, which were hundreds of pages long. A third round of competition took place in 2013, however little is known about this phase.

The Gia Lam New Town was a proposed development in a suburban district of Hanoi, Vietnam approximately 10 kilometres to the east of the city. The developer of the project was the Vietnam Infrastructure Development and Finance Investment Joint Stock Company (VIDIFI), a construction and development company set up by the Vietnamese government. In early 2009 VIDIFI announced a design competition for the development of an area of approximately 1,200 ha and population of approximately

50,000 - 60,000 people. The winning entry, announced in June 2009, was from a consortium formed by Dissing & Weitling, a Danish architecture practice, Buro Happold, and a Vietnamese architecture and engineering firm, Vinaconex R&D. The team presented a masterplan and associated technical reports to the client in March 2010. For a number of months, the team awaited word about the next phase of project development. However following a change in government, the project ultimately did not move forward.

Tun Razak Exchange (TRX) is a new financial district planned for a 34 hectare site just outside central Kuala Lumpur. The developer of the project is the Indonesian state-owned sovereign wealth fund, 1Malaysia Development Berhad (1MDB). TRX is their first major property development. 1MDB organized a design competition in 2010, inviting 12 firms to submit proposals. In early 2011, the winning team was announced, a partnership between Machado and Silvetti, a relatively small Boston-based architecture firm, and a Malaysian firm, Akitek Jururancang. The team brought Buro Happold on board for engineering and sustainability consultancy. They completed their masterplan in 2012, and construction on the project began later that year.

Palava is a 1,600 hectare new town development in the Dombivali region, approximately one hour east of Mumbai, India. Built on formerly agricultural land, the development is largely residential, but also incorporates a university, a sports centre and a special economic zone focused on IT. Behind the project is the Lodha group, a large Mumbai-based real estate developer with a particular focus on the residential market. The masterplan for the project was completed in 2010 by a team consisting of the Boston-based architecture and urban design firm Sasaki Associates and Buro Happold. The first phase of the project began construction in 2011.

Each of the four projects described above involve a transaction where a client commissioned one or more teams of practitioners to prepare a product, a masterplan, to help them decide how to take forward development in a territorially defined site. Three of the clients were development agencies accountable to their national governments, the fourth a private property developer. Two of the clients opted to work with teams led by architectural firms that operate at the margins of the GIC, while the other two chose prominent and well-established GIC firms. Buro Happold's involvement in all four

projects is not a coincidence. Their participation allowed me to observe these projects. Each project adopted elements of sustainable urbanism but, as Chapter 7 will describe in more detail, they did so for different reasons.

1.6   Traveling models

How a set of ideas becomes a model, and the characteristics of these models, are common themes in recent literature on the international travels of urban policy and planning ideas. This literature will be discussed in more detail in Chapters 2 and 3. The ensuing discussion will focus specifically on the guidance it provides about what it means to be a "model". As a broad starting point, a planning model can be conceived of as a package of normative principles for directing the development of the built environment. It is important to note at this point that the type of planning model discussed in this dissertation is that used for land-use planning, so it is planning in a more restricted, physical sense, rather than its broader definition (for instance not including economic planning).

Recent literature in the area of urban policy mobilities offers one approach to understanding traveling models. According to Peck (2011a) and Peck and Theodore (2010a) a model consists of a crystallization of a bundle of practices and conventions, that link particular policy problems with supposed solutions. To become a model a place must present itself as such and enlist an audience (Hoffman 2011; Peck and Theodore 2012). As soon as there is an audience interested in a particular model, it is likely to begin to travel. Models are not the same thing everywhere they are implemented, rather they "mutate in the wild" (Peck and Theodore 2010a). Policy models then, are not rooted in a particular geographical location only to be adapted or corrupted by those that implement them elsewhere (Roy 2011a). Rather they are hybrids, co-constituted "through the networks, and across the landscapes, over which they travel"(Peck and Theodore 2012: 23).

There are important distinctions between traveling policies and traveling planning ideas. The policies studied in the mobilities literature tend to be relatively clear and codified responses to perceived problems that exist in the urban realm. These policies are developed by, or with the cooperation of a governmental body, and legitimized and given power by the endorsement of the state. Urban policies exist not only in their social

and material impacts in the urban realm, but also in the form of a piece of legislation, a policy document or a guidance manual. Planning ideas and concepts on the other hand can be enshrined in legislation, but for the most part they are not as clearly codified as urban policies. They may be developed by local governments, but just as often they are the product of private sector or citizen groups.

It is useful then to distinguish between policy and planning models. There are also different types of planning models. Urban planning models fall into three categories; codified, place-based and paradigmatic. The first, which most resembles a policy are codified models. Examples include the Garden City, which Ebenezer Howard comprehensively described in his work, the Neighbourhood Unit, which Clarence Perry outlined in his work, and New Urbanism, whose key principles are enshrined in a charter. Codified models propose clear normative guidelines for spatial planning. Implementing this type of model brings a different set of challenges from those encountered when implementing an urban policy. The timescale is generally much longer and private sector actors (in particular property developers) are likely to play a larger role.

The second type of traveling model emerges from and is associated with a particular city, such as the Vancouver model or the Barcelona model. The elements of a city's approach to urban planning that become part of a place-based model and travel can vary. They might include an overall approach to urban planning, particular planning policies, or the urban morphology of that city. Variations in what travels exist not just between different place-based models, but even within one model. What is understood as the "Vancouver" model in one place may vary from one place to another. Place-based models may even contain contradictory elements (Thornley 2012). Nevertheless this type of model is popular as it can become a shorthand for a particular style of urbanism or development model (Peck and Theodore 2010a; Roy 2011a).

The third type of model, and the focus of this research, emerges from neither a particular codified approach to planning, nor an existing city. Paradigmatic models emerge gradually, and are not linked to a particular individual or place. They reflect broader trends in society as a whole. Urban planning as a discipline tends to reflect broader social, cultural, and economic trends in society. Particular approaches to urban

development capture the imaginations of people around the world, leading to their implementation in numerous and geographically disparate locations. Historical examples of paradigmatic models include the City Beautiful movement and Modernism. Each of these movements is associated with a set of physical design principles, leading to codification to an extent. For instance, the principles of Modernism were set out in the work of leading figures such as le Corbusier and in the work of the Congrès Internationaux d'Architecture Moderne (CIAM). The influence of this model can be seen in the proliferation of high-rise residential towers, separation of land uses and large highways in hundreds of cities around the world. The City Beautiful movement is often associated with Haussmann's Paris, but also more generally with elements such as broad boulevards and grand public buildings. The movement's influence can be seen in many cities around the world where this model was implemented, both through colonial imposition and indigenous admiration. As discussed above, in recent years sustainability has arguably become planning's primary overarching objective. Sustainable urbanism, though not yet as influential as the other examples cited above, is emerging as a traveling paradigmatic model.

Just like traveling policies, planning models change as they travel. Even fairly clearly defined codified models such as New Urbanism can be implemented in very different ways in the same city (Moore 2010). As for place-based models, Roy (2011a) argues against a conception of models or ideas as something fixed and rooted in a particular geographical location. "Originary ideas themselves" she says "are composed through transnational references and cross-border borrowing… Places as locative maps of ideas are themselves inherently hybrid" (Roy 2011a: 7). The antecedents of aspects of the Vancouver model, for instance, can be traced back to Hong Kong (Lowry and McCann 2011; Olds 2001). While it can be complex to trace the origins and follow the travels of codified and place-based models, it is even more difficult to do so for paradigmatic models. Paradigmatic models are rooted in many places and the work of many people. Rather than attempting to trace in detail the origins of sustainable urbanism, this dissertation will focus instead on explaining how a broad set of ideas, principles and technologies for planning and designing a city coalesce into a traveling model.

1.7   Overview of the dissertation

This dissertation consists of nine chapters. Chapters 2 through 4 provide a background to the subject area, an overview of the theoretical and conceptual framework and a summary of the research design and methodology. These are followed by four chapters that describe and interpret the empirical findings of the research. The first of these chapters describes the model of sustainable urbanism, while the following three explore how and why it moves around internationally. Each chapter looks at one element of a three-part conceptual framework set out in Chapter 3. Because the topic of this dissertation is a relatively new area of research, there is not a great deal of existing literature to build on. As a result the empirical chapters include a fair amount of description as well as explanation. The final chapter presents the overarching conclusions of the dissertation. The remainder of this section summarizes each chapter in more detail.

Chapter 2 reviews how conceptualizations of the international movement of ideas in urban planning and design have evolved over time. It looks specifically at how the existing literature conceptualizes how planning ideas move, why they move, and what happens to them along the way. The chapter divides this discussion into three broad historical categories, colonial, postcolonial and global. For each era, it examines the primary mechanisms and drivers of diffusion. The colonial era saw a largely unidirectional flow of ideas from colonizers to the colonized. This situation changed in the postcolonial era, as more diverse flows of planning knowledge and expertise developed. Those on the "importing" side of the relationship became more active agents in the exchange of ideas. The global era has seen the emergence of a robust debate about where power and agency lie in the international exchange of ideas, and the extent to which this exchange is encouraging a convergence in urban form. This era has also seen an increase in the involvement of private sector consultants as ideas move through commercial hire. The literature demonstrates the increasingly diverse trajectories along which knowledge moves. As such, it supports the development of a conception of the international travels of urban planning ideas that goes beyond structural explanations and simple dichotomies.

Chapter 3 sets out the theoretical and conceptual framework that guides the analysis in this dissertation. It begins by arguing that a study of traveling ideas must be

underpinned by a poststructural, relational ontology, and reviews the way this approach has been applied in urban planning and geography. The chapter then reviews four existing conceptualizations of the way ideas travel: a hybrid approach proposed by Patsy Healey, the policy mobilities approach, actor network theory and assemblage thinking. Ultimately, the chapter argues in favour of a poststructural approach grounded in assemblage thinking. Assemblage thinking is useful for challenging structurally determined and linear accounts of how and why urban planning ideas travel internationally. It does so through a focus on processes of formation and transformation, the relationship between parts and wholes, and an emphasis on looking at not just what something is, but what it has the capacity and potential to be.

The conceptual framework that guides the application of this approach is based on McFarlane's (2011b) proposal that urban learning occurs through three processes. The first is coordination, the construction of systems to organize knowledge in a way that facilitates adaptation. The second is translation, a concept taken from actor network theory that highlights the way ideas move through networks of social and material actors. Finally, there is the process of dwelling or inhabiting through which learning is experienced and lived. In setting out the conceptual framework that guides this research, this chapter also establishes the structure for the remainder of the dissertation.

Chapter 4 describes the design of this research project, and the methods used to gather and interpret data. In a departure from the majority of studies on the international mobility of urban planning and policy ideas, the research is not grounded in a territorially defined case. Rather, it is a study of the travels of a particular planning model, and the industry that facilitates its travels. Methodologically, this entailed extended periods of participant observation. As an engineering doctorate project carried out in collaboration with a company that is a member of the GIC, this research project benefited from a unique level of access to the planning process and the plans that result. The bulk of the chapter describes each of the five primary methodological components of the fieldwork. These were interviews, participant observation of the planning process, content analysis of 10 masterplans, participant observation of study tours, and a desktop review of the websites of 13 GIC firms. Following this, the chapter

describes the data analysis process, much of which was conducted using the qualitative data analysis software package ATLAS.ti.

Chapter 5 summarizes the key dimensions of the "model – as – assemblage" of sustainable urbanism being developed and applied around the world through the work of the GIC and their clients. In doing so it also demonstrates how, through their work, the GIC contribute to shaping international conceptions of what sustainable urbanism means. To describe the model the chapter applies a framework proposed by McFarlane (2011b) that has four dimensions. Firstly, there is the form of mobile ideas, or how people share and promote ideas and solutions. These include masterplans and associated promotional materials such as corporate videos, textbooks, good practice compendiums, lectures, conferences and study tours. Secondly, there is the object of the model. This is the solution it proposes and how the problem it is trying to address is defined. These objects have an associated imaginary, that is the image and experience that success in implementing sustainable urbanism would bring. This research found that as applied by the GIC, sustainable urbanism has three objects and associated imaginaries. Sustainable urbanism is "good" urbanism, that is, dense, compact, walkable and featuring public transit. It is also high-performance urbanism, using resources in a more efficient way than conventional urban development. And finally, sustainable urbanism is characterized by design features bringing multiple benefits.

The model's fit within an entrepreneurial planning paradigm is assisted by the fact that it emphasizes synergies between environmental and economic objectives. The fourth dimension of the framework applied in this chapter is a focus on power. Three forms of power underlie the strategies used to promote, frame or structure the solutions that sustainable urbanism proposes: authority, seduction and persuasion. The chapter concludes that sustainable urbanism is underpinned by a mainstream understanding of sustainability as sustainable development. However, looking forward to the chapters that will follow, it argues that sustainable urbanism is not a prescription to be followed to the letter but rather an assemblage of ideas and propositions about what sustainable urbanism looks like and how to go about achieving it. Elements of the assemblage can be emphasized in order to ensure sustainable urbanism adapts appropriately to the context in which it will be implemented.

Chapter 6 describes the primary mechanisms that have evolved to coordinate the complexity of sustainable urbanism in order to facilitate its translation into new environments. The chapter begins by describing the breath of work carried out around the world by the GIC. A survey of the office and project locations of 13 GIC firms found that among them they have offices in 80 countries, and have worked on planning projects in 61 different countries. Many firms have actively pursued a strategy of working internationally. In addition, demand for the GIC's planning services has grown along with the role of private sector and public – private developers in urban development. The demand internationally for high-profile firms creates barriers to entry into the GIC.

The chapter then describes three types of coordinating devices: multidisciplinary teams, masterplans, and sustainability certification systems. These devices help manage the complexity of the planning process, pulling together contributions from different professional disciplines. They also maintain and reinforce the GIC's privileged position in the market for planning services. The GIC are closely involved in the development and deployment of each of these devices and therefore have a significant influence over some of the key devices through which sustainable urbanism travels. As a result, these coordinating devices are not just tools for managing the complexity of sustainable urbanism. They also ensure that the ability to manage this complexity remains the purview of a small group. The coordinating devices aim to facilitate the translation of the model of sustainable urbanism as a whole. However at times they are used in a way that may encourage the take-up of only individual elements or design principles. In addition, the GIC's virtual monopoly on some of the most important devices for coordinating sustainable urbanism's travels may be limiting the potential for the model to incorporate a broader and more inclusive set of ideas and propositions.

Chapter 7 employs the concept of translation as a means for understanding and explaining sustainable urbanism's travels. Sustainable urbanism's international success is linked to two factors in particular. The first is the dynamic nature and many capacities of the model, which allow it to be expressed in ways that speak to the key drivers of individual urban development projects. The second is the ease with which the model can be deployed in an entrepreneurial climate. The chapter begins by considering this second factor, arguing that sustainability has come to play an important role in

branding and marketing urban developments. A discussion of the way sustainability assessment and rating tools are used in contemporary high-end property developments demonstrates this.

The chapter then goes on to demonstrate how sustainable urbanism is translated on planning projects carried out by the GIC around the world. The GIC translate sustainable urbanism through a series of several processes. They begin by enrolling the necessary actors, identifying key project drivers and developing a version of sustainable urbanism that aligns with these. They then identify and apply the devices that will coordinate the model's travels. Finally they develop a version of sustainable urbanism that will be applied to a particular project, and filter it into a variety of different forms for further dissemination. These processes are illustrated through analyses of how they occurred on three of the projects introduced earlier in this chapter, TRX, Palava and Gai Lam. For each project, sustainable urbanism is expressed differently in order to align with the project drivers most important to the clients behind them. These examples highlight the way sustainable urbanism's various capacities and potentials facilitate its translation into new environments. This flexibility is useful in the context of the commercial transaction which sustainable urbanism is translated. However, it can also threaten the model's coherence and integrity. This occurs when, for instance, masterplans become simply a menu of options for clients to choose from rather than an assemblage of elements that are greater than the sum of their parts.

Chapter 8 focuses on how the GIC use strategies of learning through inhabiting in order to facilitate the take up of sustainable urbanism in new environments. Inhabiting requires interacting with our environment on a sensory level. The chapter begins by describing the way the GIC use examples to bring sustainable urbanism to life. Examples can validate their proposals and enhance credibility. However the real value of examples in the planning process is the way they persuade and seduce by allowing people to "see" or "experience," and hence interact with an idea for themselves. Sustainable urbanism travels as materials and experiences are used to enable people to learn about the model through inhabiting it. Visual media, such as photographs, digital renderings, drawings and videos materialize both the actual and virtual dimensions of sustainable urbanism. Some of the GIC's most effective uses of these materials

encourage the person interacting with them to imagine what it would be like to be in a place.

The GIC also use people's actual experiences of places in the planning process. They may do so by encouraging their clients to reflect on places they have visited. Another more deliberate form of inhabiting is the practice of undertaking study tours. The impact of learning through inhabiting is not limited to shaping an individual plan. Rather, it can contribute to the broader processes of assembling the model of sustainable urbanism. Given this, the importance of inhabiting to encouraging the take-up of sustainable urbanism has two key implications. Firstly, there is the potential that a sanitized "sales pitch" version of sustainable urbanism is what travels. Secondly, the repeated use of examples from Western Europe in the planning process may reinforce a limited understanding of sustainable urbanism.

Chapter 9 begins by summarizing the findings of the dissertation against the first three primary research questions, describing what constitutes the model of sustainable urbanism and how and why it travels internationally. Sustainable urbanism promises that the environmental impact of urban development can be mitigated by ensuring that such development focuses on the three objectives of good, high-performance and integrated urbanism. The model is not inherently entrepreneurial, but it is well-suited to helping a project meet the demands of an entrepreneurial climate, particularly because of its perceived value to marketing strategies. The model's many potentials and capacities mean that it can be expressed in a variety of ways to align with different types of project drivers.

The chapter goes on to make some concluding reflections on the ethical implications of the GIC's substantial influence over the state of the international debate on sustainable urbanism. In doing so it addresses the final primary research question about the broader implications of sustainable urbanism's travels for practitioners. Practitioners rarely consider the underlying values and ethics that guide their decision-making processes. To address this, the chapter outlines an ethical frame to guide the GIC's work when translating sustainable urbanism into new environments. In recognition of the complexity of the planning process, as well as the constraints and limitations of the commercial environment within which sustainable urbanism is translated, such a frame

must be dynamic rather than prescriptive. The chapter closes by reviewing the dissertation's primary contributions to knowledge, and making suggestions for future research, in particular recommending more collaborative research between planning academics and practitioners.

One of the significant contributions of this research project is the way it opens up to academic scrutiny the work of an influential and largely unstudied group of actors. It is important to note at this point that the story told in this dissertation is not a universal one. While I did manage to speak to or observe a large number of people in the GIC, the fact remains that they are small and elite group. They are not the only people involved in developing and sharing ideas about sustainable urbanism internationally. In addition, while in conducting this research I made every effort to gather as representative a sample as possible, the GIC and their clients can be extremely difficult to access for a researcher. At times I had to rely on the people and documents that were available. Given these limitations, this dissertation does not purport to put forward a universal theory or picture of sustainable urbanism and its travels. Rather, given that I am among the first people to do in-depth research into this industry, my aim is to demonstrate the value and importance of researching private sector planners when studying traveling ideas. I hope that this dissertation can lay the groundwork for future, more in-depth research in this area.

1.8   Conclusion

This introductory chapter has outlined the three primary foci of this research project. These are the industry of private sector consultants involved in working on sustainable urban projects worldwide; the masterplans they develop; and what has begun to be defined as a 'model' of sustainable urbanism. Chapter 3 will elaborate how the first two of these foci can be understood as forming part of the model itself, if it is conceptualised as an assemblage. The chapter has also set out the context of the type of projects the GIC work on, as well as explored the genesis of the concept of sustainability and the way it has been taken up in urban planning. These discussions provide the contextual background necessary to understand the field of study—that of a small group of elite private sector consultants applying their conceptions of sustainability in their work on prestigious, high-profile urban projects around the world. Given the diversity of topics

covered in this chapter, it is important to clarify at this point the primary foci of this dissertation: to elaborate how an internationally mobile planning model is constituted, and how and why it travels. This dissertation uses sustainable urbanism as a case study to explore these questions, and a study centred on the GIC as an approach to doing so.

The GIC play a prominent role in the discussion that follows because they were the point of entry to this field of study as a researcher. There are, of course, other options, other starting points, for undertaking a study of how planning ideas (specifically sustainable urbanism) travel. Chapter 3 conceptualises sustainable urbanism as an assemblage, made up of a diverse range of social and material actors including the GIC, the projects they work on, the masterplans they produce and the clients they work with. Any one of these elements of the assemblage could have provided a point of entry to this study. I chose the GIC because I was fundamentally interested in studying how ideas travel in real time through the process of planning. The GIC, as I will argue in Chapter 6, play a particularly important role in the process of assembling an international model of sustainable urbanism, and enabling it to circulate internationally. They are an under-researched group, but, as I will argue in subsequent chapters, they, and the work they produce, play an important role in mobilising sustainable urbanism.

The focus on the GIC has important implications for the story that emerges in the pages that follow. This is the story of the travels of sustainable urbanism, and the GIC, from the perspective primarily of the GIC themselves. For reasons that will be explained in Chapter 4, the views of clients and other stakeholders that they work with are not nearly as well represented as those of members of the GIC themselves.

The emphasis on the GIC will lead to a focus on this group when considering the final primary research question behind this dissertation, that of the broader implications for planning practice of the findings on how and why planning ideas travel. I stated early in this chapter that one of my underlying motivations for undertaking this research was my concern about the ethical implications of built environment consultants working internationally. This issue was also of particular concern for Happold Consulting, who routinely challenged me over the course of this project to help them reflect on the ethics of their everyday practices.

The decisions practitioners make in the planning process about how to achieve sustainability are actions that are guided by their underlying values and ethics. However, as will be highlighted throughout this dissertation, such issues are rarely consciously and explicitly considered by the GIC in their work. The problem, perhaps, is that philosophical debates about ethics can seem far removed from the process of developing a masterplan for a new urban area in Asia or the Middle East.

Ethical systems are generally described as falling into two major categories. Teleological, or consequentialist systems make judgments based on the outcome of an action, while deontological systems make judgments on the basis of the extent to which an action adheres to a predetermined set of rules (Farmer and Radford 2010). Planning, Upton (2002) has argued, is "spatial ethics," the complex practice of applying ethical systems and principles. Ideally, an ethical system can be applied to help guide processes of decision-making. Sustainable development for instance is, in Upton's view, the ultimate deontological framework in planning. Consequentialist approaches include those that focus on assessing the outcomes and impacts of particular design approaches. However applying ethical systems to planning problems can be difficult. Planning problems are, as Rittel and Webber (1973) famously observed, "wicked" problems—complex, ill-defined, and ultimately unsolvable. As a result, finding or devising a single ethical system that can guide planning practice is challenging. Doing so would require, in a consequentialist system, a single way to define planning's objectives. In a deontological system it would require the development of a system of rules to guide practice. While many planning theorists and practitioners have certainly tried to do this (communicative planning could be seen as an example of the latter) the prospect of developing a single ethical system to guide our approach to the wicked problems of planning remains daunting.

One of the primary things that practitioners can take away from the findings of this research is to incorporate into their work an explicit consideration of the ethical underpinnings of how they define and apply sustainability and sustainable urbanism. Throughout this dissertation I will highlight ethical issues as they arise. The concluding chapter will outline how ethics can be made practical and applicable to the work of the GIC.

2 THE TRAVELS OF URBAN PLANNING IDEAS: A HISTORY

2.1 Introduction

One of the primary objectives of this research project is to explore how and why sustainable urbanization moves around as a planning model. The purpose of this chapter is to put these questions into context by reviewing the way conceptualizations of the international movement of ideas in urban planning have evolved over time. Ward (2000) identifies three major concerns in the literature on the spread of planning ideas between countries. These are the mechanisms by which ideas move, the cause of this movement, and the extent to which ideas and practices are changed through their travels. The three concerns can be expressed in simplified terms as how planning ideas move; why they move; and what happens to them along the way. This chapter looks at how these three concerns have been discussed in the literature over time in order to better understand the drivers of the use of international expertise in planning projects both historically and today.

The various mechanisms through which planning ideas travel can be divided into two categories. The first is an indirect circulation, where ideas filter into new environments. The second is the more direct introduction of new ideas that occurs in the context of a planning project when actors who can be defined as "foreign" to a particular territorial location are engaged to develop a plan for that place. Mechanisms facilitating indirect circulation include: international education (studying planning abroad); the international movement of information and images through which people can see how planning and urban development is done elsewhere; and international travels through which actors involved in urban development are exposed to new and different urban planning styles and forms of urbanity. The direct introduction of ideas, on the other hand, occurs when a planner or team of planners is given a task of developing a plan for a particular territorially defined site. There are, broadly, three sets of conditions under which ideas may be directly introduced. The first is imperialism, where a colonial power engages planners from the home country. The second is under the auspices of development aid, whereby a bilateral or multilateral aid agency pays for a foreign team to do a planning project in a country seen as needing assistance in this area. The final set of conditions is commercial hire.

The focus of this research project is largely on the exchange of planning ideas that occurs around a specific project, under the conditions of commercial hire. However, it also recognizes the importance of the wider range of mechanisms by which urban planning ideas and models circulate. For example, the international reputation of Paris had a significant influence on the decisions of leaders in Africa and Latin America to engage French planners to work on their cities in the early part of the 20th century. The spread of the American ideal of modernity in the middle of the century, meanwhile, contributed to an increasing demand for American planning expertise abroad.

This discussion that follows is divided into three broad historical eras: colonial, or the period from the 19th century through to roughly World War II; postcolonial, defined as the period from the end of World War II to the 1970s; and global, defined as the period from the 1980s to today. The review summarizes what the existing literature identifies as the primary mechanisms and drivers of the international movement of planning ideas for each era. In exploring these it is useful to distinguish between those that motivate actors to seek ideas and expertise from elsewhere, and those that motivate professionals in the built environment to work in new and foreign environments. Put simply, there is a supply side and a demand side to the international exchange of ideas (McCann 2011; McCann and Ward 2010). In the review that follows, the supply and demand side drivers of the international exchange of ideas will each be discussed in turn in order to better understand the motivations of both the GIC and those who hire them. The chapter concludes by drawing out some of the common themes from all three eras, and their implications for studying the contemporary movement of planning ideas.

2.2   Colonial era

While planning ideas have moved across national borders for centuries, this practice increased substantially in the nineteenth century as colonisation provided the institutional basis for sharing ideas (Thornley and Rydin 2002). Despite the large number of examples of the international exchange of planning ideas in the colonial era, the literature on this subject is sparse (Beattie 2004). This literature tends to focus on the implications of the power disparities between colonizers and colonized. However many accounts also draw out the progressive as well as repressive nature of colonial planning endeavours.

2.2.1   Mechanisms of the international flow of ideas

The mechanisms by which planning ideas travelled in this era were quite straightforward. For the most part, architects and planners from the colonizing country worked in the colony (King 1980). They were generally employed by the colonial authorities, either directly or as consultants. Many colonial rulers brought architects and planners from their countries to masterplan new cities or urban districts (Balbo 1993; Banerjee 2005). The travel of urban planning ideas along colonial lines was augmented by the fact that the period of colonization coincided with the emergence of urban planning as a formal discipline in many European countries (Ward 2005). Colonies sometimes served as a training ground for planners, a place where they could test out and refine their ideas before returning to work in their home countries (Hein 2003; Rabinow 1989; Ward 2005).

2.2.2   Drivers of the international flow of ideas

Reflecting the power imbalances of the colonial era, accounts of the drivers of the international flow of ideas during this era emphasize the supply side. Common to the masterplans of this era was the exportation of a European style of planning. The British, French and Dutch all planned their colonial cities like their home cities; for instance port cities in India were laid out according to the baroque style then in vogue in Europe (Banerjee 2005).

Planners chose these layouts rather than local architectural vernaculars and urban morphologies in order to assert the superiority of European culture and impress the natives (Balbo 1993; Banerjee 2005). In colonial cities "the large avenues of the European city, its modern services and infrastructure were to show very clearly on which side progress, wealth and power were situated" (Balbo 1993: 25). The construction of European-style districts in colonial cities also served to provide suitable accommodation for colonial officials. The dynamics of this era led in many cities of the colonial world to the creation of dual urbanities, with a new "European town" being built alongside the old indigenous town (Celik 1997; King 1976; Rabinow 1989; Wright 1991). When a new "modern" settlement was constructed, a second, unplanned city often grew up around it (Balbo 1993; Scott 1998). In many cities in formerly colonized countries this fragmented nature continues today (Balbo 1993).

For countries still developing their own approaches to the new discipline of urban planning, colonies also offered an ideal location to test out ideas before implementing them at home. With the monopoly on power afforded by colonialism, colonial powers were relatively unconstrained in their ability to implement planning ideas (Hein 2003; Roy 2011c; Ward 2005; Ward 2010). The French, British and Japanese in particular used to their colonies to test planning ideas, but so too did the Dutch, Italians, Germans and Japanese (Hein 2003; Ward 2010). Local or indigenous approaches, however, did influence colonial planning at times. In some cases, planning proposals and projects adopted an approach that hybridized colonial and indigenous planning styles (Beattie 2004; van der Heiden 1990).

Town planning was also part of a move in the 20th century towards a more progressive, if paternalistic ideology on the part of colonizers (Cowherd 2005; Home 1990; van der Heiden 1990). Planning in Dutch Indonesia for instance became relatively progressive following the introduction of the "ethical policy," designed to atone for the subjugation of the earlier colonial period (Cowherd 2005). The growth of the urban planning profession at the end of the 19th and beginning of the 20th centuries came at the same time as movements to create more enlightened forms of Empire, and "the progressive, reforming image of planning helped to give colonialism a more acceptable face" (Ward 2005: 129).

2.3   Postcolonial era

Over the course of the 20th century as colonies gained their independence the dynamics of the international exchange of planning ideas began to shift. The colonial legacy continued to play a role, with leaders looking to their former colonizers for inspiration and assistance—e.g. India to the United Kingdom, Indonesia to the Netherlands, the Philippines to the United States (Leichenko and Solecki 2005). These continued links can be viewed as creating what King (1980) labelled a new "cultural colonialism" with a one-way flow of values, ideologies and planning models.

Yet the exchange of ideas in the postcolonial era did not occur solely between colonial powers and their former colonies. More diverse flows of planning knowledge and expertise developed as newly independent states sought advice and support from a wider range of countries (Ward 2010). However, those providing expertise and

assistance were largely from a small group of countries in the more developed economies of Europe, North America and Japan. For example, since the turn of the 20th century nearly all large-scale planning efforts for major cities in Arab countries have been undertaken with the aid of European expertise (Abu-Dayyeh 2004). Masterplans for major cities in Iraq, Kuwait, Syria and Jordan have been developed by planners from a range of countries including the UK, France, Greece, Poland and Japan (ibid). In Latin America, French planners were very active in the early part of the 20th century until the American influence became more prominent from the 1940s onward (Ward 2010). Soviet planners worked in the countries in their sphere of influence (Ward 2010). The Polish architecture and planning agency Polservice also did a great deal of work in the postcolonial world (ibid).

Another important feature of this era was an expansion in the influence of the United States. Beginning in the 1930s, and in particular after World War II, American planning ideas began to spread more widely, supplementing, and in many cases eclipsing the European influence in locations as diverse as Southeast Asia (Cowherd 2005), India (Banerjee 2009; Banerjee and Chakravorty 1994), South America (Almandoz 1999; Peattie 1987), the Middle East (Mahgoub 2004; Nagy 2000), and North Africa (Volait 2003). Despite this, overall this era saw planning knowledge becoming more internationalized. Planners working abroad no longer just brought ideas just from their own country, but rather concepts that had "a complex international history that reflected more than one national tradition; they were synthesized products of an international planning community" (Ward 2010: 66). The process by which planning ideas moved around became less one of export and imposition and more of a process of negotiation and selective adoption where those on the receiving end of ideas from elsewhere played a more active role.

2.3.1   Mechanisms of the international flow of ideas

In the postcolonial era ideas increasingly circulated via indirect mechanisms as the discipline of urban planning became more established. Academic programs dedicated to the new science of urban or town planning attracted students from abroad. The students then returned to their home countries with new ideas as well as professional links and connections to practitioners in other countries. Continuing improvements in international communications made it easier to access ideas from elsewhere.

With colonialism no longer providing the institutional framework for the direct introduction of ideas from elsewhere on particular planning projects, this occurred largely through two mechanisms: international aid and commercial hire. International aid in many ways mimicked the dynamics of the colonial era. Bilateral aid in particular, which often came directly from a former colonizing power to a newly independent colony, could be particularly reminiscent of colonial arrangements. Aid agreements often required the employment of professionals from the donor country to work on the project. The British Ministry of Overseas Development financed the work of British planning firms on redevelopment plans for cities including Kingston in Jamaica, Kaduna in Nigeria and Francistown in Botswana (King, 1980). Attaching such strings to aid funding have led some to argue that it creates a neo-colonialism that maintains the power inequalities of the imperial era, and perpetrates a largely unidirectional flow of planning ideas and practices (Kazimbaya-Senkwe and Lubambo 2010; Ward 2000). Multilateral aid for urban development also began to be channelled through international institutions such as the United Nations and the World Bank, while charitable foundations such as the Ford Foundation also became involved in funding and managing international urban development projects (Banerjee 2009).

Many newly independent countries did not rely on international aid to address urban issues but instead began to build new international links and strengthen their own planning capacity. Leaders in many countries, particularly in the Middle East and Latin America, actively sought out international experts in urban planning and hired them commercially to develop urban plans and projects (Banerjee 2009; Collins 1995; Nagy 2000; Novick 2003; Peattie 1987; Verdeil 2008). International experts were sought out in particular to develop masterplans for capitals and other prominent cities in newly independent countries. Well known examples include Le Corbusier's work on Chandigarh in India and Constantinos Doxiadis's plan for Islamabad, Pakistan (Bromley 2003; Perera 2004).

While planners from some countries continued to work primarily in former colonies, others began to branch out more widely- the French urbanists in particular (Ward 2010). This era saw the rise of the first truly global practitioners, with prominent figure such as Le Corbusier and Doxiadis's working all over the world. Enhancing international participation in planning projects at this time was the advent of the use of international

design competitions as a way of selecting a team for a large planning project. Such competitions are often intended specifically to attract international entrants, and provide a way for architects and planners to begin or continue an international career (Ward 2005).

The international exchange and travel of ideas in this era was aided by the ascendancy of modernism in architecture and urban planning. Proposed as scientific and universally applicable (in contrast with more locally generated approaches) the modernist approach to architecture and urban design was highly influential in the first half of the 20th century. Modernism certainly always had a global ambitions, it was after all called the "international style" (Adam 2008). However, as will be discussed below, the most important shift between the colonial and postcolonial eras in the dynamics of the way planning ideas move around internationally was the increasing importance of demand side drivers.

2.3.2   Drivers of the international flow of ideas

Supply-side
The shift towards commercial hire in the postcolonial era is indicative of an evolution in the drivers on the supply side of the international flow of planning ideas. The international movement and exchange of planning ideas no longer existed to meet the needs of Empire. While the objective of "enlightened" imperialists to assist with the development and modernization of countries in the global South continued to be pursued through the auspices of development aid, more commercial ambitions also emerged as motivators for planners to work abroad.

Planners in countries whose approach to urbanism was respected internationally began to take advantage of their reputations to obtain work abroad. They did so in the face of shrinking domestic markets for their services, and were often supported by professional organizations in their own countries. The British Town Planning Institute promoted the role of the British planner abroad in the 1950s (Ward 2010). French urbanists, on the advice of commercial envoys looking for new markets for French products and investments, undertook missions to Latin America in order to obtain government contracts (Novick 2003).

These commercial efforts were assisted by a spatial imbalance between the countries where modern urban planning developed, and thus a supply of professional planners was created, and those where rapid urbanization created need for these skills (Ward 2005). The extent of French involvement in Latin America in the early part of the 20th century can be linked to the fact that the French urbanists were trained in urban design, but had limited opportunities within France to practice this (Ward 2005).

Demand-side
Although they were freed from colonial subjugation, political leaders and other elites in countries of the global South continued to look to Europe, North America and Japan for support with urban planning endeavours. One of the primary motivators for importing planning principles and professionals from elsewhere was a perception that there was a lack of local expertise in architecture and urban planning, and that foreigners were much more experienced in this area (Golany 1984; Mahgoub 2004; Peattie 1987). In other instances, hiring a foreigner was seen as a way to obtain an independent perspective and approach from someone with both substantial expertise and critical distance (Novick 2003; Sanyal 2005). However as a number of authors emphasize, the employment of foreign professionals to work on a plan for an urban area was not cultural subordination or something that was imposed; rather it was a conscious and deliberate decision made by informed actors (Collins 1995; Mahgoub 2004; Novick 2003; Perera 2004; Verdeil 2008). In such instances, lack of familiarity with local planning cultures was at times considered an asset, rather than a drawback (Sanyal 2005).

Networks of relationships between those commissioning a project and experts abroad often influenced processes of decision-making about who to bring in to assist with a planning project. These relationships were frequently established through international study. The decision to employ a team from MIT to help with the planning of Ciudad Guyana in Venezuela was in part based on the fact that the head of the agency tasked with planning the city was an MIT graduate (Peattie 1987). The employment of French experts on a masterplan for Buenos Aires was related to the connections forged by Argentines who had studied in France (Novick 2003).

Admiration of the way planning was done in a particular city, or what Ward (2005) calls "qualitative admiration" was another factor that sometimes led to the decision to hire

foreign planner. Doing so was seen as a way to obtain a plan associated with the country of the planner. This dynamic can be seen in particular in Latin America in the 1930s. The French urbanists, benefiting in part from widespread admiration of Paris, were invited to take part in a number of major planning projects across the continent (Almandoz 1999; Collins 1995; Ward 2005).

A final significant supply side driver for seeking out international expertise in planning projects was that it was seen as a way of demonstrating a place's engagement with the most modern and up-to-date thinking on urban planning (Golany 1984; Scott 1998; Ward 2005). In some cases, this involved hiring a prestigious international figure as "a way of signifying and validating these evolving ideas of progress"(Ward 2005: 135). In others, as with Lucio Costa and Oscar Niemeyer's plan for Brasilia, the local architects brought in were seen as the best and most up to date with international ideas about architecture and urban planning (Scott 1998). However while global figures may have been used to signify progress, often they were not themselves at the roots of change, but agents of local interests (Ward 2005). In some cases, the role of foreigners was largely to legitimize already established local strategies. Novick (2003) argues that this was the case in Buenos Aires, where foreign experts were used to validate and back locally developed plans.

Exploring the roles and motivations of local agents challenges some of the common criticisms made of foreign plans developed for colonial and postcolonial contexts. Such critiques note that many such plans were never implemented. Their failure is linked to two factors. The first is that plans rested on an assumption that physical solutions could solve social and economic problems. The second factor is that planners failed to recognize differences in the underlying conditions between Northern and Southern cities (King 1980; Soussan 1982). While the blame for these mistakes is often placed at the feet of foreign planners, this may be an oversimplification. The desire of their clients to appear modern and, in some cases, to imitate cities of the global North, has trapped designers who may have wanted to make their designs more suitable to the local context (Golany 1984; Peattie 1987).

2.3.3   Colonial and postcolonial mobilities: reconsidering the role of locals

A strong theme in the more recent literature on the international travels of planning ideas in the colonial and postcolonial era is the role and agency of local actors. In their introduction to the collection *Urbanism: Imported or Exported*, Nasr and Volait (2003) argue that this shift is necessary as even in the colonial era the transfer of planning ideas was not simply a one-way process, in which locals were "impotent recipients... spectators observing physical and spatial changes that they neither control nor understand" (Nasr and Volait 2003: xii). This shift in focus to local actors challenges the conception that ideas from elsewhere can simply be imposed. Rather, even in cases where locals depended on foreign plans and planners, local professionals have significant capacity to shape the form of a city (Banerjee 2009; Nagy 2000). As several historians of colonial and postcolonial urbanism have argued, when ideas inappropriate for a particular context are imposed, contestations over space ensue and people often find a way to adapt environments to their own needs (Holston 1989; Perera 2010; Scott 1998; Yeoh 2003).

As the commissioning of foreigners to work on planning projects is increasingly initiated by local, rather than international actors, the balance of power on these projects is shifting. Verdeil (2003), examining the way Lebanon used foreign experts in the late 1950s and early 1960s, demonstrates that local actors played a significant role in determining the success, or lack thereof, of ideas proposed by foreigners. He links the relative success of the French planner Michel Ecochard working in the country (in contrast with other foreigners) to Ecochard's significant local experience, ties of friendship and professional prestige, as well as the fact that he had many friends and former colleagues on the administrative body supervising his work. Nevertheless, as a more robust local industry in planning and urban development evolved, local professionals in countries like Lebanon began to see foreigners such as Ecochard as competitors (Verdeil 2008).

Indeed, the mechanisms by which ideas from elsewhere become incorporated into a city or country's approach to urban planning are increasingly complex. Egyptian planners, fans of the British approach to urban planning, by the 1950s were exporting British town planning principles to other countries in the region (Volait 2003). In Lebanon from the late 1960s onwards, a new breed of indigenous multidisciplinary consulting firms, founded by locals trained in American universities, began to emerge (Verdeil

2008). Overall, scholars of the historical movement of planning ideas have largely moved towards a more complexified, multidirectional and relational approach to understanding of the way this movement has occurred. This is very much echoed in the way this movement is described in studies of the contemporary, global era, as the next section will demonstrate.

2.4   Globalized era

The third era to be discussed in this survey of the history of the travels of planning ideas is the contemporary, or global era. The hallmark of this era is the increased interconnectedness brought by the arrival of globalization. Globalization refers to "the expanding scale, growing magnitude, speeding up and deepening impact of interregional flows and patterns of social interaction" (Held and McGrew 2003: 4). In the popular imagination, globalization is often thought of in its economic sense, in particular as spreading the economic doctrine of neoliberalism. The impact of neoliberalism on urban planning and development, in particular the increased role for the private sector in these processes, has already been discussed in Chapter 1. Another oft – cited impact of neoliberalism on urban areas is increased interurban competition as a result of relaxed trade restrictions.

Globalization and neoliberalism are sometimes cited as structural forces driving an international convergence in urban form. By extension then, the same structural forces could be seen as the primary drivers of an increased international traffic of urban planning ideas and models in the global era. This is an idea seen to an extent in the work of some scholars researching urban policy mobilities, an area of research which will be discussed in more detail in Chapter 3. As stated in the introduction, this dissertation challenges the idea that neoliberalism is a dominant force in structuring how and why planning models travel. To this end, this section will begin by considering the arguments for and against globalization and neoliberalism as structural forces encouraging the homogenization of urban places. It will then go on to review, as those on the colonial and postcolonial eras did, the primary themes in the literature on the mechanisms and drivers of the international exchange of ideas. This discussion will incorporate insights from literature on the travels of both urban planning ideas and those of urban policies.

2.4.1   Globalization and urban form: convergence or divergence?

One perspective on the impact of globalization on cities can be briefly summarized as follows. As cities began to take on a new and more globally oriented role the range of actors making claims on urban space expanded to include foreign firms and international business people (Sassen 1998). Cities, no longer protected by their national economies, have found themselves courting investors increasingly free to choose from any one of a number of global locations. In response, cities eager to attract visitors and investors adopted an entrepreneurial approach to urban management (Harvey 1989).

Harvey (1989) argues that this increasing interurban competition serves as a powerful coercive force, driving the replication of similar patterns of development. This effect is augmented by the emergence of large, multinational real estate developers and architecture firms, as well as networks of speculative financiers investing in real estate (Haila 1997; Pizarro et al. 2003; Zukin 1992). The result, in the view of a number of observers, is that patterns of urbanization in both so-called "global" cities and their less prominent counterparts are converging around a Western model of urbanization (Adam 2008; Cohen 1996; Dick and Rimmer 1998; Leichenko and Solecki 2005; Pizarro et al. 2003). The homogenization wrought by globalization is such that it can be difficult to distinguish between parts of cities in widely disparate countries (Adam 2008; Gilbert 1994).

A related argument is that interurban competition leads to increasing demand from cities for prestigious developments and landmarks, including iconic buildings and megaprojects, to establish or enhance their presence on the world stage (Adam 2008; McNeill 2009; Sklair 2006). For cities in the global South, large scale, high profile urban projects can be used as a way to advertise their modernity (Bunnell 2004). The demand for iconic architecture owes much to the so-called "Bilbao effect", after the industrial city in northern Spain that revived its prospects by becoming the site for Frank Geary's iconic Guggenheim Museum. Those projects seen as successful in attracting tourism and investment are now replicated in other locations. Abu Dhabi for instance, will soon be home to another branch of the Guggenheim Museum, also housed in a building designed by Frank Geary. Another frequently cited example is the Baltimore Harborfront project, a public – private initiative that redeveloped the city's derelict inner harbour into a

mixed – use urban attraction. The Baltimore Harborfront came to be seen as "a global prototype of waterfront regeneration," inspiring similar developments including the London Docklands development (Ward 2002: 342). Somewhat ironically then, in trying to be distinctive, cities may end up becoming more similar to their international counterparts.

The idea that economic globalization and neoliberalism have led to a homogenization of urban planning, policy and form is hotly contested. This critique consists of four interrelated lines of argument. The first is a questioning of the substantial causal power often assigned to globalization and neoliberalism in the international flow of urban ideas (Bunnell 2013; Ong 2007; Peck and Tickell 2002; Robinson and Parnell 2011). Similar patterns of development mask the fact that the processes through which these pieces of the urban fabric were conceived and developed are distinct (Jacobs 2006; King 2004; Leichenko and Solecki 2005). We cannot assume that the emergence of similar urban forms around the world is evidence of a globalization of cause and effect (Robinson and Parnell 2011).

The second argument is, as discussed at the end of the last section, a growing recognition of the importance of agency. Convergence theories, by privileging similarity over difference, underestimate the ability of local actors to shape urban projects (Friedmann 2005; King 2004; Shatkin 2007; Shatkin 2008). Rather than so-called "global" actors imposing their ideas on hapless locals, there is in fact a demand for global approaches to urban development from actors who see this as a way to achieve their own objectives (Chen et al. 2009; Olds 2001; Ong 2011a). Even in situations where foreign assistance is imposed to a degree (as through development aid) local actors find ways to align it with their own objectives (Kazimbaya-Senkwe and Lubambo 2010). Urban space is not solely produced by flows of hyper mobile capital, people, images and symbols, "the reality is that globalization is variously embraced, resisted, subverted, and exploited as it makes contact with specific cultures and settings (Knox 1996a: 126 cited in Yeoh 1999). The drivers of demand for foreign expertise will be discussed further in the next section of this chapter.

The third line of argument is the application, by authors such as Jenny Robinson and Ananya Roy, of the postcolonial critique to our understanding of urbanism. Urbanism,

like modernity, is assumed to emerge from the West and spread to the rest of the world (Roy 2011b). Such "origin stories" are called into question by postcolonial analysis (Roy 2011b). This critique questions the modernist assumption that there is a single development trajectory, at points along which all cities and nations are placed. The idea that there is a process of convergence around a global model of urban development, in which cities of the global South are lagging behind, is critiqued by Robinson as a "regulating fiction" (Robinson 2002). The final argument is that, as should be evident from the first two sections of this chapter, the exchange of urban planning ideas is nothing new, and in fact predates globalization (Clarke 2012; Harris and Moore 2013; McFarlane 2011b; Ward 1999).

All these critiques share an underlying scepticism about the broad causal powers associated with globalization and neoliberalism. In doing so, they all to a certain extent draw on the post-structural critique of the tendency of urban geographers who, looking through a Marxist lens, focus on finding universal laws and explanations and developing structural theories (Ong 2011a; Ong 2011b). Prominent voices in this critique include authors such as Ash Amin and Doreen Massey, who argue that globalization is not a homogenizing "out there" phenomenon (Amin 1997; Massey 1994). This line of argument challenges dichotomies between local and global, national and international, foreign and local as increasingly outdated. The "local" is not always in contradistinction to the global, and is not always static (King 2004). Rather, global and local are not separate, but are becoming hybridized; a locality, rather than being a set of established conditions, is a node where numerous networks of different natures meet, where synergies or clashes may be created (Massey 1991; Massey 1994). These ideas and their implications for this study will be discussed further in the next chapter.

2.4.2   Mechanisms of exchange in the global era

In the global era, international consultants have become increasingly prominent as there has been a distinct shift towards private hire as the primary mechanism by which planning ideas move around internationally. Bilateral and multilateral aid still plays a role, particularly in the world's poorest countries. However, increasingly even in very poor countries, large urban projects are being developed with foreign financing and expertise. In some cases, projects financed by private capital may be more likely to go forward than those funded by international donor aid (Paling 2012). The international

traffic of ideas has been augmented by improvements in global communications. The advent of the World Wide Web in particular has led to a substantial increase in the availability of information on practices elsewhere, even if this information may be biased (Tomlinson et al. 2010).

A distinguishing feature of the transnational flow of planning ideas today is the increasing diversity of trajectories (Healey 2010). Many of the largest and most well-known GIC firms have their headquarters in North America and Western Europe, but they are not the only ones being hired to do international planning work. Firms from other regions of the world, in particular Asia and the Middle East have achieved an increasingly global reach through expansion and acquisition. There is a significant amount of exchange and inter-referencing between countries in Asia, with regional powers such as Singapore and Malaysia particularly active in this regard (Bunnell et al. 2012; Paling 2012; Shatkin 2011). Middle Eastern and North African firms are working in Sub-Saharan Africa, while China's growing investments across Africa extend to urban development projects (Brautigam and Xiaoyang 2011; Choplin and Franck 2010; Sautman and Hairong 2007).

2.4.3   Supply-side drivers

In the global era a significant influence on the international exchange of ideas in urban planning and development has been the growing internationalization of firms involved in architecture, engineering, urban planning, real estate and property development. As discussed in the introduction, to date the internationalization of architectural practices has received the most attention from scholars. Like business services firms before them, architectural practices began to work abroad in order to meet the increasingly international demands of their clients (Knox and Taylor 2005; McNeill 2009). While initially most large architecture firms followed their transnational clients' invitations to work for them overseas, over time these firms began to develop the global networks needed to establish themselves independently in a variety of new international markets (Knox and Taylor 2005; McNeill 2009).

Becoming a global "brand" can be more challenging for an architecture firm than a more traditional business services firm. In general they are much smaller, and as their work is project-based and therefore not always balanced over time, it can be difficult to justify establishing an international office (Knox and Taylor 2005). Given this, what motivates

architecture firms to work internationally? In his study of the globalization of architectural practice, McNeill (2009) finds that architecture firms chose to grow their business overseas for four main reasons: to diversify their client base; to obtain repeat business as their clients globalised; to use their expertise in a particular sector; and because they find working in a foreign context satisfying. Knox and Taylor (2005) examined the way architecture firms described their global strategies. A common theme in such descriptions is that geographical expansion was necessary in order to meet the needs of their clients to provide them with a seamless service.

These two studies demonstrate that economic considerations are clearly a factor in a decision to work abroad. However McNeill (2006) argues that market driven rationality cannot be the only driver. Many architecture firms are held privately by partners and thus not accountable to public shareholders. As McNeill points out, many firms also find working in a foreign context offers opportunities to try novel and innovative designs that would be less likely to be built in their more traditional markets. Locations rife with wealthy clients looking to put a mark on the urban landscape, such as Kuwait in the 1980s and Dubai in the 2000s, have provided something of a playground for architects (Mahgoub 2004; Peyroux et al. 2012). There are also reputational benefits to working abroad. Boutique, "starchitect" architecture firms in particular build their reputations by working on high-profile, prestigious commissions. Even more commercially driven firms use conventional commissions to subsidise more exciting but less profitable projects, which can significantly enhance their reputation and lead to additional work (McNeill 2006; Olds 2001). The reputational advantages of working on a high profile project extend beyond architectural commissions to work on large urban projects, as Olds (2001) demonstrates was the case for the European firms involved in the competition to develop a plan for the Luijazui, Pudong area in Shanghai.

2.4.4   Demand-side drivers

Despite the internationalization of the property development industry, the developers of large urban projects are usually based in the country, or at least the region of the projects they work on. Yet rather than drawing on local expertise, they often hire masterplanners, designers, architects and advisers from elsewhere. In the global era, what motivates a city authority or property developer in Asia or the Middle East to use a model from elsewhere or hire a firm from the West? The literature in this area identifies

four factors as motivators: globalizing ambitions; borrowed legitimacy; project branding and prestige; and seeking external expertise or "something different".

Globalizing ambitions. Despite the postcolonial critique of the idea that cities need to follow a prescribed path to development, according to a number of authors the desire to become a "global" city, or at least to enhance their international standing is a powerful influence on urban leaders and policymakers worldwide (Adam 2008; McNeill 2009; Sklair 2006). The need to modernize, globalize or "catch up" with other cities is often used to justify particular types of urban development projects, borrowing models from elsewhere, and involving outsiders in urban design and development (Ong 2011a; Wang and Shao 2010).

International architects and urban designers are sometimes criticized for bringing a standardized, decontextualized modernist approach to projects around the world regardless of context (Haila 1997; Olds 2001). Yet foreign architects are often hired specifically in order to design a building or development in an international style (Faulconbridge 2009). Such projects often start with high profile competitions in which only famous architects are invited to participate (Larson 1994; Sklair 2005). Prestige urban projects are often seen as a way of sending a message to the world. Reflecting a driver in the postcolonial era, using ideas from elsewhere can be a way to show that you and your city are "modern" and "global" (Acuto 2010; Olds 2001; Ren 2008). Iconic buildings in particular are seen as a way to put a city "on the map" (Bunnell 2004; Sklair 2006).

Project branding and prestige. In architecture and property development, a plan developed by a prestigious firm or celebrity architect can increase a project's profile and help it obtain the political support and investment necessary to take the project forward (Abramson 2010; Collins et al. 2000; McNeill 2007; Olds 2001; Ward 2002). Outside experts bring prestige and international reputation (Healey 2010). In China for instance conducting an international planning competition or employing a foreign team to develop a plan for a major urban project is a popular way to increase the amount of publicity that a project receives (Abramson 2010; Olds 2001; Wu 2007).

This is the case even when the plan prepared by the foreign team brought in has little influence on the project that is actually developed, as Olds (2001) demonstrates

occurred when the Shanghai government conducted a high profile competition for a new district in the 1990s. Promotional materials for the project used the brand of the global firms involved in the competition, despite the fact that the foreign plans had very little influence on the actual masterplan for the site. Situations like these can be frustrating for foreign planners who may find that the plans that they labour over "are often just tools in a multi-staged negotiation over the control of land, the attraction of investment, or some other part of the development process" (Abramson 2010: 307).

Borrowed legitimacy. A third motivator for cities to use models and ideas from elsewhere is what Sorensen (2010) calls "borrowed legitimacy." Ideas and models are adopted, not just in the hope of actually mimicking something that has been done elsewhere, but as a strategic resource in the highly politicized realm of urban development. Models perceived as successful bring with them an element of legitimacy and moral authority that can be useful in shaping the discourse around planning and urban development, and deployed in struggles and conflicts over competing visions (Peck 2011a; Shatkin 2011; Sorensen 2010). Depicting a new idea as respectable and successful elsewhere can be used to enhance trust in the capacity of a particular model to do what it is intended to do (Offee 1996, cited in Peck, 2011). Referencing supposedly successful examples from other cities "rather than reflecting a naïve belief that cities can simply follow along the path beaten by other globalizing cities, instead reflects the shrewd employment of certain images and ideals to promote a very specific development agenda" (Shatkin 2011: 93). Ideas from elsewhere can be used to justify a particular project or course of action that may help achieve a desired objective that has little to do with the original intentions of the model being employed.

Skills gap. As in the postcolonial era, the employment of international designers is sometimes driven by a perception that there is a lack of local expertise in the type of planning to be done. In contemporary planning processes there is often a strong focus on strategy and vision creation, which planners in countries where training is still highly technical are not always equipped to do (Wu 2007). Foreigners are also seen as bringing in new ideas that local professionals can learn from (Chen et al. 2009; Olds 2001; Wu 2007). In addition, their lack of familiarity with local contexts can be a strength: "ignorance of local conditions is welcomed, as this can help to overcome institutional hurdles and intergovernmental politics (Wu 2007: 389).

2.5   Conclusion

"Planners, architects, policymakers and consultants have always sought to learn from elsewhere in their attempts to assemble the city, so much so that the city is always already a relational product of different agendas and strategies from other cities" (McFarlane 2011b: 116).

The literature reviewed in this chapter revealed several commonalities in how urban planning and policy ideas have travelled internationally over time. Common to all three eras surveyed in this chapter is that for practitioners, working abroad offers the opportunity to try out new ideas, sometimes in a more permissive environment. Common to the postcolonial and global eras are several drivers. On the supply side are the commercial and reputational benefits of expansion. On the demand side is the belief that foreign expertise is needed to become more modern or global.

Other themes in the literature are the increasingly diverse trajectories along which knowledge moves, and that ideas are rarely imposed. When looking at the international movement of models and ideas it is important to move beyond simple dichotomies of local versus global / foreign /external. Having local people in control of the development process does not mean that what emerges will be contextually embedded. Meanwhile, outside experts can challenge locals, encouraging broader debates and highlighting previously marginalized perspectives (Healey 2010).

These points are critical to keep in mind when studying the GIC. International consultants in the built environment industry can be seen as agents of structural forces, in particular globalization and neoliberalism. It is true that the work delivered by international consultants may be more globally than locally oriented, and ideas initially developed for one context may be presented again in another (Adam 2008; Banerjee 2009; Bunnell and Das 2010; Haila 1997). However it is important to distinguish between the work delivered and the way it is taken up and implemented. Ideas, model or professionals from elsewhere are used largely in the pursuit of objectives specific to a particular context. In the postcolonial era, demonstrating your engagement with modern, up-to-date thinking on urban planning by bringing in foreign experts was connected to national or urban pride. Today this is driven more by economic drivers. Whatever the circumstances, external ideas, "are more likely to gain purchase when

they are seen to be of benefit to local agents, or when they are purposefully and selectively embraced from inside" (Zhang 2012: 2855).

This chapter has demonstrated that the international movement of ideas in urban planning and policy is nothing new. Our understanding of this movement, however, is rapidly evolving. As the quote from McFarlane above alludes to, the shift towards a relational approach to interpreting international flows of urban ideas precludes the possibility of uncovering simple, straightforward answers to the questions this dissertation seeks to answer. How and why ideas move around and what happens to them along the way are questions that can only be answered by drawing on detailed empirical work. The literature surveyed in this chapter includes a number of attempts to explore these questions through the use of in-depth case studies of particular instances of the transfer of ideas. This dissertation aims to complement such research through a study of the production and circulation of one specific planning model, sustainable urbanism. The theoretical approach that frames the study is outlined in the next chapter.

3 Conceptualizing travelling ideas

3.1 Introduction

The international traffic in ideas about how to plan and design cities is nothing new. However the scale of this traffic, and the pace at which ideas move around appear to have increased in recent years. The primary objectives of this dissertation are to present an empirically grounded description of what constitutes sustainable urbanism as a traveling planning "model" and to explain how and why it is being employed in such a variety of different locations around the world. As discussed in Chapter 1, this is conducted using the GIC as an entry point into studying sustainable urbanism and its travels. The purpose of this chapter is to consider how to conceptualize the international travels of a planning model, as well as the role played by the actors involved in its development and mobilization. Chapter 2 demonstrated that the conception that ideas are simply exported from a core and imposed on a periphery is largely out of date. This chapter will build on this point by arguing that travelling planning ideas and models are dynamic, and neither their trajectories nor their impact on the places where they land are predetermined by structural forces such as neoliberalism or globalization. How ideas are presented and taken up in new places varies, and models can change as they travel.

This chapter sets out the theoretical underpinnings and conceptual framework that guide the interpretation of the empirical evidence gathered in this research project. It begins by establishing the ontology adopted in this dissertation, arguing that a poststructural, relational ontology is most appropriate for understanding and conceptualizing the world of the GIC and traveling sustainable urbanisms. The chapter goes on to consider the benefits and drawbacks of the various ways that traveling urban planning and policy ideas have been conceptualized in the urban planning and geography literature. These include the relational – territorial dialectic of policy mobilities scholars, as well as approaches that draw on the relational materialist perspective of actor network theory and the poststructural world of assemblages developed by Deleuze and Guttari. The purpose of this discussion is to set out and explain some of the key ideas and conceptualizations that are useful to help understand the world of traveling ideas.

Ultimately the chapter will argue for the benefits of one approach to pulling together many of these elements: assemblage thinking as it has been developed in recent writing in critical urban geography. The intellectual antecedents of assemblage thinking's deployment in geography can be found in both actor network theory and Deleuze and Guttari (Anderson and McFarlane 2011). Assemblage thinking's focus on processes of emergence and formation makes it particularly well-suited to studying traveling ideas. The work of Colin McFarlane is particularly useful in this regard, as he uses assemblage thinking to examine the way learning occurs across boundaries (McFarlane 2011b). McFarlane's work provides a conceptual framework that both guides the interpretation of data and sets out the structure for the remainder of the dissertation.

3.2   Urban dynamics: towards a relational view

The world of globetrotting consultants and internationally mobile urban planning models described in this dissertation sits at odds with a conception of places, or indeed people that can be described principally by reference to a point on a map. Should an engineer raised in Vietnam, educated and working in the United Kingdom be considered a "local" consultant when he works on a project in London, or one in Hanoi? How should one trace the provenance of the ideas applied on an urban development project designed by a team of consultants from the United Kingdom and the United States, being constructed in Kuala Lumpur, funded partially by a sovereign wealth fund based in Abu Dhabi? The underlying theme in these questions is that clearly defined categories for explaining what we see in the social world no longer exist. This is something of a leitmotif in critical urban theory over last 20 years. This theme has its roots in a critique of theories of structural determinism in anthropology. Such theories hypothesized that underlying structures and forms are the generative measures shaping social life, and therefore explaining social and cultural life requires studying such forms rather than people or behaviour (Murdoch 2006).

The alternative, poststructuralist recognition of the existence of multiple meanings and identities has led, in the field of human geography, to the emergence and widespread adoption of a relational ontology of identity and space (Leitner and Sheppard 2003; Massey 1994; Murdoch 2006). Rather than looking at spatial forms as the outcome of social and economic factors, geographers began to see such forces as mutually

constitutive (Leitner and Sheppard 2003). This shift led to a reconceptualization of the meaning of "identity" as something not inherent and static but rather as something that is constituted through relations and interactions (Massey 2004).

This relational understanding of identity has been used by geographers, most notably the British geographers Thrift, Amin and Massey, to reconceptualize notions such as space, place, global, local and community. In most critical and social theory, time has been associated with processes and space with structures (Massey 2005). Space, Massey argues "has been imagined, persistently if often only implicitly, as a sphere of immobility" (Massey 2005: 42). To get beyond this we need to move from a territorial conception of space as bounded to a relational one that emphasises how many influences—past, present, and future—come together to define the nature of a particular space at a particular point in time. What is required, argue Amin and Thrift (2002), is an ontology of the city that sees it as a process, something to be considered not by looking at its present state, but at the set of potentials that it contains. These multiple potentials exist, they argue, precisely because cities are the sites of multiple flows – of people, commodities, information, and networks that are constantly interacting.

A post-structural, relational ontology underpins much of the work in human geography today. Relational geography emphasizes that space is a product of interrelations at various different scales, a 'meeting place' where relations interweave and intersect. These interrelations are constant such that space is never fixed or closed, it is always in the process of becoming (Massey 1994; Massey 2005). A relational perspective encourages looking not at the reality of a particular space at a moment in time, but at the multiple space-times which exist in a city, and the interactions between them (Amin & Thrift 2002). This leads to an understanding of place as defined not by its history or a set of boundaries but as a unique point at which networks of social relations, movements and communications intersect, or "articulated moments in networks of social relations and understanding" (Massey 1994: 154).

Thinking relationally does not mean denying the existence and impact of global or historical forces. "Instead, it is a subtle folding together of the distant and the proximate, the virtual and the material, presence and absence, flow and stasis, into a single

ontological plane upon which location—a place on the map—has come to be relationally and topologically defined"(Amin 2007: 103). This approach leads relational geographers to an analytical concern with flows and networks, the dynamic over the static, and interactions over objects. In doing so they seek to explain contemporary urban dynamics where more static theoretical conceptions have failed.

3.3   Relational planning

Despite its substantial influence in human geography, relational thinking has not been widely applied in planning theory. An exception is the work of Patsy Healey, who argues that relational geography is useful for planners because it "speaks to a post-'modern' recognition of the dynamic complexity and many contingencies of urban conditions" (Healey 2007: 221). According to Healey, this complexity needs to be recognised and accounted for in planning theory and practice. Yet planning practice remains mired in a falsely static conception of the world, its tools ill-equipped to deal with the complexity of contemporary urban areas (Graham and Healey 1999; Healey 2000). Addressing this deficiency requires developing planning theories and practices based on a relational understanding of the world. This is what Healey has tried to do through the development of her 'institutionalist' approach to planning, which combines relational geography with an interpretive approach to policy analysis. Like relational geography, interpretive policy analysis focuses on the relations, interactions and social processes through which meaning is constructed, as well as the complexity of interactions and the way they are embedded in context (Healey 2007: 14).

The institutionalist approach sees planning as a social process of identifying problems, drawing on knowledge to develop solutions, and putting the solutions into place (Healey 1997). This approach has implications for the source of planning's legitimacy. Planners must accept that urban areas are too complex for future states to be predicted and pre-designed. The power of spatial strategies lies in their ability to focus attention on particular places and develop new connections (Healey 2007). Thus:

> "planning efforts have to abandon the idea that there are some pre-given spatial ordering principles that can provide a legitimate basis for interventions in the emergent realities of urban areas. It is the social process of the production of such principles that gives them legitimacy" (Healey 2007: 228).

The institutionalist perspective does not simply focus on the social process of planning and the agents involved. It also takes into account that planning processes occur in the context of particular places. These places influence the planning process, and vice versa. In other words, planning processes are both culturally embedded, and have a broader influence on the contexts in which they occur. This assertion reflects Healey's use of Anthony Giddens's (1984) theory of structuration to develop an understanding of the way structures and agents shape each other through the planning process. Structuration theory is an attempt to reconcile the classic dilemma of structure versus agency. According to Giddens, as Healey (1997) explains, while powerful structuring forces exist in the world, they exist through us rather than outside of us. While structures may become abstracted and taken for granted, they are actively made, and remade through human agency. The planning process itself can shape and frame the relational webs that create the very structures planners use (Healey 1997: 57). The process of developing a spatial strategy may be a dynamic social construction, but it can also contribute to stabilising and ordering a complex reality (Healey 2007).

From Healey's institutionalist perspective, the power of a spatial strategy such as a masterplan lies not in its ability to set out a plan that will be followed to the letter, but in the way it can focus attention and develop new connections. This perspective on the source of planning's legitimacy and the role of spatial planning strategies encourages an analytical focus on planning processes. From an institutionalist perspective, elements of sustainable urbanism such as compact development or green roofs do not have pre-given legitimacy; rather they gain these through the planning process. This approach is a useful way to understand how individual instances of developing a masterplan, which legitimate particular ideas, feed into a larger process through which what is considered sustainable urbanism emerges and travels.

There are two important limitations to Healey's institutionalist approach when it comes to understanding traveling ideas. Firstly, in her focus on planning processes as consisting largely of the social construction of meaning she neglects the role of materials in the planning process. This is something that, as will be discussed below, is an important contribution of actor network theory. Secondly, her reliance on structuration theory reflects her desire to find a "compromise" position (Latour 2005) in the debate about whether structures or agents are most important in shaping the

social world. The ways these limitations hamper her attempt to develop a theory of the way planning ideas travel will be discussed further below.

3.4   Conceptualizing traveling ideas

Chapter 1 outlined a complex world of ideas traveling along multiple trajectories, adapting and changing along the way. Taking a relational approach to studying this world of traveling urban planning models makes a great deal of sense. Seeing entities as shaped and defined largely by their relationships and interactions with other entities helps explain the unpredictable outcomes of an idea's travels. The way relational thinking has been taken up by those who attempt to conceptualize traveling ideas varies. Some approaches attempt to reconcile relational thinking with more structuralist leanings, while others are grounded in the more avowedly poststructural perspectives of actor network theory and assemblage theory. This section will review the various ways traveling urban planning and policy ideas have been conceptualized. This provides the backdrop for the following section, which sets out the analytical approach and conceptual framework guiding this research.

3.4.1   Situated contingencies: Conceptualizations from the planning literature

Given that this dissertation is a study of the travels of a planning model, the planning literature is the first place to look in the search for an appropriate conceptualization of traveling ideas. The literature reviewed in the previous chapter set out a number of explanations for the international travels of planners and planning ideas over time. However this literature, which is mostly drawn from the sub-discipline of planning history, tends to focus on the spread of particular idea or model, the travels of an individual planner, or the story of a particular plan. While the literature contains many fascinating stories, for the most part it does not attempt to develop broader theoretical frameworks or generalize about the way planning ideas spread internationally. One attempt by a planning historian to do so is Stephen Ward's typology of how planning ideas are diffused based on the power relationship between the 'importing' and 'exporting' countries (Ward 2000). At one end, he argues, lies dependence and an obligatory imposition of ideas, at the other, a largely equal relationship where borrowing and adaptation can occur (Ward, 2000). Yet in reflecting back on this formulation more recently, Ward notes that perhaps this was too static to describe a

world in which countries in the South are more independent and ideas are beginning to flow in multiple directions (Ward, 2010).

Looking more broadly in the planning literature for conceptualizations of traveling ideas returns us to the work of Patsy Healey. As argued above, Healey's relational approach to planning presents a version of the planning process that is to some degree aligned with the type of planning that is the focus of this research project. Recently Healey has applied her perspective to understanding the international movement of planning models and ideas (Healey 2012; Healey 2013; Healey and Upton 2010). In a recent article, Healey (2013) sketched out the outlines of an approach to studying the movement of urban planning ideas that would bring together methods from actor network theory, concepts from interpretive policy analysis, and the more "structural sensibility" of elements of policy mobilities research. Yet while she recommends the adoption of some elements of the actor network theory methodology, she also maintains an emphasis on the role of social actors. Thus she does not take up one of ANT's most useful contributions to the study of traveling ideas, its emphasis on the role of the material.

Healey's approach to studying traveling planning ideas also maintains the compromise position about the relative roles of structure and agency offered by structuration theory. Studies of traveling ideas, she argues, must continue to pay attention to the "systemic structuring dynamics which shape the world in which agency gets to work" (Healey 2013: 1520). One aspect of doing this is recognizing the importance of what she calls "situated contingencies." These are "the particular histories and geographies of context within which planning ideas are shaped and adapted, and get to flow around" that "need to be given careful attention" (Healey 2013: 1521). Healey seems to be trying to assert that we need to take structural forces into consideration when studying how ideas travel, but to avoid making a universal declaration about what these forces might be.

From Healey's perspective, situated contingencies shape how knowledge is acquired, validated as relevant, and used to legitimate governance action. The details of how such contingencies interact with traveling ideas, Healey appears to argue, will be revealed by research which undertakes the production of thick descriptions of the travels of individual ideas. Transnational learning, she proposes, is best produced through the use

of in-depth cases rather than best practice summary or typologies. Such descriptions should look at an idea's "origin narrative," that is how it came to be, and the story of "how it got here", as well as what an idea "carries inside it" (Healey 2012: 195). Healey's work explores some of the critical issues around how urban planning ideas travel, however it falls short of offering a robust conceptual framework and approach to this topic. The drawbacks of her approach will be further clarified in the discussion below of alternative, more avowedly poststructural perspectives on the travel of ideas.

Before turning to these, however, the next section will discuss a body of work which is at the opposite end of the spectrum from the largely historical literature on the travels of planning models. This is recent work in urban geography on policy mobilities, which looks at the contemporary movement of urban policy and planning models.

3.4.2   Relational – territorial dialectics: the policy mobilities approach

The field of urban policy mobilities, which has been developed by political and urban geographers in recent years, positions itself as an alternative to the policy transfer approach taken by political scientists. Policy transfer conceptualizes the movement of policies as taking place in a relatively unstructured and free market where rational actors exchange policy products and only the best policies travel (Peck and Theodore 2010b). The mobilities literature challenges this conception by drawing largely on detailed reconstructions of examples of the movement of urban policies. Recent work has focused on a diverse collection of policies including business improvement districts, drug policy, new urbanism, creative cities, workfare and conditional cash transfers (Lee and Hwang 2012; McCann 2008; McCann and Ward 2010; Peck 2002; Peck and Theodore 2010b; Ward 2006).

The policy mobilities project is "aimed at going beyond the imaginary of "terrains" as spatially fixed geographical containers for social processes, and calling into question scalar logics such as local/global as descriptors of regional extent" (Hannam et al. 2006:5, quoted in McCann 2011: 176). Yet while mobilities scholars adopt a relational ontology, they also emphasize that policy development and delivery are grounded processes, whose impact depends on context (Peck 2011a). As they travel, policies change and mutate, but they also must become fixed to a degree in order to be implemented in the places where they land (McCann, 2011; McCann & Ward, 2010). Thus as McCann and Ward (2010, p. 176) argue "urban policy – making must be

understood as both relational and territorial; as both in motion and simultaneously fixed, or embedded in place".

Broadly, the mobilities literature makes the following points, many of which are reminiscent of themes described in the last chapter. Firstly, urban policies are not fixed, concrete entities, but social constructions produced and enacted by networks of human beings (McCann 2011; Peck 2011b). Far from neutral and rational, the processes by which policies are transferred are highly political (McCann and Ward 2010; Peck and Theodore 2010a). Policies are generally not imposed from outside. Rather, cities go through a process of what Zhang (2012) calls "selective policy emulation" in which they adopt particular principles of a model from elsewhere. The aspects of the model that travel are those most attractive to the actors adopting the model (McCann and Ward 2010; Peck and Theodore 2010b).

The mobilities literature also highlights that policies are not precisely replicated when they move, rather they change and mutate as they travel (McCann and Ward 2010; Peck 2011b; Peck and Theodore 2010b). Policy ideas are shaped and reshaped as they circulate such that "something happens to policy knowledge along the way, in the telling, and on-site as policy actors learn from each other, from sites they visit, and from the various institutions and mediators they encounter" (McCann 2011: 117). But the policies themselves are not the only things that change as they travel. In their study of the role of traveling engineers in the globalization of water privatization, Larner and Laurie (2010) note the reflexive nature of this process. Traveling engineers "are not simply embedded within globalizing privatization processes, but… these processes are shaped through their movements" (Larner and Laurie 2010: 2–3). Thus traveling policies can have a broader impact, as they create new relational connections (Peck 2011a).

The policy mobilities literature grew in part out of a wider body of work on neoliberal political economic transformations. Despite their efforts to move away from the policy transfer literature's conception of linear processes of policy exportation, Bunnell (2013) argues that the dominant picture presented by authors writing in this area is still one of cities undergoing neo-liberalization. What is mobilized, despite its mutations, is almost invariably "neoliberal". The work of Jamie Peck, in particular, still reflects these

antecedents. While he emphasizes that policy mobility is not leading to convergence or homogenization of policy practice and regimes, he does argue that policy experimentation occurs within a structured zone within a dominant neoliberal paradigm (Peck 2011b). Policies that travel are those that "affirm and extended dominant paradigms and which consolidate powerful interests" (Peck and Theodore 2010b: 170).

Urban planning and development occurs in the context of the entrepreneurial, or neo-liberal in Peck's terms, paradigm described in Chapter 1. This paradigm can influence which elements of a planning model travel and are taken up in new locations. For example, McCann and Ward (2010) found that the principles of the urban planning model of new urbanism that travel are those that are attractive to planning officers and urban developers because they are seen as profitable. This could be an example of a structured zone of experimentation. Alternatively, it could be an example of Zhang's (2012) "selective policy emulation," where actors choose aspects of the traveling model that appeal to them, for reasons that may vary. Jacobs (2012) argues that the reason policy mobilities scholars see neoliberalism everywhere is because they focus on instances of policy presence, rather than absence. Bunnell (2013) agrees in part with this point, but also points out that this critique assumes that only neoliberal policies have the kind of global presence whose origins we might want to trace. Socially progressive ideas, he argues, can also travel, yet these are rarely the focus of inquiry.

The policy mobilities literature appeals to those, like Healey, who seek to combine a relational perspective with the continued acknowledgment that there are broad structuring forces "out there" that affect the way ideas move and are taken up in new environments. Yet despite the argument of McCann and Ward that policies can be both relational and territorial, trying to incorporate structural forces into a relational approach seems at times like an uncomfortable marriage. This is particularly the case when looking at traveling ideas. Structuralism reinforces the dualisms such as global and local, macro and micro that Chapter 1 demonstrated are increasingly irrelevant when ideas travel.

There are two more avowedly poststructural approaches to understanding the social world that are popular amongst urban geographers and increasingly making inroads

into planning: actor network theory and assemblage theory. Both of these have recently been applied to understanding the way urban planning ideas and models travel. The next two sections of this chapter will outline some of the key characteristics of each of these approaches, followed by a discussion of the way they can be and have been applied to studying traveling ideas.

3.4.3   Heterogeneous associations: Actor network theory

Actor network theory (ANT) emerged out of the field of science and technology studies and has been developed primarily by Bruno Latour, Michel Callon and John Law (Callon 1986; Latour 1987; Latour 1993; Law 2004). Early actor network theory focused on the production of scientific knowledge. Over time it has evolved into a theory of how to understand, as well as how to study, the social world. In recent years, ANT as a theoretical approach and research methodology has widely been taken up in human geography (Farias and Bender 2010; Hitchings 2003; Jacobs et al. 2007; Murdoch 1997b; Murdoch 1998), and more recently is gaining popularity in urban planning (Boelens 2010; Doak and Karadimitriou 2007; Rydin 2010; Rydin 2013; Tait 2002; Webb 2011).

One of the most distinctive features of actor network theory is its assertion that nonhumans have agency. ANT adopts a flat ontology in which social and material actors are given equal importance. Building on this, actor network theorists see the social as the outcome of a process where human and nonhuman actors come together in networks. Rather than social structures ANT theorists see "stable and enduring sets of heterogeneous associations"(Murdoch 1997b: 329). The heterogeneous nature of networks, in particular the materials that play a critical role in solidifying social relations (material embodiments of social arrangements tend to endure longer) is what allows them to endure and makes them appear to be, to some extent, structural (Murdoch 1998). By focusing on the way associations bring things together ANT attempts to move beyond dualisms such as structure and agency, local and global, macro and micro (Latour 2005; Murdoch 1998).

Actor network theory is very much concerned with how knowledge and technologies cohere into forms in which they are capable of traveling and exerting influence. In these processes, nonhuman actors, or "actants" play an important role. One concept that is particularly important to an ANT understanding of how ideas move is translation.

Translation is an important element in Latour's explanation of how ideas gain influence in a world characterized by associations rather than structures. Translation "refers to the processes of negotiation, representation and displacement which establish relations between actors, entities and places" (Murdoch 1998: 362). Looking at what each actor in a network does, and how they transform things through the process of translation, reveals the way things have effects. Latour explains influence in this way:

> Actors "might be associated in such a way that they *make others do things*. This is done not by transporting a force that would remain the *same* throughout as some sort of faithful intermediaries, but by generating *transformations* manifested by the many unexpected *events* triggered and the other mediators that *follow* them along the line" (Latour 2005 p. 107, italics in original).

Translation is "a connection that transports transformations" (ibid. page 108). Authority for new concepts is generated by creating a network of interested parties, and getting these parties to recognize the value of the concept. In this way the concept accumulates power and becomes able to act at a distance from the site of its creation. Through its travels, the concept can change both the networks it travels among, as well as other important concepts it encounters along the way. ANT focuses on the materiality of the way findings, techniques and ideas are formed and flow (Healey 2013). Material resources and technologies are essential in allowing humans to act upon and influence others who may be far away in time and space (Murdoch 1997b).

ANT as a research approach aims to open up the "black box" of a technology or concept to reveal the actor network that constitutes it. Black boxes are parts of networks which, as the term implies, are hidden from view. Once black boxed, a set of relations is both stabilized and immunized against critique (Latour 2005). Latour developed the concept of the black box as a way to explain how a fluid assemblage of relations can become fixed to a point where a technology can travel (Latour 1987). Several authors have also used actor network theory to explore the way ideas, or sets of ideas about how to plan and organize the built environment travel (Hult 2013; Jacobs et al. 2007; Rydin 2013). Tait and Jensen (2007) take this approach further, drawing on actor network theory in developing a framework to explain how models of urban form travel.

In doing so, they rely heavily on the concept of translation, which they describe as the series of processes that enable ideas to cohere into a set of relationships, or an actor

network that allows the ideas travel. According to Tait and Jensen, seeing the travel of ideas through the lens of translation emphasizes that these travels have "less to do with the ideas themselves and more to do with the actions of numerous actors to import, change and embed the idea in different contexts" (Tait and Jensen 2007: 112). From this perspective, models themselves are not powerful. Rather, the power of a model resides in the assemblage surrounding it. Or, in their words: "the power of ideas is dependent on the relational configurations of capacities embedded partly within its networking infrastructure and partly as a reflection of contingent decisions and actions made by agents"(Tait and Jensen 2007: 125). In an ANT perspective, the agency of the planner is similarly shaped by the relational ties of the assemblage within which they are working (Rydin 2013). Planners "can seek to exercise reflection, intentionality and negotiation in order to shift development outcomes but do so within the associative networks linking the social and the material and thus in the face of material agency also"(Rydin 2013: 27).

Translation, then, emphasizes the importance of looking at the role of models and the actors involved in their travels in the context of the broader networks of social and material actors within which they are embedded. Jacobs (2012: 418) argues eloquently for replacing a diffusionist imaginary of how ideas move internationally with one grounded in Latourian translation.

> Translation brings into view not only the work required for a thing to reach one point from another, but also the multiplicity of add-ons that contribute, often in unpredictable and varying ways, to transportation, arrival, adoption and (something current urban policy mobility studies are entirely blind to) non-arrival and non-adoption. The concept of translation brings back in not only the forgotten many who carry policies but also the crowds of acting entities that shape the affiliations that form around a thing on the move. These entities meaningfully contribute to how coherent and convincing something that moves remains or becomes, and so the extent to which it is likely to take hold or not take hold.

ANT is not just a theory, but a methodology. ANT's conceptualizations of the social as connective tissue within materially heterogeneous networks, and of structure as a process are reflected in its methodological prescriptions. The task of science then is to follow actors in order to trace their associations, to replace the "convenient shorthand

of the social… (with) the painful and costly longhand of its associations" (Latour 2005: 11).

Yet as Healy (2013) has argued, policy and planning ideas are more fluid than technologies, and therefore not as easily treated as a black box whose trajectory can be traced. To study not a technology but an idea, especially one that is far from fully formed, the ANT methodology of detailed tracing of networks is not effective or practical. The "laboratory" for this research project is, if anywhere, the laptop of a busy international consultant, who is one day in Abu Dhabi, the next in Singapore. The material, that is, the masterplan or PowerPoint presentation he or she is working on, is in one form when he leaves his office in New York, another when presented to the client in Shanghai, and yet another when packaged up as a case study on his company's website. Any of these forms may, of course, bear little resemblance to the more concrete materiality of sustainable urbanism: the streets and buildings, parks and power lines that may or may not be built on the basis of a masterplan.

ANT does introduce three concepts that are useful to a relational, poststructural approach to understanding the travels of a planning idea. Firstly, ANT's rejection of traditional dichotomies between structure and agency, global and local, macro and micro is similar to that seen in contemporary literature on the movement of urban planning and policy ideas. Secondly, ANT's flat ontology and recognition of the importance of material objects is also valuable, as the traveling model of sustainable urbanism is certainly materially heterogeneous. Documents, presentations and, in particular masterplans are important elements of the object of inquiry. And finally, the concept of translation is a useful lens for examining the international travels of sustainable urbanism. However, as the next section will argue, these concepts are better applied as part of a theoretical approach that combines the insights of ANT with the assemblage theory of Deleuze and Guttari. It is to the latter that the next section turns.

3.4.4   Formation and form: assemblage thinking

The concept of the assemblage is usually associated with the work of Giles Deleuze, who elaborates the concept primarily in his work *A Thousand Plateaus* written with his collaborator Felix Guttari (Deleuze and Guattari 2004). Assemblage thinking builds on and aligns with relational approaches and shares with ANT an interest in how social and material entities come together into forms in which they can have effects. Its focus,

however, differs from ANT in that it is specifically concerned with the agency of both wholes and parts, and the relationship between these (McFarlane and Anderson 2011).

Manuel DeLanda, who is perhaps Deleuze and Guttari's most lucid Anglophone interpreter describes assemblages as a way of thinking about the relationship between parts and wholes that sees them as characterized by relations of exteriority (DeLanda 2006). The concept of "relations of exteriority" emphasizes the distinction between the properties defining an entity and the more or less unlimited capacities it has to interact with other entities, as well as the fact that a part of an assemblage can be removed and put into a different assemblage, and the interactions will be different (DeLanda 2006; McFarlane 2011a).

Practically, this means that assemblage thinking "is attentive to both the individual elements and the agency of the interactive whole, where the agency of both can change over time and through interactions"(McFarlane 2011a: 208). In other words, both an assemblage and the components that make it up have agency, but the way their agency is expressed can change. In addition, because the component parts of an assemblage are autonomous, assemblages are not organic wholes, the sum of their properties or parts (McFarlane 2011a). Rather, it is the interactions between components that form an assemblage. Assemblage thinking implies an empirical focus on these interactions as a way of studying the processes by which an assemblage forms.

The dynamic nature of an assemblage, and the importance of focusing on processes of assembly can be seen in what Deleuze and Guttari describe as their "tetravalency" (DeLanda 2006). In chemistry, valency refers to the power of an element or molecule to combine things. The assemblage's tetra (four) valances are split along two axes: the material and the expressive and the territorialising and deterritorialising.

> "On a first, horizontal, axis an assemblage comprises two segments, one of content, the other of expression. On the one hand it is a *machinic assemblage* of bodies, of actions and passions, an intermingling of bodies reacting to one another; on the other hand it is a *collective assemblage of enunciation*, of acts and statements, of incorporeal transformations attributed to the bodies. Then on the vertical axis, the assemblage has both *territorial sides*, or reterritorialized sides, which stabilize it, and *cutting edges of deterritorialisation*, which carry it away" (Deleuze and Guattari 2004: 97–98).

Explaining the horizontal axis, Deleuze and Guttari describe the machinic aspect of an assemblage as "a precise state of intermingling of bodies in society," hence "the ship machine, the hotel machine, the circus machine" (Deleuze and Guattari 2004: 98–99). They describe the collective assemblage of enunciation as consisting of statements, expressions, laws and judgments.

The vertical axis of territorialisation and deterritorialisation is particularly important for understanding how assemblage thinking conceptualizes the way elements become part of, or detached from an assemblage. According to DeLanda, territorialisation is a process that stabilises the components of an assemblage—that is, what makes up the "ship machine". Territorialisation can occur through defining and sharpening the spatial boundaries of an actual territory, but also through a process of increasing the internal homogeneity of an assemblage, for instance by defining the jurisdiction of an organization. A process that does the opposite, destabilizing spatial boundaries or increasing internal heterogeneity, is deterritorialisation.

Territorialisation then "plays a synthetic role, since it is in part through the more or less permanent articulations produced by this process that the whole emerges from its parts and maintains its identity once it has emerged" (DeLanda 2006: 14). A second synthetic process, coding, consolidates the effects of territorialisation, further stabilizing the identity of an assemblage. According to Deleuze, as DeLanda explains, words and genes are the basis for coding. So in social entities, coding could be a Constitution spelling out rights and obligations associated with each role in an organizational hierarchy. While some social assemblages may be highly coded and territorialized, others may not be. Social encounters are governed by formal and rigid rules and tend to be more coded. However many social assemblages, such as conversations, are less coded (DeLanda 2006).

The extent to which assemblage thinking can and should be differentiated from actor network theory is debated among scholars (Acuto and Curtis 2013; Harman 2013; Law 2004; Murdoch 1997a). Those who advocate assemblage theory as a distinct theoretical approach distinguish it from ANT in two ways. One, assemblage thinking focuses our attention on processes of formation, rather than a set of relations constituting existing things. Anderson et al. (2012) argue that actor networks are seamless wholes, while

assemblages, characterized as they are by relations of exteriority, are not fully determined. As a result, while actor network theory was designed to study formed things, assemblage thinking focuses on processes of transformation and reassembling (McFarlane 2011c). While assemblage thinking sees the world as dynamic and fluid, assemblages are in a constant process of change, even when they seem stable and coherent (Anderson and McFarlane 2011).

That said, assemblage thinking also provides a way of understanding how durable entities come to exist in the world. This is the second aspect of assemblage thinking that distinguishes it from ANT. Harman (2013), drawing on the differing philosophical antecedents of Deleuze and Latour, argues that durable assemblages cannot exist in an actor network theory view of the world, that proposes that entities are continually being translated. Dewsbury (2011) takes a similar view. "Thinking in terms of assemblages" he argues "allows you to …follow connections without those connections becoming the object of a conceptualisation that would abolish the very thing you are trying to investigate" (Dewsbury 2011: 149). Assemblage thinking offers an alternative to ANT's concept of the black box for understanding "the specific ways in which orders emerge and endure across differences and amid transformations" (Anderson et al. 2012: 176). From an assemblage perspective, this occurs through processes such as territorialisation and coding. Assemblage thinking's approach to explaining how durable entities come to exist in the world can be applied to studying what happens when ideas travel, as will be discussed below.

Amidst debates about the distinction between ANT and assemblage theory, within the social sciences assemblage thinking has become increasingly influential as something distinct from ANT in recent years. In human geography the approach has gained popularity, perhaps due to the need of geographers for an approach capable of fitting together:

> "all the ways in which the world is now characterized by flows, connections and becoming whose functioning logic is more about folds than structures, more complex than linear, more recursive than dialectical, more emergent than totalising (Dewsbury 2011: 149)"

The concept of the assemblage, with its inherent focus on process and flat ontology provides such an approach. A small group of authors have developed an assemblage

thinking approach to thinking about urban processes and forms which draws on both ANT and Deleuze and Guttari (Anderson et al. 2012; Anderson and McFarlane 2011; McFarlane 2011a; McFarlane 2011c). Colin McFarlane, one of the most active proponents of the value of assemblage thinking as an ontology in critical urban studies uses it as way to shift the focus of inquiry away from cities as "resulting formations" towards "emergence and process… multiple temporalities and possibilities"(McFarlane 2011a: 206). McFarlane argues that assemblage thinking emphasizes the depth and potentiality of sites and actors in terms of their history, the labour required to produce them, and their inevitable capacity to exceed the sum of their connections (McFarlane 2011c). By "depth," he refers to the way urban histories shape trajectories, by "potentiality," the relationship between the actual and the virtual city, the sense of possibility.

The adoption of an ontology of assemblages, it is important to point out, is controversial amongst critical urban theorists. Brenner et al. (2011) argue that such an ontology, by rejecting concepts of structure, deprives the analyst of an important explanatory tool. According to Brenner et al. the assemblage approach does not offer a clear basis for understanding how, when and why particular paths are pursued in specific conditions and others are not. In addition, they also argue that by trying to do too much with the assemblage concept, it becomes vague. This criticism is echoed by other authors. Assemblage thinking has been critiqued as being overly focused on description and empirical detail and neglecting the equally important tasks of theorisation and conceptualization (Acuto and Curtis 2013; Allen 2011). There is also an inherent danger in assemblage thinking that we see the world as just an ever-growing undifferentiated magma of assemblages (Dewsbury 2011). In order to counter some of these criticisms it is important to clearly define how assemblage thinking is understood and applied in this dissertation. Section 3.6 will do so, drawing on a hypothetical example of something that might occur during the planning process.

These critiques notwithstanding, several authors have recently begun to apply assemblage thinking to study the international travels of urban planning and policy ideas. Prince (2010; 2012) uses the assemblage as a way to develop an understanding of the international movement of urban policy and planning ideas that does not see it as resulting from broad structural forces such as globalization or neoliberalism. Rather

than Deleuze and Guttari, Prince draws on Ong and Collier's (2005) work on global assemblages. Global forms, he argues become "universal" through the formation of global assemblages that are made up of a set of interconnected local assemblages.

Another approach, which draws on Deleuze and Guttari's understanding of assemblages, can be found in a recent paper by Lagendijk and Boertjes (2013). The authors apply assemblage theory, in particular as interpreted by DeLanda, as a conceptual frame to understand the global circulation of light rail transit (LRT). One of their arguments is that in order to be able to travel, an assemblage must both exist in a form that can travel, and take on a recognizable identity. Form and identity, they argue, are produced through processes of coding, which produce social and material forms (such as organizational structures, policy guidelines or good practice documents) which legitimize an idea and provide guidance for how to implement it. Lagendijk and Boertjes also point out an important element of the way Deleuze and Guttari conceptualize how things have effects. Deleuze and Guttari rejected the idea of transcendence, or "some absolute or universal idea 'out-there' that shapes behaviour" (Hillier 2008: 45) in favour of the idea of immanence; that "forces and objects are imminent to the resources and processes at hand"(Lagendijk and Boertjes 2013: 296).

The principle of immanence has important implications for understanding how and why ideas change and evolve. Drawing on DeLanda, Lagendijk and Boertjes argue that if we accept that immanence drives the way things occur in the social world, the world consists of two ontological realms, or in Deleuzian terms, planes. These are the "planes of reference" and "planes of immanence" which "correspond to the actually and virtually existing world, respectively" (Lagendijk and Boertjes 2013: 291). The plane of reference consists of things that exist in the world that we can actually refer to, such as existing LRT networks. The plane of immanence, on the other hand is "the virtual world of potentialities, of capacities not (yet) actualized" (Lagendijk and Boertjes 2013: 297). As discussed above, assemblages and the entities that make them up have a number of different capacities. These capacities already exist within the assemblage, though they may not have been expressed. If they are expressed, an assemblage might evolve, or a new version of the assemblage might emerge. In Lagendijk and Boertjes's example, inhabiting the plane of immanence are potential LRT networks, or new forms such as hybrids between LRT and other modes of transport. The plane of immanence is not a

world of unlimited possibilities. It is limited by the potentials of an assemblage and its components.

In summary, assemblage thinking focuses on processes of formation and transformation, the relationship between parts and wholes, and gives the world of potential and capacities equal ontological status to that of existing things. These dimensions make it a useful theoretical lens through which to interpret the travels of sustainable urbanism. The way the principles of assemblage thinking outlined so far will be taken up in this dissertation are discussed below. First however the next section sets out the way power should be understood in a world of assemblages.

3.5   Power in assemblages

Embracing the concept of assemblages requires rejecting a centralized conceptualization of power as something embedded in people, places or institutions. This is because:

> "a world in which power and authority is easily locatable and capable of extension over fixed distances with more or less uncomplicated reach over a given territory sits awkwardly alongside a geography of coexistence and entanglement where proximity and presence are themselves not straightforward givens" (Allen 2011: 155).

From this perspective, it is mistaken to think that power can just be extended outwards through networks across a flat surface. It is far more dispersed and diffused. An understanding of power as dispersed, rather than centralized is closely associated with the work of Michel Foucault. Foucault was interested not in centralized or institutional power, such as that of the state or class relations, but rather the more subtle and diffuse ways power is exercised though accepted practices (McNay 1994). Rather than emanating from a central point, power is the effect of the "moving substrate of force relations" (Foucault 1998: 93). Power then is being produced from one moment or point to another, and is therefore everywhere because it comes from everywhere (ibid.).

A Foucaultian conceptualization of power, specifically that which he developed in his later works on governmentality, is certainly reflected in assemblage thinking. Indeed, in developing his ideas Deleuze drew in part on the work of Foucault (Legg 2011). However the breadth of Foucault's power analytics can be seen not just as a strength

but also a weakness, as there comes a point when "everything begins to shade into power" (Allen 2003: 99). Drawing on the work of a broad range of theorists of power including Weber, Arndt, Giddens, Foucault and Deleuze, Allen has developed a conceptualization of power that McFarlane (2009) argues is useful when thinking with assemblages. There are, of course, are a multitude of other approaches to defining and conceptualizing power. Allen's theory of power is applied in this dissertation because his sympathy with assemblage thinking means that his approach is useful for understanding how power operates within dynamic assemblages.

Allen (2003) argues that we need greater precision when discussing power relationships and their effects. By being more precise and specific in our analyses of power, he argues, we can apply a rigor that is lost in more diffuse conceptions of power such as Foucault's. In addition we can create the scope for understanding how space is integral to the ways different types of power work in practice. Specifically, it is important to distinguish between the ways in which power is exercised, and what is or is not a relation of power. Power is not centred, or a property of a person or thing. It is a relational effect of social interaction. There do not exist "pre-formed blocs of power out there waiting to constrain or limit the choices of others. There are only resources and abilities of many different kinds… which *may* be mobilized and deployed to produce what we would recognize as power" (Allen 2003: 96). Allen advocates disassociating the mobilization of resources from power. Thus resources may be mobilized, this mobilization may lead to effects, and effects may look like power. But none of this is a given.

Allen argues that there are two forms of relational ties through which power may be established.

> "These ties, broadly speaking, take one of two forms: either *instrumental*, where power is something that is held over you and used to obtain leverage, or *associational*, where power acts more like a collective medium enabling things to get done or facilitate some common aim. The contrast is significant because it is what we experience when power is exercised either over or with others… As a convenient shorthand, one involves the exercise of 'power over' others and the other the 'power to' act" (Allen 2003: 5)

While historically domination has been closely associated with power, it is just one of many modes of power (Allen 2003). Domination "is about the closing down of

possibilities… The removal of choice and the imposition of constraint" (Allen 2003: 166). In addition to domination, Allen outlines several other modes including authority, coercion, inducement, manipulation, seduction, negotiation and persuasion. Each mode of power is associated with a form of social relations. Through his analysis of the social relations underlying different forms of power, Alan draws a distinction between domination and the other modes of 'power over'. While authority and domination are often conflated, authority he argues "is conceded, not imposed" (Allen 2003: 6). It is conceded only as long as an actor can justify that authority, which is then subsequently recognized by others. Authority is not a permanent form of power, it is lent to an actor while recognition lasts (Allen 2003: 6). Seduction does not aim to dominate, but rather to encourage a particular desire. It operates in an environment in which there is choice, and as a result there is "always the possibility of refusal or indifference" (Allen 2003: 31). Coercion is a type of power that aims to influence behaviour through the threat of negative sanctions; inducement works by convincing people of the advantages of something; manipulation works by concealing intent (Allen 2003: 31).

Negotiation and persuasion fall into the category of 'power to.' Negotiation involves coming to a mutual agreement rather than one group imposing its ideas on another; persuasion involves the use of arguments to convince actors to adopt ideas. They are distinguished from similar forms of power such as seduction by the fact that they can only operate in an environment where there is a "symmetry" of relationships; that is, in the context of a "two-way process of communication to exercise the 'power to' achieve shared outcomes" (Allen 2003: 125–6).

Seeing power as a relational effect of social interaction helps clarify how ideas from elsewhere come to have influence. Firstly, different modes of power have different potentials for spatial reach. Authority for instance requires "constant recognition… The more direct the presence, the more direct the impact" (McFarlane 2011b: 120). Manipulation and seduction, because they can conceal the control they're exercising, can have an extensive spatial reach (Allen 2003). Secondly, the influence of an idea from elsewhere is a function not just of the resources of the key actors transporting the idea, or the strength of the idea itself, but the assemblage within which an idea travels. Resources and abilities exist within assemblages. But their mobilization and the effects of that mobilization are not pre-given. A member of the GIC's knowledge and expertise

are resources that may imbue him with authority. However there are also many factors that could constrain him from drawing on these resources and hence reduce his authority. When working on a sustainable masterplan these could include the scope of work, time and budgetary constraints, and a lack of familiarity with the context of the place for which the plan is being designed. These issues will be discussed further in the chapters that follow.

3.6   Applying assemblage thinking to traveling ideas

Through their work tracing the international travels of urban policies, policy mobility scholars have demonstrated that ideas change and adapt as they travel. However ideas do retain a certain sense of coherence, otherwise a business improvement district or harm reduction strategy could not be labelled as such. The same is true for planning models. This situation creates a conceptual dilemma. How can something be a model if it changes every time it is applied? This dissertation resolves this dilemma by conceptualising planning models as assemblages. Seeing sustainable urbanism as an assemblage provides a way to conceptualize and understand the traveling planning model as a coherent entity that is nevertheless dynamic and can be expressed in different ways.

An assemblage is made up of a diverse array of actors and materials. The assemblage / planning model of sustainable urbanism is made up of people, including the GIC and their clients. It also includes the work they produce including masterplans, images, videos, and actually constructed sustainable urban places, the textbooks and good practice case studies that provide normative guidance on sustainable urbanism. At a more micro-level, the assemblage includes the various design principles and technologies often deployed in sustainable masterplans, such as passive cooling, renewable energy generation, low-carbon transit technologies and sustainable urban drainage systems. When the model is applied, a project actually built, no single example of this model will necessarily draw on or incorporate all of these elements, or use them in the same way. In addition, accepting the principle of immanence, each of these elements and the assemblage as a whole has a variety of capacities and potentials.

This section will develop a hypothetical example in order to illustrate the way assemblage thinking is used in this dissertation to understand sustainable urbanism, its

international travels and the GIC's role in them. We begin with the question of where to find agency and causality in assemblages. In a debate about the value of assemblage thinking, McFarlane (2011a) and Brenner et al. (2011) contest where to find agency and causality in the situation where a consultant presents a sleek PowerPoint presentation. Is agency embedded in the socio-materiality of elements such as the PowerPoint itself, or the larger ideological project for which the PowerPoint is used? To change this hypothetical situation slightly, imagine a member of the GIC is in a conference room at her client's offices presenting an overview of the masterplan she has developed.

In her presentation she references, as an example of what the masterplan is trying to achieve, a successful example of a sustainable urban project that is frequently cited as "best practice". The consultant, her PowerPoint slide, her description of the project being referenced, and the project itself are all elements in the assemblage of sustainable urbanism. Each has "agency" in this situation. But they are acting as part of a broader assemblage, that of sustainable urbanism. McFarlane and others build on the Deleuze – Guttarian concept of relations of exteriority to emphasize the fact that *assemblages are greater than just the sum of their parts.* This is the first important feature of assemblage thinking taken up in this dissertation. What this means in the planning process is that ideas move as a part of a heterogeneous assemblage.

In this situation, a number of factors individually or in combination might be what convinces the client to move forward with implementing the masterplan. For instance, the consultant might have been particularly convincing, inspiring trust and confidence in the client. But without an example of where the ideas she presented have been implemented elsewhere, the client might not have been so convinced. Without the medium of a professional looking PowerPoint presentation, she may not have been able to express her ideas in such a convincing way. In this way, her agency cannot be separated from that of other elements in the assemblage of which she is a part.

A second important feature of assemblage thinking is that *assemblages are materially heterogeneous*. The example elaborated above of the elements of the assemblage of sustainable urbanism included both social and material actors. The hypothetical consultant and the team she is a part of are all elements in the assemblage. So too are the PowerPoint presentation and the detailed masterplan that underlies it. Other

important material components include pages on the websites of GIC firms promoting their accomplishments in sustainable urbanism, textbooks used in the many academic courses on sustainable urban planning and design, and famous sustainable urban projects that are visited by study tours.

As discussed in Chapter 2, in the planning process actors will incorporate aspects of ideas from elsewhere that seem to be a good fit. But how what is a good fit is determined is messy, complicated, and sometimes due more to chance and circumstance than, for instance, structural forces such as neoliberalism. This then is the third important feature of assemblage thinking. *Assemblage thinking allows for non-linear causality*, leaving room for randomness, but not presupposing that everything is random (Anderson et al. 2012). Returning to the consultant – client presentation, what influences the client's decision to embrace an aspect of the global model/assemblage of sustainable urbanism? Important factors might be the consultant's presentation skills, the client's openness to new ideas, the presence in the room of key influencers and decision-makers, and pre-existing relationships between those in the room and the consultants. It is not always possible to predict why a planning model will or will not travel successfully.

It is easy to see why, when doing a retrospective analysis of an instance of an idea moving from one place to another, structural forces such as neoliberalism might be seen as important factors. When examining already formed policies or plans that have been implemented in disparate locations, if they look similar, a structural explanation makes a great deal of sense. The plan that the clients of the consultant in our hypothetical situation eventually adopt may look similar to those for other projects elsewhere. The reasons for this, however, may be quite complex and difficult to discern for an outside observer. It is only through observing the process by which the plan was developed that these reasons might become more apparent. This then is the fourth important feature of assemblage thinking: its *focus on processes of formation over resultant forms*. In particular, it focuses attention on processes of assembling, transformation and reassembling. To understand how and why a planning model moves around, studying the process by which it moves is as important as studying the final product.

Planning models are assembled through cumulative processes of making and promoting individual plans. Following DeLanda and Lagendijk and Boertjes, studying the formation and reformation of the model requires studying the processes of territorialisation and coding. In her presentation and her masterplan, the consultant in our hypothetical example has coded the model of sustainable urbanism. Territorialisation occurs as repeated references to a particular design idea or technology in such work leads to the boundaries of the model being expanded to include this. As the same ideas and principles are repeated in plans for sustainable urban places, the model begins to crystallize and take on a form that, while still dynamic, can remain relatively consistent across time and space.

The importance of studying the processes of formation of the assemblage explains the focus on the GIC and the masterplans they produce in this dissertation. Through their work on masterplans for new sustainable urban areas, the GIC are continually involved in the territorialisation and coding of sustainable urbanism. They engage in these processes, for example, every time they prepare a masterplan, give a presentation, put up content on the website, or comment in a media article. The GIC's influence is compounded by the fact that as they tend to be involved in so many high profile sustainable urban projects and that their work receives a great deal of publicity. In addition, perhaps more than any other group of actors, the GIC are invested in developing and circulating sustainable urbanism, as this is how they make their living.

Through the planning process, the model that the consultant has put forward in a masterplan and presentation might be expressed in different ways. The options for the ways it might be expressed are not limited to those contained in existing plans or projects. Building on this, the final key element of assemblage thinking applied in this dissertation evokes the conception of immanence. *An assemblage and its components have to be thought of not just in terms of what they are, but also the potentials they contain*. The consultant might propose generating energy from waste as a way of reducing carbon emissions from the project, only to find that her clients take up her proposal but adapt it in order to meet an economic requirement.

In summary, the conceptualization of assemblage thinking applied in this dissertation has five key elements. These are as follows.

- Assemblages are greater than just the sum of their parts.

- Assemblages are materially heterogeneous.

- Assemblage thinking allows for non-linear causality.

- Assemblage thinking focuses on processes of formation over resultant forms.

- Assemblages and their components have a number of different potentials and capacities which can be expressed.

It is also important to consider what is categorized as "an assemblage" in this dissertation. In recognition of Dewsbury's caution above, the dissertation does not employ a broad ontology of a world that consists only of assemblages. Rather, it uses the parameters of assemblage thinking outlined above, filtered through two more practical conceptualizations described below, as a lens for interpreting and explaining the empirical material presented in Chapters 5 to 8. One final clarification is also warranted at this point. In conducting this research assemblage thinking was not, as will be discussed further in Chapter 4, used as a methodological approach. Rather, it is applied as an interpretive framework, a way to make sense of the empirical material and to conceptualise traveling planning models.

3.7   Conceptual framework

Despite the increasing popularity of assemblage thinking in geography, there is little guidance in the literature on how to do an assemblage analysis. McFarlane's work, in particular his 2011 book *Learning the City*, is helpful and instructive in this regard. In it, McFarlane develops a conceptualization of what he calls "urban learning assemblages" as a way of understanding how urban learning occurs. In developing this conceptualization, he focuses in part on how learning occurs across boundaries, and in particular the role of comparison within this.

In *Learning the City* McFarlane proposes a critical framework for conceptualizing urban policy mobilities that highlights four issues. These are: the power at work; the object of learning; the form of learning; and the imaginary at work in learning. Chapter 5 will apply this framework to sustainable urbanism, and in doing so develop a description of the model that includes its key characteristics, potentials and underlying ideologies. In

addition to this framework for conceptualizing policy mobilities, McFarlane proposes an analytical frame that is useful for applying assemblage thinking to interpret the empirical material gathered in this research project. McFarlane proposes that learning consists of three interrelated processes: coordination, translation and dwelling.

While McFarlane's framework is developed to analyse urban learning, he comes at this from the perspective of someone who is fundamentally interested in the way ideas travel and are taken up in new environments. Urban learning, he argues "is not simply spatially bounded in local places, but is instead relationally produced, and due to the increasingly important role that translocal practices and connections play in the production of different forms of urban knowledge"(McFarlane 2011b: 2). McFarlane's framework, developed to conceptualize how urban learning occurs in a relational world provides a useful structure upon which to hang an analysis of how and why an urban planning model travels internationally. Chapters 6 to 8 of this dissertation will, in turn, look at these travels through the lenses of coordination, translation and dwelling. Each of these processes is briefly outlined below.

Coordination

Coordination is the "construction of functional systems that enable learning as a means of coping with complexity, facilitating adaptation, and organizing different domains of knowledge" (McFarlane 2011b: 23). As an example, McFarlane references Sennett's description of how Christopher Wren used his plan for London to coordinate input from a number of different perspectives. This coordination involved "relays of translation… (which) can stimulate the imagination in learning new kinds of urbanism"(McFarlane 2011b: 20). Urban plans, then, are coordination tools, but so too are policy documents, statistical databases, conferences, meetings and study tours.

As discussed in the introduction, sustainable urbanism is a complex concept. It tends to be applied to planning projects by large multidisciplinary teams, drawing on knowledge from a number of different disciplines. Coordination of this complexity is an important part of making sustainable urbanism legible to a lay audience. Chapter 6 will discuss what devices are used to coordinate the translation of sustainable urbanism into new environments, and the GIC's role in creating and deploying these devices.

Translation

Latour developed the concept of translation explicitly to challenge diffusionist narratives of how concepts gain influence (Jacobs 2012; McFarlane 2011b). In contrast to diffusion, translation acknowledges that the impact of the movement of an idea, and its encounter with other people, materials, and places is open-ended. Such encounters do not "always involve the re-creation of a periphery in the image of a centre" (McFarlane 2011b: 18). The open-ended nature of the process of translation can be explained by recalling the condition of immanence proposed by Deleuze and Guttari. Assemblages and the entities that make them up have a number of potential and capacities. When sustainable urbanism is translated into new environments, new capacities may be expressed.

Translation acknowledges the reflexive and relational dimensions of the movement of ideas. As the policy mobilities scholars point out, mobile ideas change along the way. But they also may change the environments that they travel through, and other important concepts they encounter in their travels. Translation also draws attention to the many intermediaries and add-ons that contribute to the movement of an idea and its adoption or non-adoption (Jacobs 2012; McFarlane 2011b). Thinking about the travels of a planning model through the lens of translation reveals, as Tait and Jensen (2007) argue, that much of the power of a model resides in the socio-material assemblage surrounding it. This dissertation conceptualizes the processes by which sustainable urbanism moves and changes as translations. Chapter 7 explores how sustainable urbanism is translated as it travels.

Dwelling / Inhabiting
Unpacking the underlying ideologies of mobile ideas is certainly important. However, it is also important not to see them as all-powerful and all-encompassing. We also need to pay attention to "how the materialities, contingencies and everyday practices – i.e. the work of learning as dwelling – which may appear mundane and inconsequential in relation to ideology, can be critical to how learning occurs and to the sorts of urbanism and urban politics that emerge" (McFarlane 2011b: 145). McFarlane uses the concept of dwelling to draw attention to such practices. Dwelling, he argues is "how learning is lived" (McFarlane 2011b: 21). In developing the concept he draws on Ingold (2000) to propose that a perspective based on dwelling is one that develops when we immerse

ourselves in our environment. Processes of learning through dwelling feed into the practical ways we exist within and interact with the environments we live in.

Dwelling itself is not instinctive. It has to be learned. Again drawing on Ingold, McFarlane argues that dwelling is the "education of attention, learning through dwelling entails a shift in perception, a way of seeing that is haptic – sensed, embodied, practiced – and which positions learning as a changing process of perceiving how to use the affordances of documents, objects and situations" (McFarlane 2011b: 21). The meaning of what we learn through dwelling is not externally determined but imminent to people's engagements with their environments. Environments are not just physical places. In the case of urban policy, McFarlane argues, these engagements can be with a "document, environs, discourse or idea" (McFarlane 2011b: 21).

The term "dwelling" retains a static, residential connotation. Although McFarlane argues that this can be overcome, when he discusses policy mobilities he uses the alternative word "inhabiting". It is unclear from his text whether this is by design, but inhabiting does seem better suited to describing the world of mobile policy and policymakers. Inhabiting tends to be used to describe more transitory situations: we dwell in our home, but we inhabit a meeting room for an hour. If learning through dwelling requires an extended engagement and interaction with a particular environment, learning through inhabiting can occur in the context of a much less lengthy engagement.

Inhabiting entails a focus on processes. Ingold (2008: 1797) distinguishes between a world that is occupied, which is "furnished with already existing things" and one that is inhabited which is "woven from the strands of their continual coming into being." When we learn through inhabiting, we become part of the very thing that we are learning about. Ingold, drawing on Heidegger, makes the point that the world in which we live is not there, already existing. It is created through the process of inhabiting. Policymakers, McFarlane argues, learn through inhabiting policies and ideas when attending presentations, going on study tours and through informal interactions over coffee or lunch. Such processes are among the most powerful ways that ideas can gain purchase in new environments. The role that inhabiting plays in the international travels of sustainable urbanism is taken up in Chapter 8.

3.8   Conclusion: assembling a planning model

This dissertation aims to explain how and why sustainable urbanism travels internationally, and the broader implications of this movement. To do so it is useful to study not just the form of sustainable urbanism, but also the processes of formation and transformation that occur as ideas are developed and negotiated through the planning process. This is a key reason why the GIC is a good entry point for studying sustainable urbanism's travels. As the ensuing chapters will demonstrate, they are central to these processes and negotiations. A planning model is not developed and then rolled out internationally. Rather, as Healey (2012; 2013) argues, ideas are developed and validated through the planning process.

However, where Healey sees the planning process as one of the social construction of knowledge, this dissertation adopts a different view. It sees the planning process as a relational, socio-material process of assembling. It is relational in that it involves actors and ideas from beyond the geographic boundaries of the place being planned. The process is socio-material in that it is shaped and influenced by both social and material actors. Finally, planning is a process of assembling in that it involves bringing together components into a dynamic whole that is more than just the sum of its parts. The planning process, specifically the process of developing masterplans, is a reflexive process of assembling not just individual plans, but broader conceptions of what constitutes sustainable urbanism. The model of sustainable urbanism is a dynamic assemblage, but its elements can crystallize and it can take on a form that remains relatively consistent over time. Individual plans are shaped by a crystallized international model of sustainable urbanism. This model, however, is assembled largely through the work of the GIC and their clients on individual plans.

This chapter has set out the fundamentals of the theoretical approach which will guide the remainder of this dissertation. To summarize these are as follows.

- The research adopts a relational conception of space as not inherent and static but constituted through relations and interactions.

- Theoretically this research is interpreted through the lens of assemblage thinking as it has been developed in recent years in human geography, which

incorporates elements of both actor network theory and the assemblage theory of Deleuze and Guttari.

- The empirical focus of the research is the process of planning, and the plans that result. These findings are analysed using three concepts: translation, coordination and dwelling.

This dissertation will set out what constitutes the international planning model of sustainable urbanism and how it is assembled through the work of the GIC and their clients on masterplans for urban development projects. In doing so it seeks to draw a number of more general conclusions about the nature of the private sector industry in sustainable urban planning and design as well as internationally mobile urban planning models. The empirical chapters that follow will set out more precisely what constitutes "sustainable urbanism" and then explore the way the processes of coordination, translation and dwelling play out in the international travels of sustainable urbanism.

4 RESEARCH DESIGN AND METHODOLOGY

4.1 Research design

This dissertation describes the way ideas about how to plan and design sustainable urban places move around internationally. It does so through a focus largely on the planning processes into which sustainable urbanism is incorporated, and the masterplans that result. In its focus on the planning process, this research fits into a tradition of empirical studies of planning practice, a research approach that has been growing in popularity since the 1980s (Dalton 1989; Lauria and Wagner 2006).

When I embarked on this project in 2008 I found very little guidance on how to study the contemporary travels of a planning model. Most of the literature on the travels of planning ideas was historical, and the policy mobilities literature was still in its infancy. I knew that I wanted to focus on the planning process, how ideas travel through this, and that I would do this through a study embarking from the offices of a GIC firm. As mentioned in Chapter 1, the privileged role of the GIC in my research came not from a desire to study the industry explicitly, but because of my own personal experience of their influence and my observation that they were under-researched. Actor network theory, with its detailed tracing of associations, did not seem to me to be a practical way to study a collection of traveling ideas. Instead I turned, initially, to the work of Patsy Healey (1997; 2007) and her conception of planning as a social process in which actors make meaning through their interactions. However, as outlined in Chapter 3, over the course of conducting my research I came to see a number of limitations to this approach.

Over the past six years, there has been a significant increase in interest in academia in the travels of urban planning and policy ideas. However, again as discussed in Chapter 3, this has not included many attempts to conceptualize these travels (Cochrane and Ward 2012). When it came time to interpret my data I initially struggled to find a conceptual framework that would help me make sense of what I had seen in my fieldwork. Whilst gathering data I had come to the conclusion that Healey's theorisations could not adequately describe what I was observing. Assemblage thinking is, in my view, the most useful theoretical lens through which to understand the contemporary travels of planning ideas. McFarlane's framework provides a practical

way of applying assemblage thinking to the analysis of the way ideas move across boundaries. I hope that my work in this dissertation and subsequent publications will contribute to a broader recognition of the value of this approach.

Two aspects of the research design for this project are particularly important for contextualizing the discussions in the ensuing chapters: the absence of a territorially defined case study, and the focus on the process, rather than the outcome of planning. Firstly, this research is not grounded in a territorially defined "site" or "case". Rather, it is a study of an industry. This contrasts with most other investigations into the international mobility of ideas in urban policy and planning. Most of these studies focus on one or more places either as exporters or recipients of ideas and expertise. Case study research allows for detailed and in-depth investigations. In new areas of research such as that tackled in this dissertation, it can be a valuable way of beginning to unpack the dynamics of the issue being studied (Eisenhardt 1989).

Case study research does have drawbacks however. These include methodological ambiguities and the level of generalizability of findings beyond the specific case (Gerring 2004; Noor 2008). Advocates of case study research argue that these drawbacks do not compromise the ability of this method to produce valuable findings (Flyvbjerg 2006; Yin 2009). While I accept these arguments, I also agree with Gerring (2004) that different types of research designs need not sit in competition with one another, but can be complementary. Even amongst policy mobility scholars there is growing recognition that "the field," should not always be considered a single and geographically bounded place (McCann and Ward 2012; Peck and Theodore 2012).

Overall, a case study approach to this research would have led to the dissertation looking in more detail at the interactions between the model and the environments it encounters. I would have most likely spent extended time in the case study location and had access to a broader range of actors and materials upon which to base my analysis. Instead, I investigated in depth primarily one aspect (the work of the GIC) of how sustainable urbanism travels. However, and this leads on to the second important aspect of the research design, a case study approach would have made it more difficult to study the *process* of planning. This was something I was particularly interested in, as I thought it would reveal the relationship between the formation of a planning model,

and the form that it eventually takes on. Originally, I planned do this by conducting both a series of interviews and a case study of a sustainable urban project in the process of development. However the volatility and sensitivity of the property development industry (which was heightened by the financial crisis that began shortly after I embarked on this research project) meant that I was not able to research in depth any of the three case studies I identified for analysis.

While waiting to be granted permission to study the projects I had identified as case studies, I embarked on a series of interviews with members of the GIC. Very early on I realized that these interviews were themselves a useful way to explore those themes I had been hoping to delve into through a case study. Ultimately I concluded that the excellent access I had to people in an under-researched industry was a strong basis for a study of sustainable urbanism as a model, and the GIC as an industry, rather than a specific case study. What this has produced is a study of the processes that contribute to shaping the model of sustainable urbanism, rather than the climates that receive it and the model's interactions with these. Again, this contrasts with existing studies in this subject area, which are almost entirely retrospective, retracing the travels of a particular idea after it has arrived somewhere else. My hope is that this has produced findings that will complement more case-oriented research on both sustainable urbanism and the mobility of urban policy and planning ideas.

It is important to emphasise that in this research project assemblage thinking has been used as an interpretive frame, but not as a methodology. Assemblage thinking did not guide the research design and data collection process. As mentioned in Chapter 3, this is an emerging area of theory, about which little had been published when I began my research. The relationship between my theoretical and methodological frameworks, then, is not an orthodox approach. My research was conducted in a diverse and heterodox way. As described in Chapter 3, I embarked on this research project with a relational, social constructionist approach, but this evolved over the course of the project. I began by interviewing and observing social actors (the GIC and their clients). However very quickly I began to appreciate the important role played by materials, particularly masterplans but also images, presentations and videos used in the process of planning and promoting urban projects. Despite the initial focus on social actors, materials are not neglected in the chapters that follow. Through my analysis of

masterplans in particular I was able to give materials a voice. The relationships between these social and material actors also seemed important, an observation that eventually led me to the assemblage thinking framework though which I interpret the theoretical material.

In my methodological approach, I responded to the call of a number of authors in the field of urban policy and planning mobilities for researchers to undertake a more anthropological and ethnographic approach to studying this topic (Cochrane and Ward 2012; Jacobs 2012; Larner and Laurie 2010; McCann 2011; McCann and Ward 2010; McCann and Ward 2012; Peck and Theodore 2012). I did not conduct ethnography so to speak, but I did spend extended periods of time observing my research subjects as they actually did the work of mobilizing sustainable urbanism. My ability to do so was enhanced by the fact that as an EngD student sponsored by a GIC firm, I had first-hand access to the industry I was studying over the course of the research.

The fact that this research project was an EngD rather than a traditional PhD had implications for the research design and methodology. An EngD differs from a PhD in several ways, most significantly in that it is usually carried out in collaboration with an industrial partner working in the same subject area being studied. An EngD, like a PhD, must make an original contribution to knowledge. This contribution, however, must have specific value to the industrial partner. On this project, my industrial partner was Happold Consulting, the strategic consultancy arm of Buro Happold, an international firm of consulting engineers with their headquarters in the United Kingdom. An EngD's industrial contribution can take a number of different forms. Some students develop a product, others test a new approach to an engineering or design problem, and others provide insights into an area of broader and more theoretical interest to the company. My contribution fell into this final category. I have attempted to provide my sponsors with a critical perspective on their international work. In order to do this, my research had to be designed in such a way that I could present a robust picture of the industry. This dissertation is a study of the GIC from within the industry itself, designed to inform their work. As a result, while it is a critical, academic piece, it is also more focused in its scope than it would have been had I embarked on the project from a position outside the industry being studied. Specifically, the focus is largely on the GIC themselves over the clients and other actors that they work with.

This chapter summarizes the research design and methodology applied in carrying out this research project. The remainder of this introductory section summarizes the research questions and hypotheses, describes my position as a researcher and considers the reliability and generalizability of the data collected. The second and longest section summarizes the research methodology, which consists of five elements: interviews; participant observation of the work of the GIC in the planning process; content analysis of masterplans; participant observation of a study tour; and a survey of the websites of GIC firms. The third section describes the methods I used to analyse and interpret the data collected. The concluding section reflects on the implications of the research design and methodology for the research findings.

4.1.1   Research questions and hypotheses
The primary research questions that this dissertation explores are as follows.

1. *What characterizes sustainable urbanism as a planning model?*

2. *How and why is it moving around internationally, and what is the role of private sector consultants in this mobility?*

3. *What are the broader implications of the global spread of this model, and the role played by these consultants, for urban planning practice?*

I broke these research questions down into a series of more practical and easily investigated operational questions. The operational questions were then used to guide my research design. A summary of the operational questions and the methods used to investigate them can be found in Appendix A.

To answer each of these questions I adopted a variety of methodological approaches. The primary methods used to investigate each question are outlined in the table in Appendix 1. In most cases I used a mixed-methods approach, drawing on both social actors and materials. For example, to understand what characterizes sustainable urbanism, I undertook a content analysis of masterplans, but also drew on my interviewees discussions, both explicit and implicit, of how they understand sustainability. To explore the internationalisation of the urban planning industry, I discussed this in interviews with longstanding members of the GIC, and also undertook an analysis of the scope of the industry's international work.

The final research question merits discussion in a bit more detail. As mentioned above, one requirement of an EngD project is that it makes a contribution to the industrial partner involved in the project, and the industry the student is working with more broadly. To this end, in developing my research questions I worked closely with Happold Consulting to determine how the more academic elements of the research could be made relevant and applicable to their work. Initially I proposed to them that I develop a number of tools that they could use. These were to include, for example, tools to evaluate the quality of their projects, to decide which planning and design variables to consider when working internationally, and a methodology for creating a project and location-specific definition of sustainable urbanism. However, as the project progressed, my sponsors became less interested in normative guidance and tools that they believed would have a limited shelf life. Instead, they grew more interested in the critical picture of the industry that I could produce. To this end, they asked me to produce a more reflective set of outputs that would highlight to their staff the ethical implications of their work. In particular they wanted to encourage their staff to understand how their everyday work becomes part of something bigger than individual projects. The third primary research question emerged from discussions about these issues. The question was deliberately left open ended, to allow me to develop a picture, over the course of the research, of the implications of my findings for the everyday practices of my sponsors, and the GIC more broadly.

4.1.2   Researcher's position

Prior to embarking on this research project I was employed as a strategic urban planning consultant with Happold Consulting. While I myself did not work on many masterplanning projects, I was familiar with the company's work in this area through interactions with friends and colleagues at the company. Therefore I started this project as an insider. As I will explain below, I believe that this status benefited me over the course of doing the research.

Because this was an EngD I was able to continue to draw on the support and resources of Happold Consulting and Buro Happold over the course of the project. I had a desk, a company email address and phone number and was treated very much as part of the team. I also worked and advised on company projects on an ad hoc basis. This situation naturally raised some challenges around how to maintain my independence and

objectivity as a researcher given my close links with the industry I was studying. As Peck and Theodore (2012) have warned, when studying cosmopolitan networks of actors, one risks becoming a creature of these networks.

In order to maintain my independence I always attempted to be clear about when I was wearing my "researcher" hat and when I was wearing my "colleague" hat. I pursued interviews with employees of Buro Happold in the same way I did with people outside the company, through an email request that included clear information on the purpose of the interview. My ability to remain objective was aided by the remarkable level of openness and candour of the people I encountered within Buro Happold. At no point did anyone within the company shy away from the prospect of being criticized. On the contrary, I was often challenged, both in interviews and in other contexts, to draw conclusions from my research about how the company could improve the way it works.

My position as an industry insider was less problematic when doing interviews outside my sponsor company. In those cases, I presented myself as a researcher from University College London. I always informed my research subjects that I was affiliated with and supported by Happold Consulting. In most cases interviewees did not have a problem with this affiliation, or at least they did not say so to my face. However, at times it was clear from the way people responded to my questions that they were being careful and guarded about what they said. Whether or not the reasons for this were related to my affiliation with a potential competitor was not always clear. In one instance, an interviewee did say that his boss had questioned whether or not I might be a spy. Another challenge that I encountered was that because of the nature of my research and the range of people I had spoken to in the industry, some interview subjects saw me as a potential source of competitively useful information. I learned to deal with this by politely answering questions but speaking only in generalities without mentioning specific firms or individuals.

Overall, I believe that the benefits of my industry links and experience far outweighed the drawbacks. As I will discuss below in the description of my research methodologies, the level of access I enjoyed would not have been possible for someone without such connections.

4.1.3   Epistemological underpinnings

In line with much contemporary research in urban planning, this research does not adopt the positivist epistemology employed in much of scientific inquiry. Positivism is a theory of the way that knowledge is produced that assumes that the world around us "exists as an objective entity, outside the mind of the observer, and in principle it is knowable in its entirety" (Della Porta and Keating 2008: 23). From a positivist world view, valid knowledge is produced by following the scientific method of working deductively, developing and testing a hypothesis. Applied to the social world, a positivist epistemology implies that reality is controllable and that scientific understanding can lead to clarity about the public interest (Beauregard 2003). Positivism is associated with the modernist belief that that there is "a universally valid, linear pathway to economic and social development" (Healey 2012: 190). The value of positivism as an underlying basis for planning theory, research and practice has been widely contested over the last 30 years (Allmendinger 2002; Cornwall 2002; Forester 1989; Healey 1997; Innes 1995). Many of these critiques, and the alternatives they propose, draw on an alternative, post-positivist, constructivist epistemology.

The constructivist perspective holds that there is no independent reality; the social world does not exist independently of human knowledge. Constructivists seek explanations for social outcomes but do not expect to derive these from universal rules (Della Porta and Keating 2008). They accept that in social research, knowledge is always filtered through a researcher's theory. The task of the researcher, therefore, is not to develop universal explanations, but to search for meaning or understanding (Della Porta and Keating 2008; Schutt 2004). This approach builds on Weber's proposal that the goal of research in the social sciences should not be causal explanations, but "verstehen," or understanding of the motivations lying behind human behaviour (Della Porta and Keating 2008; Williams and May 1996).

This research adopts a constructivist epistemology. Answering the research question behind this dissertation requires description (what constitutes the model of sustainable urbanism, how is it traveling internationally) and explanation (why is it traveling internationally). While it will look at the relationships between concepts, such as sustainable urbanism and economic development, it does not aim to demonstrate that

such elements are definitively correlated, or to develop a way to predict the future by proving causation.

In describing and explaining what sustainable urbanism is and how it travels, my aim is not to provide definitive and universal answers. Attempting to do so would not make sense in the context of the way I conceptualize sustainable urbanism. Just as we are not following a universal pathway to development, the work of practitioners and academics on sustainable urbanism is not a process of getting us closer to the "truth" about what makes an urban area sustainable. As Chapter 3 explained, in this dissertation sustainable urbanism is understood as a dynamic assemblage. The assemblage can crystallize into a fairly consistent form, but there is no one single, objective answer to what constitutes sustainable urbanism. Given this, applying sustainable urbanism is not the work of technical experts following a prescription. The assemblage takes different forms when it is applied around the world.

4.1.4   Reliability, generalizability and limitations

One of the objectives of positivist research is to produce findings that can be justified as both valid and reliable. Both of these criteria relate to the measures used in conducting research. A reliable measurement procedure is one that will consistently produce the same results, even if used by different researchers; a valid one accurately measures the "real" meaning of the concepts being investigated (Babbie 2004; Schutt 2004). Validity is not a relevant consideration in this dissertation for two reasons. Firstly, a constructionist viewpoint rejects the idea that knowledge is something "out there" to be discovered through properly designed and conducted research (Schutt 2004). Secondly, this research project is non-experimental, designed to describe and explain phenomena rather than test for correlation and causation.

Reliability, on the other hand, is an important consideration for this research, particularly as I was the only researcher involved in gathering and interpreting the data. Triangulation, or the incorporation of different methods into a research design, is one way of achieving a better picture of reality when undertaking social research. According to Berg (2009: 5) "every method is a different line of sight directed towards the same point… By combining several lines of sight, researchers obtain a better more substantive picture of reality." Following this advice, I used a number of methods to examine my research questions. This allowed me to triangulate much of the data I

gathered. For example, when trying to understand how sustainable urbanism is defined and applied by the GIC, I could compare what people told me in interviews with their actual application of them all in the masterplans analysed. Similarly, I could compare interviewees' references to the value of images and experiences in encouraging the take-up of new ideas and interviews with the way they were applied in masterplans, as well as my observations from participating in a study tour.

Another measure of good knowledge that is relevant in a constructivist approach is generalizability. This is the extent to which the research findings can be generalized to the larger population from which the sample of research subjects was taken. In this case, the sample is the subset of people from the GIC that I interviewed and observed, and the subset of masterplans analysed. Researchers can enhance generalizability by the way they select their samples. My approach to sample selection will be discussed in Section 4.2.

One challenge that I encountered in conducting this research has implications for the generalizability of my findings. This was the difficulty I had accessing some of the subjects I wished to interview and observe. Getting access to senior level of members of the GIC was challenging, and indeed possible for me only because of my existing network of contacts in the industry. It was even more challenging to obtain interviews with clients, that is, the actors who hire the GIC. I had hoped initially to obtain a relatively equal number of interviews with these two groups. However in the end the number of people from the GIC I was able to interview far outstripped the number of clients. The implications of these limitations are that the picture presented in the chapters that follow is largely that put forward by the GIC. I have tried much as possible to counterbalance the GIC's views with those of the clients I was able to interview.

4.2   Research methodology
The empirical research undertaken included five primary components, listed below.

1. Interviews with 36 members of the GIC from 13 different firms and eight clients and other stakeholders with experience in developing sustainable urban areas.

2. Participant observation of the work of the GIC in the planning process. This included observation of numerous project planning meetings and workshops as well as more

informal observation of staff at Buro Happold and SOM undertaking their day-to-day work. More active participant observation consisted of writing portions of masterplans for urban projects.

3. Content analysis of 10 masterplans prepared for new urban projects with sustainability ambitions.

4. Participant observation of a one-day study visit and a five-day study tour, as well as follow-up interviews with four study tour participants and three representatives of places and projects often cited as exemplars in sustainable urbanism.

5. Desktop review of the websites of 13 GIC firms to see how they describe sustainable urbanism in their marketing materials, as well as the location of their offices and urban planning projects.

Fieldwork was carried out in London, New York, Chicago, Boston, and Toronto—the cities where the firms studied are based. Telephone interviews expanded the geographical scope of the research to a wider range of locations including Vancouver, Hong Kong, Singapore and Shanghai. In addition, the study tour component of the research involved visits to sites in Germany, Denmark and Sweden.

4.2.1 Interviews

Over the course of this research project I conducted semi-structured interviews with 51 people between November 2010 and May 2012. These interviews provided much of the data that this dissertation draws on.

Selection of interview subjects

Table 1 shows the number of people I interviewed, broken down by the type of work these people do. As I promised my interviewees confidentiality, throughout this dissertation their names are not mentioned and their comments are anonymized. However a list of the number and disciplinary affiliation of people interviewed at each firm can be found in Appendix B.

Category	Description	Number of people interviewed
Designers	Architects, urban designers, engineers and planners.	36
Stakeholders	Public and private sector clients of the designers, investors, others involved in the international exchange of planning ideas.	8
"Model" project representatives	People with close involvement in or knowledge of recognized examples of good practice in sustainable urbanism.	3
Study tour participants	Follow-up interviews with participants on the European study tour.	4
Total		51

Table 1 Summary of interviewees.

I used a combination of three types of non-probabilistic sampling to select interviewees. I began with a convenience, or availability sample (Berg 2009; Schutt 2004). These were members of the GIC who were easy for me to find: Buro Happold employees. This sample was also purposive in that I selected people who I knew had been involved in large-scale masterplanning projects with large sustainability components internationally. Most of these early interviewees I already knew from my time with the company, both as an employee and as a researcher.

As I expanded beyond Buro Happold, accessing interviewees became more challenging. As briefly discussed above, the GIC can be a difficult group to access as a researcher. I was particularly interested in interviewing people who had substantial experience working on international planning projects within high profile GIC firms. These people tended to be relatively senior in their organizations and, as a result, were often difficult to obtain interviews with. In my experience, getting interviews required obtaining a personal introduction, or finding a way to meet someone and ask them in person myself for an interview.

In recognition of these constraints I selected my interview subjects through two methods. The first was snowball sampling (Berg 2009; Stewart and Cash 2008). I began by asking Buro Happold employees who I knew to have good contacts within the planning industry for recommendations on whom to speak to. I then continued to ask all future interviewees for recommendations. The second method was a broader round of purposive sampling. I wanted my interviewees to be a representative sample of the GIC

in sustainable urban planning and design. Luckily, the industry is not very large; there are relatively few companies involved in high profile sustainable urban projects worldwide. I set my sights on about two dozen firms I knew were prominent in this field. My experience in the industry and my Buro Happold interviewees helped me identify which firms to target.

In order to identify who to speak to at these firms, and to create the opportunity to interview them I drew on my network of contacts in the industry. Buro Happold is one of only a small number of consulting engineering firms internationally regularly involved in large-scale masterplanning projects. As a result the firm has relationships with a large number of architecture firms involved in the masterplanning industry. My task then was to identify who within Buro Happold had primary ownership of the relationship with a particular company. Once I identified the appropriate person within Buro Happold, I would ask him or her to make a personal introduction, usually by email. In several cases, introductions also came from friends and former colleagues outside Buro Happold.

I also made an effort to create opportunities where I might meet useful interview subjects. Wherever possible, I attended meetings at Buro Happold where people from other companies and clients were present. I also attended public events and lectures on themes relating to my research, and when I thought the speakers might make interesting interview subjects I approached them directly after the event to introduce myself and ask if they would be willing to do an interview. There was also an element of chance and happenstance in my selection of interview subjects. In one instance, after giving a talk on my research to a small group of academics and professionals, two people approached me offering to make introductions to highly relevant interview subjects.

The relative ease of access I had to different groups is reflected in the balance of the affiliations of my interviewees. The largest group are Buro Happold employees. The next largest groups are employees of SOM and Sasaki Associates, both of whom allowed me to spend time in their offices. I interviewed representatives from 13 companies in total. The number of interviews with designers far outstrips that with clients and other stakeholders. Again, this reflects the relative difficulty of getting access to such people.

For interviews with clients, I was reliant on introductions from designers who I interviewed. I asked for such introductions in almost every interview, but very few people followed up and even fewer of the introductions I did receive led to interviews.

Conducting interviews

All of my interviews were semi-structured (Berg 2009; Stewart and Cash 2008). I took a list of questions into each interview but did not always stick to these closely. My questions were open-ended, designed to encourage interviewees to reflect on their experience and share their opinions. As described in Section 4.1.1, when designing my research I linked my research questions to a series of operational questions. I then translated these into interview questions. As a result, while my interviews were not tightly structured they did focus on several key themes. These were how sustainability is defined and operationalized, the way economic imperatives constrain or enable the incorporation of sustainability objectives, and the way people gather and use knowledge of international practices. Other themes commonly covered in interviews included how the international masterplanning industry had emerged and evolved and the impact of sustainability as a key objective in urban planning.

By keeping the interviews semi-structured, I was able to put interviewees at ease by allowing them to take the lead to a great extent, periodically steering the conversation towards the issues I was interested in. For instance, one thing that I was interested in exploring was how people define and apply sustainability and sustainable urbanism. However when asked such questions directly people became self-conscious and uncertain. In addition they tended to give quite broad answers. Once I realized this I quickly adapted my interview questions to come at the issue in a more roundabout way, encouraging people to explore what sustainability means in the context of talking about projects that they were working on or had worked on.

I used the same set of interview questions for all of my interviews with designers. For interviews with clients and other stakeholders I adapted my standard set of questions for each interview. I conducted background research on each of these interviewees and then tailored the questions so that they were more specific to their particular experience. My list of standard interview questions and an example of tailored interview questions are included in Appendix C.

"Studying up" and accessing interview subjects

The GIC, as previously mentioned, is a small, elite group that is not always easy to access. Quite a few of the people I interviewed and observed were members of the upper echelons of this group, and were largely middle-aged males. I, on the other hand, had worked in the industry only at a relatively junior level. In addition, to my research subjects outside Buro Happold I was simply a relatively young female student. I was, then, engaged in what anthropologists refer to as "studying up," that is studying powerful people at close proximity (Nader 1969).

As already mentioned, one challenge to studying a relatively elite group was accessing the people I wanted to interview. Even when people agreed to be interviewed, actually getting hold of them often proved difficult. This could be the case even within my sponsor company. At one point during my fieldwork I arranged to spend a week sitting with and observing the sustainable infrastructure team in Buro Happold's New York office. I arrived to find that only two members of the team of five would be there that week. One was off to Singapore, another Kuala Lumpur, another to Nairobi. The jet-setting tendencies of my interviewees meant that organizing extended periods of fieldwork to far-flung locations was not practical. Instead I undertook short visits carefully scheduled to coincide with people being in their offices. In addition I conducted a number of my interviews over the phone. My access to the GIC was also helped by the fact that I was based in London, the world's largest hub of architectural practice (Knox and Taylor 2005).

Another challenge that studying up sometimes posed in interviews was establishing a rapport. This was not a problem in most cases. However the built environment industry is not without egos and in a few instances I did feel that people were talking down to me. Another issue with speaking to such senior-level people was that many of them were used to representing their company at public and industry events, and are heavily involved in business development and client management. This meant that they were practiced in giving a marketing or promotional spin to their rhetoric and I occasionally struggled to get them to break out of this and reflect more critically on the questions I was asking. Luckily this occurred only in a small minority of my interviews. The majority of interviewees were remarkably open and candid.

4.2.2   Participant observation of planning processes

Participant observation was developed as an ethnographic research method by anthropologists, but is now commonly used as a qualitative research method across a wide range of disciplines (DeWalt and DeWalt 2011). There are a variety of ways to approach and define participant observation, but broadly it can be understood as "a qualitative method for gathering data that involves developing a sustained relationship with people while they go about their normal activities" (Berg 2009: 276). DeWalt and DeWalt (2011) differentiate participant observation from the time spent participating in and observing the communities we research more generally, by the fact that participant observation involves recording and analysing the information gathered through these experiences. As a method, they argue that participant observation brings three key advantages: it enhances the quality of the data; it enhances the interpretation of the data; and it encourages the researcher to develop new research questions and hypotheses grounded in observations (DeWalt and DeWalt 2011: 10).

There are drawbacks to participant observation as a methodology. It can result in a large amount of detailed descriptive material which can be difficult to analyse (Becker 1958). It can also be difficult to find a way to present the material as valid and scientific (Aunger 1995; Becker 1958). This latter challenge can be overcome if rather than aim to produce objective, scientific knowledge, the researcher embraces fact that the close engagement between him or her and the research subjects allows for the co-production of knowledge (Tedlock 1991).

Participant observers can take on three different types of role: pure observer; participant and observer; and covert participant (Schutt 2004). For this research project, I took on the role of participant and observer. This meant that I informed my participants of my research interests and engaged with them in a way designed to build a rapport (Schutt 2004). The participant observation I undertook for this research falls into two categories. The first was observation of and engagement in everyday practice while sitting in and working from a company's office. Most of this was in the offices of Happold Consulting and Buro Happold, but I also spent one week in the offices of SOM's planning team in Chicago, and a day in the offices of Sasaki Associates in Boston. The second type of participant observation was observation of planning workshops and meetings. These workshops brought together multiple members of a team and, in some

instances, clients. I attended about a dozen of these for about 10 different projects over the course of my research. Again, most of these were at Buro Happold, but I also attended a two-day planning workshop for a large-scale sustainable urban project at SOM.

Throughout the course of my research I kept a number of field diaries where I made notes about what I observed while spending time with practitioners. In the empirical chapters that follow most of the references to the way the industry operates that do not refer to interviews draw on information gathered in this way.

During the period when I was conducting my research I made a point of keeping track of ongoing projects within Buro Happold that fitted the parameters of what I was studying. I tracked the progression of three projects in particular—Gia Lam, K.A.CARE and TRX— each of which I hoped could be a case study. While I did not get the level of access I needed to any of these projects to make them a case study, in the process of trying to do so I learned a great deal about them. I kept in regular contact with the staff members working on these projects, who were happy to give me informal updates on the projects' progress and send me draft plans, presentations and communications from clients.

Some of this material proved invaluable in understanding the planning process. For instance, for one project a colleague gave me the client's feedback report on the submissions received to a masterplanning competition. It was in this area that my status as an insider within the company was probably most useful. I had good working relationships with these people, established during my time working for Happold Consulting, and through work on projects while with the company as a researcher. This led to a level of trust and openness that I do not believe could have been achieved by a researcher coming in from the outside.

Practical things, such as the fact that I had a desk at Happold Consulting and a company email address were instrumental in getting the access I enjoyed. Working in an open plan office, it was quite easy to keep track of what was going on with the projects I was interested in. Around the office I would often overhear a conversation or see a document lying around that would pique my interest. I could then approach the relevant person to ask them for more information. In some cases, once people knew I was interested in a certain project they would make a point of checking in with me on a

regular basis to keep me updated on the project's status. Even if they did not do so, people were always happy to answer my questions about how things were going. Being part of the company's email system meant that it was simple for people to forward me emails or links to documents on the company's servers. I also had access myself to a wealth of documents and information on the company's servers, which I was familiar with from my time working with them. This type of material is known as grey literature. Grey literature is that produced by sources for whom publishing is not a primary activity, and is not found in traditional indexes or databases (Cooper *et al.* 2008). The value of grey literature to researchers is increasingly recognised by researchers. In my case, this material was instrumental in helping me piece together a picture of the industry. However, as much of it was of course confidential it cannot be cited directly in this research.

4.2.3   Participant observation of study tours

My interest in study tours stemmed from the repeated references of my interviewees to the importance of using precedents and examples in the planning process. Somewhat serendipitously, right around time I was developing this interest, a Buro Happold colleague asked if I would help him in preparing some background information on sustainable urban projects in Europe. He was shortly to begin a new job and had a potential client who was interested in undertaking a study tour. Over the following weeks, my role in planning the trip grew. Eventually the trip convener, an urban planner and designer based in Australia, agreed that I would join the study tour. In exchange for helping organize the tour and sharing my knowledge about sustainable urbanism I was allowed to join as a participant observer.

The tour took place over one week in April 2012 during which we visited four cities in Germany, Denmark and Sweden. There were seven people on the trip. These were me, the trip convener, another urban designer from his company, a property developer client with whom they were working on a proposal for a new urban development on the outskirts of Melbourne, the client's wife, an architect, a Colombian transport planner living and working in Australia, and a Colombian urban designer based in the United States. The convener and I collaborated on the itinerary for the trip, which can be found in Appendix D.

During the trip I kept a field diary where I recorded my experiences and observations on a daily basis. On the last day of the trip, I conducted a focus group with all of the participants about their experiences. This was designed to collect qualitative data, and validate some of my initial observations from the trip, by asking the participants to respond to open-ended questions (Fern 2001; Schutt 2004). I then conducted semi-structured follow-up interviews with four out of the six of the participants between six and eight months after the end of the trip.

4.2.4 Masterplan review

During the course of my research I collected a set of masterplans for large-scale urban projects prepared by some of the firms that I spent time with. Having spent so much time speaking to my interview subjects about planning for sustainable urban places I wanted to see how they actually applied these ideas in practice. The plans I collected took a number of different forms, from a 30-page high level strategy to a comprehensive 600-page, multi-volume document. The plans were for projects in eight different countries. All of the plans involved either Buro Happold or SOM. However as such projects usually involve multiple companies, in total the plans represent the work of six different GIC firms. The sustainability ambitions of the projects these plans were for varied. In some, sustainability played a strong and prominent role, in others it was relegated to a short section towards the end of the masterplan. A summary of the plans analysed that includes the location and a brief description of each project, including its current status, the companies that worked on it and the year of plan completion is included in Table 2.

I conducted a content analysis of the plans to complement the data gathered by the other methods described in this chapter. In particular I examined the way they defined and applied sustainability, used images and data, and drew on examples. Further details on this analysis are included in Section 3 below on data analysis and interpretation.

Project Name	Location	Master planners	Client	Year plan finished	Current status
Gia Lam New Town	Vietnam	Dissing & Weitling Architecture Buro Happold	Vietnam Infrastructure Development & Finance Investment Joint Stock Company	2010	Not constructed
Palava	India	Sasaki Buro Happold	Lodha Group	2010	Under construction
K.A.CARE	Saudi Arabia	SOM Buro Happold Gustafson Porter Klimaat Consulting	Saudi Arabian Government	2011	Planning continues
Tianjin Binhai	China	SOM	Tanggu District Government, Tianjin Province, China	2009	Under construction
Jaypee City	India	SOM	Jaypee Group	2010	Under construction
Panama Government City	Panama	SOM	Panama Government	2011	Pre-construction
Al Ain Emirate	United Arab Emirates	HOK Buro Happold	Al Quadra Real Estate	2007	Under construction
Pyramid Heights	Egypt	SOM Gillespies Buro Happold	Samcrete Development	2010	Unknown
Wuhan Wangjiadun	China	SOM	Wuhan CBD Construction and Investment Company	2008	Not constructed

Table 2 Overview of key features of masterplans analysed.

4.2.5   Survey of office and project locations

The final element of my research was a desktop review of the websites of 13 GIC firms. The 13 firms included 11 of those that my interviewees came from (I excluded two of the very smallest firms). I added to the list one major GIC firm where I was not successful in obtaining interviews, and, to add geographical balance, two GIC firms with their headquarters outside Europe and North America. This review had two parts. The first focused on the way these firms described their work in their promotional material,

in particular how they describe their approach to sustainability. Because so many of my interviewees in the masterplans analysed came from Buro Happold and SOM, I wanted to balance out my portrayal of the industry by incorporating additional material from a broader range of firms. I draw on this material primarily in Chapter 5, which presents an overview of how the GIC define and operationalize sustainable urbanism.

The second part of the desktop review was a survey of where the 13 firms have their offices and have worked on planning projects. The purpose of this was to complement the information on the internationalization of the industry that I had gathered by other methods. I developed the scope for this review, but the actual research was conducted by a Research Assistant who is a Masters student at UCL, Kewen Yang. Kewen also produced the images summarizing this review, which are included in Chapter 6.

The survey was a desktop review based largely on research conducted online. At my instruction, Kewen searched the official websites of the 13 GIC companies for their office locations and the countries where they have worked on planning projects. "Planning project" was defined as the projects listed on a company's website under the categories of "masterplanning" and "planning and urban design". Kewen also searched the websites for any description of the growth and expansion of the companies' international business; her findings also feed into the description of the evolution of the industry in Chapter 6.

We encountered several challenges in carrying out this part of the research. Firstly, it was not clear from many companies' websites which of their offices provided planning services. Secondly, most firms had a category on their website for masterplanning or planning and urban design. However it is possible that some projects that could be considered planning projects might not be included in these parts of the websites. In addition, companies curate their websites for purposes of marketing and confidentiality, so it is likely that the data set collected is incomplete. Thirdly, firms varied in the time spectrum of projects included in their websites, and three firms did not indicate what year the projects featured were completed. And finally, verifying the data collected and collecting missing information was not possible as all but one of the firms surveyed did not respond to email requests for further information. Despite these

limitations the desktop review served its purpose of providing a broad overview of the GIC's international work.

4.3 Data analysis and interpretation

The primary method used to analyse and interpret the data gathered in this research was a content analysis of interview transcripts and masterplans. Complementing this was a review and analysis of my field notes.

4.3.1 Content analysis

I conducted a content analysis of my interview transcripts and the masterplans using the qualitative data analysis software package ATLAS.ti. In conducting the content analysis I used a combination of inductive and deductive reasoning.

For the content analysis I created two "hermeneutic units" (HUs), ATLAS.ti's name for a group of documents, one for the masterplans and one for my interview transcripts. For both HUs I conducted two rounds of coding, one topical and the second conceptual. The first round of coding was topical. I began by working deductively, developing a provisional set of codes that built on the key themes that I had explored in my fieldwork such as definitions of sustainability, the planning process, and the use of precedents and examples. Following the method suggested by Friese (2012) for developing a coding system in ATLAS.ti, I coded a small sample of the interviews using this provisional scheme. Because the software allows you to create new codes as you analyse, I was also able to work inductively, refining my coding scheme as I moved through the documents during this pilot process. For instance, in the masterplans HU, I added a set of codes that categorized the way images were used.

At the end of the pilot coding process I undertook a comprehensive review of my codes and developed my final coding system. ATLAS.ti allows the user to create code families that encompass a range of sub-codes. In this topical content analysis I eventually used a set of seven code families for my interviews. These included areas explored in my fieldwork such as 'definition of sustainability,' 'evolution of the industry' and 'planning processes.' For the masterplans I developed a set of six code families. I then defined each code. The list of codes I used for each HU and their definitions can be found in Appendix E.

In this first round of analysis I focused on themes that were fairly straightforward to identify. One more interpretive element of this process was identifying latent content. Content analysis can look at manifest content, that is, elements that are physically present, or latent content that may not be present but can be represented or measured by other indicators (Neuendorf 2002). In coding masterplans I looked at both. This is because discussions of sustainability, for instance, were not always explicitly labelled as such. Some plans contained a section that more or less summarized a project's sustainability features, but others did not discuss this as explicitly. In addition particular dimensions of sustainability were quite clearly labelled while others were not. For example, discussions of sustainable practices on the disposal of waste were always clearly identified as waste strategies or objectives. Discussions of the social dimensions of sustainability, on the other hand, were rarely labelled as such. I interpreted a number of indicators, such as references to open space and affordability, as referencing social sustainability. When coding interviews I did the same. I did focus more explicitly on manifest content in interviews; however, in some cases coding interviews required a degree of interpretation. For example, interviewees would not list those elements that they thought made up sustainable urbanism, but they would talk about how applying certain ideas was an obvious thing to do, or down to "common sense".

Following this first round of coding I had a good handle on my data and what themes would be interesting to draw out in the dissertation. I then undertook a second, conceptual round of coding in which I attempted to link the content to McFarlane's two frameworks: that used to describe sustainable urbanism in Chapter 5 though a discussion of the model's form, object, imaginary and power, and the concepts of translation, coordination and dwelling explored in Chapters 6, 7 and 8. I began this phase of analysis in Atlast.ti. Firstly I used the software's network view function to link my topical codes to the conceptual themes of translation, coordination and dwelling. These networks of codes can be found in Appendix F. However I quickly realised that my existing, thematic codes did not neatly map into these conceptual categories. Only some of the quotes that became part of the "translation" network, for example, were actually about translation. I then attempted to go back through the masterplans and transcripts and code for these concepts. However this did not take advantage of the work done in the first round of coding, though which I had already grouped key

concepts together. Eventually I exported and printed out all of the quotes that were in each of the three networks I created. I went through these hard copies and identified quotes that actually related to the conceptual themes I was using. These hand-coded documents were what I built on to do the analysis that underpinned the early drafts of my empirical chapters.

This process was highly interpretive, as coding for a concept such as "translation" is not as straightforward as working with the themes I used in the first round of coding. Throughout this process I referred repeatedly to McFarlane's definitions of these terms. I also began to develop and refine my own understandings of what they might mean in the context of this research project. As a result, the process of data analysis was also one of theory and concept building. My conceptual framework assisted me in interpreting the data, but the data also helped me refine the conceptual framework and make it my own.

4.3.2   Field notes

In addition to the interviews and masterplan content analysis and participant observation, both of the planning process and the week long study tour were important elements of the research methodology. Throughout the course of the research project I recorded my thoughts and observations in both notebooks and word processing documents. My field notes were not of the in depth type used in true ethnographic research, but rather for keeping track of informal interactions that seemed like they would be useful data but that I could not record or transcribe. In this way the diaries helped me retain knowledge that I was unlikely to be able to simply remember. For example, I used them to record the working practices (working hours, office culture) of my research subjects during periods of participant observation, as well as how they seemed to react to having a researcher around. I also took notes when I was able to sit in on meetings that I did not have permission to record, such as workshops with clients or senior members of staff. On the study tour I kept a daily log of the day's activities and my observations. In the data analysis process I did not code my field diaries, but rather used them to job my memory.

4.3.3   Confidentiality

One of the primary challenges to gaining access to work on planning projects led by private sector firms is concern about the commercial sensitivity of this work. Clients

were hesitant about having details of their projects in the public realm before they are finalized. They worried that this could compromise ongoing negotiations and interfere with their marketing and publicity plans for a project. Therefore, in a number of cases when referring to project workshops I do not mention the name of the project or that of the firm working on it. The three projects discussed throughout this dissertation, TRX, Palava and K.A.CARE are not fully anonymized, as much of the information about these projects and the people who worked on them is now widely available in the public realm. However some details, in particular the names of people I spoke to about the projects are not included. Similarly, out of respect for my interview subjects, the more informal interactions that informed this research have all been anonymized in this dissertation.

I also guaranteed confidentiality to all of my interview subjects, and assured them that their comments would be amalgamated with those of other interviewees to form a general picture of the industry. I felt that this was important to encourage interviewees to speak from their own perspective, rather than as a spokesperson for their company. Quotes from the majority of interview subjects are anonymized throughout the dissertation. In a few cases people are named; I went back to these interviewees to ask if they would be willing to be affiliated with their quotes.

4.4   Conclusion

The nature of this research project, which is focused on examining the work of an internationalized group of actors working in a rapidly changing and evolving industry, required me to be quite flexible in my approach. People and places that seemed important to learn about at the beginning of the project faded from view over time to be replaced by others. For example, when I started the research project the concept of the eco-city was popular in the urban planning and development industry; by the time I came to my fieldwork it was dismissed as somewhat passé by many of the people I spoke to. Ultimately being flexible and allowing my research design to evolve over the course of the project worked to my benefit. I could not have anticipated that all three of my attempts to secure a case study would not work out, but neither could I have predicted that the opportunity to go on a study tour would arise. The story that this dissertation tells differs significantly from the one I envisioned in my 2008 research

proposal. In my view this is only fitting, as like the dynamic assemblage at the heart of it, the story of sustainable urbanism's international travels is shifting and changing all the time.

5 Sustainable urbanism: dimensions of the model

5.1 Introduction

The phrase "sustainable urbanism" might bring a number of images or ideas to mind. For some it might connote a compact, walkable city; for others, buildings clad in solar panels; and for others a city whose residents have sustainable livelihoods. As discussed in Chapter 1, it is the ability of the idea of sustainability to mean different things to different people, but still to bring them together around a common goal that accounts for great deal of its popularity. The purpose of this chapter is to describe what this research found to be form in which the model-as-assemblage of sustainable urbanism has crystallized in the industry studied; the model whose travels the remainder of this dissertation will document. However it does not attempt to put forward a universal definition. The model of sustainable urbanism presented in this chapter is not the only version that exists. The chapter simply describes what analysis of interviews and documents conducted for this research project demonstrated to be the main features of the model that is being developed and applied around the world through the work of the GIC and their clients. Similarly, this chapter does not explicitly pass judgement on whether or not the model described is better or worse than other versions of sustainable urbanism that exist. Later chapters will examine the model more critically.

To describe the model the chapter applies a framework developed by McFarlane (2011b) for conceptualizing mobile urban policies. This framework has four dimensions. The first is the *form* of mobile ideas, that is, how people share and promote ideas and solutions. The second dimension is the *object* of the model. This is what solution it proposes and how the problem it is trying to address is defined. The third is the *imaginary* of sustainable urbanism, or the image and experience that success in implementing the model would bring. And finally, the fourth dimension is what *forms of power* underlie the strategies used to promote, frame or structure the solutions that sustainable urbanism promotes.

To piece together a description of the assemblage of sustainable urbanism, this chapter will draw on analysis of empirical findings about how the GIC go about the process of planning, and the plans they produce. In particular, it looks at the way the GIC and their clients define and apply sustainable urbanism in their work, and how these definitions

and applications travel. In line with the assemblage thinking approach guiding this work, the focus of this chapter is on how the assemblage is stabilized into a particular form through territorialisation and coding. In describing what sustainable urbanism is the intention is not to present the model as something fixed and immutable. Rather, it will present the current consensus among the GIC about what sustainable urbanism means and how to go about creating it. The chapter is not purely descriptive. McFarlane's framework helps expose both the broader ideologies and the myriad small and modest factors that contribute to shaping the model. The chapter addresses each dimension of McFarlane's framework in turn, as well as setting out some of the key elements of the assemblage of sustainable urbanism. The concluding section summarises the model, and reflects on what assemblage thinking contributes to the way the model is conceptualized.

5.2   Practicing sustainable urbanism: form

Ideas about how to create sustainable urban places are shared and promoted through a variety of processes and materials. These include masterplans and the meetings and workshops that are a part of their development. Masterplans provide the most comprehensive description and application of members of the GICs' perspectives on sustainability. Through their role in shaping urban development projects they can have a substantial influence on the form of new urban places designed to be sustainable. There are, however, many other forms through which ideas are shared, that may be quite formal and structured or casual and impromptu.

The masterplans reviewed for this research project discuss sustainability in one of two ways. The first method is to have a separate chapter or section on sustainability, usually towards the end of the document. Where this is the case, the sustainability chapter usually has been prepared by either a separate sustainability team or external sustainability consultant. The practice of separating out sustainability from the rest of the plan appears to have become less popular. The second method of discussing sustainability, more common in recent plans, is to take a more integrated approach where sustainability is incorporated throughout the document. Of the 10 plans analysed, only three had separate sustainability chapters.

Masterplans in and of themselves are not an effective form for sharing ideas with a broader audience. They are often long and detailed documents, and are rarely publicly available. The proposals in masterplans will also be disseminated in a number of other more easily accessible and understandable forms. Once a masterplan is finalized, both the GIC and the clients who commissioned the plan will produce promotional materials about it. These include press releases and websites, usually featuring attractive renderings of the proposed project. Historically, architectural practices might produce a three-dimensional model of the proposed project. This still occurs, particularly when a project is to be promoted at a property fair (a form of knowledge sharing discussed below).

It is also now common practice in the property development industry to commission a promotional video for a project. Such videos can be found on the websites of many large developers worldwide. These videos usually feature a fly-through of a digitally rendered version of the proposed project interspersed with stock video footage of scenes such as children running outdoors and business people shaking hands. All of this will be accompanied by a voiceover describing the features of the project. As these videos confidently outline the sustainability features of a project, they introduce or reiterate the model of sustainable urbanism to their audience. In doing so, they associate these features with sustainable urbanism and contribute to territorialising the model. For example, over the last several years the idea that cities should be "smart" has gained popularity among urban leaders and planners. While what precisely constitutes a smart city is variously defined, it usually refers in some way the use of technology to make urban living more comfortable, convenient and resource efficient. This idea has quickly begun to be applied alongside the model of sustainable urbanism. The corporate marketing videos for both Palava and Tun Razak Exchange describe their projects as smart and futuristic. One way that both demonstrate this is through the use of an image of a person applying their hand to a piece of glass, which presumably recognizes their fingerprints and allows them access to information. Stills from the two videos can be seen in Figure 1. The image on the left is from the video for Palava, the one on the right from that for Tun Razak Exchange.

Figure 1 Smart city stills from promotional videos. (Palava Megacity - By Lodha 2012; Tun Razak Exchange (TRX) Corporate Video 2013)

In these videos, fingerprint recognition technology is associated with a smart, secure and sustainable urban development. If images such as these continue to be used in promotional material for sustainable urban projects, fingerprint recognition technology will be gradually territorialized into the traveling model of sustainable (and smart) urbanism.

As ideas gain currency they are incorporated into forms explicitly designed to disseminate knowledge rather than promote a particular project. These include textbooks, academic articles and other educational materials as well as good practice compendiums and repositories maintained by governments and international organizations such as the Clinton Climate Initiative. Such materials play an important role in territorialising and coding the model by setting it out in a form that is durable and can be cited. Knowledge sharing resources often feature examples of existing "good practice" in sustainable urbanism.

One example of such a good practice database can be seen in Figure 2. The Figure is an excerpt from an online resource about good practice in sustainable urbanism created by the UK government's former design advisory organization, the Commission for Architecture and the Built Environment (CABE). CABE collected examples from around the world, and compiled case studies on how these projects contribute to urban sustainability. Resources such as these contribute to the incorporation of particular places and projects (as opposed to design ideas and technologies) into the model of sustainable urbanism. The importance of examples in the international travels of sustainable urbanism will be discussed in more detail in Chapter 8.

Examples for cities and towns

Examples of sustainable design and management at the city scale.

Cheonggyecheon Restoration Project

The Cheonggyecheon Restoration Project created a 5.8km landscaped green pathway that runs alongside the revitalised Cheonggyecheon stream in Seoul, South Korea.

Tags: green infrastructure, public space, transport, water, cities and towns

Chicago urban forest

The City of Chicago is harnessing the potential of trees to reduce the impact of heatwaves by developing and implementing a strategic management plan for its 'urban forest'.

Tags: green infrastructure, public space, cities and towns

Curitiba

A Brazilian city of 1.6 million where 75 per cent of commuters use public transport. The bus system is financially self-sufficient service that has been achieved through strong public and private sector partnership.

Tags: transport, cities and towns

East London green grid

In East London, the Green Grid framework aims to create a network of interlinked, multi-functional and high quality open spaces that connect with town centres, public transport nodes, the countryside in the urban fringe, the Thames and major employment and residential areas.

Tags: green infrastructure, public space, water, regions and subregions, cities and towns, neighbourhoods

Flood protection in Salford

Salford uses the River Irwell flood control scheme and a strategic flood risk assessment to protect itself from future flooding.

Tags: public space, water, cities and towns

Four National Taps, Singapore

Four different water sources provide a secure supply of water in this small, densely populated city state.

Tags: water, cities and towns

Figure 2
Extract from online good practice compendium. (Commission for Architecture and the Built Environment (CABE) 2011)

Materials created for the purposes of disseminating knowledge about sustainable urbanism are important in consolidating the model. However as emphasized in Chapter 3, sustainable urbanism is not static. Websites will be continually edited, textbooks updated. This does not seem to be a problem for most people interviewed for this research, who were not looking for a single solution. Rather, they expressed a desire to continually improve on their approach to sustainable urbanism, and to actively seek out

new information and ideas. In some cases, companies had specific people or groups tasked with making sure they remained aware of cutting-edge developments in sustainability. A member of one such group said that "we get a lot of questions of 'what is the latest and greatest?' So there's a lot of keeping up with white papers and benchmarking and trying to see what our peers are doing."

Another form of knowledge sharing is what can be described as the sustainable urbanism lecture circuit. As particular firms or projects become well known as successful innovators in the field, the people associated with them are invited to give lectures and speak at conferences around the world. A planner can "dine out" on a high profile project for months or years. Becoming the Planning Director of Vancouver, widely recognized as an exemplar in sustainable urbanism has been described as a ticket to the international lecture circuit (Bula 2009). The former mayors of Bogotá, Colombia and Curitiba, Brazil, Enrique Penalosa and Jaime Lerner respectively, are also widely sought-after on this circuit because of the international recognition their sustainable planning achievements gained. As these high profile ambassadors for their cities travel, their achievements are consolidated into the model of sustainable urbanism. Today, high profile projects such as Vancouver's False Creek development and Bogotá's Transmileno bus rapid transit system are well known around the world.

Conferences also provide an important opportunity for people to gather and share ideas about sustainable urbanism. One type of conference that is particularly important in the built environment industry is the property fair. Annual real estate fairs such as MIPIM and Cityscape bring together property developers, designers and investors who learn about each other's ideas and proposals by visiting stands and attending lectures. There are also conferences and exhibitions specifically focused on sustainability in the built environment. Ecobuild in the United Kingdom and Greenbuild in the United States are examples of these.

Another important form in which sustainable urbanism can travel is the study tour. Figure 3 is taken from a website promoting study tours as a way to learn about sustainable urbanism. The website belongs to Energy Cities, an organization of European cities and towns promoting low energy transitions.

STUDY TOURS

The Energy Cities town and city network can provide you with a unique opportunity to discover, meet and exchange with people working in the field!
- You would like to initiate or develop sustainable urban development and energy management projects in your town or city.
- You wish to raise awareness of sustainable city issues amongst your municipal staff or elected members.
- You want to discover exemplary initiatives, meet players from the field and benefit from exchanges of practical experience.

Our knowledge of European local actions and players over the last twenty years enables us to prepare custom-made programmes based on your expectations and local project needs.
Hundreds of people took part in our study tours in a dozen Energy Cities member cities: Sutton (BedZED) and Southwark (UK), Stuttgart, Freiburg and Heidelberg (DE), Grenoble and Echirolles (FR), Barcelona (ES), Utrecht, Amersfoort and Culemborg (EVA-Lanxmeer) (NL), ...

You too, can visit a member city and get new ideas and inspiration:
- Exchange with elected representatives and project leaders,
- Discover innovative local energy, climate, mobility and sustainable urban development policies,
- Visit ecodistricts, low energy and passive buildings, energy-efficient district heating and cooling solutions, etc.

Figure 3 Advertisement for study tours provided by Energy Cities. (Energy Cities 2014)

The practice of undertaking study tours has a long history, and their value in facilitating knowledge transfer has been endorsed by organizations such as the World Bank, which has put together guidance on organizing and conducting study tours (World Bank Institute n.d.). Study tours are organized in a number of different ways including privately, as a part of a larger conference or event, or by governmental and nongovernmental organizations.

When a study tour is incorporated into the process of developing a masterplan, it will usually be coordinated by the consultant team in consultation with their client, and paid for by the client. Such visits vary in scale. For example, one tour observed for this research was an afternoon visit by the TRX client to the London Olympics site. This was organized around the client's visit to London for a workshop with the planning team. The primary purpose of the visit was to show lead members of the client team the district energy centre on the Olympics site, as something similar had been proposed for TRX. The second tour observed for this research was a privately organized one-week trip around northern Europe to look at examples of sustainable urbanism.

Formal mechanisms for knowledge sharing such as conferences and tours are valuable also for their role in facilitating more informal interactions. It is often in the context of these less structured interactions such as a side meeting between a designer and a developer at MIPIM, or a discussion over coffee or a drink on a study tour that the knowledge sharing that will have a real impact occurs. The participants on the study tour observed for this research all cited the informal interactions and conversations they had with other participants as critical to their learning experience on the trip.

Certain ideas, places, people and projects that are part of the assemblage of sustainable urbanism tend to circulate in a variety of different forms. When this happens it can reinforce what elements are considered part of the assemblage, contributing to its territorialisation. A provider of study tours in Freiburg, Germany described how the city's sustainability achievements, in particular the car-free sustainable urban district of Vauban, were presented in the 2000s at Expos in Hanover and Shanghai. This led to the city receiving a great deal of attention from a variety of international media outlets.

Freiburg and Vauban are now regularly referenced in good practice guidance documents, textbooks and in the work of the GIC. The district's reputation has inspired many people to undertake study tours to Freiburg. The study tour provider estimated that in 2011, his company conducted approximately 320 tours for approximately 6,000 to 7,000 visitors from 45 countries. Other projects that have become well known as exemplars in sustainable urbanism such as Hammarby Sjöstad in Stockholm, Sweden, and the Bo01 district in Malmo, Sweden, are also frequently visited by study tours. As mentioned above, when the same places are visited and referenced repeatedly, they

become accepted as exemplars and territorialized into the traveling model of sustainable urbanism.

Figure 4 A study tour at the HafenCity Hamburg visitor centre. Image credit: Author.

This section has outlined the primary forms through which the GIC and their clients share and promote ideas and solutions about sustainable urbanism. It has focused on the forms in which sustainable urbanism travels both as a comprehensive model (such as in masterplans, for example, or places like Vauban) as well as how elements of the assemblage, such as a district energy centre might travel on their own. The GIC, as elements of the assemblage, travel alongside the various forms describe in this section. As described in Chapter 3, factors such as the weight of their expertise and their skill in presenting information in an appealing way contributes to the likelihood of the model being taken up in new environments. It is important to emphasize that though elements of the assemblage may appear to travel independently, their take up in new environments is facilitated by their association with the broader assemblage of sustainable urbanism. District heating might be promoted as a good idea on a study visit, but this will be done with reference to where it has been implemented, and how it is integrated into a project as a whole.

Sustainable urbanism travels in forms beyond just those highlighted above. For example, there are city-to-city learning network such as ICLEI, an organization that encourages collaboration between local governments on sustainability issues. International aid agencies such as the World Bank also disseminate knowledge about sustainable urbanism, often with a particular focus on development. These forms have not been discussed in detail because this research found that they are not as influential in the work of the GIC internationally as those outlined above. In discussing the forms in which ideas about sustainable urbanism travel, the section has begun to highlight some of the elements of the traveling model, such as energy efficiency and rapid transit. The next three sections will go into these as well as the object and imaginary of sustainable urbanism in more detail.

5.3   Sustainable urbanism: elements of the model

Chapter 3 proposed that sustainable urbanism travels as a dynamic and materially heterogeneous assemblage. It is now possible to define and differentiate between some of the key types of planning and design elements of the assemblage. Three in particular stand out: design principles, initiatives and precedents and examples. Design principles are guidelines urban designers use to establish the macro-level morphology of a place. Prominent design principles that are part of sustainable urbanism include density, walkability, and mixed-use and transit oriented development. These will be discussed further in the sections that follow on the object and imaginary of sustainable urbanism. Design principles can travel in a number of different forms. These include masterplans, presentations and other associated materials prepared by the GIC, as well as textbooks and online or printed good practice guides.

Initiatives are specific technologies and design approaches that are associated with achieving one or more of the objects of sustainable urbanism. Table 3 summarizes what this research found to be some of the commonly mentioned initiatives associated with sustainable urbanism. They are defined here as many of them will be mentioned throughout the remainder of this dissertation. Initiatives travel in many of the same forms as design principles.

Feature	Description
Passive design	Building and urban design approaches where building height, massing and orientation are designed in such a way that they reduce the need for artificial heating, cooling and ventilation.
Demand reduction measures	Measures to reduce demand for resources such as energy or water, or, in the case of waste, to reduce its production. Methods for achieving this include public awareness and education campaigns, as well as technological interventions such as low flow taps and waterless urinals.
Combined heat and power (CHP)	A power plant that recovers the waste heat from electricity production and uses this to meet demand for heating.
District heating/district cooling	Heating or cooling provided from a central plant and distributed via an underground network of pipes to feed building heating or air conditioning systems.
Photovoltaics (PV)	Materials that can produce electricity from solar radiation.
Solar thermal (solar hot water)	Solar collectors that use solar energy to heat water.
Low – or zero – carbon transit	Walking, cycling and electric vehicles.
Bus rapid transit (BRT)	A mass transit system where buses travel between stops within dedicated lanes.
Light rail transit (LRT)	A mass transit system of tram or streetcar style trains, usually powered by electricity that operates along exclusive dedicated tracks.
Personal rapid transit (PRT)	A mass transit system consisting of small, driverless electronic vehicles that operates along dedicated guide ways. PRT vehicles offer personalized, on demand transportation.
Sustainable urban drainage system (SUDS)	Landscape design that integrates urban surface water retention and drainage.
Greywater recycling	A system that collects and filters water, usually bathwater, for reuse on or off site, usually in toilets.
Rain water harvesting	Collection of rainwater for non-potable water needs.
Green roof	A building roof that supports vegetation.
Waste recycling and recovery	Systems for recycling and reusing domestic, commercial and construction waste.
Vacuum waste extraction	A waste management system in which traditional bins are replaced by a network of underground vacuum tubes that take waste from inlets to a waste collection station.
Waste to energy	Technology that generates energy through methods such as incineration or anaerobic digestion.

Table 3 Some design interventions associated with sustainable urbanism.

The third important type of element in the model of sustainable urbanism is precedents and examples. These are examples of where the model, or particular design principles or initiatives have been implemented. Again, these can travel in a number of different forms, including images, diagrams, and presentations, or with a person who has actually experienced a place on a study tour. Precedents and examples and their role in facilitating sustainable urbanism's travels will be discussed in detail in Chapter 8.

5.4   Defining sustainable urbanism: object

While the ideal of sustainability has its detractors, by and large the need to make urban development more sustainable is widely accepted. Yet what exactly sustainable urbanism means is a subject of debate. This section sets out the findings of this research about the object, or aim, of the international model of sustainable urbanism: its high level, strategic objectives. Unpacking these objectives also reveals the answer to the equally important question of what are the problems that sustainable urbanism seeks to solve (Huxley 2013). The classic tripartite or "triple bottom line" definition of sustainability as consisting of balancing environmental, economic and social objectives is evident in the masterplans produced by the GIC. These plans usually contain objectives and proposals designed to target each of these areas, though discussion of environmental issues does tend to dominate. When discussing how they define and apply sustainability in their work on urban projects, however, interviewees almost never spoke in these terms. The phrase "triple bottom line" was mentioned only once in all the interviews, the Brundtland Commission definition twice. Instead, this research found that, based on content analysis of how interviewees describe sustainability and how it is written about in masterplans, for the GIC and their clients, sustainable urbanism has three key objectives. These are: to create good or high quality, high-performance and integrated urban places. This section will give an overview of each objective.

5.4.1 Sustainability as good urbanism

The most common thing that interviewees talked about when describing sustainable urbanism was that it should not be distinguished from good urbanism more generally. If a practitioner is doing his or her job well and designing high-quality urban places, the argument went, what they produce will be sustainable as well.

Many interviewees emphasized that sustainability is nothing new. According to one experienced planner the issues that practitioners wrestle with in doing urban planning have always been the same, but in the past "they just didn't call it sustainability, they just called it good planning." An engineer described sustainability as being about functional, efficient and cost-effective design. If you design things well, he argued, they are sustainable – "you don't need to dress it up." An architect made this point in similar terms, arguing that the popularity of sustainability has brought "dressing up of things that were basic virtues and that now they have been elevated to the status of a new idea." Another architect described how his firm, when putting together a manifesto about their approach, had used the word sustainability once. He thought this was about right because "at the end of the day, I mean, this is also obvious, right? It's good design and good design that needs to take care of what we need today and what we need tomorrow."

There was a general consensus among interviewees that the principles of good urban planning and design, that are inherently sustainable, were well known to them as practitioners. These principles were often summarized as compact, public transit oriented communities with a balance of land uses. Yet mainstream planning practice, people argued, has moved away from these. Talking about his work on a project in Saudi Arabia one engineer who was working on the K.A.CARE project described the situation as follows.

> If you look at sustainable planning, you look at the way Saudi Arabia used to build its cities... Small, compact, narrow streets, shading, natural everything, and for me that was the DNA of sustainability...You created the DNA of sustainability, it's gone elsewhere. Everyone's been replicating it somewhere else and we've lost our way.

This engineer is referencing a problem frequently raised by interviewees. As Chapter 6 will discuss, the GIC do much of their work in places like China and the Middle East. Traditional urban forms in these places aligned with the GIC's conception of good urbanism, but in recent years these countries have moved away from such forms. One of their responsibilities, interviewees argued, was to once again make these principles standard, mainstream practice in urban planning and development.

Figure 5 shows one rendering of how one design team proposed to recapture this "DNA" in K.A.CARE. In a country where the car is the primary mode of transit, here residents will walk along car-free, narrow, naturally shaded streets.

Figure 5 Rendering visualising "good" urbanism in K.A.CARE. Image credit: SOM.

In summary, one of the fundamental problems that sustainable urbanism is designed to address is that planners have lost touch with traditional, common sense principles of good urbanism. One objective of the model is to reintroduce these principles. However, the GIC do not just look to the past for inspiration about how to create sustainable urban places. The next section describes the way they also incorporate new ideas and technologies.

5.4.2 Sustainability as high-performance urbanism

Amidst the nostalgia for traditional approaches to urbanism described in the previous section, in the interviews and masterplans analysed there was also a strong emphasis on improving the performance of urban places. A second objective of sustainable urbanism is achieving measurable (usually quantifiable) improvements in the way resources are used. In the words of one engineer interviewed, what makes something sustainable is "principally the level of performance that is achieved." The focus on performance addresses what is perceived to be the unsustainable nature of current

patterns of resource use in cities. This then is one of the problems that sustainable urbanism aims to solve. The emphasis is particularly on environmental resources, especially energy and water, but economic and occasionally social resources are addressed as well.

This emphasis on performance is, in the view of many interviewees, changing the urban design profession. Enhancing performance and maximizing efficiencies is, according to one architect, "becoming more and more embedded in our process." According to another architect and urban designer "it's layered on this engineering and science behind it all." An urban designer concurred, noting that when making a design proposal "you can't just draw it on the plan now." He and his colleagues are increasingly required to do more technical and quantitative studies and analyses. Feeding more technical data into the early stages of the design process, in his view, would be essential if he and his colleagues were going to be able to become "serious" about sustainability.
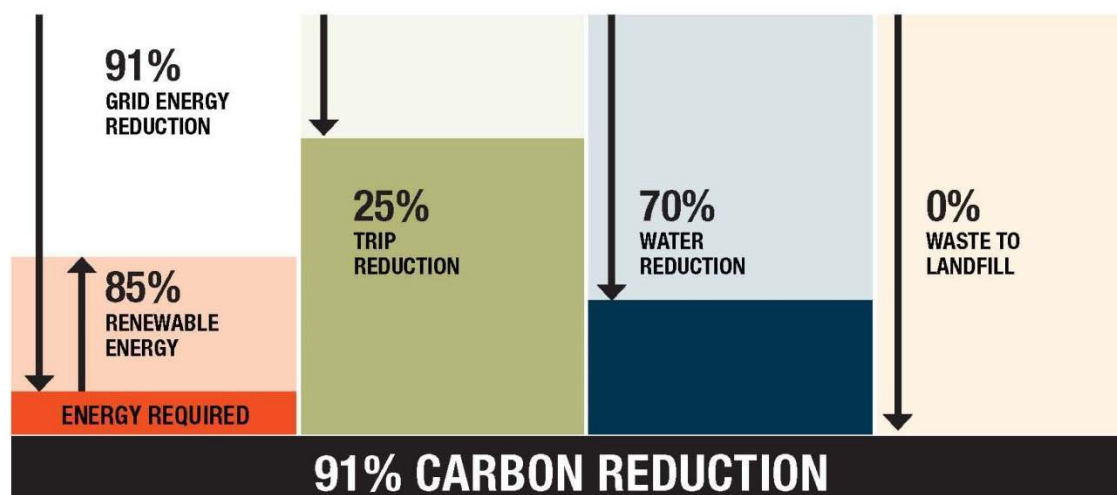
Figure 6 Sustainability targets for K.A.CARE. Image credit: SOM and Buro Happold Engineering.

The increased emphasis on performance has brought with it the introduction of indicators and metrics.

Figure 6 is an example of how one of the competition entries for K.A.CARE summarized the way it would achieve 91 per cent carbon reduction through a combination of energy, transport, water and waste strategies. Given K.A.CARE's stated objective of being highly

sustainable, being able to show such projections is an important element of sustainable urbanism for this project. Quantitative sustainability targets such as those in

Figure 6 are not unique to the masterplans for K.A.CARE. They feature in most contemporary masterplans.

5.4.3 Sustainability as integrated urbanism

The third object of sustainable urbanism is a more integrated and holistic approach to urban planning and design. This is intended as a means to cope with the complexity of designing new urban places. This complexity and the challenge of managing it was a recurring theme throughout this research. A number of GIC interviewees from a variety of different disciplines spoke about how their work had become more complex and multidisciplinary in recent years. Yet rather than working together, interviewees explained, people from different disciplines often work in isolation. This leads to a fragmented end-product. According to one experienced engineer, in big teams working together on complex urban projects you sometimes get a set of outputs that, while technically competent are not integrated or holistic in their approach. The result is a traffic solution designed by one set of actors, a drainage solution by another, the utilities network by another. A senior official in a large Middle Eastern city who has commissioned works from a number of foreign practitioners complained about the problems of such a "siloed" approach. In his view, engineers look for pure engineering solutions, architects focus on how things look, and the possibilities for trying to create integrated solutions get lost.

To operate in a more integrated way, practitioners must be willing to work across disciplines and think beyond the boundaries of their scope of work. For example, one urban designer described how on one project his team applied a transport model to the figures in the business case for a proposed urban extension. They found that if the amount of office space the client was proposing to put on the site was developed, the entire city's road network would become congested. By highlighting this problem at an early stage in the design process the team was able to steer the scope of the project in a more realistic direction.

This example highlights how integrated thinking helped avoid a problem. More commonly, interviewees and masterplans highlighted the benefits, and win – win

situations that could arise from integrated thinking. According to one landscape architect, working in a sustainable way can save money, lowering maintenance and energy costs. He gave the example of how on one project the use of green infrastructure eliminated the need for hundreds of thousands of dollars worth of drainage pipes. By approaching design in an integrated way, another engineer argued, the boundaries of the project expand to take the bigger picture into account, and "people start to realize they can make a lot more money, get a higher return on capital, get more social, economic, environmental outcomes".

As the masterplan excerpted below demonstrates, sustainable technologies, such as a district cooling system, can bring a property developer increased profits.

> The immediate benefit to building owners when a district cooling system is available is that they do not require their own air conditioning plant to generate thermal energy. This means that the owner can save on the capital cost of their building and also the space required to install chillers and cooling towers etc. The saving in plant space will increase the usable/lettable space of the building.

Sustainable design can also save money up front. This is the argument made in the masterplan for Palava to justify the proposal for adopting a sustainable urban drainage strategy rather than a conventional storm water drainage system: "This landscape is proposed to follow more closely and capitalize on the natural cycles of water – to help create a sustainable city and to also save money." The planners recognized that their private developer client, while interested in sustainability, would also be thinking about economic concerns.

An integrated approach to planning is proposed as a solution to the problem of people from different disciplines working in silos. Just as importantly, as the examples cited above highlight, it is also seen as a way to ensure a design brings economic as well as environmental benefits. The example also demonstrates how decisions initially justified for environmental reasons can be shown to have economic benefits and vice versa. In this way, enthusiasm about the benefits of integrated urbanism reflects the appeal of the ethos of entrepreneurial sustainability described in Chapter 1.

5.5   Imagining sustainable urbanism

The imaginary of sustainable urbanism is the look and feel that success in achieving the objects outlined above would create. The forms in which sustainable urbanism travels are full of representations of this imaginary. Visual forms such as renderings and videos are powerful evocations of what sustainable urbanism might look like, a topic that will be discussed in more detail in Chapter 8. The GIC also proved eloquent in describing this imaginary both in interviews and in documents. This section outlines the imaginary of good, high-performance and integrated urbanism, before pulling this together to describe the overall imaginary of sustainable urbanism.

5.5.1 The imaginary of good urbanism

One topic frequently raised by interviewees was what their conception of what sustainable urban place looked like. Table 4 includes quotes taken from a number of interviews. The second column lists what each interviewee described as the key features of sustainable urbanism.

Quote	Key features
Urban designer: "To create places where people can actually interact and work with us is really important and so the whole idea was to try and create a framework where you would be within a five minute walk of an open space or you can walk to work, you can walk to a playground, you can walk to a school and to create different neighbourhoods and all that."	Mixed-use Walkable
Architect/urban designer: "The most sustainable, kind of basic thing, that we talk about in our practice is a dedication to being compact and walkable."	Compact Walkable
Architect: "High-intensity compact, walkable development, transit-oriented, access to open space, oriented buildings the right way for higher performance in a passive manner."	Compact Walkable Public transit Passive design
Developer: "We try to do things considering human scale, and not only do we get people out of their cars, they create socialization experiences and on the real estate side continues to create footfall and generate production traffic."	Walkable Mixed-use
Architect/urban designer: "creating density around, or at least links to the transit stations... So really almost every part of this site here is within a two minute walk of some sort of transit system."	Dense Public transit
Urban designer: "High density around the central plaza, the subway line would actually come in and there would be a station right that the middle of it."	Dense Public transit

Table 4 Selection of interviewees' descriptions of sustainable urbanism.

The quotes in Table 4 indicate that there is a fairly strong consensus on the principles of good urbanism amongst the GIC, particularly on the principles that a community should be walkable and compact or dense. A good urban place features a mixture of uses within close proximity. Readily available public transportation combined with provisions that make walking and cycling easy and convenient means that the automobile is not the primary form of transit.

Visual representations of this imaginary, such as those seen in Figure 7 and Figure 8 illustrate these principles and bring them to life. Figure 7 is taken from the masterplan for Palava. In the Figure, the planners have attempted to demonstrate how their design will make the community walkable. The circles superimposed over the plan are sometimes referred to by urban designers as "ped sheds" or "pedestrian sheds". The radius of each circle is the distance the average person can walk in 10 minutes. Looking at the circles, one can see the different types of land uses that can be reached in a 10 minute walk from a number of points on the plan. Ped sheds are a common feature in masterplans produced by a number of different firms, indicating that they have become an important tool for illustrating sustainable urbanism.
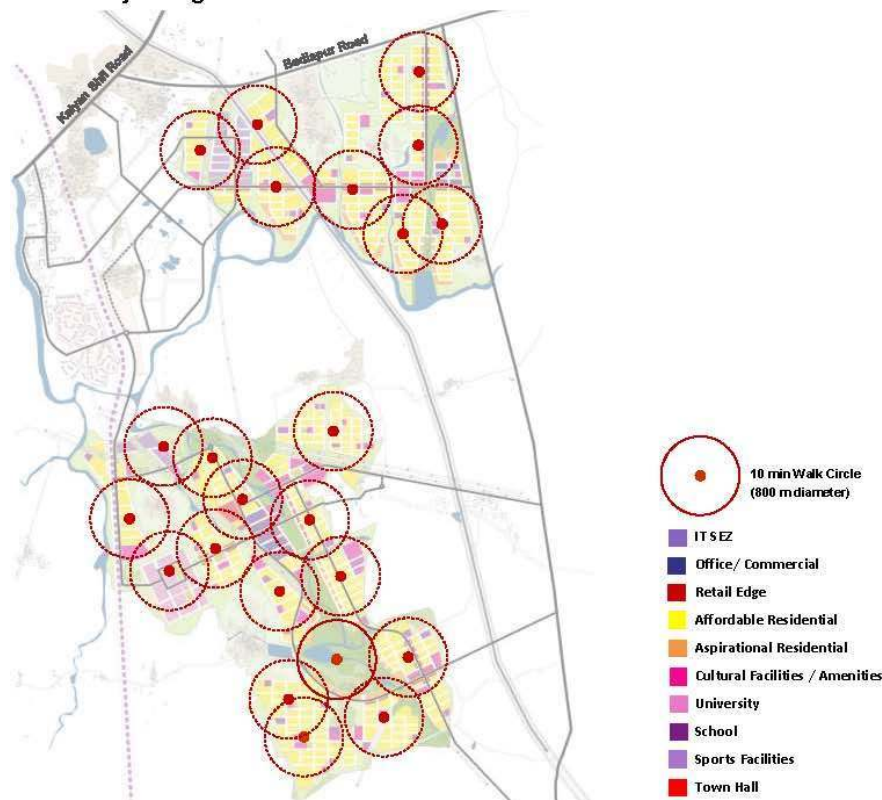
Figure 7 Plan with superimposed ped sheds for Palava. Image credit: Sasaki and Buro Happold Engineering.

Figure 8 is a rendering of the proposed Gia Lam project. The rendering is the assemblage of sustainable urbanism in visual form, depicting all of the key features of the imaginary described above. The development is walkable, as evidenced by the number of people on foot in the rendering. It is also dense – the buildings in the foreground appear to indicate a residential district of medium density, while high-rise buildings in the background demonstrate that higher densities can be found elsewhere in the development. The area is mixed-use. The rendering depicts residential, commercial and recreational land uses. And finally, the development incorporates public transit. What appears to be a tram or light rail system can be seen moving through the lower midsection of the rendering.

Figure 8 Rendering of Gia Lam. Image credit: Mikkelsen Arkitekter.

Evidence of entrepreneurial sustainability can also be seen in this image. The commercial and recreational area along the waterfront in the foreground is busy with people. The skyscrapers in the background indicate that a short distance from this relaxed scene is a thriving hub of economic activity. One message that this image appears to be trying to convey then is that features of sustainable urbanism such as

density and walkability bring advantages for both the quality of life of residents and the bottom lines of property developers and investors.

5.5.2 Imaginary of integrated, high-performance urbanism

The objectives of integrated and high-performance urbanism when brought to life produce an imaginary of an urban area characterized by symbiotic and cyclical relationships. One property developer described what an integrated approach makes possible as follows.

> "The solar panels start driving water pumps. Water pumps start irrigating all the landscape, and then landscape would collect the biomass in the anaerobic digestion and get, create more power and once you start cycling these things then it starts to make a lot of sense. If you keep the systems separate then they're not as efficient as they are combining them."

The integrated urban imaginary sees potential for synergies everywhere. Another example is this architect and urban designer's description of a plan he worked on.

> "So, in this case, the buildings of the city actually became energy generators, you know, we would collect solar energy and feed back into a grid. We would heat water, which would reduce the need to pay to heat water. We were able to design some of our major public spaces so that we could actually use under croft cooling, you know, wind towers and bring that in so we could mitigate the temperature in the main urban spaces."

As the two quotes above demonstrate, every feature of the city in the integrated urban imaginary has multiple uses and benefits. Public transit hubs are centres of economic activity, roofs are energy generators, and sustainable urban drainage systems are recreational facilities. As one masterplan proposed, a water feature can bring environmental, social and economic benefits.

> A 2.5 acre lake allows both a city hall plaza and a retail-related plaza to project onto water with steps and fountains descending to the water below. The lake also serves as an irrigation reservoir for the core of the park where a demonstration organic farm occupies the centre stage and connects east-west to the school precinct.

One particular feature of the imaginary of sustainable urbanism is the way it brings together traditional urban forms with new technologies. The increasing emphasis on enhancing the performance of urban development in order to be sustainable has led to a

greater role for engineering and technology in urban design and planning. As a result, masterplans integrate the more passive design principles of good urbanism, such as density, with active technological innovations such as district heating and cooling and graywater recycling. Also common in more recent masterplans are more novel technologies such as vacuum waste extraction systems and PRT. Many interviewees said that five to ten years ago they were not thinking about these more active technologies. Judging by their prevalence in masterplans and other materials describing sustainable urbanism, today they are widely accepted and adopted as part of the model. As a result, they are increasingly a starting point in the planning process for the GIC. "We really kind of push" said one urban designer "a few very basic, almost sustainable strategies in every project, you know, water reuse, recycling if we can, district cooling, heating."

Several interviewees emphasized the importance of balancing such active initiatives for enhancing performance with more passive design measures. One architect said that for him, **"**the challenge is sometimes how much gadgetry… one wants or should be adding or how do you make the best use of the resources that we've got. So I think it's trading off the active and passive measures and all that." Another interviewee was less diplomatic, saying "who really cares about photovoltaics if you don't have transit or you don't have density. It's just gilding a lily. It's just a question of priorities and getting your priorities straight." There did appear to be a broad distinction between disciplines in terms of their interest in active versus passive technologies with architects and urban designers focusing on passive measures, engineers on active.

5.5.3   The imaginary of sustainable urbanism

This section describes how imaginaries of the three objects of good urbanism, high-performance and integrated design come together in the imaginary of sustainable urbanism that the GIC are developing and propagating in their work on urban projects around the world. This imaginary is a vision of what the model can achieve and its material form when successfully implemented. Many aspects of this form can be drawn out from the object of the model described in the previous section. Sustainable urbanism is "good" urbanism: dense, compact, walkable and features public transit. It is also high-performance urbanism, using resources in a more efficient way than

conventional urban development. And finally, sustainable urbanism is characterized by design features bringing multiple benefits.

As one developer pointed out in an interview, there is an appealing logic to this approach. Mixed-use urban districts mean that there is a reduced need for people to travel. High density creates enough demand to put in public transit. These factors then reduce the carbon emissions associated with transit. Emissions from buildings can similarly be reduced through a set of design strategies, including passive cooling techniques and district energy systems. The common denominator in all of this is a belief in the idea that good design can enhance urban sustainability.

Table 5 contains some examples of the imaginary that emerges when these three objects come together. The Table contains descriptions of the key dimensions of sustainable urban projects designed by three different design firms taken from their websites. The far right column in the Table highlights the key features drawn out in these descriptions. These largely match the description presented so far of the GIC's conception of the principles of sustainable urbanism. All of the projects mention at least two of the key design features associated with "good" urbanism – two are described as mixed-use, two as walkable, one mentions density and all of them mention public transit. All three descriptions mention performance in terms of reducing resource consumption. In addition, all three descriptions emphasize the project's contribution to supporting economic growth, though only one talks about social features.

In the imaginary of the model, design and technology reduce resource consumption behind the scenes. Building orientation reduces the need for climate control within buildings, greywater recycling cuts water consumption, and on-site renewable energy generation lessens dependence on fossil fuels. Sustainable urbanism can also encourage urban dwellers to behave in more sustainable ways. The imaginary of sustainable urbanism sees urbanites using readily available public transport and shopping at local stores in their mixed-use neighbourhood rather than driving to out-of-town retail establishments. Economic benefits can also be realized as well, in the form of increased property values and hence profits for developers. Potential social benefits may include the increased social interaction that comes with a mixture of uses and getting people out of their cars.

Imaginaries are not accurate descriptions of actual urban places but aspirational abstractions. No project will be able to achieve all of the objects of sustainable urbanism. Even Masdar City, which is supported by the vast wealth of Abu Dhabi's rulers, had to scale back from its original objectives of being zero carbon and automobile free (Cugurullo 2013). The gap between imaginary and reality, and what it means for how to understand and conceptualize sustainable urbanism will be taken up in the concluding section of this chapter. Before this however, the next section examines the forms of power that operate when sustainable urbanism travels.

Firm	Project & location	Description of imaginary	Key features
Foster & Partners	Masdar City *United Arab Emirates*	Masdar City combines state-of-the-art technologies with the planning principals of traditional Arab settlements to create a desert community that aims to be carbon neutral and zero waste. The city will become a centre for the advancement of new ideas for energy production, with the ambition of attracting the highest levels of expertise. A mixed-use, low-rise, high-density development, Masdar City includes the headquarters for the International Renewable Energy Agency and the recently completed Masdar Institute. Masdar is linked to neighbouring communities and the international airport by existing road and rail routes. The city itself will be the first modern community in the world to operate without fossil-fuelled vehicles at street level. With a maximum distance of 200 metres to the nearest rapid transport links and amenities, the city is designed to encourage walking, while its shaded streets and courtyards offer an attractive pedestrian environment, sheltered from climatic extremes. The land surrounding the city will contain wind and photovoltaic farms, research fields and plantations, allowing the community to be entirely energy self-sufficient. (Foster & Partners 2008)	Mixed-use Dense Walkable Public transit High-performance Supports economic growth
Arup	Rostov-on-Don *Russia*	The integrated masterplan for the new mixed-use city district incorporates residential, business, retail and leisure facilities, as well as open space and community facilities. By living close to their place of work, inhabitants can reduce the need to travel. The design of Rostov City will lower demands on resource consumption through efficient water management and energy systems and dedicated public transport networks. The client has recognized that sustainable design has commercial advantages, enabling them to attract potential international occupiers by providing high environmental performance standards and a secure 24-hour energy supply. The new city district will improve social integration by providing a high proportion of affordable housing, a wide range of employment opportunities and a range of social support facilities. (Arup 2014)	Mixed-use Public transit High-performance Supports economic growth Supports social integration
SOM	Beijing CBD East Expansion *China*	Express commuter rail service would link the area to the Beijing Capital International Airport and Beijing South Station, while a new streetcar system would serve all zones within the CBD. The scheme also features a network of small, walkable blocks to encourage pedestrian and bicycle travel. Implementation of the plan could reduce energy consumption within the district by 50 percent, water consumption by 48 percent, and landfill waste by 80 percent. A decrease in emissions from high-performance office buildings would eliminate 215,000 tons of carbon dioxide per year, which is the equivalent of planting 14 million adult trees. SOM's vision would enable China's capital city to be ecologically responsible while continuing to grow as a global powerhouse for commerce. (SOM 2014).	Public transit Walkable High-performance Supports economic growth

Table 5 Descriptions of sustainable urban projects designed by GIC firms.

5.6   Power in sustainable urbanism

Three of the types of power described by Allen (2003) and outlined in Chapter 3 operate in particular as the model of sustainable urbanism travels. These are authority, seduction, and persuasion. This section explores the way each of these operates individually and in conjunction as sustainable urbanism travels through the work of the GIC. Understanding power dynamics also sheds further light on the particular role that the GIC play in the assemblage. In particular, the discussion that follows illustrates how an assemblage of social and material actors can become more than the sum of its parts.

5.6.1 Authority

Allen, drawing on the work of Arndt, argues that authority is "something that is exercised among rather than over people" and can be described as "an act of wisdom: people giving sound device that it would be foolish to ignore" (Allen 2003: 126). In the planning process the GIC's experience and expertise in sustainable urbanism leads to them being recognized as possessing the specialist knowledge required to achieve the objectives of sustainable urbanism. This authority is exercised particularly in meetings, workshops and presentations where the GIC present their proposals, and the evidence backing them up. As described in the hypothetical example in Chapter 3, the GIC's authority can lend weight to the ideas they propose. A respected consultant and an idea they propose together become something greater – more than the sum of several elements. Many in the GIC believe that they have enough expertise in sustainable urbanism to command authority. So, as one engineer explained, "we've been asked this question, develop us a sustainable masterplan, a carbon neutral city, we've been asked that question a number of times before so we know how to answer it." Based on the continued demand for the GIC's services globally, many people appear to agree.

Authority is not granted simply on the basis of reputation. As Allen (2003) argues, it is conceded. This is most likely to occur when there is mutual trust between consultant and client. Often this develops as they work together on multiple projects over time. Describing his work on a project in India, one engineer explained that "It's actually the third project we're doing with that company as well so that helps a lot. They know us; they trust us. When we say, 'You need a light rail, not buses mixed in with cars on regular lanes,' they'd say, 'Okay well we must actually need that'." Trust also develops when there is mutual respect between consultant and client for each other's areas of

expertise. In such situations, the client too can become an element of the assemblage. One urban designer described the underpinnings of his company's good relationship with a client as follows.

> I think as long as we're careful not to make assertions about things that we really don't know about, those relationships remain good, and it's tit for tat in a sense. If we don't try to speak about issues that only a Saudi would understand, then the Saudis on the receiving end are more likely to trust or believe in the solutions that we produce in our field, when we argue that we know things about engineering and masterplanning that they don't know.

The GIC are called upon not just for their expertise in creating plans for sustainable urbanism, but also to develop the strategy and narrative that will help the client promote a project and attract the political and financial support required to take it forward. One engineer argued that his international clients know that local consultants can do the "meat and potatoes," but that international consultants were better placed to develop "the big story and how does the big story come about and how do you actually – how do you sell that to an investor?"

This emphasis not just on developing a plan but 'selling' it was a recurring theme in interviews, and highlights the ethical implications of the GIC's role. When authoritative power is conceded to them, they are put in a position where their arguments about what to do with a particular piece of land may be listened to, by decision makers, more than those of others. When their views hold sway, it contributes not just to an individual plan, but also, as discussed earlier in this chapter, to broader processes of assembling the model of sustainable urbanism. Yet it was not always clear, in interviews, workshops and other planning processes observed for this workshop, whether members of the GIC appreciated that their influence can extend beyond individual projects to shaping conceptions of sustainable urbanism more broadly. Chapter 9 will return to reflect further on this issue.

One feature of authority that became evident in interviews is that it is a more effective form of power in some cultures and contexts than others. An academic and practitioner who works extensively in China argued that cultural norms reinforce the power and influence afforded to experts. In China, "If you don't understand an expert it means that you have to learn more or that you have to work on yourself, not that the expert has to

work on himself to make himself simpler." Discussing their work in India, several consultants described a very different situation, one where expertise does not automatically garner authority and respect. One engineer described the challenges his team faced when trying to introduce new ideas on a project in India.

> We were putting a lot of good ideas on the table, most of which the local staff… had never heard of. Anaerobic digestion and some advanced water treatment networks and storm water best practices… and a lot of construction practices that we've seen and we know work on sensitive sites, they had never seen before. They perceive as very expensive. They clearly don't know what they are so they feel somehow probably, we determined that they felt inadequate or they didn't know what they were doing and they were embarrassed.

An urban designer described a type of situation that sometimes occurred in his work in Saudi Arabia.

> There are moments when in the interests of, say, getting more development on site, they'll attempt to play down what we are asserting as science, as a misunderstanding of how things are done there. You know, 'Yes, Mr Foreign Consultant, you might argue that we shouldn't do it that way but that's just how we do it here.'

In both of the situations described above, authority has not been an effective form of power. Their reasons for doing so differed, but both clients shut down an argument grounded in authority or expertise. Their ability to do so results from the nature of the consultant-client relationship. When the client is paying the bill, they have final say. In situations such as the two cited above the consultants needed to draw on different forms of power to convince clients of the value of sustainable urbanism. These forms of power are grounded in an appeal not to expertise or objective knowledge, but to how sustainable urbanism can contribute to achieving the client's objectives and desires for a project.

5.6.2 Seduction

Seduction does not aim to dominate but rather to encourage a particular desire (Allen 2003). Strategies employing seductive power are designed to make a particular idea or vision appeal to an audience. Like authority, it is a form of "power over" whose effectiveness is dependent on the nature of the relationship between two parties. In both authority and seduction, power is derived from an inequality in the knowledge the

two parties possess. A key distinction is that while the ability to exercise authority depends on being able to justify your expertise, using seduction requires knowing your audience and what will appeal to them. Seduction can be a much more subtly expressed form of power. It is also closely related to manipulation, and at times there can be a fine line between the two.

Of the many forms outlined earlier in which sustainable urbanism travels, images and videos promoting the sustainable urban imaginary have particular seductive power. The image in Figure 8, for instance, is selling sustainable urbanism by illustrating what it would be like to experience the imaginary it proposes. Materials such as these which can easily travel enable the GIC to exercise seductive power over distance. Consultants also evoke places that the client might want to emulate, or be able to compete with, in order to seduce. A consultant might say, in the words of one architect and urban designer, "don't you want to be like Manhattan, don't you want to be like Paris and in the end they sort of do, because they're competitive." In this example the consultant has drawn in elements of the assemblage that he knew would appeal to his client. Again, the skills of the GIC are important to encouraging the travels of sustainable urbanism. The power of images and experiences that engage the senses to facilitate the movement and take-up of ideas will be discussed in detail in Chapter 8.

Numbers and diagrams such as the projections for reductions in resource use and carbon emissions seen in

Figure 6 also can be used to seduce. Another type of diagram frequently used to describe sustainable urbanism that has seductive power is the resource load diagram. Such diagrams epitomize the integration that is at the heart of the sustainable urban proposition. These diagrams emerged out of the tradition of systems thinking, and are largely the work of engineers. The most well-known example in sustainable urbanism is the Hammarby model. This model, which can be seen in Figure 9, summarizes the way resources are generated and used in the Hammarby Sjöstad development in Stockholm, Sweden. According to the diagram, the resource flow is entirely circular, with nothing wasted. The appeal of this diagram is reflected in the number of references that can be found to it in sustainability good practice guides and textbooks (Energy Cities 2008; Metzger and Olsson 2013; Suzuki *et al.* 2010).
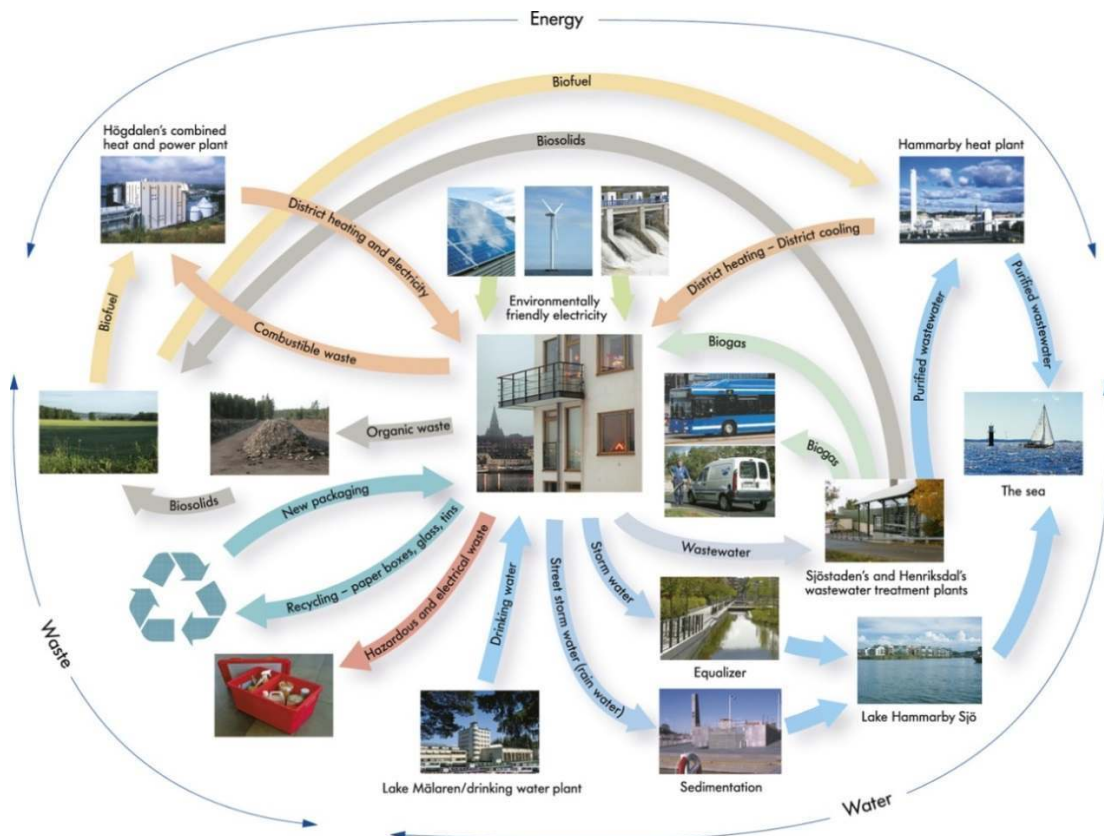
Figure 9 The Hammarby model. Image credit: Stockholm municipal government.

Thinking back to the hypothetical example of the planner giving a presentation to her clients in Chapter 3, the seductive power of an idea can be related to the assemblage it travels within. New, innovative and promising ideas, presented by a consultant with excellent presentation skills using appealing images can be particularly attractive. Seduction needs to be deployed strategically, as certain elements of the assemblage of sustainable urbanism will play well with some audiences while others will not. Talking about his work in one country, an engineer described the seductive power that came from introducing something new. "Because they have very limited exposure to sustainability ideas down there," he said "we were able to talk about it in a way that was quite compelling to them." In this situation, the consultants had an opportunity to build enthusiasm for an idea based on its novelty. To do so they exploited the difference between their knowledge and that of their clients in a way that sounds patronizing, and potentially borders on manipulation. When presenting to more experienced clients, this strategy might not work.

5.6.3 Persuasion

Persuasion differs from authority and seduction in that it is a form of "power to" rather than power over." "Power to" in this context refers to the power to act together. This requires a symmetry of relationships in which two groups act together to achieve shared objectives (Allen 2003). In the planning process, persuasion is most likely to be used when there is a level playing field between consultant and client to begin with. Persuasion is about showing the client not just the benefits of sustainable urbanism, but specifically how applying the model will benefit them and help them achieve their own objectives. This requires working closely with the client to understand their motivations and make sure they feel included in the process. Or, in the words of one engineer, "it's about finding that sensitive balance of ways to bring them along in the process to make them feel like they're part of it." In this sense, persuasion can be seen as attempting to fully bring the clients into the assemblage.

Strategies employing persuasion are nearly ubiquitous in the interactions that make up the planning process, from shaping the scope of the project to the final modifications to a masterplan. The masterplanning process tends to be iterative. The consultant team will develop a set of proposals that they will then present to the client in one or more workshops. They then go away, and modify their proposals and present them again. To persuade their clients to take up their proposals consultants draw on a diverse range of resources. These include materials such as quantified performance projections such as the type seen in

Figure 6, and renderings such as Figure 8. They will also present examples and precedents of the successful implementation of their ideas. The way information is presented can be of critical importance. This is particularly the case with technical or complex ideas. An engineer who specializes in sustainable infrastructure credited his company's success in getting their ideas taken up to their "ability to graphically and orally present this stuff, and kind of communicate some of these ideas in a format that's actually digestible by non-technical people."

5.6.4 Strategies of power

The forms of power at work when sustainable urbanism travels operate interdependently. A good speech by a recognized expert, a seductive rendering or a resource demand projection model rarely sells an idea on its own. It is easiest to

persuade someone of the merits of sustainable urbanism when it travels as an assemblage including renderings, examples of successful implementation elsewhere, and knowledgeable and persuasive experts. One key point that this section has tried to make is that in contemporary international planning processes, appealing to expertise is not enough to sell an idea. Arguments can carry more weight when they are put forward by someone recognized as having authority. However, that person must also be able to explain the model in a way that his or her audience can relate to, which makes it seem logical and feasible in the context in which it will be applied.

The way the GIC use different forms of power to convince clients of the value of their ideas can be demonstrated through a quote taken from an interview with a sustainability engineer.

> We would generally try to give examples by saying "Look at this particular example, it's a similar sort of building." Let's say it's a masterplan for a city or it's an entirely new University campus on a green field site, you know "Here's another University campus where they did it, this is the sort of energy pattern that a university campus has, or water use, this is what they did, we reckon we should do that, we could probably do it a bit better, because we're better engineers, but it's up to you Mr Client, how much do you want to go, if you want to reduce your carbon footprint by 30% then that's how we could help you do it."

In this example, the engineer draws on all three of the forms of power discussed in this section. He is using persuasion, giving an argument for a particular approach in a way that recognizes the importance of the client's agency in deciding whether or not take it. He also uses seduction by giving the example of what can be achieved in this type of project, in particular the quantitative target that can be realized. And finally he uses authority, referring his company's expertise and saying how they could probably do better than the example he referenced. The way the three forms of power described in this section are deployed in the planning process to facilitate sustainable urbanism's take up in new environments will be returned to throughout the rest of this dissertation.

This section has described how the GIC use strategies of power to encourage the take up of their ideas. But where does their belief that their proposals are the right thing for a project come from? Are they grounded in a particular ethical frame? In the interviews conducted and planning processes observed for this research there was very little

explicit consideration of the ethics of their work by the GIC, or, indeed, their clients. This does not mean that ethics were never considered, but rather that this occurred in a largely unconscious fashion. The emphasis on performance, for example, indicates adherence to a consequentialist system. The extent to which the ultimate objective of sustainability has been achieved is assessed by projections about how the project's design will reduce resource consumption and emissions.

5.7   Conclusion

This chapter has described the model of sustainable urbanism by drawing on the findings of this research about the object and imaginary of the model, the forms in which it travels and the types of power operating when it does so. This concluding section will reflect on what these findings reveal about the nature of the model, the way it is formed and transformed, and the ideologies reflected in it.

The process of coding and territorialising an international model of sustainable urbanism has occurred over the last 10 years or so in the cumulative body of work prepared largely by the GIC. Table 4 and Table 5 demonstrated how a similar set of ideas about what constitutes sustainable urbanism are repeatedly referenced in their work. Certain design approaches and technologies are repeated, principles reaffirmed time after time, particular places repeatedly referenced and visited on study tours. Through these processes a mainstream model of sustainable urbanism has crystallized. This model has three key objects. These are:

- to introduce traditional, common sense principles of good urbanism,

- to design urban areas in ways that they can achieve measurable improvements in resource use, and

- to apply a more integrated and holistic approach to urban planning and design.

These objects are designed to address three perceived problems with current planning practice. Firstly, practitioners have lost touch with traditional, common sense principles of good urbanism. Secondly, current patterns of resource use in cities are inherently unsustainable. Thirdly, the process of planning does not sufficiently integrate the contributions of multiple disciplines, leading to urban plans and places that are

inefficient and fragmented. This definition of sustainable urbanism provides a point of reference in the chapters that follow on the ways the model travels and changes.

Chapter 1 described the mainstream discourse of sustainability as sustainable development, in which there can be a positive relationship between environmental improvement and economic growth. Similarly, sustainable urbanism promises that planning and designing our cities better can mitigate the negative consequences of urbanization and economic development. In this way it reflects the principles of ecological modernization. That said, at the heart of sustainable urbanism as it is defined and applied in the work of the GIC, is a focus on how urban planning and design can be used to create high-quality, high-performance and integrated urban places.

The model can be deployed in a way that emphasizes synergies between environmental and economic objectives. However—and this is a critical distinction that an assemblage thinking perspective introduces—this does not mean that sustainable urbanism is inherently entrepreneurial or neoliberal. The model is not a prescription to be followed to the letter but rather an assemblage of ideas and propositions about what sustainable urbanism looks like and how to go about achieving it. The model can be expressed in a variety of different ways. The proposed masterplans for K.A.CARE, for example, focus to a great extent on energy in order to align with the overarching objective that the city be a leader in renewable energy generation technology. The plan for Palava focused on water because of concerns about resource availability and flooding on the site. The fact that sustainable urbanism is flexible and dynamic and that particular elements of the assemblage can be emphasized to meet the requirements of a project is, as Chapter 7 will argue, an important reason why it is taken up in so many places around the world.

The model of sustainable urbanism described in this chapter is not an inherently ideologically infused tool or a normative prescription, but an assemblage with a variety of capacities and potentials. Many of the model's elements are progressive and experimental, and it could be deployed in a less market-oriented way. As the following chapters will demonstrate, it is not the model itself but the context it is deployed in, in which it is bought and sold as a product that is entrepreneurial. This is why it is so important to look at how sustainable urbanism is assembled, how its capacities are expressed, and what actors are involved in these processes. This research focuses on

the GIC and their clients not because they are the only actors involved in defining and mobilizing sustainable urbanism, but because they occupy a privileged position in terms of the relationships and resources they can draw on to mobilize ideas. As a result, mainstream understandings of sustainable urbanism are shaped in large part by a relatively small number of firms. The dynamics of how and why this occurs are the focus of the next three chapters of this dissertation.

6 COORDINATING SUSTAINABLE URBANISM'S TRAVELS

6.1 Introduction

The complexity of planning large-scale urban development projects, particularly when attempting to integrate sustainability objectives, creates a demand for people and systems capable of coordinating the model's application to a particular project. As discussed in Chapter 1, the entrepreneurial turn in the way planning projects are carried out means that they are often led by private sector actors or public-private partnerships. These actors employ private sector design firms to help them with the planning process. This has contributed to the ability of the GIC to establish a strong international presence in planning and urban design in a relatively short period of time. This chapter will argue that an important factor in maintaining this privileged position is the GIC's domination of the development and deployment of the systems that coordinate the translation of sustainable urbanism into new environments.

Coordination is, in McFarlane's words "the creation of functional systems that enable learning as a means of coping with complexity" (McFarlane 2011b: 23). This dissertation adopts a slightly modified definition of coordination as the "creation of mechanisms to coordinate the complexity of sustainable urbanism, in order to facilitate its translation into new environments". There is some overlap between coordinating devices and the forms in which sustainable urbanism travels outlined in Chapter 5. However a coordinating device differs from one that simply enables an idea to travel. Coordinating devices both legitimize ideas and provide guidance on implementing them. They do so by coding the assemblage of sustainable urbanism into social and material forms such as organizational structures, policy guidelines or good practice documents (Tait and Jensen 2007).

This chapter will discuss three devices that coordinate sustainable urbanism's travels. The first two are multidisciplinary planning teams and the masterplans they produce. Both coordinate the input of practitioners from a variety of different disciplines. The third type of device is the sustainability rating and certification scheme. Such schemes include the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED). These three devices play a critical role not just in coordinating sustainable urbanism's travels, but also in coding and territorialising the

model. They set out what sustainable urbanism is and measure the extent to which it has been achieved. In doing so they draw a line around the assemblage, defining what it is and by extension what it is not.

This chapter is made up of two sections. The first section sets out the findings of this research about the GIC's work in urban planning and design internationally. The chapter draws on the survey of office and project locations as well as interviews. The description of the internationalisation of the industry comes from discussions with a sub-set of very senior GIC interviewees who had worked in the industry for some time and were able to describe its evolution. Other interview material drawn on includes analysis of responses by interviewees (both the GIC and other stakeholders) about the reasons the GICs services are in demand internationally. The findings presented in this first section demonstrate the scope of the GIC's international influence, providing an additional justification for the focus on this group of actors in this research. It begins by outlining the breadth of the work carried out around the world by the GIC, and describes the internationalization of urban planning and design from the perspective of practitioners. The section goes on to look at the reasons behind the continued demand for the GIC's services in urban planning and design internationally. This description provides an important backdrop to understanding how and why the GIC have come to be able to dominate the development and application of some of the most important devices coordinating sustainable urbanism's translation into new environments.

The second section of the chapter describes the three systems, mentioned above, that coordinate the complexity of sustainable urbanism and facilitate its international travels. I made the decision to designate these three things as coordinating devices for different reasons during the conceptual round of coding interviews and masterplans. I identified early on that masterplans played a central role in the travels of sustainable urbanism. Assemblage thinking validates this view, emphasising, as does actor network theory, that materials play an important role in enabling ideas to travel. Masterplans and associated documents are coherent and portable expressions of the assemblage of sustainable urbanism. The importance of multi-disciplinary teams emerged inductively during the first, thematic round of coding my interviews. In the second round of coding I concluded that groups of GIC practitioners from different disciplines played an important role in enabling the increasingly complex and multi-faceted model of

sustainable urbanism to come together. Sustainability rating and certification schemes most obviously feel into the category of coordinating device. They codify the model and are explicitly designed to manage complexity.

Coordinating devices play an important role in helping the GIC and their clients manage the complexity of designing and developing sustainable urban places. They are not, as McFarlane (2011b) points out, neutral. Power relations and politics are at play in their development and deployment. For each coordinating device, the chapter looks at some of the key dimensions that need to be understood in order to reveal underlying power dynamics at play. These include understanding who developed them, who controls them, what methods they use to manage complexity, and what is left out in order to make sustainable urbanism more easily understandable.

6.2   The international industry in urban design and planning

This section describes the GIC in urban planning and design and the way this small group of firms came to play an important role in the international travels of sustainable urbanism. It begins with a description of the industry's geographical scope, and goes on to provide an overview of the industry's evolution from the perspective of the practitioners interviewed for this research. This section goes on to consider how this small group of firms maintain their dominance, and the barriers faced by those who would like to join their ranks.

6.2.1   Geographical scope of the international industry in urban planning and design

A desktop review carried out in early 2014 of the locations of the offices and planning projects of 13 GIC firms reveals the international scope of their work in urban planning and design. Table 6 lists the firms that were part of the review and provides some basic information on them. The majority of the firms are based in Europe and North America, but have offices and projects around the world. Two firms headquartered in other regions of the world, Dar al Handasah and RSP, were frequently mentioned as important players in the industry. They were included in the review to provide a geographical balance. The data in the Table demonstrates the range of sizes of these firms, from the multidisciplinary giant AECOM to small but highly respected companies such as Sasaki

and Urban Strategies. Between them the firms surveyed have offices in 80 different countries.

Firm	Headquarters & year founded	Offices	Ownership
AECOM	USA (1990)	431 offices in 68 countries	Public - shareholders
Arup	UK (1946)	83 offices in 31 countries	Independent trust
Buro Happold	UK (1976)	24 offices in 11 countries	Partnership
Foster & Partners	UK (1967)	7 offices in 5 countries	Private Limited, private equity firm is minority shareholder
Gensler	USA (1965)	46 offices in 15 countries	Private
HOK	USA (1955)	24 offices in 7 countries	Private
Kohn, Pedersen Fox (KPF)	USA (1976)	6 offices in 4 countries	Private
SOM	USA (1936)	10 offices in 5 countries	Partnership
Urban Strategies	Canada (1986)	1 office	Partnership
Sasaki	USA (1953)	1 office	Private
Terry Farrell	UK (1980)	3 offices in 2 countries	Private
Dar al Handasah	Lebanon (1956)	43 offices in 29 countries	Private
RSP	Singapore (1956)	10 offices in 6 countries	Subsidiary of a public company

Table 6 Headquarters and number of offices of GIC firms surveyed.

The firm's respective sizes reflect not just the demand for their services but also the structure of their companies. The majority of GIC companies in the cohort studied are privately owned, many through a partnership model. This means that partners have full control over their company's trajectory. Some firms, such as Sasaki and Terry Farrell, have purposefully opted to keep their operations small and centralized. Others such as Arup and Gensler, have diversified geographically. The largest company included in this review, AECOM, is the one publicly traded company. Since going public, AECOM has grown steadily, in part through a series of acquisitions.

Figure 10 maps where the 13 firms have offices. While they do not carry out planning work from all of these offices (some will only deliver related services) the map is still an indication of where the work of the GIC is focused. The size of each circle represents the

number of firms surveyed that have an office in a particular country. Europe and North America, where the headquarters of many of the firms surveyed are located, are well represented. The fact that so many of the firms have offices in these countries indicates that these are mature, saturated markets. In addition, both of these regions are already highly urbanized. As a result, opportunities for urban planning and design work in Europe and North America are limited, and competition is intense. These firms also have a large presence in Asia, especially China and India, and in the Middle East. The GIC is not as well represented in other developed economies such as Australia and Japan, where there are already well-established indigenous firms. The GIC also do not have a strong presence in South America and much of sub-Saharan Africa.

The areas of the map that are densely populated reflect the convergence of two factors. First, these are the places where urban development is occurring, either to cope with urbanization, or, in already heavily urbanized countries, because urban redevelopment and regeneration is taking place. The second factor is wealth. The GIC's services do not come cheap, and the fact that they are being employed in a country indicates that governments or property developers have enough money to seek out urban planning and design services at the top end of the market. This explains the strong presence of the GIC in places such as China, India and the Middle East. These places still undergoing the process of urbanization, but also have strong economies.

The less densely covered areas of the map in Figure 10 are not dead zones in terms of urban planning and development. The firms surveyed and those discussed in this research project are not the only companies working internationally in urban planning and design. Another story could be told about the work of Japanese firms across Asia, or that of Spanish consultants in Latin America. Chinese companies are involved in urban projects in many parts of Africa (Brautigam 2009). Meanwhile many Asian cities look within their region, rather than to North America and Europe for inspiration and expertise (Bunnell *et al.* 2012).
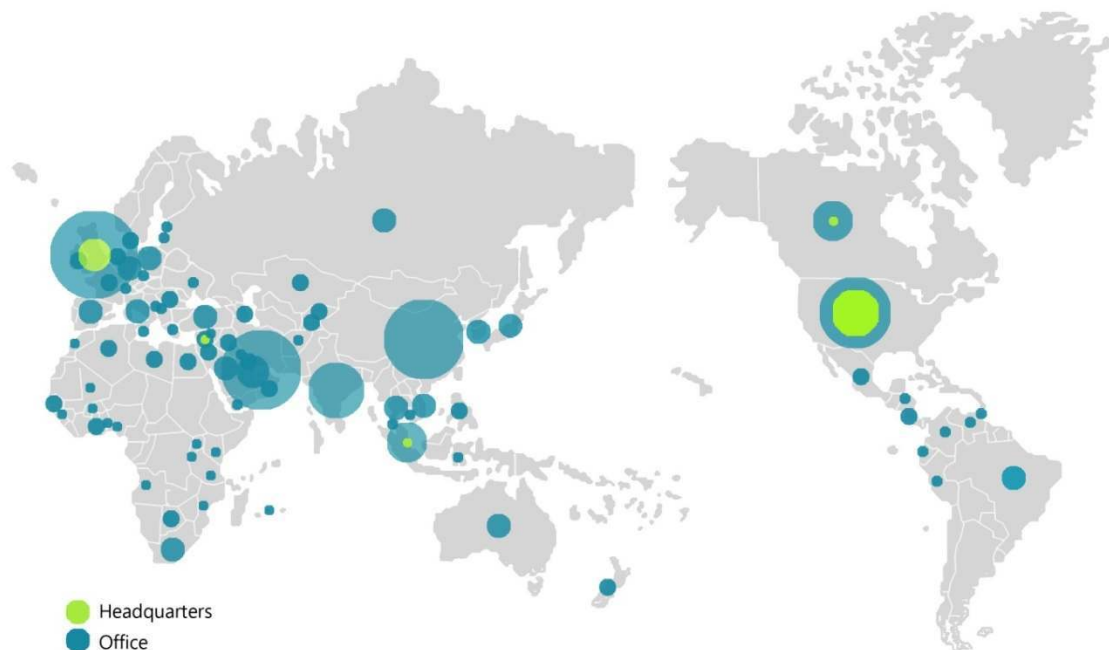
Figure 10 Office locations of firms surveyed.

Figure 11 shows the locations of planning and urban design projects that the firms surveyed have worked on. Most of these have been carried out since 2000. Between them, the 13 firms have worked on planning projects in 61 different countries around the world. As companies do not list all of their projects on their websites, the likelihood is that this is actually an underestimate of the geographical breadth of the GIC's work in planning and urban design. The size of the circle over each country represents the number of planning projects firms surveyed have in each country. The geographic dispersion of projects is similar to that of office locations seen in Figure 10. Once again, Europe and North America are well covered, indicating that these firms are well-established in these markets. The largest circle on the map is reserved for China, where every single one of the 13 companies has worked on planning projects.
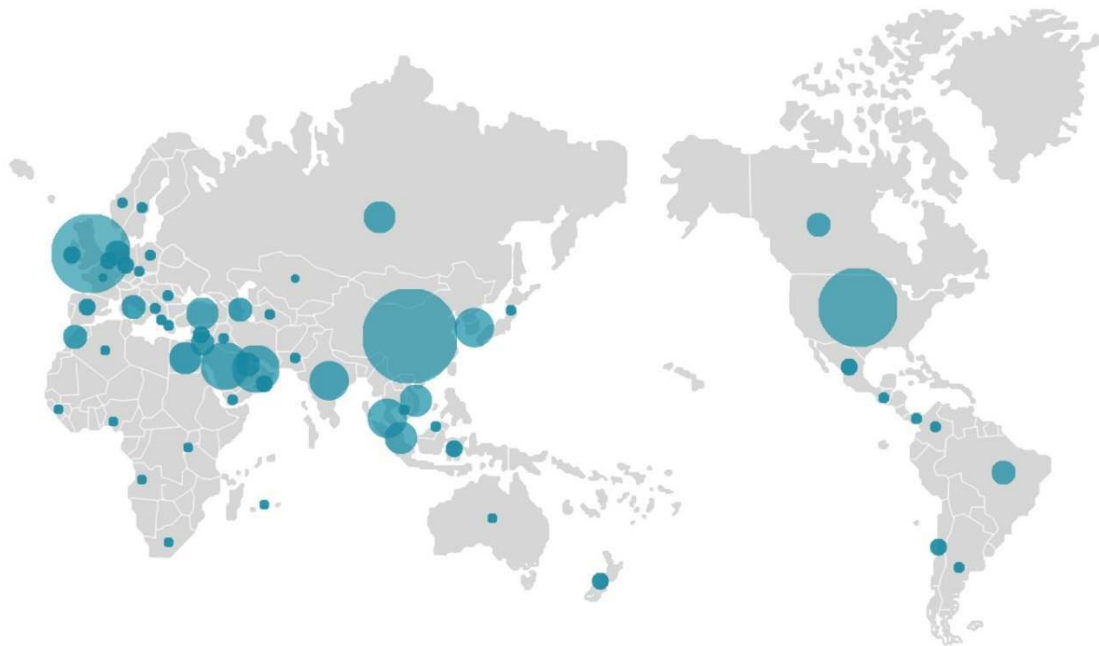
Figure 11 Location of planning projects carried out by firms surveyed.

The large circles over China and several Middle Eastern countries reflect not just their wealth and the pace of urbanization, but also the ability of the relatively autocratic regimes in these countries to undertake large-scale planning projects. A number of interviewees for this research commented on the pace at which urban development projects can move in China and the Middle East. Getting a large-scale planning project off the ground in a democratic society with a complex planning system can take years or even decades. By contrast in countries like China or Saudi Arabia, government ownership of the land, as well as close connections between the government and property developers mean that projects can move much more quickly.

Two regions that appear to be emerging markets for the GIC's work in urban planning and design are India and Southeast Asia. India's urbanization has sparked a great deal of interest among the GIC in the last several years. While they do not currently have a great deal of work in South America, this continent is also likely to be a growth area for the GIC in coming years. A number of interviewees discussed how they were seeking to work in Brazil in particular. The GIC are attracted by the country's growth, and its

apparent commitment to large urban development projects on the back of hosting both the World Cup and the Olympics in the next decade.

Table 7 shows the international reach of each of the 13 firms broken down by region of the world. All of the companies are active in Asia, and, apart from the Toronto-based Urban Strategies and London-based Terry Farrell, they have worked in the Middle East and North Africa region. Europe and North America are also well covered, which again is not surprising given that all but two of the firms surveyed have their headquarters in one of these regions. The firms surveyed are least active in sub-Saharan Africa and Australia and New Zealand, for reasons similar to those which explain why they do not have many offices in these regions. The full data set behind Figure 10, Figure 11 and Table 7 can be found in Appendix F.

The preceding discussion has, for reasons of brevity, glossed over a diverse range of drivers for how and why the work of the GIC has become internationalized. In doing so it has made a number of generalizations about the dynamics of urban development in particular regions, and the way GIC firms operate. Given this, it is important to emphasize that the story told in this chapter is not meant to be universal, but rather reflects an initial survey of an as yet under-researched area.

	AECOM	Arup	Buro Happold	Foster & Partners	Gensler	HOK	KPF	SOM	Urban Strategies	Sasaki	Terry Farrell	Dar al Handasah	RSP
EUROPE	X	X	X	X	X	X	X	X	X	X	X	X	
MIDDLE EAST & NORTH AFRICA	X	X	X	X	X	X	X	X		X		X	X
SUB-SAHARAN AFRICA	X	X		X					X			X	
ASIA	X	X	X	X	X	X	X	X	X	X	X	X	X
NORTH AMERICA	X	X	X	X	X	X	X	X	X	X			
SOUTH AMERICA		X			X	X		X	X				
AUSTRALIA & NEW ZEALAND		X									X		

Table 7 Locations of planning projects carried out by the GIC by region.

6.2.2   The development of an international industry in urban planning and design

The GIC is dominated largely by companies for whom urban planning and design is a relatively new business stream representing a small portion of their overall financial turnover. For the most part these firms are large, prestigious architecture practices and multidisciplinary engineering firms. Of all of the organizations involved in this research project, only one, the Toronto-based Urban Strategies works exclusively on urban planning projects. The others either had a group focused on projects at the urban scale, or two or more groups collaborating on such projects. In addition, the vast majority of practitioners interviewed and observed for this research were originally trained in architecture or engineering rather than planning, though many architects in particular had gained a further qualification in urban design.

Given the lack of a tradition of working on urban scale projects, and of employees trained in urban planning, how is it that the GIC has gained such a strong foothold in the international urban planning and design industry? Interviews with senior staff at a range of GIC firms who experienced this transition for themselves shed some light on this question. As described in Chapter 1, the internationalization of the built environment industry began with architecture firms following their clients overseas in the second half of the 20th century. Their destinations were initially the emerging economies in Asia and the Middle East. Engineering firms also looked abroad for work around the same time. Arup had offices on five continents by the mid-70s, while Buro Happold opened its first international office in Saudi Arabia in 1983. International markets developed in different time frames. In the Middle East and the Persian Gulf, demand for international expertise began in the 1960s as countries looked to use their newfound oil wealth to transform processes of urbanization. The market in Asia opened up in earnest in the 1990s as economies began to grow and, in countries like China and Vietnam, when governments lifted restrictions on international companies.

In the early days of their internationalization the GIC worked largely on architectural projects. Most interviewees placed the increase in demand for masterplanning services around the turn of the 21st century. The entrepreneurial turn in urban planning and development discussed in Chapter 1 contributed to this. Several interviewees linked the increased demand for their services to the growing role of private sector real estate

firms in urban development. Reflecting the privatization of planning characteristic of the entrepreneurial paradigm, these developers acquired large plots of land and came to the GIC for advice on how to develop them.

Around the same time many European and North American firms were looking to increase their international work. This was largely for economic reasons – the need to grow, or at least maintain turnover levels. As mentioned in the last section, the home countries of most GIC firms are already highly urbanized and there are few opportunities for large-scale physical planning projects. In addition, in recent years many firms faced shrinking local markets for their services as a result of the financial crisis in the late 2000s. In the face of these challenges companies are increasingly looking abroad for work. According to one urban designer at SOM, when the recession came "literally everything domestically just dried up and it was all Middle East, Korea and China." This trend was confirmed by information gathered on the international work of GIC firms. In an email communication, the marketing director for KPF said that approximately half of their work is currently outside the United States. AECOM's report to its shareholders for the first quarter of the 2014 fiscal year show a similar percentage of international work (AECOM 2014).

In establishing themselves as qualified masterplanners, firms can draw on their reputation, which may have been established working on architectural projects. In some countries there is a preference for working with planners from certain places. In the Middle East, explained one engineer, American and British architects and designers have traditionally enjoyed a good reputation. Once a company's reputation is established and they have carried out work in a country, further work can become self-generating. Obtaining a high profile, prestigious commission is particularly valuable as it enhances a company's reputation and offers opportunities to build or affirm relationships. An urban designer at SOM described his perspective on how this had occurred for his employer.

> I think we've built a strong portfolio of planning work in China with some significant high profile wins…the Beijing Central Business District expansion a few years ago was also very high profile. Now we're starting to see other cities say well we need to expand our city who do we get? SOM is the best, they did Beijing and Tianjin.

Establishing a good relationship with a client can be invaluable because they will come back for repeat work and recommend a person or firm to others in their network. In some cultures, relationships trump everything. As one architect explained, in such places clients do not care about the company, they care about the individual.

Like companies in any other industry, GIC firms are focused on developing a brand identity that will appeal to potential clients. The GIC are in the business of selling a service—design and planning—and a product—the actual design or plan that is the output of their work. To remain competitive, a firm needs to be able to demonstrate that their services and products are a cut above what their competitors offer: proven and tested, but also innovative. All of the firms that were part of this research see their expertise in sustainable urbanism as an important brand identifier and skill set used to sell their services. Taking on projects branded as sustainable, "eco-" or zero carbon, that often attract a great deal of publicity, can bring reputational benefits for a company. This is the case even for some projects that are never built. The London-based engineering consultancy Arup, designers of the Dongtan Eco-City project, developed a reputation as early leaders in this industry despite the fact that the project was never built. Following Dongtan, Arup went on to gain commissions for a number of other large-scale planning projects around China.

The growing global presence of the GIC, and their involvement in many high-profile planning projects, is one of the primary reasons why they are able to play such a significant role in shaping the model of sustainable urbanism described in Chapter 5. As the next two sections of this chapter will describe, the GIC remains both a small, elite group, and one whose services are in demand. Once again this highlights the ethical implications of the GIC's work internationally. One feature of their work is that plans for diverse local contexts can look quite different. Elements from a failed project, such as Dongtan, will be recycled into plans for other places at other times. Time and financial pressures mean that the GIC often cut and paste content from one plan to the next. The ethical underpinnings of such an approach can be seen as being derived from a consequentialist frame. There is an underlying assumption that as these designs can (according to calculations by the GIC) achieve certain outcomes, they are therefore appropriate. From this perspective, the process of planning, which may be quite brief,

and recycle old material, does not threaten the quality of the outcome. Section 6.3.3 will return to this theme when discussing sustainability certification systems.

6.2.3   The Usual Suspects: barriers to joining the ranks of the GIC

The internationalization of the urban planning and design industry has favoured a relatively limited number of firms. Those who had already worked abroad on architecture projects had a natural advantage in obtaining planning and urban design commissions, because they had already established a reputation and made contacts. Also operating at an advantage were firms with a certain level of international prestige. They benefit from the fact that for most large international planning commissions, firms are selected through invited competitions. Unlike open competitions, which any firm can enter, invited competitions usually include between three to 12 firms who are paid to develop a competition entry.

This situation has led to the development of what several interviewees referred to as a list of "usual suspects". One interviewee at SOM said they were always up against Foster and Partners in competitions, while someone at Sasaki talked about how they often found themselves up against Foster and Partners and SOM. Buro Happold, meanwhile, found themselves invited to work with four of the 12 architectural firms selected to submit proposals for K.A.CARE. Reflecting on this situation, one Buro Happold engineer said that, "if you look at the circuit of who does these big international masterplans, there's like eight or ten firms, both from an architecture and urbanism point of view and from and engineering point of view...you keep running into the same people again, and again, and again." Reflecting the somewhat cynical tone in which people tended to discuss this situation, one planner described the industry as "a floating circus... when we compete there are a dozen firms and half a dozen of them are the ones that you will be competing against generally."

There are significant barriers to entry for smaller firms who might want to join this floating circus. The only real way for a new and unknown firm to gain a foothold is through success in a design competition. However, as an unknown firm is unlikely to be asked to participate in an invited (and hence paid) competition, a competition entry would have to be a speculative endeavour. This rules out most small firms who will not be able to dedicate the required resources. Another barrier to entry is the relatively low fee paid for planning projects as opposed to big architectural commissions. Several

interviewees expressed the view that for large companies, planning projects are seen as a "loss leader." Getting in on a project at the masterplanning stage can help secure the more lucrative commission to design iconic or signature buildings for the resulting development.

The fact that the GIC is relatively small, and that barriers to joining this small, elite group exist, influences the way sustainable urbanism is assembled. Because of their international profile the GIC, as described in Chapter 5, play an important role in shaping international conceptions of what constitutes sustainable urbanism. This means that the model is being shaped by a limited number of people and firms. Their privileged position brings with it critical ethical implications for the GIC, an issue that will be discussed in more detail in Chapter 9.

6.2.4   Drivers of demand for the GIC's services

The global reach of companies like Dar al Handasah and RSP demonstrates that North American and European companies are not the only firms working on large urban projects globally. However the research conducted for this dissertation suggests that the services of the North America and Western European-based segment of the GIC remain in demand. According to interviewees two factors in particular drive this: the perception that they have the expertise and experience required to undertake masterplanning projects; and the value of employing a GIC firm for branding and marketing a project.

The perception that global firms have greater expertise in doing large-scale urban development projects, particularly those with a sustainability emphasis remains a factor in clients' decisions to hire them. A number of interviewees from the GIC said that they had found their breadth of experience and expertise an important factor in winning work internationally. There is also still an aspect of qualitative admiration at work. According to a government official in one Asian city, in some Chinese cities and regions "they are still quite enamoured by the Western import of ideas." An urban designer said that in his experience in the Middle East, "there is clearly the notion that you know you buy a superior product." In addition, the authoritative power granted to recognized "experts" can be useful when a client wants to do something new or different. One experienced international practitioner put it this way: "in very… tightly bound regimes

where change is difficult from within the system they are often looking for people outside the system. You know a visiting firm will always get listened to."

The demand for experience contributes to the situation where a small number of firms dominate the industry. According to an urban designer at a prestigious international architecture firm, design competitions favour companies that will have a "better let's say, CV in place, expertise and experience in that particular science than a smaller one, a local one." GIC firms are sometimes hired deliberately to get an outsider's perspective, or an alternative to what an indigenous firm might produce. Explaining his company's repeated use of a United States-based firm to do masterplans, a senior manager at a large Chinese property development company claimed that if he had used a domestic masterplanner, "we'd... just end up with something like what everybody else has, and so it also came down to the market differentiation aspect."

Several interviewees did emphasize that, particularly in China, they felt that locals were trying to learn from their work with the intention of eventually reducing the country's use of international firms. One interviewee had even recently found a Chinese website where it was possible to download dozens of masterplans prepared by prestigious international firms. Still, the GIC are unlikely to be out of a job soon since having an international firm attached to your project still brings benefits in terms of marketing and prestige. Large-scale urban development projects are extremely difficult to get off the ground. Only a small proportion of the masterplans prepared by the GIC are actually translated into projects. Masterplans often operate less as a blueprint for future development, and more as a prospectus to take to government officials and potential investors. Many of the practitioners interviewed recognize that one element of their expertise that is in high demand is their skill creating a seductive imaginary and storyline for a proposed project. They can answer the question, as one engineer put it of "what's the big story and how does the big story come about and how do you actually – how do you sell that to an investor? The local consultants aren't necessarily going to help you do that."

A recognizable name and an attractive design can bring publicity for a project and differentiate it in a crowded market. This in turn can help attract the investment and government support needed to get a project off the ground. Reflecting on an

international design competition he had participated in, one engineer said that its primary purpose was to "garner interest and attention to the project globally so that people can be attracted by it." Inviting prestigious foreign practitioners to a design competition, said one urban designer:

> "It helps put them on the map first of all – it puts the project on the map and gets it out into the consciousness of the world which is I think half the reason why they do that. It's basically like PR; it's like advertising. It's like, okay we are going to hire the five best architects we can find then like advertise that and, you know, it's going to create so much visibility and attention that, you know, people have to come.

While some practitioners were pragmatic about this dimension of their international appeal, others view it more cynically. One architect and urban designer mused, "sometimes they just need an international name, I think truthfully just to kind of gain approval and they can all of a sudden then say, this is a (firm name) designed project." A real estate investment expert who worked on Masdar City argued that "Masdar would not have got off the ground if it hadn't had Norman Foster…It got legs because, whether it's SOM, Fosters or somebody else, you know the government kind of waves that. Right or wrong, those guys have got brand value." An international name may remain attached to a project long after the work has been completed, and even when plans for the project no longer resemble the original masterplan. One international practitioner put it this way: "even if it's just the very earliest stages of planning, they bring in an Arup or an Atkins or whoever…that means on all of the subsequent publications, presentations that they can do, they can put this big international name right at the top of the list."

This research found that the demand to incorporate sustainability into urban planning projects has grown in recent years for two main reasons. Firstly, sustainability is increasingly a requirement for urban development projects. This is partly due to government regulations in this area, but also the growing popularity of voluntary commitments to sustainability, a topic that will be discussed further later in this chapter as well as in Chapter 7. The second reason is, as briefly discussed in Chapter 5, that sustainability has become associated with the achievement of economic objectives as well as environmental. As will be discussed in Chapter 7, for many urban development projects, sustainability has become part of a marketing strategy.

The demand for making an urban project sustainable has, understandably, increased demand for design firms who can deliver on this objective. The GIC occupy a privileged position in this market. There are relatively few urban development projects around the world that have incorporated ambitious sustainability objectives, meaning that the consultants who have worked on these projects are in demand. This situation creates an opportunity for those consultants who can successfully sell their expertise in this field. For the moment at least, this dynamic appears to be operating to the advantage of international companies with both experience working on sustainable urban projects, and the marketing prowess to successfully promote this. European firms also have an advantage in sustainable urbanism because, as a number of interviewees described, domestic regulations and standards have gradually been pushing them to improve the sustainability performance of their work for the last 20 years. They also have the advantage of being able to point to examples in their own countries. The Swedish government, for example, has built on the high profile of projects such as Hammarby Sjöstad to develop and market internationally the Swedish approach to urban sustainability (Hult 2013). Elite American firms are able to compete in this market because, as will be discussed below, the widespread adoption of voluntary environmental standards such as LEED has driven a shift in their domestic work toward sustainability.

So far this chapter has established the prominent role that the GIC play in planning projects internationally. This prominence has contributed to their influence in shaping and deploying the devices that coordinate sustainable urbanism's travels. These devices are the focus of the remainder of the chapter.

6.3   Coordinating devices

In many ways, urban planning is a continual process of decision-making. What is the appropriate floor area ratio? Where should the train station be located? When sustainability is a driving objective for a plan, even more questions are introduced into the process. Should we plug into the existing energy grid, or generate our own power? Is it cost-effective to incorporate graywater recycling? If planning is about decision-making, one way the GIC help clients cope with the complexity of planning a sustainable urban place is by reducing the number of decisions they need to make. In order to do so,

they cannot just refer to their authoritative expertise. This is rarely enough to convince a client of the merits of their approach. They need to create systems for decision-making that make sustainable urbanism legible to a non-expert client group. In assemblage thinking terms, they need to create coordinating devices.

This section focuses on three coordinating devices that the GIC use to help their clients navigate the complexity of sustainable urbanism and thus facilitate its translation into new environments. The three devices are multidisciplinary planning teams, masterplans and sustainability certification schemes. The section will describe how each of these coordinating devices operates and how they have come to play a critical role in facilitating the international travels of sustainable urbanism. In doing so, it will focus on the power dynamics at play in coordinating sustainable urbanism's travels. In particular, it will look at how these three coordinating devices maintain and reinforce the GIC's privileged position in shaping the assemblage of sustainable urbanism.

There are two dimensions to this argument. Firstly, the GIC are closely involved in the development and deployment of each of these devices and therefore have a significant influence over some of the key mechanisms through which sustainable urbanism travels. They are able to maintain this privileged position over time because coordinating devices are not static, but continually changing and evolving, once again through processes that the GIC are closely involved in. Secondly, these coordinating devices are deployed in the context of the planning process. This process is, as emphasized in earlier chapters, ultimately a transaction between consultant and client. The transactional nature of the planning process, the section will argue, influences the nature of these coordinating devices. They are not just tools for managing the complexity of sustainable urbanism, but also for ensuring that the ability to do so remains the purview of a small group.

6.3.1   Multidisciplinary planning teams as a system for coordination

In the discussion of the historic travels of planning ideas in Chapter 2, the focus was often on one or more key actors, usually architects, as the primary figures. However the days of the lone, visionary architect bringing his ideas to a new place are long gone. Sustainable urbanism travels in the hands of large teams. The first device that the industry has developed to coordinate planning for urban sustainability is a shift in their working practices towards the use of larger and more interdisciplinary teams for

developing masterplans. An extreme example is the SOM – led team for the second stage of the K.A.CARE competition. The team consisted of SOM (masterplan, urban design and architecture), Buro Happold (infrastructure design), Happold Consulting (development programming and implementation), Klimaat Consulting and Innovation (energy and micro climatic design), Ford Motor Company (next-generation transportation networks) Gustafson Porter (landscape design), Royal Botanic Garden, Kew (desert horticulture) and Davis Langdon (cost estimation).

Interviewees broadly agreed that a masterplan needs to be informed by a range of disciplines, in particular engineering, but also landscape architecture, ecology, economics, real estate and even sociology and anthropology. A landscape architect attributed this shift to the increasing literacy of professionals about the work of other disciplines, and the benefits that come from working in an interdisciplinary way: "you just know that there are things outside of your own discipline that you need to bring in to understand better what you're doing." This acceptance of the boundaries of disciplinary knowledge was a common theme in interviews. An architect and urban designer put it this way.

> I definitely think we've had to be much more reliant on other disciplines cause you can't possibly know exactly how to respond to all these different things. So you need to talk to an engineer about how water is gonna be managed. You need to talk to someone about what plants are gonna grow in this sort of place. You need to talk to someone about the cultural, social issues… So we're probably more reliant on each other as a team, across multiple disciplines.

The use of multidisciplinary teams as coordinating devices is driven by the increasing complexity of mainstream understandings of sustainable urbanism. As described in Chapter 5, while sustainable urbanism was once conceived of as being largely about "good" urbanism, it is also now about high-performance and integration. This has made the planning process increasingly technical and complex, as the interviewee quoted below explained.

> Ten years ago, planning good streets sensibly, connecting it well, making sure there is sufficient infrastructure to support it (was enough). But it was still perhaps a bit conventional development and urban design. But in the last ten years, that's been revolutionized by technology to a large extent, and energy policy. It has become a rather more complex process than planning a good development.

It is no longer enough, several interviewees argued, to just say that your work is sustainable. According to one urban designer "in order to propose something you can't just draw it on the plan now… It doesn't necessarily just start with markers on trace paper and end up in a plan, but there is a lot more information, technical data that gets fed into the early stages."

Sustainable urbanism is a complex model even before it encounters all of the additional factors it will need to contend with to be applied in the real world. This creates the need for a team capable of managing the complex enterprise of translating the model into a new environment. Architects and urban designers who once might have led a project on their own now need the input of specialists from other disciplines in the masterplanning process. Putting together an interdisciplinary team means giving up a portion of your fee to sub-consultants. This is not something that is immediately appealing in a profit-making industry. However it is necessary because part of GIC's authoritative power resides in their ability to produce robust justifications for the decisions they make on behalf of their clients. A multidisciplinary team brings more expertise to the planning process thus increasing the GIC's authoritative power.

Putting together a multidisciplinary team is not just about gathering input from multiple disciplines, but also integrating all these inputs into a coherent plan. This is not necessarily a straightforward process. Carl, the planner introduced in Chapter 1 who had worked at a number of GIC firms throughout his career, described how one company had specialists from a range of different disciplines, but he found it quite difficult to get them all to collaborate on a plan. When they do operate effectively, such teams coordinate the travels of sustainable urbanism by working to pull together the inputs of a variety of disciplines. For example, they can draw connections between resource demand projection models and urban design, sustainability objectives and infrastructure strategies. This is a core part of the service that the GIC offer their clients. It is also a service that clients must turn to private sector consultants to procure, as it is unlikely they would have such a range of expertise in-house.

This links to a possible second factor driving the use of multidisciplinary teams as coordinating devices. The ability to provide expertise from a range of disciplines is about more than just good practice, it is critical to remaining competitive in the market

for planning projects. The GIC need to offer something above and beyond what the client might get from a lower-priced competitor. If the complexity of sustainable urbanism is one of the factors driving demand for the GIC's services, it is possible that they have a vested interest in sustainable urbanism remaining complex because this helps them maintain their competitive advantage.

The commercial environment within which the planning process is carried out also shapes the way multidisciplinary teams operate as devices to coordinate sustainable urbanism's travels. As a wider range of practitioners become regularly involved in the planning process tension about the division of labour within the industry has emerged. This is largely focused around who should coordinate and manage these multidisciplinary teams.

There is an emerging class of large multidisciplinary "one-stop shop" practices like AECOM that offer architecture, engineering and planning services under one roof. However in order to create a multidisciplinary team, most of the companies studied for this research still prefer to work in consortium with specialists from other companies and disciplines. For the most part consortiums are managed by architectural practices who subcontract with engineers and other consultants. Interviews revealed that the move of some companies who have traditionally been sub-consultants "up the value chain" to receiving direct commissions has rubbed some architects the wrong way, as this means increased competition.

Related to this, there is also some disagreement about who is best positioned to work on planning projects. One interviewee described architecture and masterplanning as two sides of the same coin.

> And I think now, I think if you…even if you're an international architect there's no way you can do buildings if you don't have a masterplanning practice and if you want to be a masterplanning practice there's no way you can be a masterplanning practice unless you can do buildings or infrastructure.

Such a pragmatic, business-oriented approach rankles those who see themselves as pure planners. A number of interviewees, particularly those who identified themselves as urban planners and designers rather than architects, expressed scepticism about the trend of architects trying to diversify into masterplanning. Such efforts were described

by one interviewee as "architects having a crack" and another as "a component of the business plan, rather than a passion." Another urban designer was concerned about some architects approaching urban design as "big architecture."

Whatever the tensions among them, for the moment these teams are still managing to successfully coordinate the process of sustainable urbanism's travels. Doing so relies also on the production of a product, in most cases a masterplan. In the next section the chapter turns to examining this more material coordinating device.

6.3.2   Masterplans as a system for coordination

Contemporary masterplans play an important role in coordinating the complexity of sustainable urbanism. As described in the Introduction, the recent resurgence in the popularity of site-based masterplans has been linked to the entrepreneurial turn in urban planning and development. Masterplans can contribute to the success of an urban development project which, in an entrepreneurial climate, is largely measured in economic terms. They do so by coordinating the objectives and actions of a wide range of actors and interests and help reduce development risks (Bell 2005; Carmona et al. 2002).

Masterplans draw together input from a number of different disciplines: architecture, urban design and engineering, but also landscape architecture, economics and ecology. They also coordinate multiple domains and forms of knowledge including designs, maps, numbers and policies. Traditionally, masterplans were land-use plans that set out what would be built on each part of a plot of land. Increasingly they are also strategic plans, setting out the vision for a proposed project and a set of objectives for how to achieve this vision. Depending on the requirements of the client, they may also contain much more specific and detailed proposals about topics such as infrastructure, anticipated occupants and development phasing.

Masterplans provide a focal point for the planning process. They are something to gather around in meetings and workshops, and a tangible, material output that can be pointed to at the end. They are also important as a commercial product. Clients do not hire the GIC just for their expertise, but for their expertise in producing something that will be of value to them. At the heart of the transaction between client and consultant is not just a service, but a product, usually a masterplan.

To this end, a masterplan must play two coordinating roles that reflect the two primary reasons described earlier for why the GIC's services are in demand. The first and most straightforward role played by a masterplan is to provide a proposition for how the design and development of a piece of land can be organized to best achieve the client's objectives. Planning teams take a model with many potentials and capacities and code it into a form that speaks to the requirements of the particular client and project. The second role once again reflects the property development model in which masterplans are developed and applied. Masterplans also need to provide content that can be translated to serve the purposes of marketing and development. After the design team has finished with a masterplan, this document is, as one engineer explained:

> "reduced to a marketing brochure and a model, and at the property fair basically people come along and say 'yes okay I'd like to buy that flat' and so they buy it and they put money up front… And when the client has got enough of these people buying, then they got enough money to go ahead, and they start on the details of the design process and then they make it happen."

In order to play these two coordinating roles, two masterplans may be needed for one project. In some cases, a client may initially commission a shorter, high-level masterplan that they can use to generate interest in a project. If they succeed in this, they may then commission a second phase of work to develop the masterplan in more detail.

Masterplans coordinate sustainable urbanism's travels by streamlining the complexity of the urban planning process. They are, effectively, a curated and tailored version of the model of sustainable urbanism, expressed in a way that responds to the demands of a particular project. To streamline the planning process, some masterplans will simply detail a recommended course of action. Others will list all of the options that were considered and either make a recommendation, or describe the advantages and disadvantages of various options allowing the client to make an informed choice.

Figure 12 is an example from the masterplan for Palava of the latter strategy. In this case the consultants have summarized in the table the various technologies they considered for reducing the amount of water used in the proposed development (incidentally, an example of sustainability interpreted as high-performance urbanism). The Table describes each technology, indicates whether or not it has been taken up in the masterplan, and gives a reason for this decision. The complex universe of potential

sustainable water strategies that might be applied in this project is vastly simplified by this Table.

Waste Strategies Considered

Technology	Description	(Y/M/N)	Reasoning
Recyclables Collection	Residents and offices provide waste bins for the input of all waste (ie single stream recycling). Waste is removed and sent to materials recovery facility for processing.	Y	Reduce waste sent to landfill.
Windrow Composting	Organic waste can be processed on-site through windrow composting, reducing the amount of waste removed from the site and associated energy. Compost could be used for landscape and agricultural applications.	Y	Space is available, no energy requirements.
In-Vessel Composting	An industrial form of composting biodegradable waste that occurs in enclosed reactors.	N	Typically is a reasonable technology where space is tight such as in a dense urban condition.
Anaerobic Digester	Controlled anaerobic decomposition of biodegradable matter into methane.	Y/M	Common practice in local market. Les expensive options than gasification, incineration, and pyrolysis. Digestion tanks can be scaled up with coming phases.
Waste Collection Trucks	Typical waste hauling trucks for waste pick up and transfer.	Y	Cost effective, established system.
Pneumatic Waste Collection	High-speed air moves the waste through a totally sealed underground piping network to one central collection area.	N	Energy intensive, high upfront capital cost, maintenance issues.
Solar Powered Waste Collectors	Example – Big Bellies. Waste bins that incorporate a solar panels that enables a compacting mechanism. Unit can send signal when full.	M	Can reduce necessary waste pick up days due to compaction of waste in bins. Not a proven technology in India.
Landfill (off-site)	Municipal run landfill, off-site.	Y	Some materials will not be recyclable or compostable and therefore will need to go to landfill. Propose to use municipal landfill.
On-site Materials Recovery Facility (MRF)	Waste is separated into primary streams at central facility. Includes anaerobic digestion, and composting facilities as well.	Y	Standard practice, reduced hauling fees, created employment opportunity.

Figure 12 Summary of sustainable water strategies considered for Palava. Image credit: Buro Happold.

Not only that, but the Table can be used as evidence justifying many of the urban and environmental design features of the masterplan, which include sustainable urban drainage measures and storm water reservoirs. This could be useful for the client if they have to seek approval for their plans.

In the example in Figure 12, the GIC are relying largely on authoritative power to convince their clients of the viability of their proposals. They are hoping that their expertise is enough for their clients to accept the reasoning detailed in the far right column. Masterplans also routinely combine such appeals to authoritative power with attempts to use persuasion and seduction as well. They often use images to do so, something that will be discussed in detail in Chapter 8.

The GIC's power to shape the assemblage of sustainable urbanism is expressed through the coordinating devices of their masterplans. Masterplans play a critical role in the international spread of sustainable urbanism because they package up the model into a

form that can travel. They set out for a client the options available if they want their project to be sustainable. They also code the assemblage by expressing it in a material form. In ways such as these masterplans consolidate and territorialize the assemblage of sustainable urbanism. In doing so, they shape the landscape of possibilities for achieving sustainable urbanism. This landscape of possibilities is being limited by the fact that masterplans tend to repeat a similar group of ideas.

Repetition of the same idea time and again can lead to it becoming an element of the assemblage of sustainable urbanism. Similarly ideas that are not mentioned may be deterritorialized. One example of this is PRT. PRT is an idea which dates back to the 1970s, but has been revived in recent years. Its profile was enhanced when the technology was incorporated into the Foster and Partners masterplan for Masdar City. For Masdar, which originally aimed to be car free, PRT was proposed as a public transit system that would still allow passengers to travel in privacy and comfort, in pods traveling along pre-programmed routes.

A prototype version of the scheme exists in Masdar City, and a small number of PRT vehicles shuttle passengers in one of the terminals at London's Heathrow airport. However the technology has yet to be implemented on the urban scale. Despite this, PRT was mentioned as an option in several of the masterplans analysed. Through its incorporation in one high profile project and multiple masterplans since, the technology has become part of the assemblage of sustainable urbanism.

6.3.3   Sustainability certification schemes as systems for coordination

In recent years voluntary sustainability rating and certification systems have become increasingly de rigueur for large-scale international property developments. Such systems are important coordinating devices for sustainable urbanism's travels. Once again the GIC influence their development and application. LEED and a similar system developed in the United Kingdom, the Building Research Establishment Environmental Assessment Methodology (BREEAM) are the most popular of these systems internationally (Saunders 2008). However a number of countries, including Abu Dhabi, Singapore, Thailand and South Africa have developed their own green building councils, rating systems and certification processes. Many of these are based on LEED and BREEAM and customized to the national context (Reed et al. 2009). Originally focused on buildings, in particular the commercial real estate sector, the popularity of these

systems has now spread to projects on the urban scale. The USGBC introduced LEED for Neighbourhood Development (LEED ND) in 2010. Similar certification schemes include BREEAM Communities in the United Kingdom, and the Estidama Pearl Community Rating System in Abu Dhabi.

These rating systems are based around the accumulation of points, or credits. LEED ND is organized into three sections: smart location and linkage, neighbourhood pattern and design, and green infrastructure and buildings. For each category, a project which aspires to certification must meet a number of prerequisites. The project can then accumulate further credits by meeting certain criteria such as bicycle network and storage, walkable streets or on-site renewable energy sources. For each of the four levels of LEED certification (LEED-certified, Silver, Gold and Platinum) there is a point threshold. An application for LEED certification has to be evaluated by a certified assessor. Most GIC firms employ certified assessors, allowing them to offer an integrated service of both doing the planning work and managing the process of obtaining certification. This is encouraged by the fact that having a certified assessor on the planning team also earns projects a point in the certification process.

Sustainability rating systems can be seen as a type of ethical frame for the planning process which incorporates both consequentialist and deontological elements. They define and quantify the achievement of the desired outcome of 'sustainability' (it is achieved when enough points are accumulated). They also prescribe a process for how to achieve this objective (hire a design team qualified to incorporate the required elements). However, sustainability rating systems have been criticised as insufficiently adaptable to local circumstances, and for having a mixed impact on a project's actual sustainability (Sharifi and Murayama 2013; Sullivan *et al.* 2014).

Nevertheless, systems such as LEED are powerful tools for coordinating the complexity of doing sustainable urban development. Since LEED ND's introduction in 2010, 345 projects have been certified (U.S. Green Buildings Council 2014). The appeal of such schemes is undeniable. They provide a path through the planning process, again helping to minimize the number of decisions to be made. In addition, they allow a developer to put a visible stamp on the project that certifies that it is, indeed, sustainable. The developers of Tun Razak Exchange, for example, were extremely concerned about how

they would market their project internationally as sustainable. Ultimately they elected to have their project certified with LEED Gold status. Chapter 7 discusses the way such certification schemes and their marketing value play a role in the translation of sustainable urbanism into new environments.

To understand the power dynamics at play in the codified versions of sustainable urbanism contained in a rating system it is useful to briefly examine the processes behind their development. LEED ND was developed by the USGBC in collaboration with two American nongovernmental organizations, the Congress for the New Urbanism and the Natural Resources Defence Council. In line with the objectives and preferences of these organizations, the scheme emphasizes principles, such as smart growth, that are popular amongst American sustainability advocates. The GIC are often involved directly in the development of such systems. One interviewee, an architect with a large multinational firm, described how he and a group of colleagues developed the original LEED certification system. The Abu Dhabi Urban Planning Council developed their Estidama rating system with the support of consultants from Buro Happold. Once again, the GIC has close links with the development and deployment of a key device for coordinating sustainable urbanism's travels.

6.4   Conclusion

This research found that there is a belief amongst the GIC and their clients that the process of planning has become increasingly complex, technical and multidisciplinary. All of the coordinating devices discussed in this chapter are designed to manage this complexity and facilitate sustainable urbanism's travel as a model. What does the nature of these devices indicate about the future trajectory of sustainable urbanism? Will it become less complex over time, or more so? To this end, it is important to consider whether maintaining the perception that sustainable urbanism is complex and technical benefits the GIC. If developing a sustainable urban project became too easy, the GIC would be out of a job. Therefore, coordinating devices are designed to require their ongoing involvement. Only a small number of firms are in a position to put together the types of large multidisciplinary teams that work on large-scale planning projects. Obtaining LEED certification requires hiring a certified assessor who is usually an

employee of a GIC firm. Once again, the commercial environment in which sustainable urbanism is applied shapes how and why it travels.

Systems such as LEED ND are designed to keep assessments about what is or is not sustainable urbanism in the hands of experts and maintain the integrity of the model. The existence of such prescriptive systems indicates recognition of the fact that sustainable urbanism can become watered-down when applied on actual projects. As Chapter 7 discusses, the model is most effective when it travels as an assemblage of elements that together become more than the sum of their parts. However even when they are presented as part of a broader assemblage, individual elements sometimes travel independently. A particular design principle or initiative may prove more seductive than the model as a whole, or a client might be more persuaded by one part of the model more than the others.

This issue highlights some important differences between the types of coordinating devices discussed above. Systems such as LEED ND are designed to make sure a relatively holistic approach to sustainable urbanism has been applied. However, they can also be criticized as leading people to focus on accumulating points rather than applying the most contextually appropriate expression of the model. Sustainable masterplans can be better tailored to a particular site, but their proposals can also easily be stripped away or watered down over time, something that many interviewees said commonly happens.

This chapter has reviewed the way the industry in sustainable urban planning and design developed as well as some of the important mechanisms for coordinating sustainable urbanism's travels. In doing so, it has explored the reasons behind the GIC's competitive advantage in working on large-scale urban projects, particularly those integrating sustainability objectives. The GIC are uniquely positioned to deploy some of the most important systems used to enable the uptake of sustainable urbanism: putting together multidisciplinary teams and developing integrated masterplans. In addition they are often involved in the development of the assessment and rating tools used to judge projects' sustainability credentials.

These devices also play a role in the broader processes of coding and territorialising the model of sustainable urbanism. The composition of multidisciplinary teams contributes

to defining which disciplines are required to plan sustainable urban places. Masterplans repeat a similar set of ideas, coding the model and territorialising and deterritorialising design principles and initiatives. Systems such as LEED ND require that particular design principles and initiatives are considered in the planning process, almost automatically guaranteeing their wide acceptance as elements of sustainable urbanism. All of this is compounded by the fact that a relatively limited number of actors are regularly involved in high profile urban planning projects around the world.

The GIC have something of a monopoly on some of the most important devices used to coordinate the complexity of sustainable urbanism. As Chapter 7 will demonstrate, they do not have the last word on how the projects they work on are ultimately implemented. However, at present when it comes to planning large urban projects in a sustainable fashion, there is a limited group of people, defining a limited set of options to choose from.

7 TRANSLATING SUSTAINABLE URBANISM

7.1 Introduction

This chapter focuses on how and why sustainable urbanism is taken up in urban projects internationally. In particular it will explore the "why" element of the research question behind this dissertation. To do so, it applies the concept of translation to analyse how the model was applied to some of the projects observed for this research. The chapter will argue that sustainable urbanism's international success is linked to two factors in particular. The first is the dynamic nature and many capacities of the model, which allow it to be expressed in ways that speak to the key drivers of individual urban development projects. The second is the ease with which the model can be deployed in an entrepreneurial climate. While the model's flexibility facilitates its international travels, it can also threaten its coherence and integrity. To this end, the chapter will also consider how the model can degrade as it travels.

This chapter uses the concept of translation as a means for understanding and explaining sustainable urbanism's travels. As discussed in Chapter 3, in ANT, translation is the series of processes that enable ideas to cohere into a set of relationships, or an actor network that allows the ideas travel (Tait and Jensen 2007). For a new concept to gain authority and accumulate the power needed to act at a distance, the creation of a network of interested parties is required. This network then needs to recognize the value of the concept. As a way to conceptualize the way ideas travel, translation provides an alternative "to a geography of diffusion, where the nature of urban policy learning is reduced to an explanatory framework based on ideology such as neoliberalism" (McFarlane 2011b: 148). Conceptualizing the international travel of urban planning and policy ideas not as a process of transferring, but one of translating, acknowledges that the impact of the movement of an idea and its encounter with other people and places is not externally determined. Assemblage thinking, in particular the Deleuze – Guttarian principle of immanence underpins the analysis of sustainable urbanism's travels in this chapter. From this perspective the various forms that the model takes on are immanent to it as an assemblage, rather than the result of external, transcendent forces.

In the context of an assemblage thinking, rather than an ANT perspective, understanding the translation of sustainable urbanism is less about looking at how it acts at a distance, and more about the way the model is expressed in different environments and conditions. Like actor networks, assemblages are relationally constituted. They are also inherently dynamic; the model can crystallize, but this does not mean that it is static, only having a single form. Through its adoption of the idea of immanence, assemblage thinking highlights that sustainable urbanism and the various entities that constitute it have a variety of potentials and capacities that might be expressed as the model travels. The translation of sustainable urbanism occurs in the planning process, through the interactions between the networks of social and material actors that come together around a particular project.

This chapter draws on empirical observations of international planning processes, interviews about this topic as well as the forms of the assemblage (masterplans and associated materials) that emerge from these processes. To describe the process of translation it draws on three projects observed during the course of the research: Tun Razak Exchange, Palava and Gia Lam. The type of information I was able to gather for each of these projects differs. As a result the analyses vary somewhat in their focus. In addition, because of the limited amount of data available, this chapter will not be able to present a detailed account of the interactions between sustainable urbanism and the climates it encounters. Given this, the discussion will not be able to do full justice to the concept of translation as it would normally be applied in an ANT analysis. Rather my intention is to demonstrate how using the concept of translation can be useful in studying traveling ideas.

The idea that sustainable urbanism is translated, rather than transferred or exported, is a significant contribution of McFarlane's conceptual framework to this research. The three cases described in this chapter are used to unpack and analyse the process of translation. As a starting point for examining how the translation process occurred in each of the three cases, I examined interview excerpts coded, in the thematic round of coding, as discussing the planning process. Through this analysis, I discovered that the process of translating a planning model could be broken down into a series of steps. These steps are outlined below. As I did not have the same set of data on each project, in

order to detail each step for each project, I supplemented my fieldwork data with information gathered from materials publically available online.

The process of translating sustainable urbanism occurs through several steps. Firstly, as mentioned above, translation requires creating a network of interested parties. Actor network theorists refer to this as "enrolling" the necessary actors. The GIC are already interested in translating sustainable urbanism. As Chapter 6 described, it is an important element of the product and service that they offer to their clients. Clients may or may not be interested in translating the model. Part of the GIC's role is to convince their clients of its validity and relevance to their project. The GIC and their clients also need to bring on board other actors necessary to take the project forward, which may include governments and other regulatory bodies and investors. Actors can also be materials such as visual media, masterplans, precedents and example projects.

In order to bring together the actors needed to make sure sustainable urbanism's application to a project is feasible, the GIC go through several steps. The first two are to identify key project drivers and develop a version of sustainable urbanism that aligns with these. Sustainable urbanism's flexibility means that the model can be tailored to align with the key objectives of a project and the actors behind it. These objectives, which will be referred to as project drivers, can include things such as making a profit, obtaining government approval, or ensuring a project is in a good position to compete for investment and tenants with other, similar projects. These broader project drivers do not simply sit alongside sustainability in shaping how an urban project develops. They are usually the reason why sustainability is incorporated into a project in the first place. An experienced consultant is aware of this, and of the importance of applying the model in such a way that it speaks to the key project drivers. As will be demonstrated throughout the chapter, project drivers often reflect the entrepreneurial climate within which urban development takes place.

The next step in the translation process is to identify and apply the devices, discussed in Chapter 6, that will coordinate the model's travels. In all the cases observed for this research, the coordinating devices included multidisciplinary teams and masterplans, while some also used certification schemes such as LEED. Once the way sustainable urbanism will be expressed is decided, the actors needed to get a project off the ground

are enrolled, and coordinating devices are selected, a strategy, vision and plan for the proposed project will be produced. These will then be filtered into a variety of different forms in which they can travel, and help enrol more actors.

The chapter is made up of three main sections. The first section considers the connections between sustainable urbanism and the entrepreneurial approach to urban planning and development. It argues that sustainability has come to play an important role in branding and marketing urban developments, and draws on the way sustainability assessment and rating tools are used to demonstrate this. The second section looks at how sustainable urbanism is translated on planning projects carried out by the GIC. It draws on three examples, Tun Razak Exchange, Palava and Gia Lam, to demonstrate how different types of project drivers affect the way the model is translated. The third section considers the positive and negative implications of sustainable urbanism's flexibility and the extent to which it threatens the integrity of the model. The chapter concludes by reflecting on the contribution of the preceding analysis to answering the research questions underpinning this dissertation.

7.2   Sustainable urbanism and entrepreneurial development

As has already been emphasized elsewhere in this dissertation, contemporary urban development projects largely take place within an entrepreneurial context. Reflecting this, in all of the cases observed for this research economic considerations were a factor in clients' decision-making processes about how to incorporate sustainable urbanism into their project. The way these considerations manifested varied, from projects led by property developers where clients were concerned about turning a profit, to those that form part of an effort by a city or country or to establish or solidify its position in the global economy. K.A.CARE is an example of the latter approach. The proposed city is one element of a broader national initiative to develop an atomic and renewable energy sector in Saudi Arabia. According to the project's website, the fundamental aim of the city is to build "a sustainable future for Saudi Arabia by developing a substantial alternative energy capacity fully supported by world-class local industries" (K.A.CARE 2013). In K.A.CARE, sustainability is not simply complementary to economic development but the impetus for it, reflecting the theory of ecological modernization.

One of the clearest answers to the question of why sustainable urbanism travels so successfully internationally is that mainstream sustainable urbanism (that is, the model described in Chapter 5) can easily be expressed in a way that fits in with and supports an entrepreneurial approach to urban planning and development. This does not mean that the processes by which an urban development project takes shape will be uniform, focused entirely on making a quick profit. In particular, the duration of a developer's commitment to a project affects the timescale within which they need to make a profit or recoup their investment. Some developers will sell off plots of land once they have put in basic infrastructure, while others will remained involved as the master developer for 30 years or more. In a government-backed project the state may plan to retain ownership of the site. Time frames can have an impact on openness to ideas about sustainability. For example, one interviewee explained that it is difficult to sell the idea of developing an on-site energy centre rather than plugging into the surrounding infrastructure network to a developer who will not be involved in the project in 20 or even 10 years time. The sustainability benefits are unlikely to be enough to offset the additional upfront capital cost of taking up this option. The longer term benefits of a reliable and guaranteed energy supply are of limited interest to an entity that is planning to sell on a development fairly quickly.

There was a consensus among most interviewees that the financial benefits of sustainability are more of a long-term than a short-term proposition. As a result, public sector clients who have a stake in the economic, social and environmental performance of an urban project over the longer term are seen by the GIC as more open to sustainable urbanism. In general, property developers will be involved with the project for shorter period of time than governments. As one interviewee pointed out, most property developers are funded by publicly listed investors looking for a return on their investment in the near future. The challenge in this situation, he went on to say, is to create "a successful short-term economic play. In other words, the ability to flip a site or part of the site and make a profit whilst acknowledging the need to cover their bases in terms of any environmental sustainability approach."

In his reference to "covering your bases" the interviewee is referring to the challenge of developing a plan that remains true to the objectives of sustainable urbanism in a situation where economic imperatives might make this difficult. As the next section will

demonstrate, sustainable urbanism's flexibility enhances its ability to be translated in a way that facilitates its take up in new environments. Yet some efforts to achieve sustainable urbanism have also been derided as "greenwashing" (French 2007). Such accusations highlight the fact that there is a difference between a flexible adaptation of the model that retains its coherence and integrity, and the instrumental application of particular elements of sustainable urbanism simply as a means to achieve economic objectives. This topic will be taken up further in Section 7.4.

In terms of the connections between sustainable urbanism and entrepreneurialism, one of the strongest themes that emerged from interviews with the GIC and their clients was that sustainability currently plays an important role in branding and marketing urban development projects. Clients are conscious that they are in competition with other, similar projects for investment and tenants. To this end, sustainability can be used to—in the words of one architect interviewed— "separate yourself from the building next to you." In many places incorporating sustainability into an urban project is no longer just about gaining a competitive edge. Sustainability's influence on urban development and planning has grown internationally to the point where in many cities it has become a baseline requirement for high-end urban development projects rather than a differentiator. According to one experienced architect and urban designer who had experienced the shift first hand over his 20-plus year career, while sustainability was once the purview of a few maverick progressives in the industry, things have changed radically. Today he said,

> "there is not a single developer in New York—not one—or for that matter here (London) or anywhere else in any other city, that doesn't one way or another champion this stuff. And they do it because everyone else is doing it and it's a marketing thing."

The connections between sustainability and branding and marketing have been used to encourage the uptake of the model internationally. This can be demonstrated by returning to one of the key coordinating devices discussed in Chapter 6, sustainability assessment and rating tools. The remainder of this section will explore how they facilitate the international travels of sustainable urbanism.

A common request by clients at the outset of the project is that it meets the requirements for obtaining an externally verified, high profile certification such as

LEED. One architect explained the type of dialogue he sometimes has with clients as follows.

> *Client:* 'You know we have to do…we want this whole new development to be, you know, LEED Platinum.'
>
> *Architect:* 'Why?'
>
> *Client:* 'Well, because the next city over are doing something that's LEED Platinum.'

According to a number of people interviewed for this research, sustainable urbanism's introduction into new markets has been facilitated in great part by the growth in popularity of such sustainability assessment rating tools. Some developers, said one architect, see obtaining such a certification as a box that they need to tick when considering how to present their project to the world. They "want the LEED plaque – check; signature tower – check; they want the LEED Gold new district development designation, and it all comes into the branding and marketing, for sure."

Rating tools such as LEED became influential not on their own, but as a part of the broader assemblage of sustainable urbanism, as well as other assemblages, such as real estate financing and investing models. Tracing the network of relationships through which rating tools have gained influence highlights how sustainable urbanism has become associated with networks of finance and investment capital.

The influence of sustainability rating tools initially was primarily in the market for office space. For corporate tenants, occupying a LEED-certified building became a way of demonstrating your company's commitment to sustainability. This illustrates the way rating tools as coordinating devices have become closely associated with the increasing influence of corporate responsibility (CR) and sustainability strategies. While CR strategies are voluntary, they are largely considered to be good practice. CR is in turn associated with branding and marketing strategies that, of course, are associated with competition for customers and investment. The website for the multinational bank HSBC, for instance, includes a commitment to LEED certification as one of the elements of their 2020 vision for environmental efficiency.

> **Green Building Programme:** We will achieve gold certification for Leadership in Energy and Environmental Design (LEED) or equivalent for our top 50 energy-

consuming buildings. This means 40 per cent of HSBC's energy consumption will be in LEED-accredited buildings (HSBC 2014).

HSBC is just one of many companies that have made the decision to publicly commit to a preference for LEED-certified office space. The decision to make such a commitment is, for many companies, a pillar of their CR strategies.

According to several interviewees, the drive towards corporate responsibility, and in particular the embrace by many companies of sustainability objectives is associated with the development and rise to prominence of a variety of international sustainability ranking, benchmarking and reporting systems. For example, the contents of corporate responsibility strategies are influenced by organizations like the Global Reporting Index (GRI). The GRI encourages sustainability reporting and has created a framework that provides guidance on how to create a sustainability report. The organization also provides a checking service to verify that a company's strategy meets the organization's standards. There are also similar, industry-specific organizations such as The Global Real Estate Sustainability Benchmark (GRESB), which carries out an annual benchmarking survey on the sustainability performance of real estate companies and investment firms.

Encouraging the take-up of reporting frameworks such as the GRI is a voluntary scheme encouraging responsible investment, the Principles for Responsible Investment initiative (PRI), supported by the United Nations and launched in 2006. Signatories publicly commit to adopting and implementing six principles for environmental, social and corporate governance. The PRI now counts over 1200 signatories, that collectively manage over \$35 trillion in assets (Principles for Responsible Investment n.d.). Current signatories include 799 investment managers including many of the world's largest pension funds. An expert in financing sustainable urban development projects explained in an interview that this scheme is "having all kinds of impacts on companies because companies now invest in ways that are in alignment with principles for responsible investing. Or else they can't get the institutional capital that makes their businesses go."

The large volume of pension funds that have signed up to the PRI may be significant. According to a 2013 article in the *Financial Times* there is "a structural shift by

institutional investors away from their traditional holdings of stocks and bonds into 'real' assets such as property, infrastructure, natural resources and transport" (Flood 2013). As pension funds take up an increasing stake in the built environment, mechanisms such as PRI may encourage the global spread of sustainable urbanism. This could occur as developers seek to get their projects certified in order to be able to demonstrate their commitment to sustainability, as well as to comply with their own CR strategies.

The developments outlined above have led to a shift in the market in many countries. In the United States, obtaining LEED certification was initially a market differentiator, but as time passed it increasingly became a baseline requirement. A United States-based sustainability engineer explained the situation: "Part of doing Class A office building in New York or San Francisco is you have to have LEED Gold because everyone else does and if you don't, you're a loser." It is, she went on to say "just keeping up with the Joneses in a way." The director of a major European urban regeneration project said that developers' ambitions to attract corporate tenants, who in turn demand sustainability, mean that they have no choice but to meet these demands. "Keeping up with the Joneses," then, has become a powerful motivator encouraging the international spread of sustainability in the built environment.

While the demand for real estate to have sustainability certification began in North America and Europe, the international commercial real estate market has followed suit. The international reach of HSBC's business, for example, means that their commitment is leading to the construction of LEED certified buildings in new countries. Their headquarters in Egypt was the first LEED certified building in all of Africa, their Mexico City headquarters the first LEED Gold certified building in Latin America (Mexico Today 2012; Zawya 2010).

For many property developers, sustainability certification has now become an essential pillar in their marketing strategies, as a senior executive at a large Hong Kong-based property developer explained.

> You know, a lot of international tenants, for example Morgan Stanley, JP Morgan, when they rent a space in Hong Kong their corporate instruction is to go for a building that has a standard in environmental accreditation such as LEED... So nowadays for office developments they're more alert and more willing to do so,

not because of regulations, but because of the marketability of the product. (If) you are not environmentally friendly and your sustainable building materials are not from recycled materials you cannot gain a credit. Most of the leading tenants will give you a 2nd rating rather than 1st choice.

The rapid progression of sustainability certification from differentiator to baseline requirement in North America and Europe is now occurring in cities and countries around the globe. The developer quoted above described how just over a decade ago developers in Hong Kong dismissed the idea of such certifications. In his view, once one prominent development, the Hong Kong International Financial Centre (IFC), used its LEED accreditation in its marketing campaign, other developers then realized they had to catch up with this "international standard."

Sustainability rating tools do more than just coordinate the model's travels. They bring to the assemblage of sustainable urbanism their associations with a visible commitment to sustainability, compliance with good practice in corporate responsibility, and association with responsible investment practices. All of these together combine in a way that expresses the potential of sustainable urbanism to contribute to marketing and branding.

The primary purpose of sustainability rating tools is, ostensibly, to support sustainable urban development and evaluate the extent to which it has been achieved. However as the preceding discussion has demonstrated, they have also come to play an important branding and marketing role. In this way they demonstrate the way sustainable urbanism fits into and supports an entrepreneurial approach to urban planning and development. Sustainable urbanism's entrepreneurial capacities, in particular the role it plays in branding and marketing urban development projects, will be taken up further below, drawing on examples from specific projects.

7.3   Sustainable urbanism translated

When they hire the GIC, clients are not looking for an off-the-shelf model or what one interviewee referred to as "a formula". Their expertise and experience working on a particular project might be a selling point, but clients do not approach the GIC and say, "build me a Masdar" or "build me a Hammarby." In interviews, some of the GIC's international clients reported that one of the reasons they like working with foreign

firms is that they bring in new ideas. However they were also clear that they do not just accept and adopt these ideas without question. They might test them out to see whether or not they will work, and are confident about putting ideas to one side, or leaving them out if they do not fit into their vision. One Chinese property developer described how he did this when SOM proposed urban farming for a project in China – something he deemed culturally inappropriate. Similarly, a high-ranking government official in a city in Asia explained how one consultant "has come in and worked with me, but I must tell you that even when he worked with me I've already refined and honed his initial ideas because some things work and some things don't work."

In this context, when it travels, sustainable urbanism is not a prescriptive, normative model that can simply be transferred. Rather, it goes through a process of translation, at the end of which the model is expressed in a way that fits in with the broader drivers of a project. This is the service that their clients hire the GIC for: support and advice to assemble their own version of sustainable urbanism. This section will look at three examples of how sustainable urbanism has been translated in practice. As mentioned in the introduction to this chapter, the process by which the model is translated has four primary components. Firstly, the consultant team needs to identify the key project drivers. Project drivers are those factors and objectives that are foremost in the client's mind and that they see as critical to their project's success.

Once these have been identified, the second step is for the consultants to find a way to express the model so that it speaks to these drivers. On TRX for example, when the team presented the client with their proposal for a district cooling and cogeneration plant, they used a campaign of seduction and persuasion, lauding its many virtues. An engineer on the project explained "(we used) all these beautiful diagrams explaining the flexibility and the resilience of the system, the carbon reductions, the diversities, basically the sustainability benefits the implications for LEED ND, for LEED for buildings and all the rest." The client was interested in the idea, but not for the reasons the consultants cited. Rather, they recognized another capacity of this idea. "Their interest in it," the engineer explained "was more to do with reliability of supply, diversifying your different fuel sources."

Thirdly, once the project drivers have been identified, the model can be translated to apply to the project, with the assistance of one or more coordinating devices. Finally, the model is expressed in a number of different forms. These maximize opportunity for the model to appeal to different actors, enrolling them to support the implementation of sustainable urbanism. This section will sketch out briefly how these processes occurred on three of the projects observed for this research: TRX, Palava and Gia Lam. For each project the entrepreneurial paradigm and key project drivers came together to shape the way sustainable urbanism was expressed. For TRX, sustainable urbanism is expressed as smart and state-of-the-art, for Palava as being primarily about quality of life, and for Gia Lam as responsible and sensitive development.

7.3.1   State-of-the-art: Tun Razak Exchange

Tun Razak Exchange is a planned new international financial district in central Kuala Lumpur. The client for the project, 1MDB, was established in 2009 as a sovereign wealth fund for Malaysia, and is funded by sales of government backed debt (Chew 2013). 1MDB's stated mission is "to drive sustainable economic development by forging strategic global partnerships and promoting FDI" (1MDB 2014). 1MDB's mission is reflected in the drivers of the TRX project. A key objective for TRX is to establish a financial district capable of competing with those in Hong Kong and Singapore, which currently dominate in the region. In order to achieve this, 1MDB, in part because the international management consultancy firm they had hired advised them to do so, decided that their project needed to make a visible commitment to sustainability. According to one consultant who worked on the project, in his view this was in part due to the growth in Asia of using sustainability credentials in property marketing. He described his client's perspective.

> They will say "well somebody is going to go to Hong Kong and get a LEED Gold building then they must have that as a minimum here"... And it becomes more difficult for all these financial centres being built in Guangzhou and Kuala Lumpur and where ever, and the planned business districts. It's a tougher challenge to get it to take off.

While 1MDB were clear from the beginning of the project that they wanted it to be sustainable, they did not have a clear vision about how to go about doing this. For assistance in coordinating sustainable urbanism's application to their project, they explicitly put together a multidisciplinary planning team. 1MDB has close links with the

United Arab Emirates, and in particular Abu Dhabi's government-owned sovereign wealth fund, Mubadala Development Company. Through these connections, they became aware of both of the GIC firms that were ultimately appointed to work on the masterplan for TRX, the Boston-based firm Machado and Silvetti, and UK-based Buro Happold.

Machado and Silvetti were appointed to the project after winning an invited competition. 1MDB then held an additional competitive tendering process for a second firm that would be capable of doing both the infrastructure planning and the sustainability strategy for the project. They ultimately appointed Buro Happold, which, reflecting 1MDB's focus on sustainability, was given a substantial budget to deliver these services. They also hired a Malaysian firm, Akitek Jururancang, and the multinational management consultancy Accenture as a digital masterplanning consultant to incorporate electronic media components into the masterplan. A comprehensive masterplan document, completed in 2012, amalgamated the expertise of these different actors and coordinated the application of sustainable urbanism to TRX.

The client team initially embraced sustainability as a way of helping them achieve the broader project driver of creating a regionally competitive financial district. They believed that being able to brand the project as smart and sustainable would help them achieve this objective. They did not, however, have a specific vision of how to go about doing so. The team on this project, then, had an excellent opportunity to introduce their model of sustainable urbanism into a new environment. However they needed to find a way to express the model in a form that would respond to the importance of branding and marketing as a key project driver. One way they did this was using LEED certification.

In order to draw out their client's preferences, the consultant team encouraged them to think about where they wanted to position this project in relation to other, similar developments that they had visited or heard about (a strategy of "inhabiting", as will be discussed in Chapter 8). As mentioned above, 1MDB's interest in sustainability was largely related to their desire to make their project competitive with other, similar projects in Asia. However they were not interested in being at the cutting edge, rather they wanted a safe and proven approach to demonstrating their commitment to

sustainability. The consultant quoted above described the situation by creating an analogy with the Tour de France.

> These developers, they want to be seen to be at the front of the pack at any given moment, but they don't want to be out front. If you think of it as the Tour De France, they want to be at the front of the peloton but they don't want to be in the little breakaway group that's five miles ahead of the peloton because if they are in that little break-away group, it means they have over-committed themselves financially.

The challenge for the consultant team, then, was not just to translate the model of sustainable urbanism to meet their client's requirements. They also had to develop a persuasive communications strategy to convince them that this was a viable and appropriate approach. In the language of the Tour de France example used above, they had to identify where the client wanted to be in the peloton, and then convince them that the consultant team's approach would get them there. In this case, the clients were not interested in being cutting-edge leaders in sustainable urbanism, because they considered that doing so would involve too great a financial commitment and too much risk.

The masterplan the consultant team developed was shaped by this understanding of where the client wished to position their version of sustainable urbanism. At the time of writing, the masterplan had achieved the requirements for LEED ND Gold, and included an on-site district cooling and cogeneration plant. According to one of the consultants on the project, 1MDB plans to maintain ownership of many of the buildings once the project is complete. Because of this the consultant team was able to make the longer term financial return of such an infrastructure investment acceptable to them.

TRX is currently being promoted in forms aimed at attracting corporate tenants. These include a website and a corporate marketing video. The website markets the project as having four "best in class features." These are that it is smart and future-proofed, environmentally sustainable, a top class product, and having premium brand positioning. The website also advertises the involvement of the GIC in designing the project and the benchmarking process that the team went through. According to the website, the masterplan "was developed by a leading international team of consultants, envisioned to be at par with other leading global financial centres, including Canary

Wharf in London, Battery Park in New York and IFC in Hong Kong" (Tun Razak Exchange 2013). For TRX, sustainable urbanism is expressed as smart and state-of-the-art. Reflecting 1MDB's priorities, the model has been expressed in a way that sets the project apart from other, similar developments, but also remains within acceptable parameters of financial risk.

7.3.2   Attractive lifestyle: Palava

The property developer behind Palava, Lodha Group, is a large company that operates mainly in the Mumbai region. They focus primarily on residential properties, both high-end and for the middle class. In recent years they have undertaken a number of ambitious projects, including building in Mumbai the world's tallest residential tower. Palava is a similarly ambitious proposition. Palava falls into a category often referred to in India as "integrated townships," which are privately developed and managed urban communities. The project is conceived as a new town that will ultimately house over one million families.

Palava is to be located in an agricultural area approximately 40 kilometres from Mumbai. In order to be successful, the project needs to attract people to what is at present a relatively remote area. To do so, Palava has applied sustainable urbanism in a way that focuses primarily on lifestyle. As is the case across much of the global South, for many Indians concern about resources is focused more on their availability than their conservation (Allen and You 2002). Where urban development has occurred rapidly and in an unplanned way, residents are less concerned about carbon emissions and more about blackouts, water shortages, solid waste disposal challenges, and non-existent or inadequate storm water drainage systems. Marketing higher-end residential property can be a challenge in this context. In the words of one engineer who worked on the project, "resilience and self-reliance is a big deal in countries where the surrounding infrastructure and utilities don't have the kind of reliability that you expect in the type of development they are trying to sell." Palava's version of sustainability advertises a lifestyle where such concerns are thing of the past. In doing so, it responds to a key project driver: to develop a new town offering a lifestyle that will attract middle-class families. In this context, sustainable urbanism is incorporated into an imaginary that is designed to appeal to an aspirational middle class, an alternative to the chaotic nature

of many Indian cities. For Palava, sustainable urbanism is deployed to help achieve this by focusing on two themes: reliability and resilience, and comfort and convenience.

Incorporating reliable and resilient physical and social infrastructure into Palava increases the chances that it will succeed as a standalone new town rather than a bedroom suburb. Due to regional water scarcity, the client encouraged the consultant team to incorporate solutions that would minimize the need to draw any water from beyond the site of the project. In the masterplan for the project, "maximize on-site supply" and "reliability of supply" are listed as key drivers of the design. The masterplan proposes rainwater harvesting and graywater recycling as design responses to these drivers. According to the masterplan, in the project rainwater and recycled water will be used for toilet, landscaping and cooling systems, thus reducing dependence on water provided by the municipality. In this instance, the plan aligns with two of the objects of sustainable urbanism, integration and high-performance.

Given that Palava is designed to eventually house one million families, social infrastructure is an important component of the masterplan. The plan focuses in particular on the development's walkability, and the fact that a variety of social infrastructure facilities will be within a 10 minute walk of residences. The image demonstrating this can be seen in Figure 7 in Chapter 5.

The masterplan and the multidisciplinary planning team that developed this version of sustainable urbanism provided the initial devices coordinating its application to the Palava project. The project vision was then incorporated into a number of key forms for further dissemination. These include a comprehensive website for the project, a variety of press releases and other marketing information that are used by property marketing websites, and a promotional video. Because all of these forms target potential residents, they focus explicitly on the lifestyle that Palava will offer. They are aimed at convincing middle-class families and investors to buy properties in the development. Figure 13, taken from the project's official website, advertises the high-quality, yet affordable lifestyle.

THE LIFESTYLE OF A TOP 50 CITY.
AT A FRACTION OF THE COST.

Living here pays for itself with total gains of almost Rs.10 lacs per annum — far more than the annual cost of owning a home in the city.

Capital appreciation : Rs. 5,00,000 p.a.
Real estate prices in Palava have increased threefold since 2009; making it one of the most profitable investments in the MMR region.

Increase in wages and productivity : Rs. 80,000 p.a.
Palava's residents can walk to work, cutting their commute time by an hour, while increasing their productivity and wages.

Reduction in annual expenses : Rs. 4,00,000 p.a.
Homeowners can expect to save on a range of expenses by living in Palava.

- Schools and university at affordable costs.
- Lower maintenance bills due to sustainable infrastructure.
- Lower healthcare costs due to a better lifestyle and high-quality but affordable health facilities.
- Access to world-class sports and arts and culture facilities.
- Lower transportation costs — everything is a short walk away.
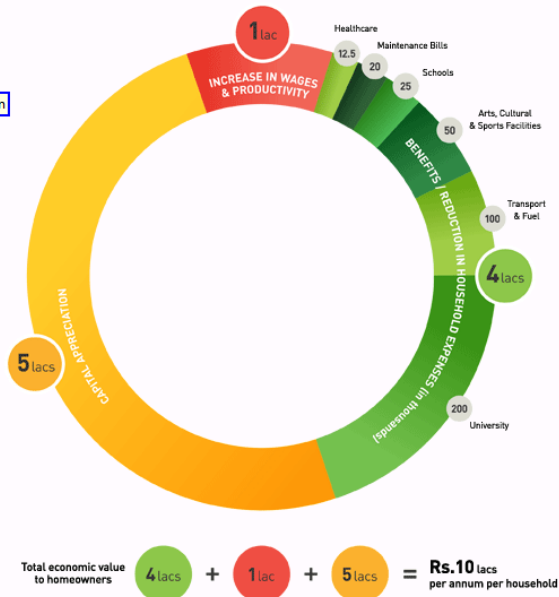
Figure 13 Palava's marketing campaign: The Palava lifestyle. (Lodha Group 2014a)

Marketing materials such as these mention the project's sustainability credentials. The incorporation of rainwater harvesting and graywater recycling into the final design of the project are touted as a selling point. One property marketing websites states that, "the city is prudent-reducing external water dependence by over 40% by partnering with the world's best to provide the highest quality recycled water" (I Got My Deal 2013). Figure 14, taken from the main website for Palava, uses the city's infrastructure as marketing strategy.

GREAT CITIES NEVER STOP.
NEITHER DOES PALAVA'S SUPPLY OF POWER AND WATER.

Figure 14 Palava's marketing campaign: Great cities never stop. (Lodha Group 2014b)

For Palava sustainable urbanism is expressed as a dimension of a high-quality, liveable urban environment designed to appeal to middle-class Indians.

7.3.3   Sensitive development: Gai Lam

The Gia Lam area was identified in the 1998 Hanoi masterplan as one of five development centres for the urban region. Following the decision to route a major new expressway linking Hanoi with the port town Hai Phong through this district, focus on its development potential intensified. Gia Lam is an example of an increasingly commonly used strategy in Vietnam to attract private investors to develop necessary infrastructure: incentivising such work through the grant of a plot of land to develop (Monthéard 2010). The client for the project, VIDIFI, was set up by the government in 2008 to manage the development of the Hanoi-Hai Phong expressway. The right to develop the Gia Lam site appears to have been added on by the government as an incentive. The route for the new expressway would run along the southern boundary of the site. The Gai Lam project would be the first glimpse of Hanoi that a visitor driving up from the coast would encounter. One key project driver for Gai Lam was to provide a gateway to a modern and prosperous Hanoi.

In 2009, VIDIFI conducted a design competition to select who would develop the masterplan for the project. The scope for the project was to create a "modern, environment-friendly new town." The winning entry came from a consortium formed by Dissing and Weitling, a Danish architecture practice, Buro Happold, and Vinaconex R&D, a Vietnamese architecture and engineering firm. Unlike TRX and Palava, the Gai Lam project ultimately did not move forward to development. As a result, this discussion focuses on the design phase of the initial masterplan for the project.

In Vietnam, the discourse of sustainability has only recently entered the official planning rhetoric. The employment of the term appears to be linked to the increasing involvement of Western consultants in planning projects for the city (Thứ 2009). From the beginning of the project, VIDIFI explicitly asked that Gai Lam be made sustainable. The project vision statement is for "a cutting edge contemporary sustainable city: a strong identity, friendly atmosphere and a vibrant urban character with a vigorous economy."

At first glance, this seems like a typical and fairly generic vision statement of the type often used to describe such projects. Yet the reality is that the client turned out to have a specific idea of what sustainability was to mean for Gia Lam. The consultant team found that the most important word within the project vision turned out to be not sustainable,

but "friendly." This idea of friendly was meant to embody a Vietnamese conception of a sustainable place as one that is both a pleasant place to live, but also friendly to the earth. Ultimately achieving sustainability meant finding a way for the project to achieve a Vietnamese standard of good design and to avoid past mistakes, in particular unplanned growth and the loss of agricultural land. The consultants interviewed about the project believed that the idea of using the word sustainability came from searching for a way to communicate the "friendly" idea to foreigners. One of the key client requirements for the Gai Lam masterplan was that it incorporated the existing settlements on the site. It was explained to the consultants that relocations did not fit with the client's idea of a friendly development. Building on this, a second key project driver for Gai Lam was that the development be socially and ecologically sensitive.

This requirement represents an important point of departure from previous new urban area developments in Vietnam, many of which required the relocation of villagers. Such projects have frequently resulted in disputes with villagers about compensation. The result of such disputes have been delays to the projects, negative publicity, and in one case the intervention of the Prime Minister to resolve the issue (Han and Vu 2008). Such disputes threaten the development agenda of the state and would be investors, not to mention tarnishing the reputation of the government among the rural poor, the traditional base of the Communist party (Han and Vu 2008). One of the leaders of the consultant team said that her impression was that the requirement to incorporate existing villages into the masterplan was the result of a local or perhaps even a national government agenda to seem to be more sensitive to local communities.

The consultants ultimately gathered that to be "friendly" their masterplan should incorporate good quality design sensitive to the local population. The version of sustainable urbanism they ultimately deployed was one that would be primarily socially and ecologically friendly. This version was coordinated through the use of a relatively small yet still multidisciplinary team of architects and engineers in the bilingual masterplan that they ultimately produced. The masterplan for Gia Lam does not rely on cutting-edge environmental technologies, focusing instead on demand reduction and passive design principles far more than complex technological interventions. According to one of the leaders of the consultant team, client and consultants agreed early in the

design process on this principle of taking a social, rather than technological approach to sustainability.

Despite this, during the planning process the clients increased the amount of gross floor area (GFA) they wished to see on the site. More GFA means more lettable space and hence more profit to be made from a piece of land. The client also began to express doubts about some of the sustainable design principles and interventions incorporated into the masterplan, in particular the amount of the site to be given over to open space and waterways. To a certain extent, a tension emerged between the two objectives of the project. The district was to be sustainable and friendly, but also a modern gateway to Hanoi, that, by virtue of its economic prosperity would ensure VIDIFI a return on their investment.

Figure 15 Multiple versions of sustainability in Gai Lam. Image credit: Mikkelsen Arkitekter.

The Gai Lam masterplan's attempt to develop and coordinate a version of sustainable urbanism that would reconcile these two objectives was not entirely successful. The masterplan contains images such as Figure 15 that illustrate a somewhat bizarre juxtaposition of different understandings of sustainability. In the rendering, farmers toil in the shadow of wind turbines and modernist skyscrapers. Because the project did not

move forward from masterplanning stage, the only forms through which it travelled were presentations and images taken from the masterplan. The renderings were designed to enrol clients by visualizing their image of the project. An example can be seen in Figure 16, which depicts the new expressway in the centre of the district at night. This is the type of "Gateway to Hanoi" that the clients were looking for. One member of the project team said only half-jokingly that he thought this rendering helped their team win the design competition.

Figure 16 Gia Lam: the gateway to Hanoi. Image credit: Mikkelsen Arkitekter.

Sustainable urbanism in the context of Gai Lam meant good quality design that would be sensitive to the local population, an alternative to the recent history of "unfriendly" development. Reflecting the client's desire to make a profit from the project, it also needed to reflect economic prosperity and modernity. The consultant team struggled to develop a version of sustainable urbanism that could reconcile these two objectives.

Table 8 summarizes how sustainable urbanism is translated for each of the three projects discussed in this section.

	Tun Razak Exchange	Palava	Gia Lam
Project drivers	Regionally competitive financial district	A lifestyle offer appealing to middle-class families	High profile gateway district Friendly and sensitive
Expression of sustainable urbanism	Smart and state-of-the-art Progressive in a regional context	High-quality, liveable environment Reliable and resilient infrastructure	Socially and ecologically friendly Sensitive development and high quality design
Coordinating devices	Multidisciplinary team with a large sustainability components and budget Masterplan LEED ND	Multidisciplinary team Masterplan	Multidisciplinary team Masterplan
Forms	Website Renderings Video	Website Video	Renderings Presentations

Table 8 Summary of sustainable urbanism's translation for three projects.

7.4   Traveling as an assemblage: flexibility versus coherence

> The more I think about it, you know, a masterplan should be incredibly flexible and, if it hasn't got flexibility in it, there has to be a good reason… If it's not flexible, it's not a very good plan. But on the other hand, you know, you have to still feel, even at the end of it, even though it's changed quite a lot, that it's actually still the same plan.

> Partner, multinational engineering firm

The interviewee quoted above argues that flexibility is a baseline requirement for a good plan. At the same time, he cautions, with too much flexibility a plan loses its coherence. Reflecting a theme that has come up throughout this dissertation, the same could be said for sustainable urbanism as a planning model. Sustainable urbanism's flexibility can be a positive thing, facilitating its translation into new environments. However it also poses a challenge to the integrity of the model. At what point does something cease to be an application of sustainable urbanism? This question relates to the final element of the research question behind this dissertation, about what are the implications of sustainable urbanism's travels are for urban planning practice more widely. Has the model's primary purpose become propping up entrepreneurial development projects? How far can it stray from an adherence to the objectives of integrated, high-performance urbanism before it simply becomes greenwashing? And what do the answers to these questions say about the ethical frame, if there is one, that underpins the GIC's work?

This section reflects on these questions and the extent to which the version of sustainable urbanism traveling internationally is progressive, or just tokenistic. In doing so it considers the impact of the entrepreneurial paradigm on sustainable urbanism's translation into new environments by the GIC. In particular it focuses on how sustainable urbanism's travels are influenced by the transactional nature of the planning process. As the examples in the previous section demonstrated, the model's various capacities mean that it can be expressed in a variety of different ways to align with different types of project drivers. A skilled consultant team is able to rapidly discern these and develop and apply the model in a way that best meets their client's requirements. In practice, this means that sustainability is sometimes applied instrumentally. Sustainable urbanism may be adopted on a project not because it is

necessarily seen as a desirable outcome in its own right, but because it can help clients achieve other objectives. On many urban projects, the ultimate objective of sustainable urbanism is not to create good, integrated and high-performance urban places but to sell more units, and earn more profit. Whether or not this is an issue depends on whether the GIC are guided by a consequentialist ethical frame, in which success is determined by the outcome rather than the process of how they get there.

GIC consultants are employed to provide a service and therefore need to respond to what their clients want. They cannot simply impose sustainable urbanism, but have to be strategic in their efforts to encourage its take-up, using strategies that draw on authority, seduction and persuasion. In this work, they are substantially assisted by the flexibility of the model. At the outset of the planning process, a common request from clients is to incorporate into a project something closely associated with sustainability, such as a renewable energy generation technology. Because of their high visibility, wind turbines and solar panels are seen by some as a way of making a statement about a project's commitment to sustainability. When this occurs the consultant team must take this request and, in a way that does not alienate the client, interpret the objective behind it. One sustainability engineer explained in an interview the process he goes through with clients when they come to him saying that they want renewable energy incorporated into their project. Behind a request for renewable energy, he explained, is usually the desire to reduce carbon emissions, or, in the language of the objects outlined in Chapter 5, to enhance the performance of the project. Once this objective has been clarified, he can then begin a dialogue with the client about some of the options that sustainable urbanism provides for achieving this objective.

> We can do that (reduce emissions) in a variety of ways. First of all we've got to reduce demand, so double glazing all round cuts heat loss. Secondly we can make the whole thing much more efficient, so we've got building management systems that control the energy and all the buildings, and make them work more efficiently, so that's reduced the energy demand even more. Then at the bottom of that list, is instead of generating electricity from coal or oil, which produce carbon dioxide, you could generate electricity using a non-carbon emitting source…So then you can say to the client…"we genuinely think it would be worth going for let's say 3% of your energy in the form of heat using solar collectors, and 2% of your energy using photovoltaics by putting these things on the roof,"

let's say. And so the client then says "Right, okay, fine, what is it going to cost, what are the benefits? Okay fine it, let's do it." So there's a dialogue.

The dialogue that this engineer refers to is at the heart of the translation process. He presents to his clients a variety of elements of the assemblage of sustainable urbanism and works with them collaboratively to select those that are most appropriate to the project given the client's objectives. In his hypothetical example, he uses energy efficiency and building management system technologies, energy models and cost-benefit calculations. However, sustainable urbanism will not be translated solely on the merit of these ideas. The assemblage is able to travel because it also includes the engineer who can draw on his expertise and ability to make a persuasive argument.

Another benefit of having a range of options for achieving an objective means that if the client rejects the consultant team's first proposal, there are alternatives to turn to. An engineer described how such a situation played out when working on a project in China. "The site conditions," he explained, "were ideal for a highly sustainable energy solution including hydro-electric, winds, power, solar, and so we came up with a very compelling story, but they pretty much dismissed it out of hand within a few minutes." As this interviewee went on to explain, the consultant team's proposal to incorporate renewable energy generation was rejected because the Chinese clients were happy to use a conventional coal-fired power station. When their preferred option was rejected, the team was not deterred from pursuing their sustainability objectives. They focused instead on maximizing the efficiency of the power plants and distribution system, and incorporating measures to improve energy efficiency. This example highlights a significant reason why the model's flexibility is an important factor in facilitating its translation into new environments: planners are rarely dealing with a blank slate. By the time a masterplanning team is hired, a number of decisions will already have been made about the site that they are developing a plan for. It might be about the way the power will be generated as described above. Another common scenario is that transportation infrastructure has already been laid out. Quite a few interviewees described their frustration at the frequency with which they are given a site to plan "sustainably," and then told that they must plan around a large highway running through the middle of it.

The GIC can use a variety of different strategies to encourage the take-up of sustainable urbanism. As the examples described so far highlight, their influence is limited. These limitations are what can lead to the model degrading as it travels. The process of planning a large-scale urban development project can be quite lengthy and protracted. The GIC's involvement in such projects is often limited to the early stages of a project. In recognition of this, their masterplans are sometimes more about showing the capacities of the model of sustainable urbanism than actually setting out in detail how it should be implemented. According to some practitioners interviewed there is a certain element, particularly in the early concept development stage of the masterplanning process, of showing the client a large number of possibilities. Clients then get to decide which of the many options presented to them make sense for their project.

Figure 17 is an example from a masterplan for K.A.CARE of such a menu of options, in this case for sustainable waste management. Menus of options such as these are focused on encouraging clients to take up a design principle, in this case sustainable waste management, rather than a specific idea or technology. The Figure demonstrates that the design principle of sustainable waste management, which contributes to the broader objectives of sustainable urbanism, can be achieved through a variety of different options. The decision about which one to take up will be left in the hands of the client, to be made most likely at a later stage in the planning process.

Garden City Waste Facility
Cluster of innovative waste processing and treatment technologies in Garden Centre contribute to K.A.CARE R&D opportunities, generate compost, produce energy and support recycling initiatives.

Pneumatic Waste Collection
Automated Waste Collection (AWC) system will be used for the collection of waste generated from buildings and public realm.

Windrow Composting
Large-scale composting techniques, like Windrow, include automatic data collection in order to improve the efficiency of the system while preventing people from being exposed to harmful toxins.

Neighborhood Collection Hubs
Allow for convenient drop off of waste from low density neighborhoods and an input station for pneumatic conveyance to waste transfer facilities.

Figure 17 Sustainable waste management options for K.A.CARE. Image credit: Buro Happold.

The danger of presenting elements of the assemblage of sustainable urbanism this way is that the model's elements and various capacities are treated not as different expressions of a coherent assemblage, but as a menu of options for clients to choose

from. Elements of the assemblage can then be applied instrumentally, for their value in marketing a project or meeting a regulatory requirement. Such a "pick a mix" approach threatens the integrity of sustainable urbanism. The model's transformative capacity is best realized when it travels as an assemblage. Elements of the assemblage are characterized by relations of exteriority, meaning that they have a variety of capacities. These are revealed when an element forms relationships with others in the assemblage. Separating out and applying elements of the assemblage on their own precludes many of the capacities of sustainable urbanism and its component parts from being expressed.

In addition, an assemblage is greater than the sum of its parts. A sustainable urban drainage system designed to capture excess storm water can be an effective way of reducing the demand for wastewater treatment, as can a graywater recycling system. Incorporating both of these into an urban development alongside wider range of measures designed to promote sustainable resource use can amplify their effectiveness and demonstrate more of their capacities. When detached from the broader assemblage, individual elements or design principles lose such capacities. Projects that claim to be sustainable because they incorporate individual elements or design principles associated with sustainable urbanism open themselves up to accusations of greenwashing.

This chapter has demonstrated the way sustainable urbanism is incorporated into urban projects for variety of reasons. This does not necessarily threaten the integrity of the model as long as when it is applied it adheres to the three primary objects outlined in Chapter 5: good, high performance and integrated urbanism. However if the outcome of the GICs work is a piecemeal or tokenistic approach to sustainability, its ethical basis, if it is based on a consequentialist frame, can be called into question.

7.5   Conclusion

One of the primary research questions underpinning this dissertation is why is sustainable urbanism traveling internationally? It is possible to construct an argument for a linear conception of sustainable urbanism's spread. We could say, for example, that neoliberalism is driving the uptake of entrepreneurial planning, which leads to increased pressure to market an urban development. This leads to the uptake of sustainability which is seen as having marketing value. In identifying the different types

of factors that drive the uptake of sustainable urbanism internationally, this chapter has attempted to demonstrate that the model's international popularity does not indicate a globalization of cause and effect. In addition, there are a number of problems with this argument.

Firstly, property marketing is not a new phenomenon. Large, ambitious urban projects of the type described in this dissertation have always been marketed to potential residents and investors, even when they were developed by public entities. The government of the United Kingdom, for instance, created an animated video promoting the virtues of new towns in the 1960s. Secondly, if the drivers of demand for sustainability were uniform, so too should be the way it is applied. However, as this chapter has demonstrated clients do not want someone else's version of sustainable urbanism. Rather, they want support and advice to assemble their own. This is because they see sustainable urbanism as a means to help them achieve a diverse range of project-specific objectives.

Sustainable urbanism is adopted widely internationally because it is seen as valuable to achieving a broad range of objectives, and because both sustainable urbanism and the elements that make it up have a variety of capacities and potentials. The coordinating device of a sustainability certification system can be employed in order to help a project attract investment. Graywater recycling can be incorporated into a project in order to help make sure it meets the preferences of an aspirational middle class. Integrated infrastructure systems can contribute to helping a developer turn a profit. The concept of sustainability as a whole can be used as a way of communicating a government's requirement for a different approach to urban development.

Sustainable urbanism however is particularly well-suited to supporting the demands of an urban project carried out in an entrepreneurial climate. This is for two reasons. Firstly, it does have marketing value. This marketing value can help sell the idea of sustainable urbanism, or literally help sell floor space. Secondly, the model's flexibility makes it more possible that the developer of the project, working with a skilled consultant team, can develop a version of the assemblage that will help them meet their economic objectives.

Sustainable urbanism's international popularity also owes a great deal to the breadth and scope of the GIC's work around the world. As discussed in Chapters 1 and 6, today sustainability is a core objective of urban planning practice. When they work internationally, the GIC will almost always try to incorporate the model into their projects. This is because, as discussed in Chapter 5, they see the model fundamentally as "good" urbanism. Given this, the model's international spread owes much to the success of the GIC in convincing their international clients of its value. The next chapter will look in more detail at how the GIC encourage the uptake of sustainable urbanism, focusing specifically on how they do so through strategies of learning and teaching through inhabiting.

8 Inhabiting sustainable urbanism

8.1 Introduction

Part of what makes the GIC in sustainable urbanism in demand is their specialist expertise. The GIC's confidence in this expertise and its international applicability became clear in interviews, in which a common theme was that they see part of their role as one of educating their clients about good urbanism and sustainability. However this process of educating is not straightforward. The GIC's expertise and the authoritative power that this grants them is not enough to result in their proposals being automatically adopted. They also cannot rely on appealing to the imaginary of sustainable urbanism to sell itself. Sustainable urbanism's mobilization relies on the GIC's ability to encourage take-up of their ideas, or, in the language of translation used in the previous chapter, to enrol actors. To do so they must develop strategies for communicating and validating both their expertise and the imaginary of sustainable urbanism in a way that will convince their clients.

Of McFarlane's three conceptual frames, the concept of inhabiting was the most straightforward to apply to the empirical material. Inhabiting provided a way to conceptualise something I observed repeatedly from very early in my fieldwork: the frequency with which the GIC and their clients referred to examples and precedents in the planning process. Indeed, I coded for this theme in my analysis of both interview transcripts and masterplans. Inhabiting helped explain the value of referring to precedents and examples. This chapter describes how the GIC use inhabiting as a strategy in the planning process to introduce and sell their proposals for making an urban project sustainable. They do so by creating opportunities for their clients to see and experience sustainable urbanism.

In the built environment industry, the best way to convince clients to do something different, argued one architect and urban designer interviewed for this research, is to make an argument "leap to their senses." This sensory approach to learning is what McFarlane (2011b) describes as learning as dwelling—learning that occurs through taking a sensory approach to seeing and perceiving in the world. Chapter 3 argued that for the purposes of this dissertation, the closely related idea of inhabiting should be used rather than dwelling as it has less domestic, rooted connotations. As emphasized in

Chapter 3, inhabiting is a process of interacting with environments and, in particular, materials. Traveling consultants, McFarlane argues, learn through inhabiting policies and ideas when attending presentations, going on study tours and through informal interactions over coffee or lunch. The duration of an experience of learning through inhabiting may be short. Nevertheless such processes, through which the GIC and their clients are able to interact with the materiality of the ideas and proposals they are considering, are among the most powerful ways that ideas gain purchase in new environments.

In the planning process learning through inhabiting can occur in a number of different ways. Many of the forms that sustainable urbanism travels in, such as images, models, videos and in particular study tours can be designed to appeal to the senses and encourage interaction. Central to inhabiting are materials that demonstrate or represent an idea. Materials are useful in part because moving imaginaries from the realm of the abstract to that of the lived and experienced requires giving them a spatial form (Grubbauer 2014). We are, after all "more inclined to believe in the existence of certain phenomena if we are able to see their manifestation in material space" (Grubbauer 2014: 18). Masterplans rely heavily on images showing where design principles or initiatives have been implemented previously to demonstrate what sustainable urbanism can and should look like. Digitally created movies and three-dimensional models are also used to elaborate the proposed form of a project. Experiences such as study tours can create the opportunity for tangible interactions with the proposals in a masterplan, for instance, by taking a ride on light rail, or observing the way a sustainable urban drainage system is incorporated into a neighbourhood.

Learning about sustainable urbanism by inhabiting it allows people to develop their own subjective opinions and impressions. This can have the somewhat paradoxical effect of convincing someone that a proposal is more objectively sound. After all, if "seeing is believing," so too is experiencing. However, it is important to pay attention to the power dynamics that can shape such experiences. Experiences can be curated and harnessed towards the achievement of specific objectives. Grubbauer (2010: 65) discusses "the constructed nature of visual communication," drawing attention to the fact that the environments people interact with when inhabiting may be ideologically

infused. The meaning of an image, for example, is connected with the process of image production, which is guided by anticipating the reaction of the intended audience (Grubbauer 2008). Study tours can be designed to show some aspects of a place and obscure others (González 2011; Peck 2011b). The GIC recognize the persuasive power of arguments that enable clients to inhabit new ideas or proposals, and many of them are skilled at creating sensory experiences that encourage this.

It is important therefore to try to unpack the underlying purposes for which inhabiting is used, and the power dynamics at play. Much of the discussion that follows demonstrates the way the GIC use inhabiting as a strategy to filter their expertise through strategies of seduction and persuasion. In doing so they draw on the resources at their disposal. These include knowledge of urban planning and design around the world and their visual presentation skills. At the same time, the GIC's reliance on the powers of seduction and persuasion rather than authority demonstrates that their expertise is not sufficient reason for their clients to take up sustainable urbanism. The central argument of this chapter is that inhabiting, which allows people to "live the assemblage" of sustainable urbanism (McFarlane 2011b) is a key process through which sustainable urbanism moves. In this process materials and experiences are used to bring the imaginary of sustainable urbanism to life, and the GIC draw simultaneously on the powers of authority, seduction and persuasion.

The main portion of this chapter consists of four sections. The first introduces the way the GIC brings sustainable urbanism to life through the use of examples. The next three sections examine the different types of processes of inhabiting that the research found are used to facilitate the movement and take-up of sustainable urbanism internationally. Section 8.2 looks at how visual media are used in the planning process to familiarize and sell new ideas and concepts. Section 8.3 looks at some of the different ways that experiences can be drawn upon in the planning process. Section 8.4 reflects on how inhabiting can be oriented towards the achievement of particular objectives, and what this reveals about the subjectivity of the learning that results. The analysis in this chapter will draw on several elements of empirical research undertaken for this project: interviews with the GIC and their clients; content analysis of masterplans; participant observation of the planning process; participant observation of study tours;

and follow-up interviews with study tour participants and representatives of projects recognized as models or exemplars.

8.2   Bringing sustainable urbanism to life

One of the consistent themes uncovered in the research undertaken was that referencing examples and precedents is an important part of the planning process. They may be drawn on in a variety of different ways. The project team may conduct a precedent study, compiling information on existing urban places and communicating this to the client through a presentation or in a masterplan. They can be referred to informally in conversations and emails. References are also incorporated into client presentations and planning workshops. For one two-day planning workshop with clients observed for this research, the project team covered the walls of the workshop space with posters detailing their proposals for the site, coupled with examples of where some of the proposals have been implemented. The types of things referenced are not limited to high-profile examples of best practice in sustainable urbanism. They may include a combined heat and power plant in London, a street in Paris, or a policy promoting sustainable transit in Copenhagen.

Examples and precedents are used to persuade clients about design principles and technologies that they might not be familiar with, and convince them of the viability of the ideas being presented to them. Understood in the context of a framework of inhabiting, this use of examples can be seen as a way of addressing a key challenge that the GIC face when trying to convince their clients of the merit and viability of sustainable urbanism. Interviewees stated time and again that ideas are not taken up on the back of the planner referring to his or her own expertise. Selling sustainable urbanism relies in great part on the GIC's ability to bring the imaginary of the model to life. They do so in order to prove that their proposals about sustainable urbanism can be materialized.

Inhabiting as a strategy works both to encourage client engagement and convince them of the viability of particular ideas. Examples are particularly important at the outset of the planning process and in the early negotiations about how sustainable urbanism will be translated. An American urban designer explained the process as follows:

> One of the things that also happens largely in the initial processes of a project is "how does one educate the client?" And so we showed them different examples, precedents and used scale comparisons as a way of really establishing what contemporary planning and urban design can do.

Lodha, the client for Palava, wanted their new city to offer a lifestyle comparable to the "world's best" cities. In order to demonstrate how their plan complied with this project driver the planning team incorporated into the masterplan a precedent study of sustainable urban projects around the world. The study looked at four projects. These were Abu Dhabi's Masdar City, the proposed Khed special economic zone in Maharashtra, India, the proposed Xeritown project in Dubai and Dongtan Ecocity. For each project, the plan lists the sustainability features and achievements in four categories: energy, water, materials (which largely appears to refer to waste) and transport. Against each category the projects are rated as either "best", defined as being a global leader, having exemplar design and cutting edge technology; "better", defined as being a regional leader, having excellent design and innovative technology; or "good", incorporating best practice, responsible design and established technology.

The masterplan then does the same for Palava. This can be seen in Figure 18, which summarizes the planning team's sustainable infrastructure proposition for the project. By placing this summary after the precedent study in the masterplan, the team demonstrates how their plan draws on and references how sustainable urbanism has been implemented in other similar developments around the world. It also demonstrates that the version of sustainable urbanism that the team is proposing in their masterplan aligns with the project driver of an attractive lifestyle competitive with that offered by the world's best cities.

Energy	Water	Materials	Transport
· 5% PV · 75% hot water from solar hot water · potential for district cooling ·Low GHG gas fired power	· rainwater harvesting · nala environmental buffers · lake water storage for infiltration and on-site use · sustainable groundwater usage	· recycling program · waste to energy · composting · central materials recovery facility	· rapid bus transit for intra/inter parcel travel · Monorail connectivity · future access to multi-modal corridor · suburban/urban rail connectivity · transit supportive land use; compact layout · bicycle lane network
· 35% demand reduction	· 60% potable water demand reduction	· 70% recovery	· multi modal transportation
Better	Best	Better	Better

Figure 18 Summary of the sustainable infrastructure strategy for Palava. Image credit: Buro Happold.

In addition to their frequent use early on in the planning process examples and precedents may also be brought in later as a deliberate communication and/or engagement strategy. One British engineer who specializes in sustainability gave an example of how, over the course of a series of meetings about one project, it became clear that the clients did not understand what he and his colleagues were talking about. He credited this lack of understanding to both the failure of his team to communicate their ideas and a lack of interest from the client in what he called "the detail." Examples, he argued, are important to overcoming both of these challenges. The American urban designer quoted above argued in a similar vein, saying that when discussions become quite technical clients often lose interest. People are more interested, he argued, in "the conceptual level and the image of the city." Where discussion of technical detail fails to engage a client and gain their support, examples can succeed.

The value of examples in the planning process goes beyond just validating proposals and enhancing credibility. Their real value is the way they allow people to "see" or "experience" an idea for themselves. The fact that people can actually see something,

that they can physically look at and interact with material embodiments of an example, is of critical importance. According to the British engineer mentioned in the previous paragraph examples are "hugely important... People find it very hard to believe anything unless you've done it somewhere or you can point to someone who's done it somewhere." Being able to point to an example allows a consultant to, in effect say "if you don't believe me, see for yourself." People want to see or experience things for themselves because, as the former planning director of a large North American city, who is now consulting internationally, put it: "you don't want to just gamble without a sense that you're going in the right direction. And one of the ways you get that is to see examples on the ground, built, working, that you can independently look at."

The experience of inhabiting can be tailored so that those examples seen or experienced are positioned as objective, independent verification of the effectiveness of sustainable urbanism. Yet the argument that seeing an example is independent verification is somewhat disingenuous. In most cases, during the planning process the consultant team is responsible for selecting the examples that are discussed. Several consultants interviewed indicated that they prefer to be in control of the process of selecting which precedents and examples to draw on. Interviewees from the GIC were decidedly less enthusiastic about examples being cited when it was their clients who initiated the discussion.

Learning through inhabiting, in particular through the use of materials referencing examples and precedents, is a way of overcoming the limitations of the GIC's authoritative power when it comes to encouraging the take-up of sustainable urbanism in new environments. The way they use sensory experiences to persuade and seduce will be explored in the next two sections of this chapter. The theme of the subjectivity of learning through inhabiting will be returned to and discussed in more detail in Section 8.5.

8.3   Inhabiting through visual media

Examples are important in making arguments in the built environment industry in part because they give the opportunity to use visual resources. In presenting an idea, visual media provide a way of materializing both the actual and virtual dimensions of the imaginary of sustainable urbanism in a persuasive and seductive way. This section looks

at how visual media, in particular photographs, digital renderings, drawings and videos, are used to encourage and enable inhabiting. As discussed in Chapter 5, visual media are an important form through which sustainable urbanism travels. Images and videos can bring an imaginary to life and communicate an idea across cultural or language barriers. One interviewee, an urban planner with a large American architecture practice, described the value of visual media as follows.

> I think we need to be more, we have to be more adept about how we communicate because you're communicating across cultural divides, across language divides. So the method of communication is different. In developed countries people are comfortable with a written or verbal explanation of why things should be the way you're proposing them. You can write a report to convince someone. In many other countries a written report is entirely useless, no one will read it. And you need to find other methods of communicating, and actually those methods fit with the way we, as architects and designers, communicate. So a graphic communication, models, 3D renderings, computer visuals, are all tools which architects are familiar with but enable us as planners to communicate our strategies.

The interviewee discusses visual media as a communication device. As this section will argue, their their value goes beyond this. They can be used to demonstrate the authority of an idea, or to seduce or persuade the client into accepting the viability of a particular proposal. This section will describe how this occurs by examining the way visual media are used by the GIC in the planning process.

Photographic images are frequently used in masterplans in an illustrative fashion, to show what a design principle or technology looks like. Figure 19 contains a collage of images taken from a masterplan that illustrates a set of three principles associated with the headline objective of "promote a low-carbon community." According to the collage, a low carbon community should be mixed-use, walkable and employ resource conservation and reuse strategies. These principles echo the objectives of sustainable urbanism as outlined in Chapter 5.
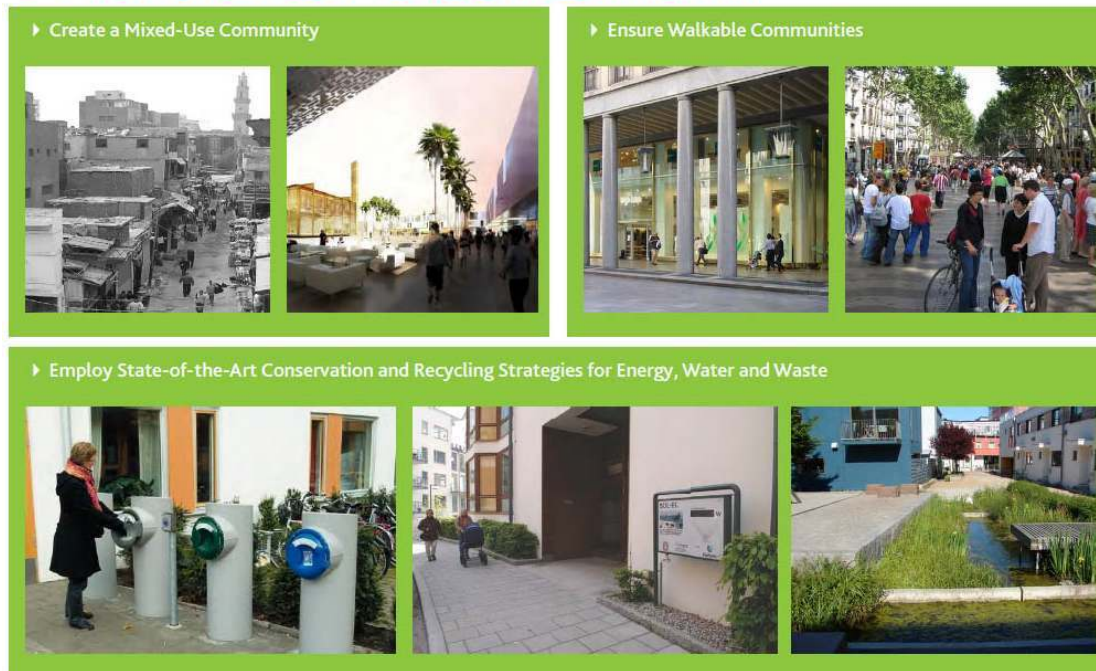
Figure 19 Collage illustrating the characteristics of a low carbon settlement. Image credit: SOM.

Similar summaries can be found in most of the masterplans analysed. However while other plans used words to explain and argue for these principles, this plan illustrates them using images. Because the images are largely photographs of existing places, the collage serves two purposes. Firstly, it illustrates what these ideas might look like when materialized. Secondly, it demonstrates that they have already been successfully implemented elsewhere, and hence are achievable.

Images are also frequently used in masterplans and presentations to materialize and demonstrate the viability of a particular type of design or technology. Figure 20 is an excerpt from the plan for Palava showing examples of district energy centres. The images materialize the technology being presented, making it seem more familiar and allowing the clients to visualize how an energy centre might fit into their project.

Next-Generation Energy Centers
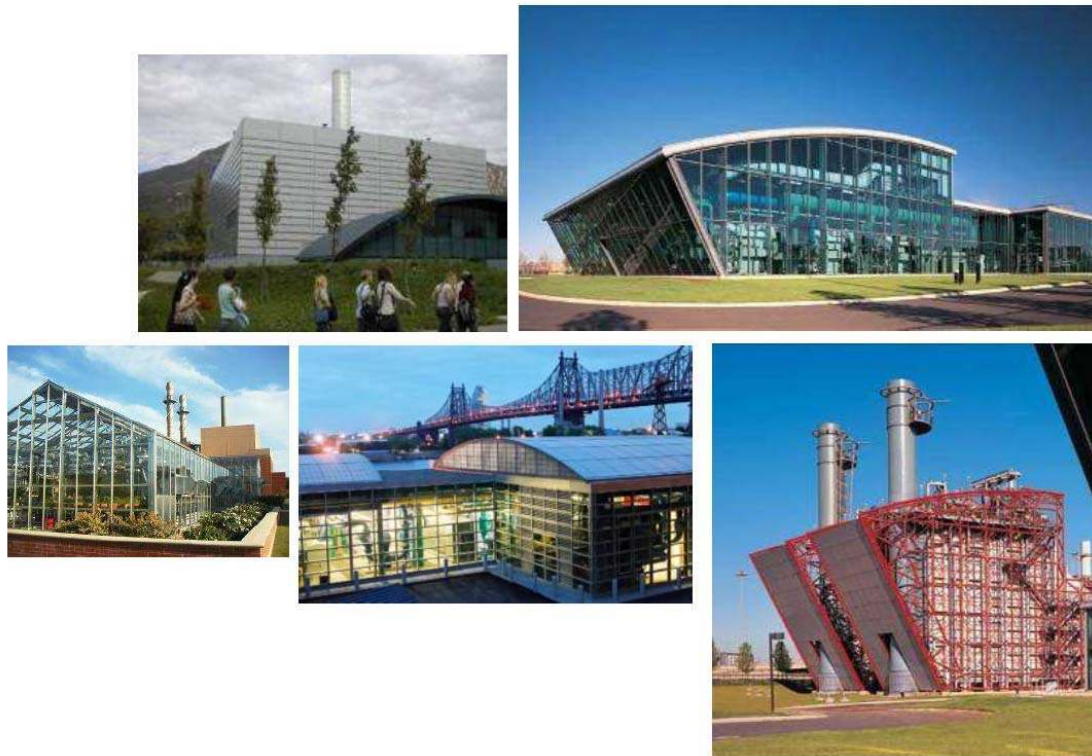
Figure 20 Examples of "next generation energy centers." Image credit: Sasaki and Buro Happold Engineering.

The effectiveness of images can be increased if they can be used to appeal to a range of senses, beyond just the visual, by encouraging the viewer to imagine what it would be like to be in a place. Another example comes from the masterplan for Palava. During the planning process the planning team identified precedents that the project could aspire to. As a part of this they conducted a "liveable city analysis." They used this analysis to identify some of the common urban planning and design features of five cities ranked high in two global urban quality-of-life indices compiled by the management consulting firm Mercer and the Economist Intelligence Unit.

The plan notes that certain features are repeated across multiple cities; for instance, parks and greenways, cycling facilities and mass transit are mentioned for all five cities. Figure 21 is a summary of key design features in the city of Vancouver. Once again, the collage of images serves two purposes. Firstly, they are used to illustrate the six features of this ostensibly "successful" city and thereby show what sustainable urbanism can look like. Secondly, the quantity and range of images also gives the viewer a feel for what the city itself might be like to live in.

Vancouver
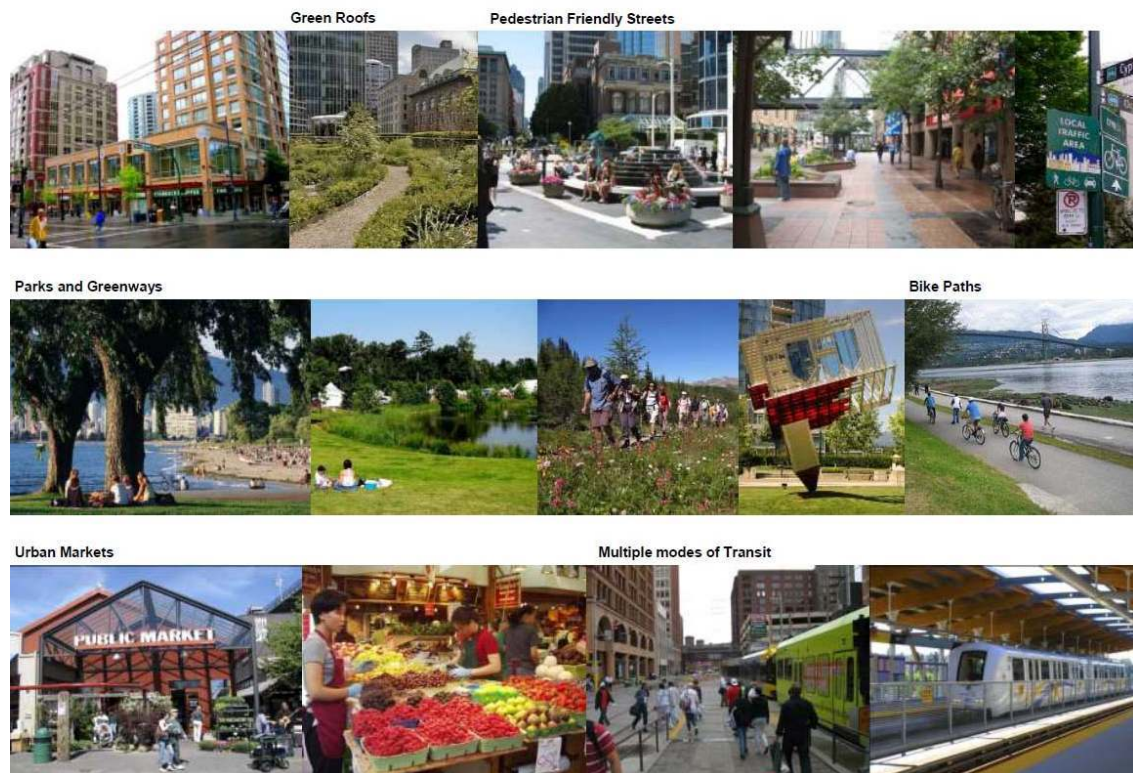
Figure 21 Visual summary of sustainable design features in Vancouver. Image credit: Sasaki / Buro Happold.

Looking at Figure 21, of course, cannot replicate actually going to Vancouver. But, what it can do is give an idea of what it might be like to interact with this environment, enabling the viewer to learn about Vancouver's brand of sustainable urbanism.

So far this discussion has focused on how images of already existing places are used to enable inhabiting. Another type of image materializes a proposed development rather than an existing place. The version of the assemblage of sustainable urbanism that will be implemented on a site exists only virtually during the planning process. In assemblage thinking terms, it exists on the plane of immanence. The challenge for masterplanners then is to bring the plane of immanence, that is, the potential and capacities of sustainable urbanism, to life in a way that encourages a positive experience of inhabiting by clients. A common form in which virtual worlds are illustrated in the built environment industry is the architectural rendering. Renderings that visualize what a proposed project will look like have, alongside scale models, long been one of the primary ways that architects and planners communicate their ideas. With advances in digital technology, the traditional hand-drawn rendering has been replaced by

increasingly lifelike digital versions. Once produced by architecture firms in-house, there are now entire firms dedicated solely to producing digital renderings for architectural practices. The architectural rendering is increasingly an art form unto itself, and practitioners think carefully about how to compose these renderings and what they want to communicate through them.

The point of view (POV) rendering which shows a scene from the perspective of a person on the street, such as in Figure 22, is particularly effective in encouraging sense of inhabiting. The consultants at the firm that produced this image, SOM, discussed in interviews their firm's preference for images and renderings done from such a perspective. POV renderings give the person looking at the image more of a feel of the actual experience of being in a place. Interviewees at another architectural practice discussed the demand for such images from their clients, referring to them half-jokingly as "cappuccino pictures" in reference to the common placement in such images of happy urban residents enjoying their coffee.

Figure 22 An urban plaza in Panama Government City. Image credit: SOM.

As discussed in Chapter 5, another increasingly common form of visual communication is the commercial video that takes a viewer through a digital version of the project. A 2010 promotional video for Masdar City made by a real estate marketing agency takes the viewer through a virtual version of the city, complete with cappuccino drinkers, while a voiceover describes the city's many objectives and virtues. Renderings and videos, particularly those created for marketing purposes, are explicitly designed to be seductive, to entice the viewer to accept or endorse the project being visualized.

Renderings and videos are two ways that consultants from the GIC use visual media to encourage clients to inhabit the virtual plane of sustainable urbanism. Another way that consultants do this in masterplans is to combine images showing examples of where an idea has been implemented with drawings and renderings of their proposals. This is an important strategy because drawings and renderings of the virtual world of a proposed project enable inhabiting, but only in a hypothetical sense. Combining images of an imagined place with those taken from real-world examples integrates the realms of the actual and the virtual such that the former is used to underline the achievability of the latter.

Figure 23, once again taken from the masterplan for Palava illustrates how this can be done. The plan proposes a large park within the development. In addition to describing the benefits of the park, the masterplan uses a variety of images, both photographic and digital, to encourage the viewer to inhabit this imagined space. Figure 23 is a collage that integrates different types of images. At the centre of the collage is a plan of the open space which will sit at the centre of the development. Two features of the park are highlighted: an urban plaza and a park pavilion. For each of these, there is a set of indicative images which invite the viewer to imagine what each of these features might look and feel like.

The plan allows the viewer of this image to inhabit the plane of immanence by imagining how this proposal will be materialized on the actual site. The examples of where the ideas contained in the plan actually exist in the plane of reference make the proposals seem more real, tangible, and achievable.

Figure 23 Landscape concept diagram featuring indicative images. Image credit: Sasaki and Buro Happold.

Visual media, whether what they depict is real or virtual, are a powerful way of communicating the features and advantages of sustainable urbanism. The characteristics of sustainable urbanism outlined in Figure 21 for example could simply be summarized in a table or diagram. In presenting this information however the consultant would have to hope that his authority as an expert was enough for his audience to accept what he was saying as correct. In contrast, a collage of pictures of a real place, particularly one that has been externally endorsed as "good" is likely a more persuasive strategy. By showing, rather than telling, the GIC invite their clients and other audiences for their work to engage with their ideas on a sensory level.

8.4   Inhabiting through experience

The most powerful form of inhabiting occurs when experiencing a place yourself. Images and videos can be used to give a sense of experiencing a place, but they still rely primarily on the visual. When actually experiencing it, all five senses can be engaged. To use people's experiences in the planning process does not necessarily require going

anywhere. The GIC often use the fact that their clients tend to be quite well-travelled to draw out what they are looking for in a plan, and how these objectives can be aligned with those of the model of sustainable urbanism.

According to the director of the planning practice for one large international multidisciplinary firm, clients might reference somewhere they visited but "they often don't know precisely why they like something. They know they liked it but they're not quite sure what it was about this that they liked. So you can help them to understand what are the qualities that perhaps they would like." Discussing how he uses this technique, another experienced international planner spoke about how he asks his clients to reflect on their own experiences. "At some point I say 'Well... Where did you go for your holidays?' 'Oh I like Istanbul so much, you know I like Paris...' 'What did you like in Paris...' 'The Champs Elysess is fantastic...' 'What do you like about it?'"

Another urban designer from a different country and firm gave almost the exact same example. The only way to get clients to explain what they want, he argued, is to ask them to draw on their own experience. To get them to do so, he explained, he asks them to put themselves back into a place, and remember what it was like. It is important, he argued, that clients explain to him the specifics of what appealed to them, that they:

> ...not only say, "I like Paris."– "What did you like in Paris? Could you describe something that you actually liked to me? – x square, or just a building, or a little bench, or a tree." Anything that they actually can picture in their mind, that you can translate, then you know what you like. Then you know what to do, and how to do the things you're going to do for that client or that government.

The consultant's role is to translate their clients' preferences about urban places into principles they can work with. As the two quotations above indicate, they may do this by encouraging the client to discuss their own personal experiences. The GIC can also create the opportunity for their clients to visit places where they can see the principles of sustainable urbanism in action. A leader of Arup's Dongtan Eco-City project described how his team did just this in order to convince the clients of the viability of the plan, which included many ideas that had not been tried before in China. "When we did the Dongtan project" he explained "every bit of it we could show them and take them there, which we did. We took our client to a lot of these places and showed them. It gave them a lot of confidence." Another planner explained how in his negotiations with

transportation engineers he draws on the experience of New York City's decision to pedestrianize Times Square.

> You go to the Department of City Public Works and you say "why don't you take a lane out of this road and extend the café tables into it." And they say, "You've got to be kidding." So you walk them down the streets of New York and say "huh." Nothing succeeds like an example.

As discussed previously, the consultant team for TRX proposed developing an on-site energy centre to generate electricity for the development. As one of the leaders on the project explained, making the case for this is difficult when the developer compares it to the much simpler option of plugging into the surrounding infrastructure. The consultants made a number of arguments in favour of this approach, including security of supply, protection from escalations in power prices, and a business case demonstrating its financial viability. They then used the client team's visit to London for a workshop as an opportunity to take them on a tour of the energy centre they had designed for the London Olympics site. They also had the lead engineer on that project give a presentation about it. The ability to demonstrate this technology in action, combined with their other arguments ultimately won the client over.

One of the components of this research was participating in and observing a weeklong study tour of sustainable urban projects in northern Europe. The impetus for the study tour was a proposed project outside Melbourne, Australia. The lead developer of the project, David, was working with an urban planner, Matt, who had been on many study tours previously and found the experience valuable. David was relatively new to the development industry and eager to learn. Together, he and Matt devised the idea of taking study tour of sustainable urban projects in Europe so that David could see the types of ideas that Matt was proposing first hand. The other participants on the tour were all practitioners who were likely to work on the proposed project at some point. So, in one sense the entire tour was designed as a way to sell sustainable urbanism to David. Ultimately, the strategy worked. At the end of the tour, David said that the trip had given him "confidence in the sense that I now have a much better grasp what makes great communities, and I now have greater confidence in the team behind me, and see what they've advised me is actually what worked in practice." By experiencing

sustainable urbanism first hand, David was persuaded of its value, and also gained trust in the expertise of his advisors.

Discussing the study tour in a follow-up interview, Darwin reflected on the value of experience.

> "I think it's the condition of the human being, right? …I think sometimes, or most of the time, we're hard-wired to experience things for ourselves and learn that way, and I think it's no different with learning about community building, and what makes great communities. We can read all we want, but we need to experience the journey ourselves."

Many interviewees agreed with Darwin that actually experiencing a place yourself is the most effective way of learning. According to another participant on the European study tour, "most people read a lot of books, and they become experts, but one way to actually be an expert, or build things that work, is feeling and experiencing them." A provider of study tours in Freiburg, Germany, cited natural human scepticism as driving this need to see things before we believe them. In his words:

> "I would say as human beings, we believe only in that which we have seen, which we can see directly and where we have a sense of access to see that it's really in function and not only a hyped story by journalists. Yes? We want to see it. We want to smell it and we would say, 'Okay, this is really so.'"

In his comment this interviewee highlights the difference between experiencing and inhabiting. Inhabiting is about more than just experiencing a place. It is also about taking those experiences and using them to inform future actions. Inhabiting requires interacting with the surrounding environment on a sensory level, seeing it, hearing it, feeling and even smelling it. Inhabiting entails, as Darwin says, a journey from one way of understanding and interpreting something to another way. For many of the participants on the European study tour, a bicycle tour and a walking tour of Copenhagen facilitated such a journey. The walking tour was conducted by an experienced, passionate and prestigious architect and urban designer. This tour provided context and background on Copenhagen's transformation from a city of cars to one of bicycles. The bicycle tour allowed the participants to experience the city in almost the same way as a local person would. In follow-up interviews, two tour participants cited these experiences as important in convincing them of the viability of the bicycle as a form of transit.

Learning through inhabiting can be a powerful way to increase someone's confidence about advocating a particular idea or approach. This confidence is something that study tour participants cited as among the most valuable things they gained from their experience. For Mike, spending time in Copenhagen hardened his resolve to promote sustainable transit in the projects he works on back in Australia.

> "That 40 – 50% of people are commuting to work on their bikes, I think that's the thing that gives us much more confidence to go to the clients down here and even though our percentages are much lower, it gives us much more confidence to say that we've seen this stuff on the ground and that it will push the clients harder back here."

The GIC do not only use experiences as a way to promote ideas to clients. Many of them actively seek out the opportunity to learn through inhabiting themselves. There is a long history among architects and urbanists of undertaking study tours which continues today. Learning through inhabiting satisfies what a number of interviewees repeatedly referred to an innate human desire to only believe what we have seen for ourselves. By visiting and learning from new places the GIC add to their own expertise, giving them another tool in their arsenal when promoting sustainable urbanism.

8.5   Inhabiting and subjectivity

The majority of the examples discussed in this chapter demonstrate how the GIC use inhabiting to provide evidence that will encourage the take-up of sustainable urbanism. An image of a combined heat and power station proves that this technology is viable; a visit to Hammarby Sjöstad shows that implementing sustainable urbanism can create a good urban place. Many interviewees argued in one way or another that "seeing is believing." For one study tour participant, traveling and seeing things for himself is essential in part because we live in what he calls "the age of Photoshop."

> "For what we do, you actually basically need to go around and around and around, to actually see what's being executed, and remember, this is the age, what I call it, the age of Photoshop, and the demise of architecture because of that. You are going to see a thousand a pictures, at dusk or dawn, in Photoshop, in which everything looks great, and those buildings capture your eyes most of the time in these pictures, but reality is, as I said, you're not looking at everything else."

By "everything else" this interviewee is referring to all those things that might not be highlighted in an article or best practice case study. While such forms circulate widely and are the means by which many people learn about sustainable urbanism, they are also produced by actors with agendas that shape what aspects of a place to promote and highlight. As a result, best practice can be a political, typifying force, encouraging conformity and precluding potential for debates about alternative approaches to development (Moore 2013). The interviewee quoted above is aware of this. For him, personal experience of a place offers him the chance for a more objective analysis of its strengths and weaknesses. Yet it is important to recall Grubbauer's (2010) argument about the constructed nature of visual communications. The same can be true for experiences. Each of the images and experiences discussed in this chapter have been produced and curated to some extent in line with the objectives of those who create them.

Visiting a place allows a person to make their own judgment about it, and to see aspects that do not make it into the descriptions available in books or online. Yet a visit itself can also offer a highly subjective experience. What visitors learn on, and take away from, a study tour is very much, as González (2011) has pointed out, based on a version of a story constructed by a particular set of actors. The actors putting together a tour itinerary may be quite selective; for instance they may only take visitors to see showcase examples (Peck 2011b). Not only this, but visitors will reshape narratives and experiences in retelling them, and also may take home a mistaken impression of a place (McCann 2011; Ward 2013). A key actor in the development of Masdar City bluntly explained his take on the desire by people to see examples.

> "Everybody is running around trying to kick the dirt and see you know, tangible examples. But the irony is…depending on who you speak to, you still don't know what the hell is going on… That's still the problem in this whole area is that you go and see a tangible example, but what, who's telling you about it and what actual story are you getting?"

This interviewee's argument highlights the subjective nature of seeing and experiencing, in which the materials that actors engage with are shaped by a number of factors. When the GIC put together a compilation of images or organize a study tour, the forms that these take on are shaped by a number of factors. These include the

consultants' existing knowledge, the availability (and language) of information, and, not least, their intended audience and the message they are trying to communicate.

For example, using images of places that have been successful in implementing particular design principles lends an air of objectivity to the proposals in the masterplan. The plan excerpted in Figure 21 puts forward a set of features of the good city by making reference to existing cities already externally validated as such. In doing so it glosses over not only the subjectivity of city rankings in general, but also the process of assembling the images. The "livable city analysis" that this image is a part of was painstakingly assembled by the consultant team for Palava. In preparing it they drew not only on the two global surveys, but also on their own experience, knowledge, and preferences as well as the materials (in this case photographs) at their disposal.

Similarly, the simple use of an image in a masterplan is a result of a process of decision-making about the best way to communicate a particular message. The images used in the masterplans analysed present a vision of sustainable urbanism that aligns with the models imaginary as a vibrant, resource efficient place. The images of the energy centres in Figure 20, with their sleek, modern designs and no smoke or other polluting discharge to be seen, offer a clear contrast with conventional imaginaries of power plants. Similarly, no automobiles can be seen in the collage of images of Vancouver. Returning to Figure 20, the use of a collage of multiple images communicates that there are options for how to implement these ideas. This increases the likelihood that an option might appeal to someone reading the plan. They may see an image that resonates with them personally, perhaps because it reflects the imaginary they had envisioned for the project, or they may recognize a place they have read about or have visited that they admire.

The computer-generated images produced for masterplans are even more carefully designed. In "cappuccino picture" renderings the sun is always shining, children are always playing and the more negative features of urban life, such as traffic, are entirely absent. Such renderings, along with professionally commissioned photographs of so-called exemplars in sustainable urbanism, make up the majority of the images that circulate on the Internet and presentations that claim to represent what sustainable urbanism is and can be. These images are designed to present an ideal, in order to sell

the idea of sustainable urbanism through strategies of persuasion and seduction. However this ideal may not reflect reality, and an unrealistic perception of what sustainable urbanism can achieve may result.

The subjectivity of inhabiting became apparent to me during a visit on the European study tour to the Bo01 district in Malmo, Sweden. This project is widely cited as an example of good practice in sustainable urbanism. The guide for our tour, a local architect, presented it to us as such. Yet the group I was traveling with was determined to inhabit places for themselves, not just to follow along on a predetermined itinerary. After the tour, several of us wandered around the district for some time. At one point, we wandered into the studio of a photographer who lived and worked in the area, and struck up a conversation. According to the photographer, some buildings in the development had been built hastily and with poor quality materials. Many of the building façades were not designed for the cold salty air and, as a result, already need to be replaced. In addition, he reported, in the winter the district is very windy and cold, making it unpleasant to live in. These issues certainly were not mentioned during our tour, or in any of the many case studies I had read previously of the project as an example of best practice.

This example highlights the way study tours can be designed to show particular aspects of a project. In addition it demonstrates that they may also facilitate chance encounters revealing competing narratives and aspects of the project that may not make it into the more polished, or "photoshopped" good practice case studies that circulate internationally. As our afternoon in Malmo came to an end, our group stopped at a café along the district's waterfront promenade. Sipping our cappuccinos we shared our thoughts and experiences of the tour and the district, continuing the process of inhabiting Bo01 through which we all arrived at our own, unique, subjective conclusions about this particular expression of sustainable urbanism.

8.6   Conclusion

This chapter has explored the ways that inhabiting is used to communicate the principles of sustainable urbanism and encourage its take-up. In the planning process, the GIC facilitate learning through inhabiting in order to encourage their clients to adopt their proposals. The power and authority granted them by virtue of their reputation as

experts are complemented by their skill in using images and experiences to persuade and seduce. As discussed in Chapters 3 and 5, an assemblage of social and material actors combines to be more than the sum of their parts. The GIC's power and authority are helpful in seeing ideas taken up elsewhere, but they also rely on the types of materials described in this chapter.

The impact of the types of images and experiences discussed in this chapter is not limited to shaping an individual plan. Rather, they contribute to the processes of territorialising the assemblage of sustainable urbanism, defining what is and is not part of the assemblage. In this way, they shape what it means to do sustainable urban development. Knowledge gained through inhabiting stays with a person. It will be used on future projects and shared with colleagues. Materials such as images and videos are highly portable forms in which sustainable urbanism can travel. They can be disseminated through a variety of media including websites, presentations and displays at conferences and trade fairs.

If inhabiting contributes to broader processes of assembling sustainable urbanism, it is important that it is undertaken in a way that encourages critical reflection. The passive use of examples and precedents, particularly packaged "good practice" versions of these brings with it the potential that a sales pitch version of sustainable urbanism is what circulates internationally. The use of visual media and experiences to encourage inhabiting are designed to persuade and seduce clients and the general public of the benefits of sustainable urbanism. While images of happy children and well-appointed couples drinking cappuccinos may enhance sustainable urbanism's saleability, they may also create a gulf between expectation and reality which ultimately compromises the ability of the model to achieve its objectives.

The selection of examples also needs to be undertaken critically. The images and experiences used to encourage inhabiting in the planning process observed for this research tend to reference the same places time and again most of which are in Western Europe. This may be reinforcing a limited understanding of sustainable urbanism based on the experience of a group of "usual suspects." The types of places visited on study tours by those interested in sustainable urbanism tend to have a similarly limited

geography. This may be because, as a number of interviewees highlighted, the number of places that truly embrace and reflect sustainable urbanism are few.

Alternatively, it could be because most of the GIC are trained, as one interviewee stated "in a European model of urbanism." It is not impossible for this European model to be replicated in an urban project in Asia, or the Middle East, though of course, whether or not this is desirable is another question. When they are used in the planning process, planners and their clients should give careful consideration to the conditions that gave rise to these European and North American examples. It is highly unlikely that these conditions will mirror those factors driving an urban project in another region of the world. A senior government official in Singapore accustomed to working with international practitioners commented in an interview:

> If you look at Freiburg and Hammarby and all these Utopias... I have visited them in Germany and Sweden, all very wonderful but, Elizabeth, how many Asian cities can do that? ...If you go to Mumbai and try to bring in a Freiburg or Hammarby, it's very difficult. Their types of problems are really very different.

As Chapter 7 emphasized, when sustainable urbanism travels it is translated, not transferred. Inhabiting, which can help bring sustainable urbanism to life plays a valuable part in facilitating this translation. The GIC have a responsibility to use it in a considered and critical way.

9 CONCLUSION

The planners observed for this research project operate largely in a world of abstraction and representations. They are given a piece of land, a set of objectives and asked to come up with a detailed imaginary for a future urban place. Sitting in an office in London or New York or Singapore, drawing lines on a piece of paper, modelling projected energy usage, or creating a rendering of someone sipping a cappuccino in an urban plaza, it is easy to slip into thinking that you can control the way a place will eventually materialize, and the way your cappuccino drinkers will behave. This omnipotence, of course, does not last. Buckminster Fuller's ambition, quoted at the beginning of this dissertation, of using design to shape human behaviour can be difficult to realise in practice. The majority of the projects masterplanned by the GIC will never materialize. Those that do will be influenced by a wide variety of factors on the long journey from plan to built project, most of which the original masterplanning team has no control over. All of this leads to a question that must be asked of any research project: what was the value of researching this particular topic? What is the importance of understanding the way ideas about sustainable urbanism travel internationally, and the GIC's role in this? And perhaps most importantly, what do the answers to the questions posed at the outset of this research project mean for the practitioners trying to plan sustainable cities?

Given my background as a practitioner, throughout this research project I have maintained a degree of affinity with my subjects. At the same time, my very motivation for wanting to undertake this project in the first place was my concern about the ethical implications of the role of people like myself and my former colleagues in moving ideas around internationally. Given these influences, Patsy Healey's (2010) advice, mentioned in Chapter 1, to be not just critical but critically constructive was a guiding principle for me in carrying out this research. While in the course of my research I did see shadows of what Anthony King (1980) once labelled "cultural colonialism", for the most part such approaches are largely not feasible today, even if they were considered desirable. In this concluding chapter I will build on the findings presented in this dissertation to set out what this research project contributes to knowledge, as well as the implications of my findings for practitioners. This is preceded by a summary of the research findings.

9.1   Summary of findings

The question that this dissertation set out to answer had three parts. These were *what* constitutes the model of sustainable urbanism; *how* is it moving around internationally and *why*, and what is the role of private sector consultants in this mobility*;* and what are the broader implications of the global spread of this model, and the role played by these consultants, for urban planning practice? This section reviews and summarizes the findings for each of these questions.

9.1.1   What constitutes the model of sustainable urbanism

Chapter 1 proposed that sustainable urbanism should be understood as an emerging paradigmatic planning model, whose growing international influence reflects the broader popularity of the idea of sustainable development. Sustainable urbanism's origins cannot be traced to a specific location. Rather it is what Roy (2011a) has described as a "model in circulation" being formed and shaped through its international travels. To conceptualize how this occurs, Chapter 3 proposed that sustainable urbanism should be understood as a dynamic assemblage, a materially heterogeneous collection of entities with the potential to be expressed in a variety of different ways. The model consists of design principles and initiatives that claim to make urban areas more sustainable. It also includes documents, presentations and videos that transform these ideas into durable, material entities capable of traveling. Also parts of the model are the actors who develop ideas, embed them in materials and present them to people around the world. Together these entities are greater than the sum of their parts. The agency of one is relationally linked to others within the assemblage.

Chapter 3 emphasized the way assemblage thinking conceptualizes the relationship between formation and form, that is, the processes that contribute to constituting an assemblage, and the more or less durable form that an assemblage can take on, thus allowing us to recognize it as a "thing." Building on Deleuze and Guttari (2004) as well as DeLanda (2006), the chapter proposed that two types of processes are particularly important to giving an assemblage a durable and recognisable form: territorialisation (and its opposite, deterritorialisation), and coding. The three coordinating devices described in Chapter 6 set out what sustainable urbanism is and define how to measure whether it has been achieved. In doing so they draw a line around the assemblage, thus territorialising it. Sustainable urbanism is coded in some of the circulating materials

that purport to set out what it means for an urban area to be sustainable. These include masterplans and associated marketing materials, "best practice" case studies and guidance documents, and textbooks. Chapter 5 discussed how, when the same ideas begin to circulate in multiple forms, this can reinforce what elements are considered part of the assemblage, contributing to its territorialisation.

Building on this understanding of sustainable urbanism as an assemblage, Chapter 5 applied a framework proposed by McFarlane (2011b)for conceptualizing traveling ideas. It looked at the forms that ideas travel in, the object and imaginary of the model and the types of power at work as it travels. The chapter drew on analysis of interviews and masterplan documents to develop an understanding of sustainable urbanism as it is applied by the GIC and their clients. Based on this analysis the chapter proposed that sustainable urbanism, as it is applied by the GIC, has the following three objects and associated imaginaries. Sustainable urbanism is "good" urbanism: dense, compact, walkable and featuring public transit. It is also high-performance urbanism, using resources in a more efficient way than conventional urban development. And finally, sustainable urbanism is characterized by design features bringing multiple benefits.

Chapter 7 argued that when the model of sustainable urbanism travels it is translated rather than transferred. The chapter's examination of examples of the translation process highlighted the way sustainable urbanism, as an assemblage, has a variety of potential and capacities. The model is expressed in different ways in order to respond to the objectives driving an urban development project. This flexibility does have limits however. The application of an individual element of the assemblage, such as a single design principle or technology, is not an expression of the model.

Chapter 1 introduced the idea that there exists a "mainstream" approach to sustainability, and the dominance of an entrepreneurial approach to planning. While the Brundtland Commission definition of sustainable development was rarely mentioned by interviewees or in masterplans. However its principal promise, that economic growth and environmental improvements are not mutually exclusive objectives, underpins the proposition of sustainable urbanism. Sustainable urbanism promises that the environmental impact of urban development can be mitigated by ensuring that such development focuses on the three objectives of good, high-performance and integrated

urbanism. In this way, the model adheres with the theory of ecological modernization that underpins the mainstream conception of sustainable development.

The relationship between sustainable urbanism and the entrepreneurial planning paradigm within which contemporary urban development projects are undertaken was a running theme throughout the dissertation. An entrepreneurial approach to planning is characterized by a focus on using urban planning as a way to attract investment and foster economic development. Within this context, large urban planning projects of the type discussed in this dissertation are largely run by development bodies which are either private, public-private partnerships or public bodies that have been given license to act like private companies. These developers adopt a property development approach to planning where urban development projects are expected to deliver economic benefits. Chapter 7 argued that sustainable urbanism is not inherently entrepreneurial, but it is well-suited to helping urban development projects meet the demands of an entrepreneurial climate. The model's many potentials and capacities mean that it can be expressed in a variety of different ways in order to align with different types of project drivers. In recent years, sustainability has come to be an important part of marketing a development to the desired tenants, whether they are international corporations or middle-class Indian families.

While the model's flexibility means that it could be applied in an innovative and progressive fashion, this does not appear to occur frequently. From the research conducted, it appears that when sustainable urbanism travels in the hands of the GIC, it results in the application of mainstream sustainability within an entrepreneurial paradigm. Embracing sustainability is largely seen as a way to achieve economic objectives. The GIC are paid to provide a service, and their involvement is limited to the early stages of work on a project. As a result, they have limited scope to encourage the take up of more progressive approaches. However, as will be discussed further below, they can gradually shift the boundaries of "mainstream" sustainable urbanism.

9.1.2   How and why the model travels internationally
Sustainable urbanism travels in many different forms. Chapter 5 outlined some of these, which do include the work of the GIC, in particular masterplans and associated documents, images, models and videos. The model travels in other forms as well, not all of which are directly related to the GIC. These include textbooks and other educational

materials, lectures, study tours, conferences and trade shows. More informal interactions such as meetings and conversations also play an important role.

While Chapter 5 pointed out the myriad forms in which sustainable urbanism can travel, Chapter 6 argued that the GIC play a particularly important role in the development and circulation of the model. This is by virtue of their involvement in many high profile urban development projects around the world. Chapter 6 described some of the reasons for the ongoing demand for the GIC's services. These include their expertise, but also the value of employing a high profile, prestigious firm for branding and marketing a project. In addition, they occupy a privileged position because of the key role they play in developing and deploying some of the most important devices used to coordinate sustainable urbanism's travels.

These coordinating devices are distinguished from the forms outlined above because they provide a mechanism not just for learning about an idea, but also guidance about how to implement it. They code the assemblage and provide normative guidance for its implementation. Chapter 6 described three coordinating devices that are important in the GIC's work: multidisciplinary planning teams, masterplans, and sustainability rating and certification schemes.

There are several reasons for sustainable urbanism's broad international uptake. Firstly, as Chapter 7 argued, the model is particularly well-suited to supporting the demands of carrying out an urban project in an entrepreneurial climate. This is in part because of the international spread of the key coordinating device of sustainability certification and rating systems such as LEED. The popularity of such systems has led to sustainability coming to be seen as having marketing value. In addition, the model's flexibility helps the GIC tailor it to the particular economic requirements of a client and their project. Another reason for sustainable urbanism's international success is its paradigmatic status, which it has obtained by virtue of the widespread acceptance of sustainability as a core objective of urban planning. Relatedly, sustainable urbanism's association with "common sense" or "good" planning is also a factor in its success. Inhabiting is a powerful tool for invoking such understandings, and enrolling new actors when sustainable urbanism is translated. As one interviewee stated, clients "want to be like Paris, not Dubai."

The internationalization of planning practice and practitioners does appear to have played a role in encouraging sustainable urbanism's international spread. All of the firms and individuals interviewed and observed for this research see sustainability as a basic underlying driver of their work. Thus when they work internationally, they take sustainable urbanism with them. In examining the GIC's role and influence, this research has revealed some of the power dynamics that shape international understandings of what constitutes sustainable urbanism. While the GIC certainly are not the only people discussing and attempting to define sustainable urbanism, they do occupy a privileged position when it comes to implementing it. By virtue of their reputation for expertise, their prestige, and the fact that they are in a position to deploy systems to coordinate the complexity of sustainable urbanism, they are repeatedly hired to work on some of the most prestigious urban projects around the world. This means that they are involved in many of the high-profile efforts to materialize the model. As a result, they have a substantial influence over the state of the international debate on sustainable urbanism.

Whether or not any one particular plan is implemented, the version of sustainable urbanism peddled internationally by the GIC is influential. They materialize their ideas in plans and images, which are then taken up in media articles, textbooks, best practice case studies and the like. These materials influence broader popular understandings of sustainable urbanism, and become a focal point for those interested in the subject. They give something to study, learn from and debate, and create the possibility for the experience of learning through inhabiting. A relatively limited number of actors are regularly involved coding and territorialising mainstream model of sustainable urbanism described in this dissertation. This is doubtless reflected in what does and does not become part of the model, circulate and materialize internationally.

Given the level of influence GIC have, there are a number of areas in which their working practices can be critiqued. Firstly, there is the tendency to repeat similar ideas across plans for a diverse range of projects. In doing so the GIC do not always give sufficient consideration to the context in which their plans will be implemented. One way to diversify the model of sustainable urbanism would be to work with a broader range of actors. The GIC incorporate ideas gathered on their travels into the assemblage of sustainable urbanism. But what, and whose, ideas do they incorporate? Sustainable

urbanism is co-produced between the GIC and the actors, social and material, that they encounter in their travels. The model would be enhanced if this group of actors were more diverse. This could include, of course, their clients, but they could also search out more opportunities to talk to less elite (and profit-oriented) actors. Most GIC firms do some pro-bono work. This work could be organised so that what is learned through those experiences is filtered back into the everyday working practices of the firm.

Another critique, and one that my sponsors at Happold Consulting suggested themselves, is that there is not enough critical questioning amongst practitioners of the underpinnings of their knowledge and the extent to which it is or is not universally valid or relevant. Professionals are not always explicitly aware that the knowledge base they have built up through their education and experience is not universally applicable. I did observe that younger practitioners, who entered the industry at a time when working internationally has become the norm, did seem to be more aware of this fact. This brings to mind the quote that opened Section 1.2, in which a senior British member of the GIC reflected on how quickly his work had become entirely international. Many practitioners were not trained for this situation. As will be discussed in Section 9.3 below, one area for further research could be the implications of the internationalisation of planning practice for education programmes in the built environment industry. It would be interesting to explore further how these programmes can prepare students for the demands of an increasingly international market for expertise.

9.1.3   Implications for planning practice

The final element of the primary research question, of the broader implications of sustainable urbanism's travels for planning practice, has not yet been directly addressed at length in this dissertation. This section will do so through a reflection on the role of values and ethics in sustainable urbanism's international travels at the hands of the GIC.

Chapter 7 proposed that planning is ultimately a process of decision-making. I am far from the first person to make this observation. Campbell (2002: 272) argues that "planning is about making choices, with and for others, about what makes good places." The complexity of decision-making in the planning process, Chapter 7 proposed, is increased when sustainability is introduced as a driving objective. What has not yet

explicitly been considered in this dissertation is the basis upon which members of the GIC and their clients make decisions about how to implement sustainable urbanism. Values and ethics are essential to guiding the decision-making processes of planning, and yet their role is often obscured or unacknowledged. Erin, a young sustainability engineer with Buro Happold, was one of very few interviewees to reflect explicitly on the way this occurs. Her comments are insightful and are therefore quoted at length below.

> I almost think that sustainable isn't anything at all… It's kind of a lazy way, a catch-all phrase, that doesn't mean anything, when what is commonly trying to be expressed is a multitude of, essentially, improved designs over what would be considered a baseline case. So someone might say "sustainable" and what they mean is this masterplan uses less energy than a comparable masterplan elsewhere. And so what they really mean is good energy design. Someone else might be saying it's sustainable, but mean there's room for lots of small businesses to allow families to grow. In which case, what they mean is it's got a better economic structure to allow growth. So I think "sustainability" has become this catch-all kind of phrase with no meaning, really, that's explicit. Because it's an easier way to just say, "Oh this is sustainable," rather than really think about, "Well, what do I mean? Why is it sustainable?"

Erin identifies the fact that people often have quite different views about what the objectives of sustainable urbanism should be. Without a clear and broadly agreed upon definition of what sustainable urbanism means in the context of a particular project, people can take advantage of sustainability's vagueness to simply use it as a shorthand for "good". Sustainable urbanism, then, can benefit from the unassailable goodness of sustainability more broadly; as Swyngedouw (2007) has noted it is hard to find anyone who is against sustainability. Erin points out that calling something "sustainable" is an easy way to attach a positive value to what you are proposing, without actually needing to explain the details of why your proposal should be viewed positively.

Practitioners' decisions about what sustainability means are guided by their understanding of the objectives of sustainable urbanism. Yet Erin believes that as practitioners she and her colleagues do not often take the time to consider what they really mean when they say something is sustainable. GIC practitioners tend to move from project to project, focusing on deadlines, outputs and keeping their clients happy. Internal design reviews, a common practice at many firms, might seem to be an

opportunity to consider the bigger picture. However, at Buro Happold at least, these appear to be largely oriented towards convincing senior management of the quality of the work conducted.

This brings us back to the theme, introduced in Chapter 1 and returned to over the course of the dissertation, of the ethics of these practitioners. In conducting this research I found little recognition among the GIC of the values and ethics that underpin their work, or any evidence that they *consciously* apply any consistent, clearly elaborated ethical framework in their work. Discussions of ethics in interviews were often accompanied by a nervous laugh, a self-deprecating comment, and a swift move on to the next topic. I was left with the impression that interviewees were deliberately avoiding an extended consideration of such issues. A common refrain from GIC interviewees was something to the effect that "if we weren't involved, this project would still go ahead and it would be done less sustainably than if we are involved." Yet it was also clear to me that interviewees thought that they *should* be considering ethical issues. A number of interviewees appeared uncomfortable when discussing projects where there was a gap between their own values and ethics, and those which they found themselves applying in their work. Another mid-level Buro Happold engineer, Jack, made the following comment in relation to his work on one particular project in India.

> No one's under any illusions that we are achieving sustainability you know. You know, there's a greenfield site here, we're about to drop a city on these people. You know, we'll be raising the living standards of a lot of people, they're all gonna have cars that they didn't have before, potentially jobs. The environmental impact is massive. The social impact on the people living there is huge. What we're trying to do is work from a point of view where this type of economic development is a given and to minimize the environmental and social impact within that. So it's not that the chaff or wheat sustainability model you know. But that's the paradise that we live within a commercial setting,

Jack explicitly acknowledges a central tension of the sustainable urban proposition, one that has been highlighted repeatedly throughout this dissertation. There are limitations on the extent to which sustainability can be achieved given the commercial environment within which urban development projects take place. At the end of the day, for the GIC, this is a business and sustainable urbanism is a product. The plans they produce are a means to an end, to help clients achieve other project drivers which. As

Chapter 7 demonstrated, these rarely include a profound commitment to a sustainable future. The concerns of clients tend to gravitate more towards issues such as gaining government approval, attracting investment, selling units, or developing a brand. Sustainable urbanism is often used instrumentally as a way to obtain the futuristic rendering, the catchy marketing slogan, or the LEED plaque. For engineers like Jack, membership the GIC comes at the price of sometimes sacrificing his values in order to help his company achieve commercial success.

In practice, the GIC do at times base their decisions on both consequentialist and deontological ethical systems. However, as mentioned above, this is rarely a conscious, considered process. Rather, their approach is more unconscious and ad-hoc. When developing masterplans for the type of large urban projects discussed in this dissertation, planners make design decisions by measuring the sustainability of the predicted outcomes of a particular design principle or initiative—a consequentialist approach. What constitutes a "desired" outcome can of course be critiqued as subjective. In order to counterbalance concerns such as these, the industry has developed coordinating devices such as LEED ND, which evaluate the sustainability of an urban project based on its ability to adhere to a set of standards—a more deontological approach. Of course, many of these standards themselves are developed, as discussed in Chapter 6, by a limited group of actors. This means that concerns can easily be raised about their subjectivity. And so the cycle continues.

In our interview Jack, quoted above, also commented, "I think that we should all be forced to go back in 20 years to the sites of our masterplans." Here Jack advocates the application of a consequentialist ethical frame to planning practice, where practitioners should be faced with the prospect of encountering the outcomes of their designs 20 years down the line. Of course this is wishful thinking on his part, and not a realistic approach to applying ethics to the GIC's work in sustainable urbanism. A possible alternative is proposed by Farmer and Guy (2010), who argue for emphasizing pragmatism in sustainable design practice. "A pragmatic sustainability" they argue "would not constitute a universal 'plan for action', but rather a landscape of possibilities, an open-ended approach to addressing environmental problems" (Farmer and Guy 2010: 371).

So what would this mean for practitioners? For Farmer and Guy, pragmatism is imaginative and experimental, but also recognizes what Bauman (1993) refers to as "morality without ethical code." In applying sustainable urbanism, practitioners should follow a moral code, but what is "moral" changes and adapts according to the circumstances of a particular situation. In their words:

> Meaningful design and ethical criteria, therefore, evolve through decision-making processes that seek to apply the best and most appropriate or viable action situated within particular circumstances during specific times. It is an argument for moral behaviour that is adjusted and adapted to different situations (Farmer and Guy 2010: 375).

Similarly, Upton reaches the conclusion that an ethical frame that would help planners achieve the objectives of sustainable development must be dynamic. What is required, he argues, is a consequentialist approach within an iterative framework. Upton argues that "if we do not like the balance of outcomes that a project or plan achieves as first formulated, then we modify the scheme to see how these outcomes can be improved to get a closer match with the value system that we apply to the assessment" (Upton 2002: 262–3).

The GIC could benefit from frequent, conscious consideration of ethical issues. What Farmer and Guy and Upton recommend, then, is a dynamic and flexible ethical frame. Such a frame would be more suitable to the dynamic and faced-paced work of the GIC than a more rigid and normative set of 'values' or 'code of ethics.' It would encourage the GIC to move from a varied, unconscious and ad-hoc consideration of ethical issues to a regular and conscious approach.

One of the outputs that my industrial partners at Happold Consulting requested from this research was a clear way of communicating, to their staff, the level of power and influence that they have over how sustainable urbanism is conceptualised and applied around the world. Practitioners recognise their influence on individual projects, but they are not as aware of their broader role in shaping the assemblage of sustainable urbanism. This will be one topic covered in a series of research dissemination workshops with the company. However awareness of their influence is only one part of the message that I would like to communicate to practitioners. Alongside this need to sit some normative guidelines for those members of the GIC who are concerned about how

to adapt their working practices if they wish to take this responsibility seriously. To this end, the remainder of this section outlines several elements of an ethical frame that the GIC could follow in applying sustainable urbanism around the world.

At the outset of the planning process, what constitutes sustainable urbanism for that particular project should be clearly defined and agreed by clients, consultants and other key stakeholders. These should be translated into a set of desired sustainability outcomes. At appropriate and regular intervals in the planning process, the same group of actors should, as Upton recommends, review the plan against the outcomes, but also the desired outcomes against the plan. This iterative process will ensure that the plan does not stray too far from the particular expression of sustainable urbanism that is its objective. Similarly it will also prevent slavish adherence to desired outcomes which, over the course of a project, it becomes clear are not realistic or applicable.

In the definition and application of sustainable urbanism, the GIC has a responsibility to protect the integrity of the model. Chapter 7 discussed the way individual design principles and initiatives that are part of the broader assemblage of sustainable urbanism are sometimes separated out and applied individually to projects. This can lead to a tokenistic approach to sustainable urbanism. The GIC can discourage this practice in a number of ways. These include emphasizing the synergies between different elements of the model and avoiding presenting sustainable urbanism in a format that allows their clients to see it as a menu of options that they can pick and choose from.

In applying sustainable urbanism, those involved in the planning process should set aside preconceived notions. Farmer and Guy argue that practitioners' individual ethical concerns and their awareness of previously successful strategies can feed into the process of doing sustainable design. However these factors should not distract practitioners from "the situated and practical interrogation of their relevance and applicability in particular scenarios" (Farmer and Guy 2010: 375). Relatedly, the GIC have a professional responsibility to bring as diverse a group of ideas about and examples of sustainable urbanism as possible to the planning process. This will help ensure that the model remains dynamic, with new and diverse elements territorialized into the assemblage on a regular basis.

Practitioners also need to think about where the ideas they propose come from, and look for examples and inspiration beyond the "usual suspects." This could be facilitated by the incorporation of new and different voices into the planning process. This could include, in particular, planners who have been educated outside North America and Western Europe and practitioners who focus primarily on the social, rather than environmental or economic dimensions of sustainability. Finally, although the possibilities for this are often limited within the scope of the type of projects of the GIC work on, they could find a way to incorporate the concerns of those who will be affected by the actual planning projects.

The flexible and iterative ethical frame outlined above emerges from a recognition of the constraints and limitations of the commercial environment within which sustainable urbanism travels internationally. In this context, trying to develop a single, universally applicable, ethical frame to guide the application of sustainable urbanism is not practical or realistic. In the face of wicked problems, "practitioners have to work with uncertainty and get on with the business of constructing environmental futures in the most appropriate, inclusive, imaginative and responsible manner they can" (Farmer and Radford 2010: 365). "Getting on" with things is important; ethical frames exist to evaluate actions and outcomes, not intentions.

9.2   Contribution to knowledge

This dissertation makes several distinct contributions to the growing literature on the international travels of urban planning and policy ideas. These also have broader relevance to planning theory and practice, as well as theoretical and normative debates about urban sustainability. This section will summarize these contributions, beginning with the dissertation's theoretical and methodological contributions, and moving on to those that emerge from the findings of the research. All of these findings must be framed in the context of the key limitation of the research methodology. The GIC were the primary focus of this research, and the findings draw primarily on their view of the industry, with only limited contributions from their clients and other stakeholders. As discussed elsewhere in the dissertation, this is because the GIC were my entry point into studying the assemblage of sustainable urbanism. This dissertation is a contribution to a new and rapidly developing area of research. I hope that this partial account of

sustainable urbanism's travels provides something that other scholars can build on, and that it eventually becomes one part of a more complete picture, informing future analyses.

9.2.1   Theoretical and methodological contributions

As discussed in Chapter 3, the existing literature on traveling urban planning and policy ideas does not provide a great deal of methodological guidance. The potential value of taking an ethnographic approach to studying traveling ideas has been advocated by several authors, though the details and implications of how this might be carried out have not been explored. Based on my experience I would argue that scholars should exercise caution in prescribing ethnography as a methodology to study traveling ideas. A genuinely anthropological approach of extended time in "the field" is difficult to achieve when the boundaries of said field are constantly shifting and changing. In my research I attempted to overcome this challenge by focusing my attentions on an industry, rather than a territorially defined case study. Because of my connections in this industry and Happold Consulting's sponsorship of my research, I had excellent access to my research subjects. Still, I would not categorize my work as ethnography, but as qualitative research built on participant observation. In my experience, this approach offered me significant insight into the world I was studying, while also being relatively pragmatic. Such a research approach does, of course, present challenges to researchers in terms of maintaining objectivity. In my view, this is outweighed by the value of actually being in the room when decision-making processes are happening. As a researcher, this allowed me to come to conclusions about how and why sustainable urbanism travels internationally based on my own observations, rather than relying on other people's retrospective accounts.

As discussed in Chapter 3, existing empirical studies of mobile urban planning and policy ideas do not offer a great deal of guidance about how to develop and apply a poststructural theoretical conceptualization of traveling ideas. ANT and assemblage thinking both have promise in this regard, but apart from a few exceptions they have not yet been applied to traveling ideas. In addition, the development and application of the assemblage thinking approach in urban geography is a nascent work in progress. Scholarship in this area has been broadly theoretical, and to date there is little guidance about how to apply it to empirical material. Given all of this, in taking up assemblage

thinking my intention was not to offer a definitive statement about how this approach should be used to study traveling ideas. Rather, my aim was to test whether the framework developed by McFarlane for studying urban learning processes could be useful when studying traveling ideas. In order to provide a comprehensive overview of the international travels of sustainable urbanism, at times my analysis did not fully exploit the depth and value of concepts from assemblage thinking. There are multiple areas where, with additional data and more space, my analysis could have gone much deeper. Despite these shortcomings, I hope that this dissertation has demonstrated the value of using assemblage thinking to unsettle conventional, linear, narratives of how and why urban planning ideas travel.

9.2.2   Empirical findings

This dissertation contributes to contemporary research on the international travels of urban planning and policy ideas by developing and testing a new approach to conceptualizing the travels of planning models. In addition, it filled a previously identified gap in the existing literature in this area, providing a real-time rather than retrospective study of the travels of an urban planning model. In addition, this research project adds to a small number of existing attempts to bridge the divide between historical studies of traveling planners and planning ideas, and contemporary studies of planning and policy mobilities. To do so, the dissertation placed a study of the contemporary travels of sustainable urbanism within the context of the historical literature on the subject, which was reviewed in Chapter 2. It is now possible to outline how the contemporary travels of urban planning ideas are distinct from those in the past.

In terms of *how* ideas travel, this research identified two ways that the international travels of planning ideas today differ from those in what Chapter 2 defined as the colonial and postcolonial eras. Firstly, the days of the single planner or a small group of planners taking ideas abroad are largely over. Instead, ideas travel in the hands of a professionalized industry of international planners for whom work outside their home country is a core part of their business. The second differentiating factor is that this industry consists almost entirely of private sector, for-profit companies. While they may work at times under the auspices of international aid projects, for the most part the exchange of ideas occurs in the context of a commercial transaction.

Building on this finding, this dissertation has demonstrated the important role that private sector planners can play, in particular in moving ideas around internationally. While no one person or group "owns" sustainability, a small group shapes mainstream conceptions of what sustainable urbanism means. Thinking about the GIC more broadly, the sheer international breadth of their work indicates that the privatization of planning is widespread. This finding is important because it demonstrates the need for further empirical work focusing on private sector planners. Influencing how they work can be a powerful way to effect change.

Turning to *why* ideas travel, some of the reasons are similar to those seen in the postcolonial era. The drivers on the supply side in both that era and today are largely the same: commercial ambitions and a desire or need to seek out new markets. On the demand side, a perceived lack of indigenous expertise, or desire to get the "best" international expertise, was an important driver for seeking out planners from elsewhere in the postcolonial era and remains so today. The discussion of the global era in Chapter 2 and the research findings presented in Chapter 6 also identified a new factor. This is the role of foreign practitioners and ideas in helping brand or market an urban development project. Chapter 6 also presented the research finding that the specific demand for the services of the GIC is related to the widespread privatization of urban planning and development processes.

These two new factors driving the international travel of planners and planning ideas point to the impact of the rise of the entrepreneurial paradigm in urban planning and management on how and why ideas travel internationally. The impact of this paradigm has been a recurring theme throughout this dissertation. However this work has also argued against a conception of the international travel of ideas as being driven by structural forces such as globalization and neoliberalism. The entrepreneurial paradigm has contributed to creating the conditions of possibility for ideas to travel more widely. However it does not on its own explain why sustainable urbanism in particular is being taken up in so many places internationally. Drawing on a poststructural, relational ontology, the dissertation argued that sustainable urbanism travels as a heterogeneous assemblage. Applying this conception the dissertation demonstrated that sustainable urbanism's incorporation into new environments is negotiated through a complex process of translation.

Sustainable urbanism's international appeal is, as Chapter 7 argued, related to its ability to be expressed in a variety of ways. This capacity allows it to support the drivers and objectives of a diverse range of urban development projects. In line with the entrepreneurial paradigm in which they take place, in the projects studied for this research these drivers did tend to relate to economic imperatives. This finding, though, doubtless relates to the field of study: a for-profit industry in which urban planning ideas travel in the context of a transaction. Sustainable urbanism could also be applied in a context that is not entrepreneurial. There is an important distinction between saying that the model can fit within an entrepreneurial paradigm, and that its spread may be enhanced by the existence of this paradigm, and saying that the model is inherently entrepreneurial or neoliberal.

The final contribution to knowledge made by this dissertation is also the one that has the most practical relevance for planning practitioners. Seeing and experiencing play important roles in convincing people of the value of new or different approaches to urban planning and design. This finding has two important implications for practitioners. Firstly, and this is something that the research clearly demonstrates is already happening, is that practitioners need to be strategic and innovative in their efforts to appeal to people's senses. Inhabiting can be used to support the application of the ethical framework for practitioners outlined above. Secondly, the value of being able to experience and interact with an idea in convincing people of its viability points to the importance of experimental and demonstration projects. However being experimental requires taking a risk, both financially and with your reputation. As a result, experimentation may need to be subsidized or incentivized.

In summary, the four main contributions to knowledge that this dissertation provides are as follows.

1. The entrepreneurial paradigm in urban planning and management has contributed to creating the conditions of possibility for ideas to travel more widely. However sustainable urbanism's incorporation into new environments is not a linear process facilitated by the power of structural forces such as neoliberalism. Sustainable urbanism is not transferred into new environments, but translated.

2. Urban planning ideas travel in the hands of a professionalized, private sector industry of international planners. A small, elite group of private sector practitioners play an instrumental role in shaping mainstream conceptions of the meaning of sustainable urbanism.

3. The GIC's services in planning and designing urban development projects internationally remain in demand for three main reasons. Firstly, in many places there is a perceived lack of indigenous expertise, or a desire to obtain what is perceived as the best international expertise. Secondly, foreign practitioners and ideas can help brand or market an urban development project. And finally, the widespread privatization of urban planning and development has expanded the market for the GIC's services.

4. Sensory engagement with ideas plays an important role in convincing people of the value of new or different approaches to urban planning and design.

9.3   Future research

Building on the findings outlined above, I would like to identify several areas that future research on international planning practice might focus on, and how such research might be made possible. The first suggestion emerges from the need to address the limited, GIC-focused perspective in this dissertation on the travels of sustainable urbanism. Further research could take an alternative entry point into the world of travelling planning ideas. Particularly useful would be a study that started from the perspective of those who are on the receiving end of the GICs expertise. Case-oriented research examining what happens when the model interacts with other places and people, and the power dynamics that operate in this process, would also be valuable. The focus of this dissertation has been on how sustainable urbanism as a model develops and changes as it travels. There is a flipside to this, as the model will also change the environments that it encounters. Without the opportunity to delve deeply into a case study, this research was not able to examine how this occurs. Detailed contemporary case studies of the interactions between planning models and the places they encounter this would be an important contribution to the literature in this area.

The second suggestion focuses on methodology. As mentioned in Chapter 4, other scholars of traveling policy and planning ideas have called for more ethnographic investigations into these travels. As discussed above, a true ethnography is not likely to be a viable methodology when studying traveling ideas. However this dissertation has demonstrated that there is value in extended periods of participant observation. Where this is possible I would encourage other researchers to adopt these methodologies. Contributing to the need, highlighted above, for research looking at the travels of sustainable urbanism from other perspectives, I would advocate applying this methodology to the study of a particular case study. Ideally, this would be structured with the researcher spending significant time both with members of the GIC team, the client that commissioned their work, and one or more other relevant groups of stakeholders in the project.

A third suggestion is for further theoretical work on traveling ideas. One of the primary challenges that I encountered in this research project was not carrying out the research, but identifying a suitable analytical framework to help me make sense of the data that I gathered. Given the burgeoning interest in traveling ideas, the lack of robust conceptualizations of how and why ideas travel internationally is a significant gap in the literature. I would encourage researchers interested in the subject area to do more detailed empirical work that can be used as a basis for developing and testing theories of the movement of ideas that challenge structuralist conceptualizations.

Earlier in this chapter I mentioned the possible implications of this research for the education of planning practitioners (as well as engineers, architects and others involved in the built environment industry). These implications fall into two categories, both of which could be topics of further research. Firstly, this dissertation could be contribute to a broader piece of work on how fit for purpose planning education is for the global era. The types of questions such research could explore include: how does planning education need to evolve such that practitioners are more consciously aware of where their knowledge comes from, and the ethical frames that they apply in carrying out their work? Secondly, the GIC's role in shaping sustainable urbanism may be substantial, but there are also wider processes through which knowledge on sustainable urbanism is consolidated. Educational practices play a role in this. The critiques of the GIC that have appeared in this dissertation could equally be seen as a critique of the institutions and

individuals who were responsible for educating them. Research on the role of education in shaping international planning models could query how international understandings of sustainable urbanism are shaped by education systems.

Another issue for further exploration would be the dynamics of what is accepted into the assemblage versus what is not. In the dissertation I did explore some explanations for this. One was sustainability's use as a marketing tool means that novelty may be an important factor. For example this could be one driver of the current interest in incorporating information and communications technology to make cities "smart." A second possible reason is that given the GIC's influence in the synthetic processes which contribute to crystallising the assemblage, elements that they happen to know about may be more likely to be included. This raises once again the need for further research into and critiques of the education and training of the GIC, as well as the way that good or best practice case studies and examples are used throughout academia and industry to illustrate sustainable urbanism.

Finally, the research community needs to create the conditions to make further research of the type I undertook feasible. This research project is somewhat unusual both in the level of access I had to the industry I was studying, and in focusing specifically on the work of private sector planning consultants. The engineering doctorate model within which this research was conducted made this approach possible. Such research has the potential to both enhance academia's understanding of actual planning practices, and to bring benefits to practitioners. To date, the world of the GIC has been largely closed to researchers. This seems counterproductive. In the high-pressure, fast-paced world of planning consultancy, practitioners have little time to reflect on their work and consider how to improve it. Opening themselves up to observation could create the space for such reflection and, at little cost, give the GIC the opportunity to gain valuable feedback on their working practices. Universities and those who fund research should to create additional mechanisms that would make possible more truly collaborative research projects like these.

9.4   Cautious optimism, or being critically constructive

The assemblage of sustainable urbanism described in this dissertation is not particularly progressive, especially when compared to more radical visions of an

ecological restructuring of human settlements. Not only this, but notably absent throughout the research undertaken (and as a result, in this dissertation) was any discussion of one of the other primary driving objectives of planning practice in recent years, social justice. Sustainable urbanism is a model that is applied largely within the context of the dominant, entrepreneurial paradigm of urban development where financial viability often trumps other concerns. One way this impacts the GIC's work is that if their goals in regards to sustainability are at times ambitious, they nevertheless appear reconciled to an incremental approach to achieving them.

In my view, the GIC are not aware of the actual scale of their influence. The impact of sustainable urbanism's international travels is not just the incorporation of a few new ideas into an individual plan, but the creation of new relational connections. These connections are built as, for example, a municipal engineer in Saudi Arabia becomes familiar with landscaping principles originally developed in Canada, or an architect in Chicago with materials used by a counterpart in Shanghai. Through these connections, ideas flow not just West to East, or North to South, but in multiple and often unpredictable directions. The diversity of the relational connections that contribute to constituting sustainable urbanism means that there are many opportunities to influence the way it evolves. As a paradigmatic model, sustainable urbanism's normative recommendations reflect the current mainstream consensus about how urban sustainability should be defined. Just as the model is not static, neither is this consensus. The model's capacities are not fixed in some central location before it is sent out into the world; it has no specific point of origin or ideal form. Just as it introduces ideas into new locations, the model itself is also being shaped as it travels internationally.

I would like to close this dissertation on a note of cautious optimism. At the root of this optimism are, firstly, the multiple possibilities for influencing the way sustainable urbanism evolves as a model. And secondly, as this dissertation has demonstrated, sustainable urbanism is flexible and has many capacities. The model is not irrevocably associated with an entrepreneurial approach to urban development, or an incremental approach to effecting change. In the right hands, sustainable urbanism contains within it the capacity and the potential to support more progressive or more ambitious aims than it does currently. The extent to which it will do so in the future depends in large part on the practitioners who facilitate its development, evolution and international travels. To

this end, the response of my industrial sponsors at Buro Happold to my research findings has been encouraging. They continue to be interested in what my research findings mean for the ethical grounding of the work they do. An upcoming roll-out of my research findings across the company will focus largely on communicating to staff the broader significance of their roles, the serious implications this brings, and some suggestions for engaging in more critical and reflective practice.

APPENDICES

Appendix A: Operationalization of research questions

Appendix B: List of interviewees

Appendix C: Interview questions

Appendix D: European study tour itinerary

Appendix E: Content analysis codes and definitions

Appendix F: Content analysis networks

Appendix G: Firm office and project location data

APPENDIX A: OPERATIONALIZATION OF RESEARCH QUESTIONS

Primary research questions
1.   What characterizes sustainable urbanism as a planning model?
2.   How and why is it moving around internationally, and what is the role of private sector consultants in this mobility?
3.   What are the broader implications of the global spread of this model, and the role played by these consultants, for urban planning practice?

Research question 1: What characterizes sustainable urbanism as a planning model?

Approach: Literature review, interviews with practitioners, content analysis of sustainable urbanism. This portion of the research is largely descriptive, demonstrating that sustainability and entrepreneurial planning are dominant themes without getting into why, as this will be explored later.

Operational question	Data collection methods	Details
How do actors working on sustainable urbanism define and apply the term "sustainability"? How is this decided upon?	Content analysis of masterplans, websites Interviews Participant observation	Using content analysis examine the way sustainability is defined and applied in masterplans. Through interviews and participant observation examine the way the research subjects understand and apply sustainability and sustainable urbanism.
How has sustainability become such a big influence in planning, and what have been the role of factors such as government regulations and market demand in this?	Interviews	Ask interviewees about how sustainability is become Incorporated into their work, what drove this, and how this has changed the industry.

Operational question	Data collection methods	Details
What is the relationship between sustainability and the economic drivers of urban development?	Content analysis of masterplans, grey material, websites, promotional documents. Interviews	Content analysis of the way informal documents and correspondence from case studies discuss these issues. Interviews and participant observation examining the way actors address these issues.

Research question 2: How and why is it moving around internationally, and what is the role of private sector consultants in this mobility?

Operational question	Data collection methods	Details
Where do the companies represented in this research work, and where are their offices?	Survey websites of selected GIC companies.	Create database and map data.
What are the push factors (supply side) encouraging built environment consultants to work abroad?	Interviews	Explore why American and European firms increasingly seek work abroad.
What are the pull (demand side) factors prompting people to hire foreign planning firms?	Interviews with GIC and clients.	Explore why clients hire foreign firms.

Operational question	Data collection methods	Details
How do professionals in this industry gather knowledge of international practices, and use this in their work?	Interviews Participant observation of planning projects Participant observation of study tour	Focus on learning and application of knowledge through travel and project work.
What aspects of planning processes facilitate the spread of sustainable urbanism?	Interviews Participant observation of planning projects Participant observation of study tour	Draw out examples from interviews and participant observation, demonstrating through multiple examples how firms apply their ideas about sustainable urbanism on international projects.

Operational question	Data collection methods	Details
How are planners influenced by sustainable urban projects elsewhere in the world? In particular, what role do precedent studies and study tours play?	Content analysis of masterplans Participant observation of study tours Interviews with practitioners Interviews with study tour participants & guides, the GIC and their clients.	Detail mechanisms for sharing ideas – good practice databases, books, study tours, precedent studies in masterplans Explore how people learn from study tours and precedent studies.
How are ideas from elsewhere incorporated into the process of developing a masterplan?	Content analysis of masterplans	Review how ideas are represented, through words, images etc.

Research question 3: What are the broader implications of the global spread of this model, and the role played by these consultants, for urban planning practice?

APPENDIX B: LIST OF INTERVIEWEES

Name	Firm	Title	Discipline	Base
CC	AECOM	Principal / Vice President, Urban Development	Architecture, urban design	London
PH	Arup	Director	Civil engineering	London
MS	Arup	Director, Global Masterplanning and Urban Design Leader	Architecture, urban design	London
BA	Buro Happold	Associate	Sustainability engineering	London
SD	Buro Happold	Associate Director	Architecture	Berlin
AC	Buro Happold	Partner, Director of Environment and Infrastructure	Civil engineering	London
AM	Buro Happold	Partner	Civil engineering	London
AH	Buro Happold	Partner, Head of Urban Development Sector	Civil engineering	Bath
BS	Buro Happold	Associate Director	Civil engineering	New York
JM	Buro Happold	Senior Engineer	Civil engineering	New York
TE	Buro Happold	Founding Partner	Civil engineering	London
BS	Buro Happold	Associate Director	Civil engineering & sustainability	New York
EG	Buro Happold	Senior Consultant	Civil engineering & sustainability	London
MD	Buro Happold	Senior Consultant	Urban Design	London
BM	Foster & Partners	Urban Designer	Urban design	London

IG	Foster & Partners	Partner	Environmental design	London
IM	Gensler	Principal, Planning and Urban Design	Urban planning	London
AW	KPF	Senior Associate Principal	Urban planner and designer	New York
PS	Machado & Silvetti	Senior Associate	Architecture	Boston
GS	Moriyama & Teshima	President	Landscape architect	Toronto
DP	Sasaki	Principal	Urban planning and design	Boston
RS	Sasaki	Senior Associate	Architecture, urban design	Boston
MG	Sasaki	Senior Associate	Urban design, landscape architecture	Boston
RW	SOM	Design Director	Architecture, urban design	Chicago
TH	SOM	Associate Director (Urban Design)	Architecture, urban design	Chicago
CB	SOM	Urban Designer	Architecture, urban design	Chicago
DS	SOM	Urban Designer	Architecture, urban design	Chicago
JS	SOM	Associate Director	Architecture	Chicago
AG	SOM	Performative Design	Sustainability engineering	Chicago
LV	SOM	Ecologist	Ecology	Chicago
JS	SOM	Urban Designer	Architecture, urban design	Chicago
SB	Stoss Landscape Urbanism	Associate Principal	Landscape architecture	Boston
JA	Stoss Landscape Urbanism	Landscape Architect	Landscape Architecture	Boston
JL	Terry Farrell	Partner	Urban design and planning	London

MT	Urban Strategies	Partner	Urban planning	Toronto
JB	Urban Strategies	Partner	Urban planning	Toronto
WP	Sustainable Development Capital LLP	Partner	Investment & finance	London
GF	Cisco	Director, Urban Innovation	Surveyor	Singapore
AK	UK-China Eco-Cities & Green Building Group	Group Co-Chair	Project Manager, ICT	Beaconsfield, UK
OK	Intelligent and Green Systems	Director	Project Manager, ICT	Beaconsfield, UK
KHC	Singapore Housing & Development Board	CEO & Deputy Secretary (Special Duties)	Urban planner	Singapore
DN	Shui On		Architecture and urban design	Shanghai / San Francisco
BW	Henderson Land	Group Consultant	Architecture, property development	Hong Kong
MDJ	TU Delft	Associate Professor	Academic	Delft
HJS	Innovations Academy	CEO	Knowledge tourism	Hamburg
JBB	HafenCity gmbh	CEO	Property development	Hamburg
LB	Beasley and Associates, Planning Inc.	Founding Principal	Urban planning	Vancouver
MD	Roberts Day	Director	Urban planning	Melbourne
DW	Roberts Day	Managing Director	Urban planning	Perth
DK	The Pacific Group	Managing Director	Property development	Manila / Melbourne
LFA	Studio LFA	Founder	Urban design	Philadelphia

APPENDIX C: INTERVIEW QUESTIONS

i) Questions used in interviews with consultants

Planning and sustainability

1. Tell me a bit about your professional background and the types of projects you work on. *(prompts: what discipline do you identify with? Where and what did you study? How did you get into this type of work)*
2. Tell me about how you understand sustainability. *Follow up: what kinds of things have influenced this? (prompts: education, experience, mentors, reading)*

Do you use the term sustainable masterplan? What does this term mean to you?

3. How has your approach to masterplanning developed over time? Has the rise of 'sustainability' as an idea had an impact on this? *Prompts: How are the masterplans you work on today different than those from earlier in your career?*

Learning and ideas

4. Can you tell me about a masterplanning project that you feel like you learned a lot on? *Follow ups: Has the experience of working on any particular plans influenced the way you work on these types of projects more generally? Any ideas from a particular place or project that you now apply more widely?*
5. How (else) do you learn about and share new ideas in your work? *Follow up: How do you think ideas about sustainability in architecture / engineering / planning are shared and moved around internationally?*

6. Are there any sustainable city / eco-city type projects that you think have shaped the way this field of work has evolved? Are there any that have influenced you in particular?

Working with clients

7. What type of clients do you work with on masterplanning projects?
8. What factors do you think motivate your clients to commission a specifically 'sustainable' masterplan?

9. On masterplanning projects is sustainability often part of the project vision from the start, or added in later? *Follow up: does it make a difference when sustainability is brought into the project?*

10. Do your clients ever reference other places or projects as examples of what they want from a sustainable masterplan? *Follow up: what project was this, and what did they reference?*

11. Why do you think a foreign client would hire your firm to develop a sustainable masterplan for a site in their country? *Follow up: what can your company offer that domestic companies or companies from another region cannot?*

12. Do you ever find that your clients' broader financial concerns influence your work on sustainable masterplans? *(Explanation: financial concerns could include the need to generate a profit, or to attract investors, market the project. Follow up: could you give me any examples?)*

13. What usually happens after you hand over a sustainable masterplan to the client? How many of your projects end up being built?

ii) Example of how questions were tailored to use with clients and other stakeholders

1. Browsing Shui On Land's website I noticed that you tend to use international firms to do your masterplans – SOM in particular. Can you talk to me a bit about that, and more generally about why you think developers in China turn to foreign practices for masterplanning expertise?
2. Over the course of your career, how have you seen the general understanding of sustainability as it applies to urban planning and design, evolve? What do you think has driven these shifts?
3. What do you think about the industry that has grown up around sustainable design and planning and the "eco-city" trend?
4. How do you find sustainability is influenced by the economic drivers of urban development?
5. One thing I've picked up on in my research to date is that there is a real hunger, around the world really, for proven models of good, sustainable urban planning. Is this something you've encountered? What are some of the good things about this, and some of the pitfalls that people fall into in the search for models?
6. I'm told that many ambitious urban projects fail to be realized – why do you think this is?
7. One thing I'm interested is in the role of precedents in getting people to challenge the status quo. Can you talk a bit about that?
8. How does working in so many countries enhance your capacity to do what you do? After such a long and successful career as a planner, are you still learning?

iii) Questions used in follow-up interviews with study tour participants

1. What were you personally hoping to get out of the study tour? Did you achieve this?
2. Thinking back, several months later, what stands out in your mind from the experience?
3. Has anything you've experienced or learned during the study tour been of use to you in your own work since you returned? Have you incorporated anything we saw or learned on the tour into any projects you are currently working on? Do you imagine you might do this in the future?
4. Do you think for what you do it is important for what you do to keep track of what is going on internationally in urban development? Why or why not? If so, what methods do you use to do this?
5. What are some of the benefits you see to going on a study tour and actually visiting projects as opposed to the other methods you use to learn about international best practices?
6. The projects we visited are quite well known internationally and are often visited by groups such as ours. Having seen them yourself, why do you think these projects get so much attention, and do you think it is merited?
7. Have you been in further contact with anyone we met on the study tour?

APPENDIX D: EUROPEAN STUDY TOUR ITINERARY

EUROPEAN PROJECTS TOUR 10th – 17th April 2012

Wednesday 11th April: Freiburg

9.00 – 17.30 – tour of Freiburg sites with Innovation Academy: Introduction to sustainable development, historical and current development of the old town, Freiburg transportation concept, Rieselfeld, Vauban.

Thursday 12 April: Hamburg

15.30 – 18.00 – Tour with Rolf Kellner, Innovations Academy: introduction to the City of Hamburg, visits to projects of the International Construction Exhibit (IBA).

Friday 13 April: Hamburg

13.00 – 14.30 Tour of HafenCity

15.00-16.30: Meeting with Jurgen Bruns-Berentelg, CEO HafenCity

Saturday 14 April: Copenhagen

12.00 – 14.00 Guided tour of Ørestad by Kirsten Ledgaard, Chief of Planning, By & Havn.

15.00 – 18.00 Copenhagen sustainable planning city tour with Lise Juul Madsen, Reflective City. Tour will visit Vesterbro (sustainable city renewal), Carlsberg (new private urban development, temporary art installations and user involvement), Nørrebro (Superkilen, carfree zones, green biking routes). Participants have the option of doing the tour on a bicycle or in a bicycle taxi.

Sunday 15 April: Copenhagen & Malmo

11.00 - Malmo - Tour of Western Harbour with Carl Backstrand, White Arkitekter.

Monday 16 April: Copenhagen

9.00 – Meeting with Larsz Gemzoe, Gehl Architects, followed by hosted city walk

15.00: Meeting with Nicolai Carlberg, Hausenberg (consultants responsible for evaluating the planning and results of large scale urban development projects in Copenhagen).

APPENDIX E: CONTENT ANALYSIS CODES AND DEFINITIONS

i) Interviews

Code name	Definition	Frequency
ETH	Discussion about the ethics of working internationally and in sustainable urbanism.	9
EVIND_getting into planning	The move of architecture and engineering firms into doing masterplanning.	22
EVIND_international_describe	Description of the internationalization of the urban planning and design industry.	28
EVIND_international_driv_dem_exp	Demand-side driver of the internationalization of planning practice: Lack of domestic experience, or the fact that international firms have the requisite experience.	25
EVIND_international_driv_dem_glob	Demand-side driver of the internationalization of planning practice: the globalization.	6
EVIND_international_driv_dem_mark	Demand-side driver of the internationalization of planning practice: the marketing benefits of bringing in a big-name international firm.	9
EVIND_international_driv_dem_urb	Demand-side driver of the internationalization of planning practice: increasing urbanization in particular places around the world.	4
EVIND_international_driv_sup_econ	Supply side driver of the internationalization of planning practice: economic imperatives for firms to expand internationally in the face of shrinking domestic markets etc.	7
EVIND_international_driv_sup_wand	Supply side driver of the internationalization of planning practice: companies desire to work abroad, wanderlust.	2
EVIND_international_impact	The impact of the internationalization of the urban planning and design industry.	6
EVIND_international_whyhireGIC	Discussion about why GIC firms are hired to do planning projects by international clients.	12
EVIND_multi-directional flow of ideas	The movement of ideas and knowledge along new and more diverse trajectories.	21
EVIND_multi-disciplinary external	The increasing multidisciplinary teams working on planning projects. Why this is and how it has come about.	23
EVIND_multi-disciplinary internal	Increasing multidisciplinarity within individual companies.	11
EVIND_relationships	Discussion about the importance of good relationships with clients in obtaining repeat work and new work.	9
EVIND_sustainability_drivers	Drivers of the increased importance of sustainability in the industry.	33
EVIND_sustainability_impact	Impact of the incorporation and increasing influence of sustainability in the built environment industry.	36

Code name	Definition	Frequency
GIC_power/influence of	The power and influence of the GIC in the international urbanism industry – how they gained this, how it is expressed.	18
LRN_from elsewhere why	Why people want to learn from elsewhere, the value of doing so	2
LRN_how	How practitioners learn about sustainable urbanism.	14
LRN_study tour value	The value of and reasons for going on a study tour.	9
LRN_subjectivity of experience	How learning through seeing or experiencing can be subjective.	3
LRN_value of experiencing	The value and importance of experiencing a place for yourself in learning and gaining confidence about an idea or approach.	16
LRN_visual comms	The importance of images and communicating ideas.	8
PPR_challenges	Challenges encountered in the masterplanning process.	24
PPR_implementation	Discussion about the actual implementation and construction of large-scale planning projects, including the impact of plans even if they aren't implemented.	6
PPR_interaction	Discussion about the role of interaction between client and consultant in the masterplanning process.	19
PPR_masterplans	Specific mention of the role of masterplans and the role that they can or should play in the planning process.	3
PPR_negotiation	Discussion about the role of negotiation between clients and consultants in the masterplanning process.	11
PPR_probs with current approaches	Discussion of problems with current approaches to urban planning and development.	5
PPR_project brief	Discussion about how the brief for a project is developed and refined.	10
PPR_risk	Reference to risk, in particular the need to take it out of urban development projects.	7
PPR_trust	Discussion about the importance of mutual trust between client and consultant in the planning process.	7
PREC_good practice as principles	Defining good practice as a set of principles.	4

Code name	Definition	Frequency
PREC_specific place	Reference to specific places as examples of good practice.	13
PREC_used in planning how	The ways in which questions and examples are used in the planning process. Includes educating the client, scale comparisions.	27
PREC_value as demonstration	The value of precedents of demonstrating that something can work.	22
PRED_good practice impact	The impact of well-known examples of good practice and models in sustainable urbanism and the planning industry.	13
SUST_applying	Discussion about applying sustainability on planning projects.	52
SUST_clients perspective, motivation	Perspectives on why clients are interested in sustainability, how they understand and use it.	24
SUST_cynicism	Cynicism about the value of sustainability as a concept, or the way in which it is employed.	13
SUST_defining	Discussion of how people understand and define sustainability.	41
SUST_envt v econ tensions	Discussions of tensions between sustainability/environmental conditions and economic issues.	16
SUST_envt/econ synergies	Discussion of synergies between environmental and economic issues.	22
SUST_part of marketing	Linking sustainable urbanism with property marketing. Sometimes related also to intercity competition.	31
SUST_pushed by consultants	Discussion about whose idea it is to incorporate sustainability into an urban development project.	13

ii) Masterplans

Code name	Definition	Frequency
apl_sust_economic	Specific intervention for the area being planned designed to enhance economic sustainability.	10
apl_sust_envt_energy	Specific intervention for the area being planned designed to enhance environmental sustainability, with a focus on energy.	25
apl_sust_envt_overarch	Specific intervention for the area being planned designed to enhance environmental sustainability.	13
apl_sust_envt_trans	Specific intervention for the area being planned designed to enhance environmental sustainability, with a focus on transport.	18
apl_sust_envt_waste	Specific intervention for the area being planned designed to enhance environmental sustainability, with a focus on waste.	12
apl_sust_envt_water	Specific intervention for the area being planned designed to enhance environmental sustainability, with a focus on water.	31
apl_sust_overarching	Specific intervention for the area being planned designed to enhance overall sustainability.	3
apl_sust_social	Specific intervention for the area being planned designed to enhance social sustainability.	22
apl-sust_tech	Specific intervention for the area being planned designed to enhance sustainability through the use of technology.	4
def_gp_general	Defining good practice in urbanism and sustainability in a general way.	8
def_gp_local	Defining good practice in urbanism and sustainability with specific reference to the site being planned.	4
def_sust_econ	Presentation of ideas about what sustainability means, with a focus on economics.	5
def_sust_envt_energy	Presentation of ideas about what sustainability means, with a focus on environmental issues, specifically energy.	22
def_sust_envt_overarch	Presentation of ideas about what sustainability means, with a focus on environmental issues.	5
def_sust_envt_trans	Presentation of ideas about what sustainability means, with a focus on environmental issues, specifically transport.	13

Code name	Definition	Frequency
def_sust_envt_waste	Presentation of ideas about what sustainability means, with a focus on environmental issues, specifically waste.	8
def_sust_envt_water	Presentation of ideas about what sustainability means, with a focus on environmental issues, specifically water.	11
def_sust_overarching	Presentation of ideas about what sustainability means, with a focus on economics.	7
def_sust_soc	Presentation of ideas about what sustainability means, with a focus on social sustainability.	9
PREC_existing_notspecified	Reference to an existing precedent where the name and location of the precedent is not specified.	51
PREC_existing_specified	Reference to existing precedent where the name and location of precedents is specified.	26
PREC_nonexistant	Reference to precedent that is not actually exist.	3
PPR_contextualising	Effort to contextualize the plan to the local area.	11
PPR_integrate_global_local	Effort to integrate global and local ideas in the plan.	3
REN_eyeofgod	Digital rendering from the overhead, eye of God perspective.	3
REN_flyin	Digital rendering from a client perspective.	7
REN_pov	Digital renderings from point of view of a person on the street perspective.	13
visual comparison - scale foreign	Visual comparison of the scale of the site for the project with foreign places.	13
visual comparison - scale local	Visual comparison of the scale of the site for the project with local places.	6

i) Coordination
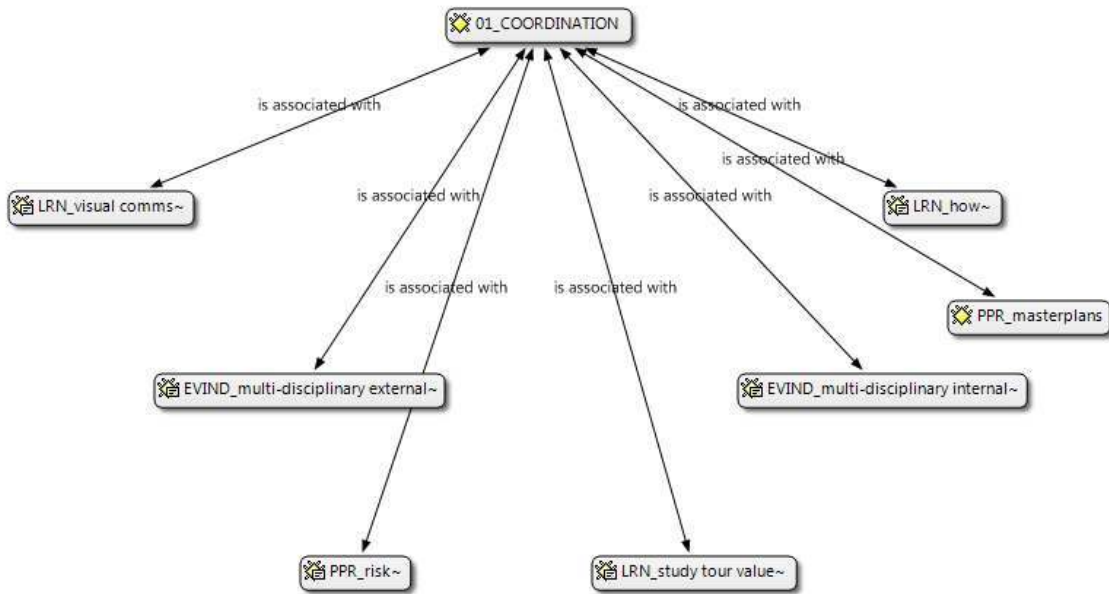
ii) Translation
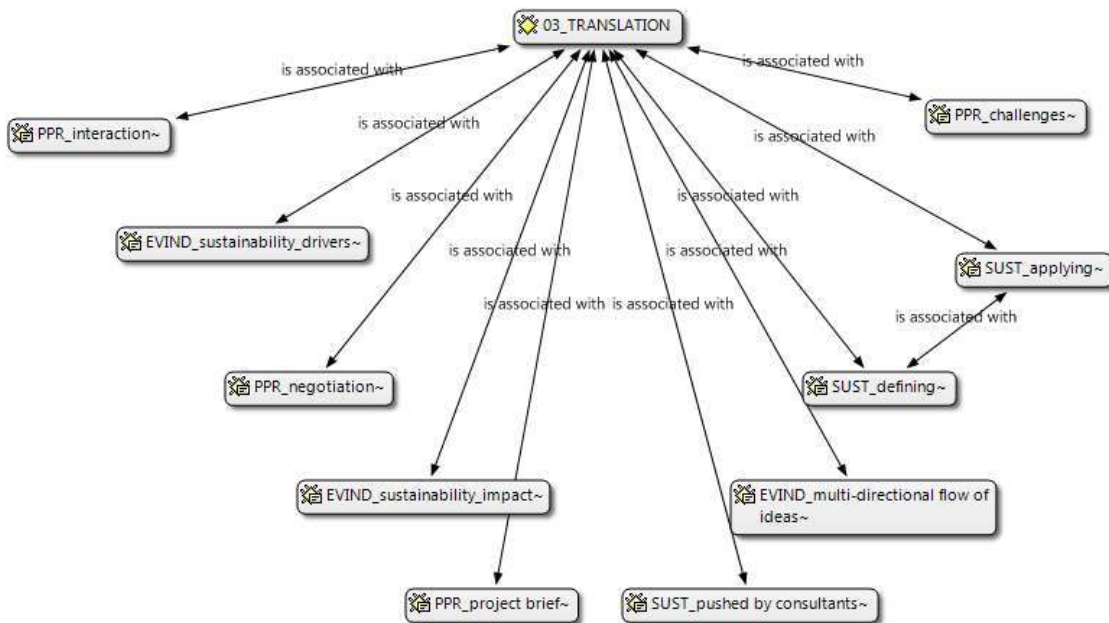
iii) Inhabiting
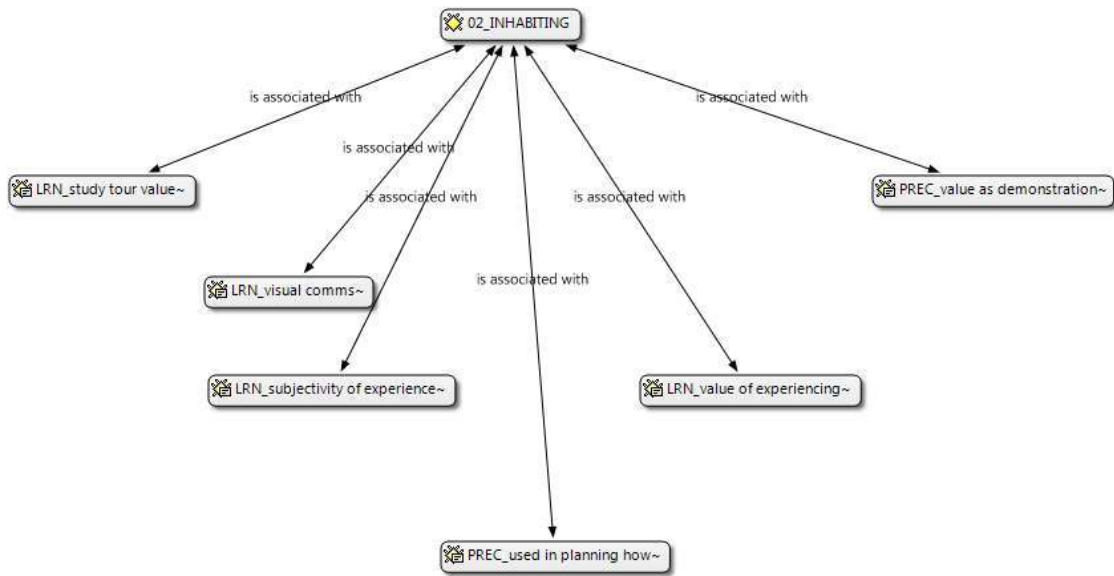
APPENDIX G: FIRM OFFICE AND PROJECT LOCATION DATA

AMERICAS

FIRM	USA		CANADA		BRAZIL		PERU		HONDURAS		COLOMBIA		TRINIDAD		VENEZUELA	
	Offices	Projects	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	175	x	50		3		2		1		1		1		1	
Arup	9	x	2	x	2	x	0		0		0		0		0	
Buro Happold	5	x	0		0		0		0		0		0		0	
Foster and Partners	1	x	0		0		0		0		0		0		0	
Gensler	26	x	1		1	x	0		0		0		0		0	
HOK	15	x	2		0		0		0		0	x	0		0	
KPF	1	x	0		0		0		0		0		0		0	
SOM	5	x	0		0	x	0		0		0		0		0	
Urban strategies	0	x	1	x	0		0		0		0		0		0	
Sasaki	1	x	0	x	0		0		0		0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	0		0		0		0		0		0		0		0	
RSP	0		0		0		0		0		0		0		0	
TOTAL	**9**	**10**	**5**	**3**	**3**	**3**	**1**		**1**		**1**	**1**	**1**		**1**	

AMERICAS

FIRM	COSTA RICA		ECUADOR		MEXICO		CHILE		ARGENTINA		PANAMA		GUATEMALA	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	1		1		1		0		0		0		0	
Arup	0		0		0	x	0	x	0		0		0	
Buro Happold	0		0		0		0		0	x	0		0	
Foster and Partners	0		0		0	x	0		0		0		0	
Gensler	1		0		1		0		0		0		0	
HOK	0		0		0		0		0		0		0	
KPF	0		0		0		0		0		0		0	
SOM	0		0		0		0		0		0	x	0	
Urban strategies	0		0		0		0		0		0		0	
Sasaki	0		0		0		0	x	0		0		0	x
Terry Farrell	0		0		0		0		0		0		0	
Dar al Handasah	0		0		0		0		0		0		0	
RSP	0		0		0		0		0		0		0	
TOTAL	**2**		**1**		**2**	**2**		**2**		**1**		**1**		**1**

ASIA

FIRM	CHINA		INDIA		THAILAND		TURKEY		VIETNAM		KYRGYZSTAN		PHILIPPINES		MALAYSIA	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	13	x	13		2		2		2		1		1		1	
Arup	10	x	1	x	1		2	x	1	x	0		1		0	x
Buro Happold	2	x	1		0		0		0		0		0		0	
Foster and Partners	1	x	0		0		0		0		0		0		0	
Gensler	3	x	1		1		0	x	0		0		0		0	x
HOK	3	x	1	x	0		0	x	0	x	0		0		0	
KPF	2	x	0	x	0		0		0		0		0		0	
SOM	2	x	1	x	0		0	x	0	x	0		0		0	x
Urban strategies	0	x	0		0		0		0		0		0		0	
Sasaki	0	x	0	x	0		0		0	x	0		0		0	x
Terry Farrell	2	x	0		0		0		0		0		0		0	
Dar al Handasah	0		2		0		1		0		1		0		0	
RSP	2	x	0		0		0		2		0		0		0	x
TOTAL	**10**	**12**	**7**	**5**	**3**		**3**	**4**	**3**	**4**	**2**		**2**		**1**	**5**

ASIA

FIRM	INDONESIA		JAPAN		SINGAPORE		TAJIKISTAN		CAMBODIA		SOUTH KOREA		TURKMENISTAN		PAKISTAN	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	1		1		1		1		0		0		0		0	
Arup	0		1		1	x	0		1	x	1	x	0	x	0	
Buro Happold	0		0		0		0		0		0		0		0	
Foster and Partners	0		0		0		0		0		0		0		0	
Gensler	0		1		1		0		0		1		0		0	
HOK	0		0		1		0		0		0	x	0		0	
KPF	0	x	0	x	0	x	0		0		1	x	0		0	
SOM	0	x	0		0		0		0		0		0		0	
Urban strategies	0		0		0	x	0		0		0		0		0	
Sasaki	0		0		0	x	0		0		0	x	0		0	x
Terry Farrell	0		0		0		0		0		0	x	0		0	
Dar al Handasah	0		0		0		1		0		0		0		0	
RSP	0		0		2		0		0		0		0		0	
TOTAL	**1**	**2**	**3**	**1**	**5**	**4**	**2**		**1**	**1**	**3**	**5**		**1**		**1**

EUROPE

FIRM	UK		IRELAND		SPAIN		CZECH PEPUBLIC		POLAND		ITALY		RUSSIA		ROMANIA	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	28	x	6		5		5		3		2		2		2	
Arup	14	x	4	x	1	x	0		3	x	2	x	2	x	1	x
Buro Happold	7	x	0		0		0		1		1		1		0	
Foster and Partners	1	x	0		1	x	0		0		0	x	0		0	
Gensler	1	x	0		0		0		0		0		0	x	0	
HOK	1	x	0		0		0		0		0		0	x	0	
KPF	1	x	0		0		0	x	0		0	x	0	x	0	
SOM	1	x	0		0		0		0		0		0		0	
Urban strategies	0	x	0	x	0		0		0		0		0		0	
Sasaki	0		0		0		0		0		0		0		0	
Terry Farrell	1	x	0		0		0		0		0		0		0	
Dar al Handasah	1		0		0		0		0		0		0		0	
RSP	1		0		0		0		0		0		0		0	
TOTAL	**11**	**10**	**2**	**2**	**3**	**2**	**1**	**1**	**3**	**1**	**3**	**3**	**3**	**4**	**2**	**1**

EUROPE

FIRM	GREECE		FRANCE		GERMANY		BOSNIA AND HERZEGOVINA		UKRAINE		ESTONIA		MALTA		SWITZERLAND	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	1		1		1		1		1		1		1		1	
Arup	0		0		3		0		0		0		0		0	
Buro Happold	0		0		2		0		0		0		0		0	
Foster and Partners	0		0	x	0	x	0		0		0		0		0	
Gensler	0		0		0		0		0		0		0		0	
HOK	0		0		0		0		0		0		0		0	
KPF	0		0		0	x	0		0		0		0		0	
SOM	0		0		0		0		0		0		0		0	
Urban strategies	0		0		0		0		0		0		0		0	
Sasaki	0	x	0		0		0		0		0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	0		1		0		0		0		0		0		0	
RSP	0		0		0		0		0		0		0		0	
TOTAL	**1**	**1**	**2**	**1**	**3**	**2**	**1**		**1**		**1**		**1**		**1**	

EUROPE

FIRM	LATVIA		THE NETHERLANDS		KAZAKHSTAN		AZERBAIJAN		DENMARK		SERBIA		BELGIUM		MONTENEGRO	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	1		1		1		1		0		0		0		0	
Arup	0		1	x	0		0	x	1		1		0	x	0	x
Buro Happold	0		0		0		0		1		0		0		0	
Foster and Partners	0		0	x	0		0		0		0		0		0	
Gensler	0		0		0		0		0		0		0		0	
HOK	0		0		0		0	x	0		0		0		0	
KPF	0		0	x	0		0		0		0		0	x	0	
SOM	0		0		0		0		0		0		0		0	
Urban strategies	0		0		0		0		0		0		0		0	
Sasaki	0		0		0		0		0		0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	0		0		2	x	1	x	0		0		0		0	
RSP	0		0		0		0		0		0		0		0	
TOTAL	**1**		**2**	**3**	**2**	**1**	**2**	**3**	**2**		**1**			**2**		**1**

EUROPE

FIRM	SWEDEN		NORWAY		ALBANIA	
	Office	Project	Office	Project	Office	Project
AECOM	0		0		0	
Arup	0		0		0	
Buro Happold	0		0		0	
Foster and Partners	0	x	0		0	
Gensler	0		0		0	
HOK	0		0		0	
KPF	0		0		0	
SOM	0		0		0	
Urban strategies	0		0		0	
Sasaki	0		0	x	0	
Terry Farrell	0		0		0	
Dar al Handasah	0		0		0	x
RSP	0		0		0	
TOTAL		1		1		1

**MIDDLE EAST &
NORTH AFRICA**

FIRM	UAE		SAUDI ARABIA		AFGHANISTAN		QATAR		YEMEN		IRAQ		BAHRAIN		OMAN	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	5	x	5	x	4		2	x	0		1		1		1	x
Arup	2	x	0		0		1		0		0		0		0	
Buro Happold	2		1	x	0		0		0		0		0		0	
Foster and Partners	1	x	0		0		0		0		0		0		0	
Gensler	3	x	0	x	0		1		0		0		0		0	
HOK	1	x	0	x	0		0	x	0		0		0		0	
KPF	1		0		0		0		0		0		0		0	
SOM	1		0		0		0		0		0		0	x	0	
Urban strategies	0		0		0		0		0		0		0		0	
Sasaki	0	x	0		0		0		0		0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	3		6	x	0		1	x	2	x	3	x	1		1	x
RSP	2		0	x	0		0		0		0		0		0	
TOTAL	**10**	**6**	**3**	**6**	**1**		**4**	**3**	**1**	**1**	**2**	**1**	**2**	**1**	**2**	**2**

MIDDLE EAST & NORTH AFRICA

FIRM	JORDAN		LEBANON		SYRIA		ALGERIA		EGYPT		LIBYA		MOROCCO		KUWAIT	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	1		1		0		2		1		1		0		0	
Arup	0	x	0		0		0		0		0		0		0	
Buro Happold	0		0		0		0		0	x	0		0		0	
Foster and Partners	0		0		0		0		0		0		0		0	
Gensler	0		0		0		0		0	x	0		0	x	0	
HOK	0		0		0		0		0		0		0		0	
KPF	0		0		0		0		0		0		0	x	0	
SOM	0		0		0		0		0		0		0		0	
Urban strategies	0		0		0		0		0		0		0		0	
Sasaki	0	x	0	x	0		0		0	x	0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	1	x	1	x	1		1	x	1	x	1		1	x	1	
RSP	0		0		0		0		0		0		0		0	
TOTAL	**2**	**3**	**2**	**2**	**1**		**2**	**1**	**2**	**4**	**2**		**1**	**3**	**1**	

SUB-SAHARAN AFRICA

FIRM	SOUTH AFRICA		BURUNDI		UGANDA		MOZAMBIQUE		SENEGAL		MALI		BOTSWANA		KENYA	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	23		2		2		1		1		1		1		1	
Arup	3	x	0		0		0		0		0		1		0	
Buro Happold	0		0		0		0		0		0		0		0	
Foster and Partners	0		0		0		0		0		0		0		0	
Gensler	0		0		0		0		0		0		0		0	
HOK	0		0		0		0		0		0		0		0	
KPF	0		0		0		0		0		0		0		0	
SOM	0		0		0		0		0		0		0		0	
Urban strategies	0		0		0		0		0		0		0		0	
Sasaki	0		0		0		0		0		0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	1		0		0		0		1		0		0		0	
RSP	0		0		0		0		0		0		0		0	
TOTAL	**3**	**1**	**1**		**1**		**1**		**2**		**1**		**2**		**1**	

SUB-SAHARAN AFRICA

FIRM	BENIN		RWANDA		MAURITIUS		GUINEA		ANGOLA		GHANA		NIGERIA		TANZANIA	
	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project	Office	Project
AECOM	1		0	x	0		1		0		0		0		0	
Arup	0		0		1		0	x	0		0		0		0	
Buro Happold	0		0		0		0		0		0		0		0	
Foster and Partners	0		0		0	x	0		0		0		0		0	
Gensler	0		0		0		0		0		0		0		0	
HOK	0		0		0		0		0		0		0		0	
KPF	0		0		0		0		0		0		0		0	
SOM	0		0		0		0		0		0		0		0	
Urban strategies	0		0		0		0		0		0		0		0	
Sasaki	0		0		0		0		0		0		0		0	
Terry Farrell	0		0		0		0		0		0		0		0	
Dar al Handasah	0		0		0		0		2	x	1		2	x	1	
RSP	0		0		0		0		0		1		0		0	
TOTAL	**1**			**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**		**1**	**1**	**1**	

AUSTRALIA & NEW ZEALAND

FIRM	AUSTRALIA		NEW ZEALAND	
	Office	Project	Office	Project
AECOM	23		7	
Arup	8	x	1	x
Buro Happold	0		0	
Foster and Partners	0		0	
Gensler	1		0	
HOK	0		0	
KPF	0		0	
SOM	0		0	
Urban strategies	0		0	
Sasaki	0		0	
Terry Farrell	0		0	x
Dar al Handasah	0		0	
RSP	0		0	
TOTAL	**3**	**1**	**2**	**2**

REFERENCES

1MDB (2014) *Mission & Vision | 1MDB*, 2014, available at
http://www.1mdb.com.my/about-us/mission-vision (accessed25 August 2014).

Abramson, D. B. (2010) 'A trans-Pacific planning education in reverse: reflections of an
American with the Chinese doctorate in urban planning and design', in P. Healey
and R. Upton (eds). *Crossing borders: international exchange and planning
practices.* Abingdon: Routledge, pp. 289–312.

Abu-Dayyeh, N. I. (2004) 'Persisting vision: plans for a modern Arab capital, Amman,
1955–2002', *Planning Perspectives* 19(1): 79–110.

Acuto, M. (2010) 'High-rise Dubai urban entrepreneurialism and the technology of
symbolic power', *Cities* 27(4): 272–284.

Acuto, M. and Curtis, S. (2013) 'Assemblage Thinking and International Relations', in M.
Acuto and S. Curtis (eds). *Reassembling International Theory: Assemblage Thinking
and International Relations.* Basingstoke; New York: Palgrave Macmillan, pp. 118–
130.

Adam, R. (2008) 'Globalisation and Architecture', *The Architectural Review* 223: 66–69.

Adams, B. (1993) 'Sustainable Development and the Greening of Development Theory',
in F. J. Schuurman (ed.). *Beyond the impasse : new directions in development theory.*
London: Zed Books, pp. 207–222.

AECOM (2014) *First-Quarter Fiscal Year 2014,*, available at
http://investors.aecom.com/phoenix.zhtml?c=131318&p=irol-presentations
(accessed26 April 2014).

Albrechts, L. (1991) 'Changing Roles and Positions of Planners', *Urban Studies* 28(1):
123–137.

Allen, A. (2009) 'Sustainable cities or sustainable urbanisation?', *Palette UCL's journal of
sustainable cities.*

Allen, A. and You, N. (2002) *Sustainable urbanization: bridging the green and brown agendas*, London: The UCL Development Planning Unit.

Allen, J. (2003) *Lost geographies of power*, Malden, Mass; Oxford: Blackwell.

Allen, J. (2011) 'Powerful assemblages?', *Area* 43(2): 154–157.

Allmendinger, P. (2002) 'Towards a Post-Positivist Typology of Planning Theory', *Planning Theory* 1(1): 77 –99.

Almandoz, A. (1999) 'Transfer of urban ideas: The emergence of Venezuelan urbanism in the proposals for 1930s' Caracas', *International Planning Studies* 4(1): 79–94.

Amin, A. (1997) 'Placing Globalization', *Theory, Culture & Society* 14(2): 123 –137.

Amin, A. (2007) 'Re-thinking the urban social', *City* 11(1): 100–114.

Amin, A. and Thrift, N. J. (2002) *Cities: Reimagining the Urban*, Oxford: Polity.

Anderson, B., Kearnes, M., McFarlane, C. and Swanton, D. (2012) 'On assemblages and geography', *Dialogues in Human Geography* 2(2): 171–189.

Anderson, B. and McFarlane, C. (2011) 'Assemblage and geography', *Area* 43(2): 124–127.

Arup (2014) *Rostov City Masterplan*, 2014, available at http://www.arup.com/Projects/Rostov_City_Masterplan.aspx (accessed10 February 2014).

Aunger, R. (1995) 'On Ethnography: Storytelling or Science?', *Current Anthropology* 36(1): 97–130.

Babbie, E. (2004) *The practice of social research*, 10th Ed., Belmont, CA: Thomson/Wadsworth.

Balbo, M. (1993) 'Urban Planning and the Fragmented City of Developing Countries', *Third World Planning Review* 15(1): 23–35.

Banerjee, T. (2005) 'Understanding Planning Cultures: The Kolkata Paradox', in B. Sanyal (ed.). *Comparative Planning Cultures*. New York: Routledge, pp. 145 – 162.

Banerjee, T. (2009) 'U.S. Planning Expeditions to Postcolonial India: From Ideology to Innovation in Technical Assistance', *Journal of the American Planning Association* 75(2): 193–208.

Banerjee, T. and Chakravorty, S. (1994) 'Transfer of planning technology and local political economy - A retrospective analysis of Calcutta's planning', *Journal of the American Planning Association* 60(1): 71–82.

Beattie, M. (2004) 'Sir Patrick Geddes and Barra Bazaar: competing visions, ambivalence and contradiction', *The Journal of Architecture* 9(2): 131–150.

Beauregard, R. (2003) 'Between Modernity and Postmodernity: The Ambiguous Position of U.S. Planning', in S. Campbell and S. S. Fainstein (eds). *Readings in Planning Theory*. Cambridge, MA: Blackwell, pp. 108 – 124.

Becker, H. S. (1958) 'Problems of Inference and Proof in Participant Observation', *American Sociological Review* 23(6): 652–660.

Bell, D. (2005) 'The Emergence of Contemporary Masterplans: Property Markets and the Value of Urban Design', *Journal of Urban Design* 10(1): 81–110.

Berg, B. L. (2009) *Qualitative research methods for the social sciences*, 7th Ed., Boston: Allyn & Bacon.

Boelens, L. (2010) 'Theorizing Practice and Practising Theory: Outlines for an Actor-Relational-Approach in Planning', *Planning Theory* 9(1): 28–62.

Brautigam, D. (2009) *The Dragon's Gift: The Real Story of China in Africa*, Oxford: Oxford University Press.

Brautigam, D. and Xiaoyang, T. (2011) 'African Shenzhen: China's special economic zones in Africa', *The Journal of Modern African Studies* 49(01): 27–54.

Breheny, M. (1992) 'The Contradictions of the Compact City: A Review', in M. J. Breheny (ed.). *Sustainable Development and Urban Form*. London: Pion, pp. 138–159.

Brenner, N., Madden, D. J. and Wachsmuth, D. (2011) 'Assemblage urbanism and the challenges of critical urban theory', *City* 15(2): 225–240.

Bromley, R. (2003) 'Towards Global Human Settlements: Constantinos Doxiadis as Entrepreneur, Coalition-Builder and Visionary', in J. Nasr and M. Volait (eds). *Urbanism: Imported or Exported?* Chichester: Wiley-Academy, pp. 316–340.

Bula, F. (2009) 'Mr. Big: Vancouver's Top City Planner', *Vancouver Magazine*, available at http://www.vanmag.com/News_and_Features/Vancouver_s_Top_City_Planner (accessed11 February 2014).

Bulkeley, H. and Betsill, M. (2005) 'Rethinking Sustainable Cities: Multilevel Governance and the "Urban" Politics of Climate Change', *Environmental Politics* 14(1): 42–63.

Bullivant, L. (2007) 'Dongtan - a Shangri-La for Shanghai?', *Architecture and Urbanism* 440: 122–127.

Bullivant, L. (2012) *Masterplanning futures*, Abingdon: Routledge.

Bunnell, T. (2004) *Malaysia, Modernity and the Multimedia Super Corridor: A Critical Geography of Intelligent Landscapes*, London: Routledge.

Bunnell, T. (2013) 'Antecedent Cities and Inter-referencing Effects: Learning from and Extending Beyond Critiques of Neoliberalisation', *Urban Studies*, available at http://usj.sagepub.com/content/early/2013/10/14/0042098013505882.

Bunnell, T. and Das, D. (2010) 'Urban Pulse—A Geography of Serial Seduction: Urban Policy Transfer from Kuala Lumpur to Hyderabad', *Urban Geography* 31(3): 277–284.

Bunnell, T., Goh, D. P. S., Lai, C.-K. and Pow, C. P. (2012) 'Introduction: Global Urban Frontiers? Asian Cities in Theory, Practice and Imagination', *Urban Studies* 49(13): 2785–2793.

Callon, M. (1986) 'Some elements of a sociology of translation: domestication of the scallops and the fishermen of St Brieuc Bay', in J. Law (ed.). *Power, action and belief: a new sociology of knowledge?* London: Routledge, pp. 196–223.

Campbell, H. (2002) 'Planning: An Idea of Value', *The Town Planning Review* 73(3): 271–288.

Carmona, M., De Magalhães, C. and Edwards, M. (2002) 'Stakeholder Views on Value and Urban Design', *Journal of Urban Design* 7(2): 145–169.

Celik, Z. (1997) *Urban forms and colonial confrontation: Algiers under French rule*, Berkeley: University of California Press.

Chen, X., Wang, L. and Kundu, R. (2009) 'Localizing the Production of Global Cities: A Comparison of New Town Developments Around Shanghai and Kolkata', *City & Community* 8(4): 433–465.

Chew, E. (2013) *Malaysia 1MDB Said to Weigh 1.5 Billion Ringgit Islamic Bond*, 18 December 2013, Bloomberg, available at http://www.bloomberg.com/news/2013-12-18/malaysia-1mdb-said-to-consider-1-5-billion-ringgit-islamic-bond.html (accessed16 April 2014).

Choplin, A. and Franck, A. (2010) 'A Glimpse of Dubai in Khartoum and Nouakchott: Prestige Urban Projects on the Margins of the Arab World', *Built Environment* 36(2): 192–205.

Clarke, N. (2012) 'Urban policy mobility, anti-politics, and histories of the transnational municipal movement', *Progress in Human Geography* 36(1): 25–43.

Cochrane, A. and Ward, K. (2012) 'Researching the geographies of policy mobility: confronting the methodological challenges', *Environment and Planning A* 44(1): 5–12.

Cohen, M. (1996) 'The hypothesis of urban convergence: Are cities in the north and south becoming more alike in an age of globalization?', in M. Cohen, B. Ruble, J. Tulchin, and A. Garland (eds). *Preparing for the Urban Future: Global Pressures and Local Forces*. Washington, D.C: Woodrow Wilson Center Press, pp. 25–38.

Collins, C. C. (1995) 'Urban Interchange in the Southern Cone: Le Corbusier (1929) and Werner Hegemann (1931) in Argentina', *Journal of the Society of Architectural Historians* 54(2): 208–227.

Collins, J. P. et al. (2000) 'A New Urban Ecology: Modeling human communities as integral parts of ecosystems poses special problems for the development and testing of ecological theory', *American Scientist* 88(5): 416–425.

Commission for Architecture and the Built Environment (CABE) (2011) *Examples for cities and towns | Sustainable Places | CABE*, 2011, available at http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cabe.org.uk/sustainable-places/cities-and-towns/examples (accessed23 April 2014).

Cooper, H. M., Hedges, L. V. and Valentine, J. C. (2008) *The Handbook of Research Synthesis and Meta-Analysis*, 2nd edition., New York: Russell Sage Foundation.

Cornwall, A. (2002) 'Locating citizen participation', *IDS bulletin* 33(2): i–x.

Cowherd, R. (2005) 'Does Planning Culture Matter? Dutch and American Models in Indonesian Urban Transformations', in B. Sanyal (ed.). *Comparative Planning Cultures.* New York: Routledge, pp. 165–192.

Cugurullo, F. (2013) 'How to Build a Sandcastle: An Analysis of the Genesis and Development of Masdar City', *Journal of Urban Technology* 20(1): 23–37.

Dalton, L. C. (1989) 'Emerging Knowledge about Planning Practice', *Journal of Planning Education and Research* 9(1): 29 –44.

Datta, A. (2012) 'India's ecocity? Environment, urbanisation, and mobility in the making of Lavasa', *Environment and Planning C: Government and Policy* 30(6): 982–996.

DeLanda, M. (2006) *A new philosophy of society : assemblage theory and social complexity*, London & New York: Continuum.

Deleuze, G. and Guattari, F. (2004) *A thousand plateaus : capitalism and schizophrenia*, London: Continuum.

Della Porta, D. and Keating, M. (2008) 'How many approaches in the social sciences? An epistemological introduction', in D. Della Porta and M. Keating (eds). *Approaches and Methodologies in the Social Sciences: A Pluralist Perspective.* Cambridge: Cambridge University Press, pp. 19–39.

DeWalt, K. M. and DeWalt, B. R. (2011) *Participant Observation: A Guide for Fieldworkers*, Second Edition., Lanham, MD & Plymouth, United Kingdom: AltaMira Press.

Dewsbury, J.-D. (2011) 'The Deleuze-Guattarian assemblage: plastic habits', *Area* 43(2): 148–153.

Dick, H. W. and Rimmer, P. J. (1998) 'Beyond the third world city: The new urban geography of South-east Asia', *Urban Studies* 35(12): 2303–2321.

Doak, J. and Karadimitriou, N. (2007) '(Re)development, Complexity and Networks: A Framework for Research', *Urban Studies* 44(2): 209–229.

Dryzek, J. S. (2005) *The Politics of the Earth: Environmental Discourses*, 2nd ed., Oxford: Oxford University Press.

Ehrlich, P. R. (1968) *The population bomb*, New York: Ballantine Books.

Eisenhardt, K. M. (1989) 'Building Theories from Case Study Research', *Academy of Management Review* 14(4): 532–550.

Energy Cities (2008) *Guidebook of Sustainable Neighbourhoods in Europe*, Besancon, France: Energy Cities, available at http://www.energy-cities.eu/IMG/pdf/ademe_sustainable_districts_en.pdf.

Energy Cities (2014) *Energy Cities - Study Tours*, 2014, available at http://www.energy-cities.eu/-Study-Tours,14- (accessed23 April 2014).

Fainstein, S. S. (2001) *The City Builders: Property Development in New York and London, 1980-2000*, 2nd ed., rev., Lawrence: University Press of Kansas.

Farias, I. and Bender, T. (eds) (2010) *Urban assemblages : how actor-network theory changes urban studies*, Abingdon; New York: Routledge.

Farmer, G. and Guy, S. (2010) 'Making morality: sustainable architecture and the pragmatic imagination', *Building Research & Information* 38(4): 368–378.

Farmer, G. and Radford, A. (2010) 'Building with uncertain ethics', *Building Research & Information* 38(4): 363–367.

Faulconbridge, J. R. (2009) 'The Regulation of Design in Global Architecture Firms: Embedding and Emplacing Buildings', *Urban Studies* 46(12): 2537–2554.

Faulconbridge, J. R. (2010) 'Global architects: learning and innovation through communities and constellations of practice', *Environment and Planning A* 42(12): 2842–2858.

Fern, E. F. (2001) *Advanced Focus Group Research*, Thousand Oaks, Calif: SAGE Publications, Inc.

Fisher, D. R. and Freudenburg, W. R. (2001) 'Ecological Modernization and Its Critics: Assessing the Past and Looking Toward the Future', *Society & Natural Resources: An International Journal* 14(8): 701–709.

Flood, C. (2013) 'Pension funds drawn to property', *Financial Times* 13 January, available at http://www.ft.com/cms/s/0/75cbbffe-454f-11e2-8ccc-00144feabdc0.html (accessed 21 February 2014).

Flyvbjerg, B. (2006) 'Five misunderstandings about case-study research', *Qualitative inquiry* 12(2): 219.

Forester, J. (1989) *Planning in the Face of Power*, Berkeley: University of California Press.

Foster & Partners (2008) *Masdar development,*, available at http://www.fosterandpartners.com/projects/masdar-development/ (accessed10 February 2014).

Foucault, M. (1998) *The History of Sexuality*, London: Penguin.

French, P. (2007) *Arup and Dongtan, worthy winner of Greenwasher of the year*, 4 December 2007, Ethical Corporation, available at http://www.ethicalcorp.com/content/arup-and-dongtan-worthy-winner-greenwasher-year (accessed3 September 2012).

Friedmann, J. (2005) 'Globalization and the emerging culture of planning', *Progress in Planning* 64(3): 183–234.

Friese, S. (2012) *Qualitative Data Analysis with ATLAS.ti*, London: Sage.

Gerring, J. (2004) 'What Is a Case Study and What Is It Good for?', *The American Political Science Review* 98(2): 341–354.

Giddens, A. (1984) *The Constitution of Society*, Cambridge, England: Polity Press.

Gilbert, A. (1994) *The Latin American city*, London: LAB.

Golany, G. (1984) 'Validity of new town principles for the developing countries', in T. L. Blair (ed.). *Urban innovation abroad: problem cities in search of solutions*. New York; London: Plenum.

González, S. (2011) 'Bilbao and Barcelona "in Motion". How Urban Regeneration "Models" Travel and Mutate in the Global Flows of Policy Tourism', *Urban Studies* 48(7): 1397–1418.

Gordon, P. and Richardson, H. W. (1997) 'Are Compact Cities a Desirable Planning Goal?', *Journal of the American Planning Association* 63(1): 95–106.

Graham, S. and Healey, P. (1999) 'Relational concepts of space and place: Issues for planning theory and practice', *European Planning Studies* 7(5): 623–646.

Grubb, M., Thompson, K. and Sullivan, F. (1993) *The 'Earth Summit' Agreements: A Guide and Assessment: An Analysis of the Rio '92 UN Conference on Environment and Development*, London: Earthscan Publications for Energy and Environmental Programme, Royal Institute of International Affairs.

Grubbauer, M. (2008) 'Images of office architecture in the media: the paradigm of urban competitiveness and global interconnectivity', in F. Eckardt (ed.). *Media and urban space understanding, investigating and approaching mediacity*. Berlin: Frank & Timme, pp. 105–132.

Grubbauer, M. (2010) 'The high-rise office tower as a global "type"', in M. Guggenheim and O. Söderström (eds). *Re-shaping cities: how global mobility transforms architecture and urban form*. London; New York: Routledge, pp. 63–80.

Grubbauer, M. (2014) 'Architecture, economic imaginaries and urban politics: The office tower as socially classifying device', *International Journal of Urban and Regional Research* 38(1): 336–359.

Gunder, M. (2006) 'Sustainability: Planning's Saving Grace or Road to Perdition?', *Journal of Planning Education and Research* 26(2): 208 –221.

Gunder, M. and Hillier, J. (2009) *Planning in Ten Words or Less*, Farnham: Ashgate.

Haas, P. M. (1992) 'Introduction: Epistemic Communities and International Policy Coordination', *International Organization* 46(1): 1–35.

Haila, A. (1997) 'The neglected builder of global cities', in O. Källtorp, I. Elander, O. Ericsson, and M. Franzen (eds). *Cities in transformation- transformation in cities: social and symbolic change of urban space*. Aldershot, England ; Brookfield, VT: Avebury, pp. 51–64.

Hajer, M. A. (1996) 'Ecological modernisation as cultural politics', in S. Lash, B. Szerszynski, and B. Wynne (eds). *Risk, Environment and Modernity: Towards a New Ecology*. London: Sage, pp. 246–268.

Hall, P. G. (2002) *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, 3rd ed., Oxford: Blackwell.

Han, S. S. and Vu, K. T. (2008) 'Land Acquisition in Transitional Hanoi, Vietnam', *Urban Studies* 45(5-6): 1097–1117.

Harman, G. (2013) 'Conclusions: Assemblage Theory and its Future', in M. Acuto and S. Curtis (eds). *Reassembling International Theory: Assemblage Thinking and International Relations*. Basingstoke; New York: Palgrave Macmillan, pp. 118–130.

Harris, A. and Moore, S. (2013) 'Planning Histories and Practices of Circulating Urban Knowledge', *International Journal of Urban and Regional Research* 37(5): 1499–1509.

Harvey, D. (1982) *The limits to capital*, Oxford: Basil Blackwell.

Harvey, D. (1989) 'From managerialism to entrepreneurialism: the transformation in urban governance in late capitalism', *Geografiska Annaler B* 71(1): 3–17.

Harvey, D. (2005) *A Brief History of Neoliberalism*, Oxford: Oxford University Press.

Healey, P. (1997) *Collaborative Planning: Shaping Places in Fragmented Societies*, Houndsmills: Macmillan.

Healey, P. (2000) 'Planning in Relational Space and Time: Responding to New Urban Realities', in G. Bridge and S. Watson (eds). *A Companion to the City*. Oxford: Blackwell, pp. 517–530.

Healey, P. (2007) *Urban Complexity and Spatial Strategies: Towards a Relational Planning for Our Times*, London: Routledge.

Healey, P. (2010) 'Introduction: The transnational flow of knowledge and expertise in the planning field', in P. Healey and R. Upton (eds). *Crossing Borders: International Exchange and Planning Practices*. London: Routledge, pp. 1–28.

Healey, P. (2012) 'The universal and the contingent: Some reflections on the transnational flow of planning ideas and practices', *Planning Theory* 11(2): 188–207.

Healey, P. (2013) 'Circuits of Knowledge and Techniques: The Transnational Flow of Planning Ideas and Practices', *International Journal of Urban and Regional Research* 37(5): 1510–1526.

Healey, P. and Upton, R. (eds) (2010) *Crossing borders: international exchange and planning practices*, Abingdon: Routledge.

Hein, C. (2003) 'The transformation of planning ideas in Japan and its colonies', in J. Nasr and M. Volait (eds). *Urbanism: Imported or Exported?* Chichester: Wiley-Academy, pp. 51–82.

Held, D. and McGrew, A. G. (2003) 'The Great Globalization Debate: An Introduction', in D. Held and A. G. McGrew (eds). *The global transformations reader*. Cambridge: Polity Press.

Hillier, J. (2008) 'Plan (e) speaking: A multiplanar theory of spatial planning', *Planning Theory* 7(1): 24–50.

Hitchings, R. (2003) 'People, plants and performance: On actor network theory and the material pleasures of the private garden', *Social & Cultural Geography* 4(1): 99–114.

Hoffman, L. (2011) 'Urban modelling and contemporary technologies of city-building in China: the production of regimes of green urbanisms', in A. Ong and A. Roy (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 55–76.

Holston, J. (1989) *The modernist city: an anthropological critique of Brasília*, Chicago: University of Chicago Press.

Home, R. K. (1990) 'Town planning and garden cities in the British colonial empire 1910–1940', *Planning Perspectives* 5(1): 23–37.

HSBC (2014) *HSBC Holdings plc - Environmental efficiency*, 2014, HSBC, available at http://www.hsbc.com/citizenship/sustainability/environmental-efficiency (accessed 27 February 2014).

Hult, A. (2013) 'Swedish Production of Sustainable Urban Imaginaries in China', *Journal of Urban Technology* 20(1): 77–94.

Huxley, M. (2013) 'Historicizing Planning, Problematizing Participation', *International Journal of Urban and Regional Research* 37(5): 1527–1541.

I Got My Deal (2013) *Lodha The Rise - Palava City Dombivali East New Projects Mumbai,,* available at http://www.slideshare.net/igotmydeal/lodha-the-rise-dombivali-27328759 (accessed 27 February 2014).

Ingold, T. (2008) 'Bindings against boundaries: entanglements of life in an open world', *Environment and Planning A* 40(8): 1796–1810.

Innes, J. E. (1995) 'Planning Theory's Emerging Paradigm: Communicative Action and Interactive Practice', *Journal of Planning Education and Research* 14(3): 183 –189.

Jacobs, J. M. (2006) 'A geography of big things', *Cultural Geographies* 13(1): 1–27.

Jacobs, J. M. (2012) 'Urban geographies I: Still thinking cities relationally', *Progress in Human Geography* 36(3): 412–422.

Jacobs, J. M., Cairns, S. and Strebel, I. (2007) '"A Tall Storey ... but, a Fact Just the Same": The Red Road High-rise as a Black Box', *Urban Studies* 44(3): 609–629.

Jenks, M., Burton, E. and Williams, K. (eds) (1996) *The Compact City: A Sustainable Urban Form?*, London: E & FN Spon.

Jonas, A. E. . and While, A. (2007) 'Greening the entrepreneurial city?: Looking for spaces of sustainability politics in the competitive city', in D. Gibbs (ed.). *The Sustainable Development Paradox: Urban Political Economy in the United States and Europe*. New York ; London: Guilford Press, pp. 123–159.

Joss, S. and Molella, A. P. (2013) 'The Eco-City as Urban Technology: Perspectives on Caofeidian International Eco-City (China)', *Journal of Urban Technology* 20(1): 115–137.

K.A.CARE (2013) *King Abdullah City for Atomic and Renewable Energy*, 2013, available at http://www.kacare.gov.sa/en/ (accessed30 April 2014).

Kazimbaya-Senkwe, B. M. and Lubambo, P. (2010) 'Subaltern Speak in a Postcolonial Setting: Diffusing and Contesting Donor-engendered Knowledge in the Water Sector in Zambia', in P. Healey and R. Upton (eds). *Crossing borders: international exchange and planning practices*. Abingdon: Routledge, pp. 191–218.

King, A. D. (1976) *Colonial Urban Development: Culture, Social Power and Environment*, London: Routledge and Kegan Paul.

King, A. D. (1980) 'Exporting Planning: The colonial and neo-colonial experience', in G. E. Cherry (ed.). *Shaping an Urban World*. London: Mansell.

King, A. D. (2004) *Spaces of Global Cultures: Architecture, Urbanism, Identity*, London: Routledge.

Kirkby, J., O'Keefe, P. and Timberlake, L. (1995) 'Sustainable Development: An Introduction', in *The Earthscan Reader in Sustainable Development*. London: Earthscan Publications, pp. 1–14.

Knox, P. L. and Taylor, P. J. (2005) 'Toward a Geography of the Globalization of Architecture Office Networks', *Journal of Architectural Education* 58(3): 23–32.

Krueger, R. and Gibbs, D. (eds) (2007) *The Sustainable Development Paradox: Urban Political Economy in the United States and Europe*, New York: Guilford Press.

Lagendijk, A. and Boertjes, S. (2013) 'Light Rail: All change please! A post-structural perspective on the global mushrooming of a transport concept', *Planning Theory* 12(3): 290–310.

Larner, W. and Laurie, N. (2010) 'Travelling technocrats, embodied knowledges: Globalising privatisation in telecoms and water', *Geoforum* 41(2): 218–226.

Larson, M. S. (1994) 'Architectural Competitions as Discursive Events', *Theory and Society* 23(4): 469–504.

Latour, B. (1987) *Science in action : how to follow scientists and engineers through society*, Cambridge, MA: Harvard University Press.

Latour, B. (1993) *We Have Never Been Modern*, New York ; London: Harvester Wheatsheaf.

Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network-Theory*, Oxford: Oxford University Press.

Lauria, M. and Wagner, J. A. (2006) 'What Can We Learn from Empirical Studies of Planning Theory? A Comparative Case Analysis of Extant Literature', *Journal of Planning Education and Research* 25(4): 364 –381.

Law, J. (2004) *After Method: Mess in Social Science Research*, Abingdon and New York: Routledge.

Lee, Y.-S. and Hwang, E.-J. (2012) 'Global Urban Frontiers through Policy Transfer? Unpacking Seoul's Creative City Programmes', *Urban Studies* 49(13): 2817–2837.

Legg, S. (2011) 'Assemblage/apparatus: using Deleuze and Foucault', *Area* 43(2): 128–133.

Leichenko, R. and Solecki, W. (2005) 'Exporting the American dream: the globalization of suburban consumption landscapes', *Regional Studies* 39(2): 241–253.

Leitner, H. and Sheppard, E. (2003) 'Unbounding Critical Geographic Research on Cities: The 1990s and beyond', *Urban Geography* 24(6): 510–528.

Lodha Group (2014a) *Palava City | Homeowner Value*, 2014, available at http://www.palava.in/cityadvantages/homeownervalue (accessed 30 April 2014).

Lodha Group (2014b) *Palava City Energy & Water*, 2014, available at http://www.palava.in/citymanagement/energywater (accessed 27 April 2014).

Lowry, G. and McCann, E. (2011) 'Asia in the mix: urban form and global mobilities-Hong Kong Vancouver Dubai', in A. Roy and A. Ong (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 182–204.

Mahgoub, Y. (2004) 'Globalization and the built environment in Kuwait', *Habitat International* 28(4): 505–519.

Massey, D. (1991) 'A global sense of place', *Marxism today* 35(6): 24–29.

Massey, D. (1994) *Space, Place and Gender*, Cambridge: Polity.

Massey, D. (2004) 'Geographies of Responsibility', *Geografiska Annaler B* 86(1): 5–18.

Massey, D. (2005) *For Space*, London: SAGE.

McCann, E. (2008) 'Expertise, truth, and urban policy mobilities: global circuits of knowledge in the development of Vancouver, Canada's "four pillar" drug strategy', *Environment and Planning A* 40(4): 885–904.

McCann, E. (2011) 'Urban Policy Mobilities and Global Circuits of Knowledge: Toward a Research Agenda', *Annals of the Association of American Geographers* 101(1): 107–130.

McCann, E. and Ward, K. (2010) 'Relationality/territoriality: Toward a conceptualization of cities in the world', *Geoforum* 41(2): 175–184.

McCann, E. and Ward, K. (2012) 'Assembling urbanism: following policies and "studying through" the sites and situations of policy making', *Environment and Planning A* 44(1): 42–51.

McFarlane, C. (2009) 'Translocal assemblages: Space, power and social movements', *Geoforum* 40(4): 561–567.

McFarlane, C. (2011a) 'Assemblage and critical urbanism', *City* 15(2): 204–224.

McFarlane, C. (2011b) *Learning the City: Knowledge and Translocal Assemblage*, Chichester: Wiley-Blackwell.

McFarlane, C. (2011c) 'The city as assemblage: dwelling and urban space', *Environment and Planning D: Society and Space* 29(4): 649–671.

McFarlane, C. and Anderson, B. (2011) 'Thinking with assemblage', *Area* 43(2): 162–164.

McManus, P. (1996) 'Contested terrains: Politics, stories and discourses of sustainability', *Environmental Politics* 5(1): 48–73.

McNay, L. (1994) *Foucault: A Critical Introduction*, Oxford: Polity Press.

McNeill, D. (2005) 'In Search of the Global Architect: the Case of Norman Foster (and Partners)', *International Journal of Urban and Regional Research* 29(3): 501–515.

McNeill, D. (2006) 'Globalization and the ethics of architectural design', *City* 10(1): 49–58.

McNeill, D. (2007) 'Office buildings and the signature architect: Piano and Foster in Sydney', *Environment and Planning A* 39(2): 487–501.

McNeill, D. (2009) *The Global Architect: Firms, Fame and Urban Form*, New York: Routledge.

Meadows, D. H., Meadows, D., Randers, J. and Behrens, W. H. I. (1974) *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*, London: Pan.

Metzger, J. and Olsson, A. R. (eds) (2013) *Sustainable Stockholm : exploring urban sustainability in Europe's greenest city*, Abingdon: Routledge.

Mexico Today (2012) *Mexico's Green Building Trend*, 19 October 2012, Mexico Today, available at http://mexicotoday.org/article/mexico%E2%80%99s-green-building-trend (accessed27 February 2014).

Middleton, N., O'Keefe, P. and Moyo, S. (1993) *Tears of the Crocodile: From Rio to Reality in the Developing World*, London: Pluto Press.

Mitlin, D. (1992) 'Sustainable Development: a Guide to the Literature', *Environment and Urbanization* 4(1): 111–124.

Monthéard, X. (2010) 'A Hanoï, les gratte-ciel dévorent les rizières', *Monde Diplomatique*, available at http://www.monde-diplomatique.fr/2010/04/MONTHEARD/19001 (accessed20 November 2010).

Moore, S. (2010) '"More Toronto, naturally" but "too strange for Orangeville": De-universalizing New Urbanism in Greater Toronto', *Cities* 27(2): 103–113.

Moore, S. (2013) 'What's Wrong with Best Practice? Questioning the Typification of New Urbanism', *Urban Studies* 50(11): 2371–2387.

Murdoch, J. (1997a) 'Inhuman/nonhuman/human: actor-network theory and the prospects for a nondualistic and symmetrical perspective on nature and society', *Environment and Planning D: Society and Space* 15(6): 731–756.

Murdoch, J. (1997b) 'Towards a geography of heterogeneous associations', *Progress in Human Geography* 21(3): 321–337.

Murdoch, J. (1998) 'The spaces of actor-network theory', *Geoforum* 29(4): 357–374.

Murdoch, J. (2006) *Post-Structuralist Geography: A Guide to Relational Space*, London: Sage.

Nader, L. (1969) 'Up the Anthropologist—Perspectives Gained From Studying Up', in D. Hymes (ed.). *Reinventing Anthropology*. New York: Vintage, pp. 284–311.

Nagy, S. (2000) 'Dressing Up Downtown: urban development and government public image in Qatar', *City & Society* 12(1): 125–147.

Nasr, J. and Volait, M. (2003) 'Introduction: Transporting Planning', in J. Nasr and M. Volait (eds). *Urbanism: Imported or Exported?* Chichester: Wiley-Academy, pp. xi–xxxvii.

Neuendorf, K. (2002) *The content analysis guidebook*, Thousand Oaks, CA; London: Sage.

Newman, P. and Kenworthy, J. R. (1989) *Cities and Automobile Dependence: A Sourcebook*, Aldershot: Gower.

Noor, K. B. M. (2008) 'Case Study: A Strategic Research Methodology', *American Journal of Applied Sciences* 5(11): 1602–1604.

Novick, A. (2003) 'Foreign Hires: French Experts and the Urbanism of Buenos Aires, 1907-32', in J. Nasr and M. Volait (eds). *Urbanism: Imported or Exported?* Chichester: Wiley-Academy, pp. 265–289.

Olds, K. (2001) *Globalization and Urban Change: Capital, Culture, and Pacific Rim Mega-Projects*, Oxford: Oxford University Press.

Ong, A. (2007) 'Neoliberalism as a mobile technology', *Transactions of the Institute of British Geographers* 32(1): 3–8.

Ong, A. (2011a) 'Hyperbuilding: Spectacle, Speculation, and the Hyperspace of Sovereignty', in A. Roy and A. Ong (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 205–226.

Ong, A. (2011b) 'Introduction: Worlding Cities, or the Art of being Global', in A. Roy and A. Ong (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 1–26.

Ong, A. and Collier, S. J. (2005) *Global assemblages: technology, politics, and ethics as anthropological problems*, Oxford: Blackwell.

Palava Megacity - By Lodha (2012) 1 June 2012, available at
     http://www.youtube.com/watch?v=qtDNRoMrQ1A&feature=youtube_gdata_play
     er (accessed23 April 2014).

Paling, W. (2012) 'Planning a Future for Phnom Penh: Mega Projects, Aid Dependence
     and Disjointed Governance', *Urban Studies* 49(13): 2889–2912.

Peattie, L. R. (1987) *Planning, rethinking Ciudad Guayana*, Ann Arbor: University of
     Michigan Press.

Peck, J. (2002) 'Political Economies of Scale: Fast Policy, Interscalar Relations, and
     Neoliberal Workfare', *Economic Geography* 78(3): 331–360.

Peck, J. (2011a) 'Geographies of policy: From transfer-diffusion to mobility-mutation',
     Progress in Human Geography 35(6): 773–797.

Peck, J. (2011b) 'Global Policy Models, Globalizing Poverty Management: International
     Convergence or Fast-Policy Integration?', *Geography Compass* 5(4): 165–181.

Peck, J. and Theodore, N. (2010a) 'Mobilizing policy: Models, methods, and mutations',
     Geoforum 41(2): 169–174.

Peck, J. and Theodore, N. (2010b) 'Recombinant workfare, across the Americas:
     Transnationalizing "fast" social policy', *Geoforum* 41(2): 195–208.

Peck, J. and Theodore, N. (2012) 'Follow the policy: a distended case approach',
     Environment and Planning A 44(1): 21–30.

Peck, J. and Tickell, A. (2002) 'Neoliberalizing Space', *Antipode* 34(3): 380–404.

Perera, N. (2004) 'Contesting visions: hybridity, liminality and authorship of the
     Chandigarh plan', *Planning Perspectives* 19(2): 175–199.

Perera, N. (2010) 'When planning ideas land: Mahaweli's people-centered approach', in
     P. Healey and R. Upton (eds). *Crossing borders: international exchange and
     planning practices.* Abingdon: Routledge, pp. 141–172.

Peyroux, E., Pütz, R. and Glasze, G. (2012) 'Business Improvement Districts (BIDs): the internationalization and contextualization of a "travelling concept"', *European Urban and Regional Studies* 19(2): 111–120.

Pizarro, R. E., Wei, L. and Banerjee, T. (2003) 'Agencies of Globalization and Third World Urban Form: A Review', *Journal of Planning Literature* 18(2): 111–130.

Prince, R. (2010) 'Policy transfer as policy assemblage: making policy for the creative industries in New Zealand', *Environment and Planning A* 42(1): 169–186.

Prince, R. (2012) 'Policy transfer, consultants and the geographies of governance', *Progress in Human Geography* 36(2): 188–203.

Principles for Responsible Investment (n.d.) *Signatories - Principles for Responsible Investment*, , available at http://www.unpri.org/signatories/signatories/ (accessed 9 April 2014).

Rabinow, P. (1989) *French modern : norms and forms of the social environment*, Cambridge, MA & London: University of Chicago Press.

Ratner, B. D. (2004) '"Sustainability" as a Dialogue of Values: Challenges to the Sociology of Development', *Sociological Inquiry* 74(1): 50–69.

Redclift, M. (1991) 'The Multiple Dimensions of Sustainable Development', *Geography* 76(1): 36–42.

Reed, R., Bilos, A., Wilkinson, S. and Schulte, K.-W. (2009) 'International Comparison of Sustainable Rating Tools', *The Journal of Sustainable Real Estate* 1(1): 1–22.

Ren, X. (2008) 'Architecture and Nation Building in the Age of Globalization: Construction of the National Stadium of Beijing for the 2008 Olympics', *Journal of Urban Affairs* 30(2): 175–190.

Rimmer, P. J. and Black, J. (1983) 'Global financiers, consultants and contractors in the Southwest Pacific since 1970', *Pacific Viewpoint* 24(2): 112–139.

Rittel, H. W. J. and Webber, M. M. (1973) 'Dilemmas in a General Theory of Planning', *Policy Sciences* 4(2): 155–169.

Robinson, J. (2002) 'Global and world cities: a view from off the map', *International Journal of Urban and Regional Research* 26(3): 531–554.

Robinson, J. and Parnell, S. (2011) 'Traveling Theory: Embracing Post-Neoliberalism Through Southern Cities', in *The New Blackwell Companion to the City*. Chichester: Wiley-Blackwell, pp. 521–531.

Roy, A. (2011a) 'Commentary: Placing Planning in the World—Transnationalism as Practice and Critique', *Journal of Planning Education and Research* 31(4): 406–415.

Roy, A. (2011b) 'Conclusion: Postcolonial Urbanism: Speed, Hysteria, Mass Dreams', in A. Roy and A. Ong (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 307–335.

Roy, A. (2011c) 'The Blockade of the World-Class City: Dialectical Images of Indian Urbanism', in A. Roy and A. Ong (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 259–278.

Rydin, Y. (2010) 'Actor-network theory and planning theory: A response to Boelens', *Planning Theory* 9(3): 265–268.

Rydin, Y. (2013) 'Using Actor–Network Theory to understand planning practice: Exploring relationships between actants in regulating low-carbon commercial development', *Planning Theory* 12(1): 23–45.

Sandercock, L. (1998) 'The death of modernist planning: radical praxis for a postmodern age', in M. Douglass and J. Friedmann (eds). *Cities for citizens : planning and the rise of civil society in a global age*. Chichester; New York: John Wiley & Sons, pp. 163–184.

Sanyal, B. (2005) 'Hybrid Planning Cultures: The Search for the Global Cultural Commons', in B. Sanyal (ed.). *Comparative Planning Cultures*. New York: Routledge, pp. 145 – 162.

Sassen, S. (1998) *Globalization and Its Discontents*, New York: New Press.

Saunders, T. (2008) *A Discussion Document Comparing International Environmental Assessment Methods for Buildings*, Glasgow: BRE Global Ltd, available at http://www.dgbc.nl/images/uploads/rapport_vergelijking.pdf.

Sautman, B. and Hairong, Y. (2007) 'Friends and interests: China's distinctive links with Africa', *African Studies Review* 75–114.

Schutt, R. K. (2004) *Investigating the social world : the process and practice of research*, 4th Ed., Thosand Oaks, CA; London: Pine Forge Press.

Scott, J. C. (1998) *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, New Haven, [Conn.]: Yale University Press.

Sharifi, A. and Murayama, A. (2013) 'A critical review of seven selected neighborhood sustainability assessment tools', *Environmental Impact Assessment Review* 38: 73–87.

Shatkin, G. (2007) 'Global cities of the South: Emerging perspectives on growth and inequality', *Cities* 24(1): 1–15.

Shatkin, G. (2008) 'The city and the bottom line: urban megaprojects and the privatization of planning in Southeast Asia', *Environment and Planning A* 40(2): 383–401.

Shatkin, G. (2011) 'Planning Privatopolis: Representation and Contestation in the Development of Urban Integrated Mega-Projects', in A. Roy and A. Ong (eds). *Worlding Cities: Asian Experiments and the Art of Being Global*. Chichester: Wiley-Blackwell, pp. 77–97.

Shwayri, S. T. (2013) 'A Model Korean Ubiquitous Eco-City? The Politics of Making Songdo', *Journal of Urban Technology* 20(1): 39–55.

Sklair, L. (2000) *The Transnational Capitalist Class*, Chichester: Wiley-Blackwell.

Sklair, L. (2005) 'The Transnational Capitalist Class and Contemporary Architecture in Globalizing Cities', *International Journal of Urban and Regional Research* 29(3): 485–500.

Sklair, L. (2006) 'Iconic architecture and capitalist globalization', *City* 10(1): 21–47.

SOM (2014) *Beijing CBD East Expansion*, 2014, available at
http://www.som.com/projects/beijing_cbd_east_expansion (accessed10 February
2014).

Sorensen, A. (2010) 'Urban sustainability and compact cities ideas in Japan: the
diffusion, transformation and deployment of planning concepts', in P. Healey and
R. Upton (eds). *Crossing borders: international exchange and planning practices.*
Abingdon: Routledge, pp. 117–140.

Soussan, J. G. (1982) 'Urban planning and the community: an example from the Third
World', *Environment and Planning A* 14(7): 901–916.

Stewart, C. J. and Cash, W. B. (2008) *Interviewing: Principles and Practices*, 12th Ed.,
Boston: McGraw-Hill Higher Education.

Sullivan, L. J., Rydin, Y. and Buchanan, C. (2014) *Neighbourhood sustainability
frameworks - a literature review*, London: UCL Centre for Urban Sustainability and
Resilience, available at http://www.ucl.ac.uk/usar/wps.

Suzuki, H., Dastur, A., Moffatt, S., Yabuki, N. and Maruyama, H. (2010) *Eco2 Cities:
ecological cities as economic cities*, Washington, D.C.: World Bank Publications.

Swyngedouw, E. (2007) 'Impossible "sustainability" and the postpolitical condition', in
R. Krueger and D. Gibbs (eds). *The Sustainable Development Paradox: Urban
Political Economy in the United States and Europe*. New York ; London: Guilford
Press, pp. 13–40.

Tait, M. (2002) 'Room for Manoeuvre? An Actor-network Study of Central-Local
Relations in Development Plan Making', *Planning Theory & Practice* 3(1): 69–85.

Tait, M. and Jensen, O. B. (2007) 'Travelling Ideas, Power and Place: The Cases of Urban
Villages and Business Improvement Districts', *International Planning Studies*
12(2): 107–128.

Temenos, C. and McCann, E. (2012) 'The local politics of policy mobility: learning, persuasion, and the production of a municipal sustainability fix', *Environment and Planning A* 44(6): 1389–1406.

Thornley, A. (2012) 'Exporter le modèle barcelonais" à Londres: le role "formateur' des architectes', *Revue Urbanisme* 383: 52–54.

Thornley, A. and Rydin, Y. (2002) 'Planning in a Global Era', in A. Thornley and Y. Rydin (eds). *Planning in a Global Era*. Aldershot: Ashgate, pp. 1–12.

Thứ, S. (2009) 'Experts surprised by audacity of proposed Hanoi master plan', *Ashui.com*, available at http://mag.ashui.com/index.php/english/news/37-news/1311-experts-surprised-by-audacity-of-proposed-hanoi-master-plan.html (accessed21 November 2010).

Tomlinson, R. et al. (2010) 'The Influence of Google on Urban Policy in Developing Countries', *International Journal of Urban and Regional Research* 34(1): 174–189.

Tun Razak Exchange (2013) *Tun Razak Exchange (TRX)*, 2013, available at http://www.trx.my/features.html (accessed30 April 2014).

Tun Razak Exchange (TRX) Corporate Video (2013) 16 December 2013, available at http://www.youtube.com/watch?v=ELwDZRW1RPs&feature=youtube_gdata_player (accessed23 April 2014).

U.S. Green Buildings Council (2014) *Projects Directory*, 2014, available at http://www.usgbc.org/projects/neighborhood-development (accessed18 March 2014).

Upton, R. (2002) 'Planning praxis: Ethics, values and theory', *Town Planning Review* 73(3): 253–269.

Van der Heiden, C. N. (1990) 'Town planning in the Dutch Indies', *Planning Perspectives* 5(1): 63–84.

Verdeil, E. (2003) 'Politics, Ideology and Professional Interests: Forign versus Local Planners in Lebanon under President Chehab', in J. Nasr and M. Volait (eds). *Urbanism: Imported or Exported?* Chichester: Wiley-Academy, pp. 294–315.

Verdeil, E. (2008) 'Michel Ecochard in Lebanon and Syria (1956-1968). The spread of Modernism, the Building of the Independent States and the Rise of Local Professionals of Planning', in *European Association of Urban History, 12th Conference, Lyon : France (2008)*. 30 August 2008, Lyon, France, available at http://halshs.archives-ouvertes.fr/halshs-00424544/.

Volait, M. (2003) 'Making Cairo modern (1870 to 1950): multiple models for a "European-style" urbanism', in J. Nasr and M. Volait (eds). *Urbanism: Imported or Exported?* Chichester: Wiley-Academy, pp. 17–50.

Wang, T. and Shao, L. (2010) 'Eco-city: China's realities and challenges in urban planning and design', in L. F. Lye and G. Chen (eds). *Towards A Liveable And Sustainable Urban Environment: Eco-Cities In East Asia*. Singapore: World Scientific Publishing, pp. 141–158.

Ward, K. (2006) '"Policies in Motion", Urban Management and State Restructuring: The Trans-Local Expansion of Business Improvement Districts', *International Journal of Urban and Regional Research* 30(1): 54–75.

Ward, S. (2000) 'Re-examining the International Diffusion of Planning', in R. Freestone (ed.). *Urban Planning in a Changing World: The Twentieth Century Experience*. London: E&FN Spon, pp. 41–60.

Ward, S. V. (1999) 'The international diffusion of planning: A review and a Canadian case study', *International Planning Studies* 4(1): 53–77.

Ward, S. V. (2002) *Planning the Twentieth-Century City: The Advanced Capitalist World*, Chichester: Wiley.

Ward, S. V. (2005) 'A pioneer "global intelligence corps"? The internationalisation of planning practice, 1890-1939', *The Town Planning Review* 76(2): 119–141.

Ward, S. V. (2010) 'Transnational planners in a postcolonial world', in P. Healey and R. Upton (eds). *Crossing Borders: International Exchange and Planning Practices*. London: Routledge, pp. 47–72.

Ward, S. V. (2013) 'Cities as planning models', *Planning Perspectives* 28(2): 295–313.

Webb, D. (2011) 'The limits of associative democracy: a comment on an actor-relational approach in planning', *Planning Theory* 10(3): 273–282.

While, A., Jonas, A. E. G. and Gibbs, D. (2004) 'The environment and the entrepreneurial city: searching for the urban "sustainability;fix" in Manchester and Leeds', *International Journal of Urban and Regional Research* 28(3): 549–569.

Williams, K. (2009) 'Sustainable cities: research and practice challenges', *International Journal of Urban Sustainable Development* 1(1): 128–132.

Williams, M. and May, T. (1996) *Introduction to the Philosophy of Social Research*, London: Routledge.

World Bank Institute (n.d.) *The Art of Knowledge Exchange / Step 4. Study Tours*, South – South knowledge exchange, available at http://wbi.worldbank.org/sske/guide/implement/study (accessed4 December 2013).

World Commission on Environment and Development (1987) *Our Common Future*, Oxford: Oxford University Press.

Wright, G. (1991) *The Politics of Design in French Colonial Urbanism*, University of Chicago Press.

Wu, F. (2007) 'Re-orientation of the city plan: Strategic planning and design competition in China', *Geoforum* 38(2): 379–392.

Yeoh, B. S. A. (2003) *Contesting space in global Singapore: power relations and the urban built environment*, Singapore: Singapore University Press.

Yin, R. K. (2009) *Case Study Research: Design and Methods*, 4th ed., Thousand Oaks, Calif: Sage.

Zawya (2010) *HSBC Bank Egypt Global Service Centre becomes the first LEED certified project in all of Africa*, 2 June 2010, Zawya, available at http://www.zawya.com/story/HSBC_Bank_Egypt_Global_Service_Centre_becomes _the_first_LEED_certified_project_in_all_of_Africa-ZAWYA20100602111206/ (accessed27 February 2014).

Zhang, J. (2012) 'From Hong Kong's Capitalist Fundamentals to Singapore's
    Authoritarian Governance: The Policy Mobility of Neo-liberalising Shenzhen,
    China', *Urban Studies* 49(13): 2853–2871.

Zukin, S. (1992) 'The city as a landscape of power: London and New York as global
    financial capitals', in *Global Finance and Urban Living. Aspects of Metropolitan
    Change.* London & New York: Routledge and Kegan Paul, pp. 195 – 223.