

LANDSCAPE-ORIENTED NEW TOWN DEVELOPMENT IN CHINA

—prospects and implications for Western design firms

Victoria Sjöstedt



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The Royal Danish Academy of Fine Arts
Schools of Architecture, Design and Conservation
School of Architecture

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and implications for Western design firms

Author: Victoria Sjøstedt

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The Royal Danish Academy of Fine Arts, Schools of Architecture,
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Supervisor: Professor Jens Kvorning

Co-supervisor: Architect René Nedergaard

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PART ONE

INTRODUCTION AND RESEARCH DESIGN





*Design workshop in Changsha, SHL and SS100.
Source: Thomas Walcher, SHL (2006).*

CHAPTER 1: INTRODUCTION

1.1

Background

Serious environmental degradation has followed China's rapid urban growth over the last three decades. With such unprecedented degrees of urbanization, modernization and economic development, new models to expand cities in more sustainable ways are actively sought. This study addresses the question of how Western design firms can contribute to raising the level of environmental sustainability when they participate in developing new towns in China. The topic for the study originates from the architectural firm Schmidt Hammer Lassen (SHL), where I, as a PhD student, studying for an Industrial PhD degree, was asked to investigate how the office could improve the level of sustainability in their urban design tasks in China. SHL's interest in the study relates to their more general desire to develop tools to better integrate sustainability in daily work and to strengthen the urban design section at the office, which at the time when this research project was initiated, mainly dealt with projects in China. My decision to pursue this study originates in my interest in Chinese language and culture, which I was very happy to be able to combine with studies in urban planning and design.

To get an understanding of how the architects at SHL approach their tasks in China and the challenges they face when they seek to address environmental sustainability, I began this project by following the work of the 'China team' at the SHL Copenhagen office. For a pilot case I looked at the master plan for a residential area in Changsha in Hunan province (*Changsha Guoji Xincheng*, 长沙国际新城), a site of around 260,000 m². I studied drawings and documents and spoke with the architects and landscape architects involved—SHL, architects, and Kragh-Berglund, landscape architects. Soon it became clear that the architects had faced severe restrictions when developing the Changsha master plan. Demands to fit into a high density programme and comply with solar distances, special requirements concerning the layout of the apartment units, a strict budget and a tight time schedule left little room for experimentation. The architects said their time was very occupied with finding ways to meet the programme demands. They had tried to involve environmental engineers in the initial phase of the project, but without success, since the client considered the additional costs to be too high. I could see that the client's priority was not environmental sustainability and if there was any attempt to achieve it, the cost to the client should be low, and it

should require little maintenance. What then is possible to achieve within such a framework? From studying the work of the landscape architects, I could see that they were less restricted by programme demands; in a simple and low-cost way, their landscape design improved the local microclimate and contributed to purifying water. Would it be possible for the SHL team to more actively involve the landscape when developing their urban schemes? Would an obvious way for the practitioners to approach environmental sustainability be to actively interweave design interventions with the landscape structures found on site? The questions point to a practice of urbanism that allows landscape, the green system, to set the tone. What are then the prospects for practising landscape-oriented urbanism in the context of developing new towns in China, and how can the Western design firms make use of such an approach?

Figures 1-1 and 1-2. Images from Changsha SS100 International New City. Source: Victoria Sjöstedt (2008).





*Figure 1-3.
Master plan
for Changsha
SS100
International
New City.
Source:
Kragh-
Berglund
(2006).*

This dissertation is structured in four parts. In part one, I clarify the research background, research objectives, questions and methods and I discuss the selected methods used in the study. In part two, I locate the study within a theoretical setting and I develop an analytical framework for the case study. In part three, I explore possibilities for landscape-oriented urbanism in a study of conceptual plans for urban expansion in Wuxi and Tangshan, tasks undertaken by two Western design firms that operate in China. I identify opportunities and challenges for landscape-oriented urbanism by studying how the Western actors read their sites and how the Chinese actors respond. In part four, I suggest modifications to make landscape-oriented urbanism more relevant to the development of new towns in China, and I provide some ideas for Western design firms involved in such practices to operate tactically. I discuss the contributions of the study and the perspectives for future investigations. Finally, I illustrate the landscape-oriented approach applied to the Wuxi case material through a series of conceptual drawings, called an Idea Catalogue, intended to be of inspirational use for practitioners.

1.2

Rapid urban growth and environmental degradation

Since China's reforms of 1978 were introduced by President Deng Xiaoping that opened up China to the world (*gaige kaifang*, 改革开放), rapid urban expansion has been driven by economic and industrial development and the subsequent increase of urban population. The introduction of a land lease system, with the possibility to buy land use rights from the government for a period of between forty and seventy years (Land Administration Law, 1986), along with the commodification and privatization of the housing system (Housing Reform, 1998), activated an enormous market and triggered a construction boom.¹ The authors of a recent World Bank report state that between 1990 and 2000, many Chinese cities more than doubled their built-up area (Baumler et al., 2012). Chinese cities are expected to continue to grow, to accommodate around 350 million new urban residents in the next twenty years (ibid). This rapid urban growth is unprecedented. Thomas J. Campanella, an American urban planner, writes; 'China is the most rapidly urbanizing nation in the world, and perhaps in history. Never have so many urban settlements grown so fast, nor has more urban fabric been razed and reconstructed with such haste. In a single extraordinary generation, China has undergone a process of urban growth and transformation that took a century to unfold in the United States' (2008, p. 281).

While the speed and scale of China's urban development is astonishing, environmental degradation and social segregation are the downside of its rapid growth (Economy, 2004). The costs following environmental degradation are enormous and the seriousness of the situation in China is well recognized by the political leadership. The latest economic and social development plans (five-year plans, FYPs), however, indicate a change of approach. The eleventh FYP (2006–2010) focuses on efficient resource use, green GDP and upgrade of industry and emphasizes the building of a 'harmonious socialist society' (*shehui zhuyi hexie shehui*, 社会主义和谐社会), taking a 'scientific outlook on development' (*kexue fazhanguan*, 科学发展观). A harmonious and balanced society with decreased income gaps is the goal, while scientific development, understood as economic growth that also takes people, regions and environmental concerns into account, is the method to get there (Fan, 2006). The twelfth FYP (2011–2015) has been described as a green development plan, promoting a slower, more sustainable growth (a low-carbon growth path) (Baumler et al., 2012).²

Following these directives, conventional urban planning in China seeks to

move away from extensive land use, urban sprawl and car dominance, towards models that focus on ecology and intensive land use to preserve agricultural land. Guidelines to direct cities towards sustainability have been developed since the early 1990s by China's central government (the State Council), the Ministry of Environmental Protection (MEP) and the Ministry of Housing and Urban Rural Development (MoHURD) (Baeumler et al., 2012). Many Chinese cities are developing ecological and low-carbon initiatives. Since the first decade of the twenty-first century, China has initiated 100 eco city projects, and these initiatives are expected to continue (Ibid). China's current focus on sustainable development and low carbon growth, together with a dynamic and innovative urban planning practice, have given the urban green system plan, a sector plan of the urban master plan, a more important role (Liu, 2008). Landscape architecture, or landscape planning, has come to play an increasingly important role, as reflected in the work of leading contemporary Chinese planning and design practices, such as that of the Tsinghua Urban Planning and Design Institute (THUPDI), Turenscape and others. This can also be seen as part of a more general tendency within planning toward respecting larger landscape systems as a necessity. As noted by French philosopher Sébastien Marot, the most promising contributions currently to tackling environmental challenges come from the field of landscape architecture (Marot, 2011).

1.3

New towns, environmental sustainability and the role of landscape

New towns

It is widely recognized that a new town needs to be of mixed use, with multiple incomes, and to have good employment opportunities, amenities and accessibility. New towns in China are compact and often have a mixture of functions and provide good employment, services, everyday amenities—often the new towns are linked to industrial areas—and huge amounts of money are invested in public transport systems. But they also have problems. New towns planned as residential towns are criticized for their functional division. The large blocks (400–600 x 400–600 m) and the large setback lines between building and road (40 m or more) lack a human scale and create environments unfriendly to pedestrians, resulting in car dependency. The rapid pace of development is also criticized for compromising quality, safety and environmental concerns, and the large-scale construction of road infrastructure is criticized for consuming agricultural land. Considering the many new towns that are to be built in China in the near future, there is currently a window of

opportunity to redirect the built environment towards more sustainable conditions. Dutch urban designer and critic Harry den Hartog indicates the potential: 'China is at the moment possibly the only place on earth where there is space for renewal in urbanism and planning: it gives economic growth, there is mass migration, and the government owns all the land.' (Hartog, 2010, p. 64).

Environmental sustainability

The notion of sustainable development gained wide-spread visibility through the well-known Brundtland report, by the World Commission on Environment and Development, which describes sustainable development as 'development which meets the needs of current generations without compromising the ability of future generations to meet their own needs' (WCED, 1987, p. 43). As noted by American landscape architect Kristina Hill, the chairman of the commission herself, Gro Harlem Brundtland, described sustainable development as a 'constructive ambiguity', where sustainability and development are deliberately juxtaposed to bring polarized groups into discussion (Hill, 2000). Instead of focusing on the basic terms of the Brundtland report, such as needs and carrying capacity, American planning professor Stephen M. Wheeler describes sustainable development as a development that 'improves the long term health of human and ecological systems' (Wheeler, 2004, p. 24). I adhere to Wheeler's understanding of sustainable development, where a wide array of complementary actions move cities towards more sustainable conditions, actions brought together in the meta theory of sustainability planning, including the long-term perspective, the holistic outlook, the acceptance of limits, the focus on place and the active involvement of various actors (Ibid). In this study, following the lead of Western design firms, the focus is set on the environmental dimension of the sustainability concept. Although a wider understanding of the sustainability concept would have been desirable, the available empirical material in this study mainly sheds light on environmental concerns. Social and economic aspects are more difficult for Western design firms to influence. Focusing on environmental aspects does not mean social and economic aspects are disregarded, but rather that environmental aspects act as both a frame and a precondition for the unfolding of social and economic processes, a platform from which to also address sustainability in a broader sense.³

Landscape and sustainability

The term 'landscape' is ambiguous. American geographer Donald W. Meinig writes that 'any landscape is composed not only of what lies before our eyes, but also what lies within our heads' (Meinig 1979, p. 34). Landscapes are interpreted, the interpretation is contextual,

linked to a specific site and culture—different cultures have different understandings of the term—and situational, linked to a specific person (Ibid). The landscape is both ‘what is seen’ (the site) and a ‘way of seeing’ (the sight) (Cosgrove, 1985; Corner, 1999). In this study I operate with a broad definition of the landscape term, and I shift between landscape understood as a political, social and economic space, to landscape understood as a physical space of layers of nature, culture and urban landscape, to a more defined understanding of landscape as the ‘unbuilt’, or open space.⁴ While this broad definition could be criticized for its lack of precision, I have chosen it since it corresponds to the theoretical sources I use.

With point of departure in the physical landscape and with emphasis on natural processes, landscape architect Michael Hough indicates various ways in which landscape, the green system, contributes to sustainable development. From an environmental perspective, landscape contributes to preserving and regenerating eco systems, creating ecological connections, promoting biodiversity, producing food, supporting natural hydrology, managing water locally, mitigating effects of climate change and providing conditions for more sustainable buildings. From a social and cultural perspective landscape contributes to reconnecting people to natural processes; providing space for walking, biking and exercising; and promoting positive community space, recreational values and well being. From an economic perspective landscape contributes to raising land value and, in the long run, increasing revenue and savings in terms of energy consumption and maintenance (Hough, 2004). Landscape in the broader understanding of the term also contributes to sustainable development by bringing in a relational and strategic way of thinking that infuses landscape with agency to orient urban planning (Corner, 1999).

1.4

Western design firms in China

Planning and design practice in China is dominated by large Chinese design institutes (such as Beijing THUPDI and Shanghai TJUPDI) and large Western firms, many of them based in the US. Competition is fierce. Whatever the Western design firms bring to the projects is quickly absorbed and adopted by the Chinese collaboration partners. The fast urban growth in China is not just unprecedented, it is also outside the experience of Western design firms, even though they are asked to aid in the planning of new urban areas arising from such rapid growth. To stay competitive, Western design firms need to develop new skills and

distinguish themselves as providers of specialist services that go beyond design and technical skills. They need to gather more knowledge about the planning practices and urbanization processes in the places where they involve.

To gain insight into Chinese planning and design practice and to develop a better understanding for the conditions within which Chinese planning and design practice unfold, I studied and worked at the Tsinghua Urban Planning and Design Institute (THUPDI) in Beijing during my PhD studies (2008–2009). THUPDI is a design institute connected to Tsinghua University, with thirty departments and around 1,000 employees.⁵ My workplace was at the architectural branch of THUPDI, where I was involved in various projects. While the work there was coloured by great optimism and a strong sense of progress, it was demanding and done under extreme time pressure. I was often told by my project manager, ‘You have to consider that time is limited! The only criteria to do this task is to do it fast!’ (pers. comm., 2008). My Chinese colleagues dealt very flexibly with the many rapid changes; for them, it was about result rather than process. My stay at THUPDI, along with my dialogues and discussions with Chinese planners and architects throughout this study, taught me the importance of staying flexible and open to cultural preferences—to listen and to act with caution.

Notes

1. The main purpose of the Land Administration Law (LAL, updated in 1998) is to protect farmland. Since LAL prohibits urban development on collectively owned rural land, urban development can only take place on state-owned urban land. Urban land can be leased for development and the land use rights (LURs) vary from forty to seventy years depending on the land use (Ding, 2009).
2. The twelfth FYP (2011–2015) advocates a low carbon agenda. It contains targets to promote resource efficiency, environmental sustainability and to reduce carbon intensity per unit of GDP. This can be seen as a step towards evaluating the performance of local governments more comprehensively—not only in terms of GDP growth (Baeumler et al., 2012).
3. In current professional debates, some voices hold environmental aspects to be the precondition for social and economic aspects to unfold, while others emphasize social and economic aspects as the precondition for environmental consideration. See Economy, 2004.

4. Within the social sciences in the last few decades, understanding of landscape has emerged as a field of various parallel processes that affect each other but that cannot be ranked or placed in a hierarchy or understood within simple causal relationships. The work of Sharon Zukin, an American sociologist, has been seminal to the development of this broad landscape understanding: landscape as a physical, political, economic and social space. This strand of thinking has inspired and influenced landscape urbanism discourse. See Zukin, 1991.

5. For further information on THUPDI see: www.thupdi.com/

CHAPTER 2: RESEARCH DESIGN

2.1

Objectives and questions

The overall aim of this study is to shed light on the question of how Western design firms can help improve the level of environmental sustainability in the development of new towns in China. In this study, I use the mode of practice called landscape urbanism, or landscape-oriented urbanism, because it brings the practitioner's attention to found sites and provides a guide—in the complex idea of 'landscape'—for how to build on such sites. Landscape urbanism brings forth the idea of landscape as guide and frame for urban development, the green system as organizer of the built. Given the well-documented environmental benefits of landscape (Hough, 2004; Corner, 1999), the end result of this guide is sustainable planning for the environment.

Landscape urbanism is very much connected to regeneration of wastelands and brownfield sites, addressing the problems of the post industrial city in the West.¹ Dealing with wastelands and brownfield sites from a landscape urbanism perspective is critical for their regeneration, just as the perspective is productive for projects dealing with urban expansion and growth. As landscape urbanism caters for environmental sustainability by giving space and priority to the green system, I hypothesize that landscape urbanism can contribute to environmental sustainability also in the development of China's new towns, provided there are possibilities to practise such urbanism. What I am interested in is the role of landscape-oriented urbanism in the development of new towns: What are the prospects for landscape-oriented development of new towns in China? What possibilities are there to operate with landscape-oriented urbanism in a setting whose speed, scale, and density of development, institutional organization and culture differ radically from those of the post-industrial city in the West? And the main research question of this study: *Can landscape-oriented urbanism provide tools for Western design firms to approach environmental sustainability in the development of new towns in China?*

To explore landscape-oriented urbanism in concrete cases, I introduce site-reading as the investigatory tool, following the lead of the practitioners—Western design firms—of the examples studied. Using site-reading, practitioners pay attention to such aspects as the physical properties, operations and first-hand impressions of the site on which

urban expansion is to unfold (Meyer, 2005). These are the site-reading categories from which this study takes its point of departure. The definition of a site as 'a dynamic relational construct', is proposed by American professor and architect Andrea Kahn (Kahn, 2005, p. 294). She adopts an operational site definition based on 'how it [the site] works in, with, through and upon its urban situation', and emphasizes that a site needs to be situated in 'multiple contextual, or scalar, frames simultaneously' (p. 285, p. 294). This study follows Kahn's relational site understanding, in which the site is linked to its surroundings in many ways and participates in many differently scaled networks at the same time.

The main research question is broken down into the following three interrelated guiding research questions.

1) *How do the Western design firms read their sites and how are their site-readings received by the Chinese actors involved?*

This question explores the role of landscape, the green system, in the development of conceptual plan proposals. The question explores how the practitioners in the studied cases read their sites and how their site-readings correspond to the site-reading categories identified above.

2) *What opportunities in and challenges to landscape-oriented urbanism can be found?*

This question explores the viability of the Western ideas about landscape-oriented urbanism in the context of developing new towns in China. What aspects of this type of urbanism can or should be absorbed? What aspects modified? What aspects avoided?

3) *What are the implications for Western design firms?*

This question explores how to operate practically with landscape-oriented urbanism in the setting of developing new towns in China.

When practitioners work on the development of new towns in the Chinese setting, they bring with them a set of Western preconceived ideas, and practitioners can expect that these ideas will be modified. I am interested in recording these modifications, since I believe they can give valuable clues to Western design firms on how to adapt practice to the Chinese setting. Thus this research is relevant for Western design firms, providing them with insight that potentially can bring them a competitive advantage. The study also has relevance for Chinese planning and design practitioners, since it gives clues to how their planning is seen from a Western perspective.

2.2 Research strategy

This research can be described as applied research or practitioner research (White, 2009). It is empirically driven and deals with practical problems. The research theme originates more from professional practice than from an academic setting; the primary concern is to address a practical problem rather than to contribute to larger theoretical debates. A main challenge inherent in practitioner research, as noted by sociologist Patrick White, is to transform 'a practitioner's problem into a researchable problem', since empirical inquiry might not always be the adequate way to address questions raised by practitioners (p. 30). I started out this study by following the work of the practitioners, with the intention to let the empirical observations fully guide my investigation. I thought this would give me a raw material from which to address the question of how Western design firms can contribute to environmental sustainability in the context of developing new towns in China. But my findings pointed in too many directions. I realised that I needed to introduce a specific lens to structure my investigation. Landscape urbanism provided me with that lens.

The understanding of the term landscape in this study relates to three paradigms: structuralism—landscape understood in a more defined way as the physical landscape; constructivism—landscape understood in a more broad sense as a socially constructed landscape; and relativism—landscape understood from a local and situated perspective, a landscape influenced by local culture.² Based on these epistemological positions, this study relies on a multi-perspective research strategy of deductive, inductive and abductive reasoning. It begins deductively by introducing site-reading categories from the top down, from physical landscape layers to operations to first-hand impressions. By following the empirical material—by inductively investigating site-readings from the bottom up, according to the method of the practitioners—deviations, or abductions, are found which have the potential to modify the initial conceptualizations of landscape-oriented urbanism. A researcher who operates with an abductive research strategy is a 'reflective practitioner', according to American philosopher Donald Schön (1983). Reflective practitioners describe the reality of their practice from the view of the insider, the person involved in the everyday activities related to the phenomena being studied. This directs attention to other issues of importance other than the ones set out at the beginning of the investigation, which leads to changes and modifications of assumptions (Asplund, 1976). As a PhD student at SHL architects, I was closely involved in the practitioners'

work and I could therefore take the role of the reflective practitioner. My research questions evolved out of the everyday problems the architects at SHL faced. Getting to know their work made me readjust my initial assumptions and gradually formulate more specific questions. When I began the dialogue with the Chinese actors connected to my cases I further revised my assumptions. I quickly understood that things were done differently in the Chinese setting and that I could not expect references and tacit understandings to be commonly shared. Terms and concepts—landscape, landscape urbanism, site, open space, sustainability—could not immediately establish common ground.

2.3

Research methods

Case study

This study operates with a hermeneutical methodology with a focus on understanding. A qualitative case study method is applied. The case study method, according to social scientist Robert K. Yin, is 'an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident' (Yin, 2003, p. 13). The case study is instrumental rather than intrinsic, meaning that the cases are used not only to learn about the particular case but to obtain knowledge about a certain theme. The qualitative case study seeks to understand how those actors who are connected to the case see things; it seeks to preserve the various realities and views (Stake, 1995). Observations and descriptions are interpretive and from the field work key episodes are described 'to give the reader the opportunity to develop an experiential understanding of the case' (p. 40).

Selection of cases

The case study comprises two projects that consist of conceptual plans drawn up by two Western design firms. The first case is a conceptual master plan for a residential area in Wuxi (Wuxi Tian Yi Town, Jiangsu province, Shanghai region), drawn by the Danish architectural firm Schmidt Hammer Lassen (SHL). The second case is a conceptual plan for a new town (eco city) in Tangshan Caofeidian (Tangshan eco city, Hebei province, Beijing region), drawn up by the Swedish environmental engineering firm SWECO in collaboration with Beijing Tsinghua Urban Planning and Design Institute (THUPDI). The cases cover different scales and development modes, and were selected strategically to provide broad insight on the realities that Western design firms meet when they operate in China. In the Wuxi case (0.4 km²), a small Western firm operates

through a collaboration initiated by a private developer at the project level. In the Tangshan case (30 km²), a large Western firm operates through a government-initiated collaboration at the planning level. Both cases emphasize environmental sustainability. The Wuxi case represents the basic unit for urban expansion, the superblock. Developing master plans for superblocks—large distinct urban units framed by highways or natural borders, for residential or commercial use—is a common task for Western design firms. The Wuxi case could be described as a ‘typical case’, many Western design firms in China operate with this project type under similar conditions, therefore the case is relevant to study (Flyvbjerg, 2006). The selection of the Wuxi case also relates to the fact that this study was carried out within the Industrial PhD programme in collaboration with SHL, their practice was part of my task. As a PhD student at SHL I had access to the work processes at the office, which was very valuable for the topic studied. However, an investigation of prospects for landscape-oriented development of new towns, needs of course to include the larger scale. The Tangshan case, with its large scale and wide-ranging scope, exploring landscape-oriented urbanism at the scale of the city, is of more critical importance to the topic investigated—it could be described as a ‘critical case’ (Ibid). Other factors that influenced the selection of this case include availability of information, accessible plan material and actors who were open for interviews.

The cases provide insight into the planning reality within which Western design firms operate, and they provide a contextual frame through which to explore prospects for landscape-oriented urbanism. It is important to note that this study looks at conceptual plans for new town developments, and so the empirical material consists of recordings of conceptual beginnings. Studying the process of urbanization or evaluating the plans in environmental terms would require a study of the built reality. Such evaluation has not been possible to include; those developments whose plans are studied here are very new, and the transformation of the plans into lived places is a process that takes time. This study stays with beginnings.

Case study methods

The data collection methods used in this study consist of participant observation, observations from meetings and workshops, semi-structured interviews and document review. In addition to the empirical material, this study also relies on an extensive literature review within the fields of landscape urbanism, site theories, travelling theory, environmental sustainability, and urban planning and urbanization in China.

My study of the Wuxi case is based on planning material obtained from the SHL Copenhagen office, participant observation at the SHL Copenhagen office, observations at meetings and workshops and interviews with the actors involved: SHL architects, pk3 landscape architects, WSPGroup, SS100, the local design institute in Wuxi, the Wuxi City Planning Bureau. My study of the Tangshan case is based on planning material for the first phase (30 km²) of the eco city obtained from the THUPDI office in Beijing, observations from meetings and workshops and interviews with the actors involved: SWECO and THUPDI. During the planning process, people from the SWECO team and from the Chinese side—THUPDI, Tangshan planning bureau, and the client—met regularly to discuss and develop the work. I participated as an observer in two of the Beijing workshops (October 2008 and January 2009), which gave me the chance to talk to the people involved from both the SWECO and the THUPDI sides and to follow discussions and negotiations. Later on I followed up with interviews with selected actors from both sides.

Interviews

Semi-structured interviews were used in the case study with open interview questions to allow the informants to freely express their opinions and experiences. The interview is a good way to capture multiple views and get descriptions and interpretations by others (Payne, 1951). In all, I conducted fifteen interviews for the Wuxi case and nine for the Tangshan case. Some of the interviews were recorded, but most often I took notes during the interviews and wrote them up directly afterwards. In addition, participation in meetings and workshops also gave me a chance to conduct more informal and open-ended interviews, in the character of informal conversations. With a few of the actors I had a continuous dialogue during the entire course of this study. For the informants in the case study, I give their profession, the date and circumstances for the interviews, but I do not give their full names (see the informants list in the list of sources). This practice arises from SHL company policy: employees talk on behalf of SHL as a company and are not to individually make statements about their work. I have therefore chosen to follow this throughout the case study, for all actors, well aware of the fact that using the informants' full names would have given the study more transparency.

I could have interviewed more actors, and I could have included a broader range of professions. For the Tangshan case, for instance, the wide range of actors from the Chinese side would have been interesting to include, as well as more actors from the SWECO side, but time and resources did not allow that. My interviews with the Chinese actors were often challenging. There were language difficulties and much time was

spent clarifying meanings and uses of various terms. I also perceived that some questions were never really answered or were answered in indirect ways. It was also not always easy to distinguish between answers reflecting an official versus personal opinion, which led to some contradictions in the interview material. Often 'cultural difference' was invoked as a way to end discussions, cultural difference being the argument for certain aspects that cannot be thoroughly understood by a foreigner, and thereby closing the dialogue.

Participant observation, observation, document review

It is important to note that the level of insight in the two cases varies. At SHL I could closely follow the work of the architect team. I could be a 'participant observer' and gain an insider's perspective, observing while also taking an active role in the work of the SHL 'China team' (Fangen, 2005). My role as a participant observer shifted between observation and participation, sometimes one more than the other, depending on the situation. At THUPDI participant observation was not possible. I gained direct experience from observations at meeting and workshops, but I relied to a larger extent on experiences mediated by the actors involved, and gathered data from interviews and document review.

Data analysis methods

In the case study I investigate how the Western design teams read their sites and how the people on the Chinese side respond. The data analysis is guided by the site-reading categories. I interpret my empirical material by comparing the practitioners' site-readings to the site-reading categories identified at the outset of the study and I modify my assumptions accordingly. While the analytical framework that I develop in the review section, and with which I structure the empirical investigation, is drawn from theory, themes and categories have also emerged from the empirical material. Thus I have worked back and forth between the empirical findings and theory. The two projects are analysed in depth—the impressions and observations taken apart, meaning given to the different parts, and then those parts put back together again in a meaningful way. To search for meaning, I search for patterns when reviewing documents, observations and interviews, and I identify patterns, or themes, through their repeated reappearance (Stake, 1995). Through description and active interpretation I develop a few themes that I take further to discussion.

Availability of data

To validate my observations, to see if my explanations hold true across several sources, I rely on alternative interpretations by other researchers,

a method called 'investigator triangulation', and I combine the research methods of observation, interview and document review, called 'methodological triangulation' (Denzin, 1984). Because I am examining the practices of Western design firms, studying planning and design practices, my material is inevitably limited because the design firms regard parts of the material as confidential, and my access to and insight into certain aspects of the cases are also therefore limited. The large amount of marketing material around the projects also made it difficult to always maintain a critical view. Since parts of the case material were only available in Chinese, I rely on translation from native speakers. Although the cases have been thoroughly studied, there might therefore be misunderstandings that limit the reliability of the study. The in-depth study of only two projects for the case study cannot provide a base for generalization, however, the in-depth qualitative study can deepen and refine the understanding of the topic investigated (Stake, 1995).

Notes

1. Peter Latz's Landscape Park Duisburg-North (1990–2002) and James Corner's Fresh Kills Landfill project in New York (2001) exemplify a landscape urbanism approach to remediating post-industrial sites and wastelands through the construction of large parks.
2. For an expanded explanation of structuralism, social constructivism and cultural relativism, see Blakie, 2000.

PART TWO

THEORETICAL FRAMEWORK



Thomas J.
Campanella

THE CONCRETE DRAGON
CHINA'S URBAN REVOLUTION AND WHAT IT MEANS FOR THE WORLD

THE NEW CHINESE CITY Edited by Logan

ELIZABETH C. ECONOMY
THE RIVER RUNS BLACK
THE ENVIRONMENTAL CHALLENGE TO CHINA'S FUTURE

KINA | GLOBALISERINGENS MITT JOHAN LAGERKVIST

Song and Ding
SMART URBAN GROWTH FOR CHINA

Land insight

BIELEFELD RUSCH
BUILDING PROJECTS IN CHINA

BIKKHAUS

Remaking Chinese Urban Form Duanfang Lu

Routledge

BIKKHAUS
DIETER HASSENPFUG
THE URBAN CODE OF CHINA

Rising
in the East
CONTEMPORARY NEW TOWNS IN ASIA



'CITIES FROM ZERO'

SAID
the World
the Text
and the Critic

Harvard

CHAPTER 3: LANDSCAPE-ORIENTED URBANISM

This review section outlines the theoretical foundation for this study and develops the analytical framework for the case study. Chapter three begins with looking at the conditions that shaped the emergence of Western landscape urbanism discourse and anchors the notion to urban theory in which landscape is the basis for sound urbanism. Landscape urbanism is reviewed as a historically and culturally embedded form of practice, of importance since the Chinese setting presents a different understanding and context for practising such urbanism. The chapter clarifies what is meant by landscape-oriented urbanism in this study and introduces a set of site-reading categories as an investigatory tool to study landscape-oriented urbanism in concrete cases. Chapter four reviews new town development in China and introduces a body of theory referred to as travelling theory or theory of travelling ideas. As richly documented by scholars, when planning ideas travel and cross borders, the ideas get altered, changed and transformed. From travelling theory I extract a certain set of factors to consider when evaluating prospects for landscape-oriented new town development in China. These factors inform the site-reading and the broader site research it involves.

3.1

WESTERN LANDSCAPE URBANISM DISCOURSE

The term *landscape urbanism* originates from academic circles in North American universities, and is perhaps best understood as a discourse or an ideological position. The term was explicitly formulated by American professor and architect Charles Waldheim at the end of the 1990s, after which a body of theoretical texts on landscape urbanism has emerged.¹ Landscape urbanism is much connected to the practice of remediating industrial sites and wastelands following de-industrialization. In short, landscape urbanists see landscape as the frame and guide for urban development. They seek to overcome dichotomies and professional boundaries, and they emphasize an adaptive, open-ended, interdisciplinary and multiscalar mode of practice that bridges landscape design and landscape planning.

Although many landscape urbanists are design practitioners, such as American landscape architect James Corner, landscape urbanism appears to be an academic position that, generally speaking, has not reached professional practice. Some critics say that landscape urbanism is a word coined by American scholars for what all landscape architects

do anyway; its use is more about brand than content. American professor and architect Kelly Shannon writes that 'the [landscape urbanism] discourse is riddled with imprecision, ambiguities and fashionable rhetoric' (De Meulder and Shannon, 2010, p. 72). 'Landscape' is already an ambiguous term with many meanings; placing it next to urbanism opens up even more interpretations. Scholars of landscape urbanism that theorize decentralizing cities, thus contributing to the perception that they are naturalized, are seen by some critics as encouraging sprawl. Critics raise questions about the viability of landscape urbanism in relation to compact, vertical developments, given the focus on horizontality in the landscape urbanism debates. In an article dedicated to a landscape urbanism theme, American architect Graham Shane writes that the recent discourse on landscape urbanism 'does not begin to deal with the issue of urban morphologies or the emergence of settlement patterns over time (...) Landscape urbanists are just beginning to battle with the thorny issue of how dense urban forms emerge from landscape' (Shane 2003, pp. 5–6). In addition, the focus on flexibility, adaptability and open-endedness put forth by scholars of landscape urbanism, is criticized for fitting well with neoliberal agendas.

Landscape urbanism is a diffuse and ambiguous accumulation of ideas, but contains nonetheless certain aspects of relevance to this study. James Corner emphasizes the 'agency' of landscape, for example, understanding landscape more as a verb than a noun, landscape as an action, as a mode of practice (Corner, 1999). For Corner, landscape is both a way to conceptualize the dynamic, networked and multilayered contemporary city and a way to operate and intervene.² Considering that this study focuses on urban planning and design practice and follows practitioners, this understanding of landscape as action-oriented seems very productive. Corner's conceptualization of landscape as infrastructure with a potential to enable a more strategic urbanism, his emphasis on the processes that drive urban development, is also productive in relation to this study, since it is essential to probe into the forces at work behind the design actions of landscape-oriented development (Corner, 2006).³

Landscape urbanism, as a mode of practice for urban development, brings the attention to the site where that development is to take place. Attention to site has shifted over time, says American landscape architect Elisabeth Meyer, and notes that current emphasis on site practice in the West is influenced by environmentalism, sustainability and debates on regional identity (Meyer, 2005). Site practice also played an important role during the period of intense modernization of the American landscape, from the late 1800s to the early 1900s, writes Meyer. Rather

than using idealized landscape types, designers preferred specific sites because of their potential to enrich 'cultural, national and regional identities' (p. 98). In relation to China's contemporary modernization and urban expansion, her observations suggest that we could perhaps see more attention to site practice also in the Chinese setting.

Landscape urbanism discourse seeks to recover landscape as an active agent with influence on urban development, since landscape (or site-practice) to a large extent were overshadowed by the scientific methods and universalist principles introduced by the modernism movement (1900–1960s). In Hitchcock and Johnson's book, *The International Style* (1932), for instance, landscape is reduced to the background for architecture. While the modernism movement viewed site-practice as nostalgic and outdated, Meyer writes that site-practice returned in the 1960s in the environmental movement, with influential actors such as Ian McHarg, Garrett Eckbo and Kevin Lynch (Meyer, 2005).⁴ McHarg's regional ecological planning methods and mapping techniques, have inspired landscape urbanism (McHarg, 1969). Also concepts and methods developed within landscape ecology, that link ecological science to spatial patterns, have been influential (Forman, 1995). In addition, the focus on rebuilding the human/land relation, brought in by the philosophical debates reacting against Western dualism and modern rationalization, has inspired the development of landscape urbanism discourse (Donadieu, 2006).

Historical roots

Although landscape urbanism has been formulated as a discourse only recently, it cannot be seen as an isolated phenomenon; it is not a new form of practice. Rather it is part of a historical continuity, building on traditions within architecture and urbanism with roots in vernacular practices that existed long before the disciplines of architecture and urbanism were formed. Shannon writes; 'City and landscape, culture and nature, have been developed in tandem and only recently has the conscious superposition of the words "landscape urbanism" or "ecological urbanism" been propelled into the discipline as state-of-the-art fields and tools to more effectively intervene in the territory.' (Shannon, 2011, p. 33). Understanding landscape urbanism within a historic continuity of urban critique is essential in this study since moving into the Chinese setting inevitably involves a different historic trajectory. Many of the same concerns that landscape urbanists grapple with today can be found in the work of such urban thinkers as Patrick Geddes, Lewis Mumford and Benton MacKaye (Marot, 2011). Patrick Geddes (1854–1932), a Scottish biologist and planner, also emphasized the interrelationship

between settlement, culture and landscape—between people and the land. To protect nature, in the view of Geddes, the relationship between human activity and nature needs to be carefully cultivated; to separate human activity and nature is not a viable option (Geddes, 1949). In *Valley Section* (1909) Geddes follows a river from its source in the mountains to its outlet in the sea, showing how human adaptations have developed in relation to the position in the section. Lewis Mumford (1895–1990), an American planner, also emphasized process and searched for adaptive strategies and hybrid methodologies to respond to dynamic and complex urban conditions. Benton MacKaye (1879–1975), an American planner and forester, sought to activate existing landscape structures and logics through minimal intervention, arguing for a shift in vision to make latent landscape systems operative. MacKaye saw the landscape as dense with potential and clues, and espoused a less costly and more flexible approach compared to traditional planning. To reveal landscape specificities, to see landscape as infrastructure, to find ways to plug into the infrastructure and to adapt the infrastructure to activities and settlements, all this was for him central (MacKaye, 1962).

Landscape-oriented urbanism

In Europe the term landscape urbanism has never been used explicitly. To develop the city from its landscape is ‘a long-standing practice’ in European landscape architecture, writes Lisa Diedrich, a German landscape architect: ‘European landscape architects previously never felt the need, perhaps wrongly, to emphasize this by dedicating a term to it. For them, landscape architecture comprises urban planning.’ (Diedrich, 2009, p. 2). Speaking from a European perspective, Diedrich suggests the term ‘landscape-oriented urbanism’ to describe current tendencies within European landscape architecture and urban planning: ‘Particularly examining the city from the perspective of landscape architecture leads to a planning position in which landscape architecture sets the tone. We therefore propose to speak of ‘landscape-oriented urbanism’ and to understand landscape as a force giving direction to urban planning.’ (p. 3). Landscape-oriented urbanism in the European setting could be exemplified by for instance the regional plan for the transformation of the Ruhr-area IBA Emscher Park (1989–1999), the work by the French landscape architects Alexandre Chemetoff and Michel Desvigne and the Italian architects Bernard Secchi and Paola Viganò. While these examples comprise the regional scale, the cases I investigate in this study both represent smaller scales—the city and the neighbourhood scale. Yet I assume that landscape-oriented urbanism, giving priority to the green system, can also have relevance on these smaller scales.

In the North American setting, scholars note that the more liberal market orientation and the less supportive public sector have limited the possibilities for landscape architects to be involved in urban planning (Andersson, 2010). With this as a backdrop it is perhaps understandable that landscape urbanism as an ism, discourse or trend, has emerged in North America and not in Europe. As an ism it raises debate and directs attention to an undesirable condition; the lack of influence of landscape architecture on urban planning. The relation between landscape planning and landscape architecture (or landscape design), however, is being reconsidered (Walker, 2012). The ecology-based planning courses at the University of Pennsylvania, established by Ian McHarg, and the courses on landscape planning methods at Harvard, established by Carl Steinitz, constitute a foundation for the emergence of practices where landscape architecture and planning combine (Ibid).

3.2 THE NEW TOWN SITE

While a 'new town' is ascribed to have specific components; 'Officially, a New Town is one built from scratch as an autonomous administered town, built according to a masterplan, and often based on a political decision', I choose in this study to adopt a rather loose definition with regard to size and autonomy and I include also larger urban expansion in the new town term (Provoost and Vanstiphout, 2011, p. 14).

Looking at historical towns, new town planning, adhering to the specific components just mentioned, can be traced back to Ebenezer Howard's garden city, in which 'concentrated decentralization' was a solution for the urban growth and the problematic sanitary conditions of the industrial city (Howard, 1902). The garden city was planned as an independent and self-supporting industrial town with a limited size, between 30,000–50,000 people, surrounded by rural areas and connected by rail. The new town strategy was further developed in 1933 by Raymond Unwin's green belt and satellite town proposal for London and Patrick Abercrombie's plan for greater London in 1944 (Ward, 2002). After WWII, expanding cities worldwide adopted government policies around planning new towns (Ibid). In Europe the new town concept is very much connected to the British new town tradition. The new town of Hook, outside London for instance, is a prototype of the new British town. Hook was planned as a self-supporting and independent town to relieve the development pressure on London. Its plan structured neighbourhoods hierarchically, and sought to balance workplaces, infrastructure and neighbourhoods (London County Council, 1961). In the 1960s and

'70s, planning started to shift from rational, comprehensive, blueprint planning to planning that emphasized strategic, participatory and communicative approaches (Hall, 1992). Around this time, the centralized planning typical of the new town movement was criticized for ignoring participation and giving little room for flexibility and bottom-up initiatives. Such new towns were criticized for their separation of functions that produced housing without sufficient employment and amenities, for their lack of public transport and social and cultural facilities and for their homogeneity and monotony. In the last decades very few new towns and large urban extensions have been realized in Europe, where it is more relevant to densify and regenerate the already built. New town development has moved to other parts of the world that now experience rapid growth, such as for instance China.

This study focuses on the new town *site*. Two such new towns, Melun Sénart, outside Paris, and the Woodlands, outside Houston in Texas, together exemplify the type of approach that landscape-oriented urbanism can take towards new town development. In Koolhaas' competition proposal for Melun Sénart as a new town, landscape is used as the organizing frame—the urban development is structured by the open space. This large new town of 50 km² is located on agricultural land and Koolhaas explicitly states that he would like to avoid construction on this site. His scepticism towards construction makes him pursue a reverse logic, starting out by identifying areas that are to be protected from construction, identifying what is not supposed to happen in Melun Sénart. 'Instead of projecting onto the landscape', Koolhaas' team 'deduced from it hoping that [they] could invent a reverse argument.' (Koolhaas, 1995, p. 977). Through careful site research with attention to the landscape's characteristics, including its history, existing infrastructure and various habitats, Koolhaas identified a system of bands to be protected from development. Construction is dedicated to the remaining islands, developed independently over time according to the financial means available. McHarg's plan of 1971 for the Woodlands, a large site of 70 km² located outside Houston, Texas, is another example. The plan has a clear environmental focus, preserving the hydrological system and carefully adapting to the site's natural drainage pattern, including a woodland environment of vegetation and wildlife habitat. Somewhere between Koolhaas and McHarg, perhaps an outline begins to emerge of the characteristics of landscape-oriented new town development, such as the focus on ecology without environmental determinism and on inclusive site research, combined with sound scepticism towards uncontrolled market forces.

3.3

SITE-READINGS AND SITE-READERS

Many of the texts on landscape urbanism operate on a theoretical meta level that is difficult to translate into analytical vectors for concrete cases. To investigate landscape urbanism in concrete cases, understanding landscape urbanism as an approach to urbanism in which the green system organizes the built, this study suggests site-reading as an investigatory tool. Several aspects, or categories, are important to include in the site-reading. Analyzing a site involves approaching a site in different ways, as Elisabeth Meyer explains: 'Site analysis, at a large scale and recorded through detached rational mappings, has given way to site readings and interpretations drawn from first-hand experience and from a specific site's social and ecological histories (...) These site-readings form a strong conceptual beginning for a design response, and are registered in memorable drawings and mappings conveying a site's physical properties, operations, and sensual impressions.' (Meyer, 2005, pp. 93–94). Similar ideas are expressed by French philosopher and architecture critic Sébastien Marot, who describes the site as a generative device for design. In his sub-urbanism, he reverses the relationship between programme and site. Instead of site as surface for programme, the site is allowed to generate programme (Marot, 2003). Following Meyer and Marot, site-reading in this study pays attention to the physical properties, the operations, or processes, and the first-hand impressions of the site where urban development is to unfold. The reading of the site—the identification of what is found—is seen as an inspirational basis for the design intervention.

Physical landscape layers

Landscape can be conceptualized, says Dutch architect Inge Bobbink, as a stack of layers consisting of a natural layer, a cultural layer and an urban layer with specific elements and patterns (Bobbink, 2009).⁵ The underlying layer forms the context for the layer above. The natural layer, Bobbink explains, is the result of natural processes, such as water systems, vegetation, soils, topography and climatic factors. The cultural layer is the result of an artificial manipulation of the natural layer, for instance, through water management and agriculture. Cultivated land leads to specific land divisions, patterns and settlements. The urban layer is the result of spatial planning and civil engineering, such as 'sewer systems, traffic systems, parks, squares and city blocks' (p. 10). I use Bobbink's model of landscape layers to conceptualize the physical landscape of the sites I study.

Operations

The layers of a landscape are dynamic and contain various processes: natural, cultural, social, economic, political, etc. There is a temporal dimension to the stack of landscape layers, as they capture how a site has evolved over time. The ability to read various clues from the landscape layers depends on the understanding of the present situation and the evolution of a site over time. Many forces influence the transformation of a site, broader site research is needed to grasp these various influences. I will expand on this broader site research in chapter four.

First-hand impressions

Sites can be read through many different lenses. Andrea Kahn writes that 'site boundaries shift in relation to the position—the physical location and ideological stance—of their beholder' (Kahn, 2005, p. 292). There is always a 'site reader' who interprets and filters the site material, who gains experiential, subjective impressions. By following the work of Western design firms, this study seeks to capture the views, interpretations and preferences of the practitioners—the site readers. To decipher the practitioners' site-readings, this study relies on representational material, descriptions and analyses that the practitioners use to produce knowledge about their sites. Grasping local complexities requires a situated view, it relies on first-hand subjective impressions, the local people perspective, from the bottom-up.

To summarize, landscape urbanism is a term that covers a broad and ambiguous field. This review has pointed out various interpretations, ranging from old vernacular practice to contemporary superficial label. In this study, following Diedrich, I choose to speak of landscape-oriented urbanism, understood as an approach to urban planning and design where landscape, the green system, is allowed to set the tone. Such a mode of practice takes its point of departure in the material found on the site where urban development is to unfold. It seeks to interweave the design intervention with the physical landscape layers on site and to activate latent landscape structures. It operates with the broader site research and the situated view. To study landscape urbanism in concrete cases, to understand the role the green system plays in the practitioners' work, I rely on a set of site-reading categories, that place the green system in a larger setting. These categories, following Meyer, include: physical landscape layers (natural, cultural, urban landscape layers), societal conditions (various processes, broader site research) and first-hand impressions (the situated view from the bottom up).

Notes

1. Among the core literature on contemporary landscape urbanism discourse could be mentioned: 'Recovering Landscape: Essays in Contemporary Landscape Architecture' (1999) edited by James Corner and 'The Landscape Urbanism Reader' (2006) edited by Charles Waldheim.
2. Scholars of landscape urbanism seek new ways to operate in the dispersed state of the contemporary city. The dispersed urban condition has been described by British architect Cedric Price as a 'scrambled egg' and by German urban planner Thomas Sieverts as a 'Zwischenstadt'. See Price's 'Three Eggs Diagram' and Sieverts' 'Cities without Cities' (2003).
3. The process-orientation can be found in many other contemporary ideological positions such as smart growth, new urbanism, green urbanism and critical pragmatism. Smart growth; to conserve open space, limit sprawl, promote compact mixed use developments, revitalise old centres, enhance public transport (transit oriented development), promote nearby employment opportunities (Song and Ding, 2009). New urbanism; to promote traditional, walkable, transit oriented neighbourhoods, discourage sprawl, segregation, environmental deterioration, loss of agricultural land and support community building (Calthorpe, 2001). Green urbanism; to reduce ecological footprints, promote urban circular metabolisms, local and regional self sufficiency and support healthier lifestyle and environment (Beatley, 2000). Critical pragmatism; to follow the market but from a critical position (Koolhaas, 1995).
4. See Ian McHarg (1969), Garrett Eckbo (1950) and Kevin Lynch (1984).
5. It is important to note that Bobbink's layer model is part of a well established planning tradition, since many years this model has been used in the overall regional plan on the comprehensive planning level. The regional plan maps water systems and resources, secures continuities in the natural systems and points out urban development areas. This is standard in European planning and it is not called landscape urbanism.

CHAPTER 4: NEW TOWN DEVELOPMENT IN CHINA

4.1 THEORY OF TRAVELLING IDEAS

Let us now turn to the context for this study, new town development in China. Here I would like to start with introducing travelling theory, or theory of travelling ideas, originally conceived by Edward Said, a literary theorist, in his book *The World, the Text and the Critic* (1983). Said introduced the idea of cultural communication as a multi-directional exchange where ideas are successively transformed, radically breaking with the dominant cultural imperialism of the West at the time and its practice of one-way communication dominated by certain (Western) cultural centres. According to Said ideas travel in four major stages—the core of his theory about what happens when ideas travel. The first stage is a ‘point of origin’, the location or the circumstances where an idea emerges and enters the discourse. The second stage is ‘a passage through the pressure of various contexts’ as the idea moves to another place. Third is a set of conditions—‘conditions of acceptance’—that enable the introduction or toleration of the transplanted idea. Fourth, the accommodated idea, ‘to some extent transformed by its new uses’, occupies a ‘new position in a new time and place’ (Said, 1983, pp. 226–227). Scholars who take Said’s theory of travelling ideas into the globalized realities of today, note that theory travelling opens up a research agenda where the displacement of ideas to new contexts becomes an important aspect of knowledge production in itself. I expand on this in the next section.

Planning ideas, developed as a response to particular problems in particular settings, have always spread across borders to new contexts. For instance, the Beijing green belt plan of 1954 has its roots in Abercrombie’s London green belt plan of 1944. While Said’s theory of travelling ideas presupposes that the society that receives ideas exerts a certain resistance that modifies the ideas, British planning professor Patsy Healey and British planning historian Stephen Ward, note that globalization has begun to loosen up the resistive borders. Healey (2010) describes the travel of ideas in terms of diffusion and adaptation. In both processes agents are involved, as carriers of exported ideas and adaptors of imported ideas. Diffusion and adaptation of planning ideas and practices are complex processes. Ideas and techniques move from one place to another, they get translated, interpreted, adapted, modified, rejected, etc. Planning ideas that travel are reshaped, writes

Healey, they lose some dimensions and accumulate others. She describes the exchange of planning ideas as a 'site of struggle' and says that the tensions and contestations can be productive in themselves (p. 16). Concepts carry 'assumptions and attitudes', says Healey; 'about how the politics of practice works, about how people relate their individual concerns to wider social expectations, about the way the law works and how the law is regarded, and about how 'doing planning work' should actually be performed' (p. 8). She writes that professionals who travel away from their home country carry 'bundles' of knowledge that reflect a particular (disciplinary) culture and tradition. While travelling professionals take part in the diffusion of planning ideas and actively contribute to exchange and transfer ideas between various contexts, they are often unaware of the assumptions and attitudes inherent in their own way of thinking, writes Healey. What might seem universal often turns out to be culture-specific.

To group possible explanations for the way planning ideas travel, Ward suggests to direct attention to structural forces (economic, political dynamics), individual agency such as the role of different actors and networks (travelling professionals with ideas developed within knowledge networks) and institutional cultures (the cultural milieu) (Ward, 2002). Diffusion and adaptation of planning ideas and practices involve complex interactions between these factors. Ideas, methods and practices might not necessarily be transferrable from one context to another. While some ideas appear to be appropriated and borrowed rather easily, other ideas are more bound to culture and location and are accordingly more difficult to absorb and accommodate (Wang, 2010). When planning ideas are placed in new contexts, the political, institutional and cultural differences might be too large, the planning ideas might not be relevant, says American professor of planning John Friedmann. Planning ideas might be perceived as threats and be resisted (Friedmann, 2010). It is important for travelling professionals involved in international planning and design practice to take this into consideration. For the success of their projects, awareness of diffusion and adaptation processes is essential. Travelling professionals need to develop sensitivity to institutional and cultural differences in the way planning work is done. They need to pay attention to the circumstances that change, modify and resist their proposed ideas. Are Western design firms aware of the economic and political processes that drive urban growth in China? Are they familiar with the specific contexts within which they make their interventions and the main forces that transform and modify their plan and design proposals?

4.2 ECONOMIC AND POLITICAL FACTORS

Globalization and marketization

In an attempt to compare contemporary new town development in Asia with the experiences with large scale planning in the West, the Dutch architectural historians Michelle Provoost and Wouter Vanstiphout examine the development of new towns in Europe during the 20th century (Provoost, Vanstiphout, 2011). In comparison to new town development in post-war Europe, between 1946 and 1970, they note that the political, economic and commercial mechanisms behind such development in Asia today are very different. While in post-war Europe, new towns were developed as part of the social agenda, idealistic notions and social democracy, they write that in Asia today a diversity of actors are behind this development and economic, political and technical factors dominate. They also note that the attitude of the architectural and planning community to new town development has changed; 'While both waves are similar in sheer quantity, their shocking uniformity and the universality of their principles, the towns of the previous generation were wholeheartedly 'owned' by the architectural and planning community, while the contemporary designers and planners seem to play an entirely different, even marginal, role.' (p. 31).

Provoost and Vanstiphout conclude that contemporary new towns in Asia are used as economic and political tools to speed up modernization, attract investments and generate economic growth. New towns in China must also be understood as part of this global neoliberal agenda. Since the 1990s, urbanization in China has been highly market driven. Urban development, with its main focus on infrastructure and housing, generates a large portion of China's GDP. The phenomenon of empty towns in China is being reported more and more. Apartments and office complexes are sold but left empty, bought for speculation. This again is very different from European post-war planning where new towns were built specifically to solve the urban housing shortage. Construction has become an economic motive in itself, note Provoost and Vanstiphout, the development of new towns today is 'not a means of tempering the socio-economic consequences of progress, but a way of lending that progress a helping hand.' (p. 20). They identify six main motivations behind contemporary new town development in Asia: to achieve environmental sustainability (eco cities), to represent political power of national or local governments (political cities), to offer 'a retreat from the existing city' (enclave cities, large residential towns), 'to attract investment' and boost the development of less developed regions (economic cities), to use

technology as attraction (high tech cities) and to provide housing to the masses (shelter cities) (pp. 14-17). The Wuxi case in this study could be described as belonging mostly to the third category; it is part of a large residential town created by private real estates. The Tangshan case could be described as a mix of the first, second, fourth and fifth category; an ecological, political, economic and high tech city.

4.3

INSTITUTIONAL SETTING

Managing urban growth is a key issue for land use policy in China. Since the 1980s China has applied urban containment strategies to preserve agricultural land—basic farmland (Zhao, 2010). The policies include city size limits; restrictions on new development in agricultural areas; intensive, high-density land use; and greenbelts for the larger cities (Ibid). The (regional) development strategy of building new towns to decentralize over-crowded and fast-growing cities is widely accepted in China. New town policy is applied in master plans for the large cities, near which compact new towns are planned to protect farmland from urban sprawl; to alleviate traffic congestion, pollution, inner city deterioration and rising housing prices; and to accommodate new urban residents (Ibid). While some new towns are built as independent towns to relieve pressure on the large cities, new towns are also built on green field sites to improve conditions in less developed regions. Recent new town development in China began in the 1990s, and during the last decade, hundreds of new towns have been planned and constructed, many of them as eco cities (Zhou, 2012).

Decentralization

To implement market reforms, the state has decentralized a lot of its power and the decentralized governance structure has made municipal governments very influential. Urban development has become a local concern, where the mayors have a lot to say as urban planning is under their charge. The authors of a recent World Bank report shed light on the complex interrelations between local governance, municipal finance and urban land-use planning (Liu and Salzberg, 2012). In the report, Liu and Salzberg point out the problematic couplings between municipal finance, land concessions and urban sprawl. While municipal governments have wide-ranging responsibilities, the financial sources available to them are limited, there is no property or land taxation system to rely on (Ibid). In order to finance infrastructure and public services the municipal governments therefore depend on the revenues they get from sales of land use rights, write Liu and Salzberg, and land concessions to attract

investments. Municipalities convert rural land to urban land and sell the land use rights for the urban land; thereby they generate large revenues. In the last decade, land concessions have to a large extent financed urban development, the revenues from land concessions make up a large portion of the municipal governmental incomes (Ibid). Infrastructure development and associated land concessions are very profitable, note Liu and Salzberg, therefore rapid urban expansion often consumes land without consideration to local people and the environment. Municipal finance through land concessions generates urban sprawl, which clearly illustrates that centrally formulated containment policy is challenged and subverted by financial incentives at the local level.

John Friedmann (2005) has described Chinese public authorities as amphibious, referring to the fact that municipal governments, enterprises and private developers form growth coalitions where private and public interests mix. Public authorities come to act as developers, acting for profit, allowing market forces to operate freely. This urban entrepreneurialism, boosted by the decentralized governance structure, makes it possible for cities to act quickly, and progressive mayors to contribute to development leaps, but the reverse can also be the case. There is a lack of cooperation across administrative levels and jurisdictional boundaries; the planning system is fragmented (Song and Ding, 2009). It is difficult to coordinate overall policy at the regional level since competition between cities prevents the necessary backup of the common goals of the regional plan. The Chinese planning community calls for no more decentralization of government. Instead, Chinese planners seek more effective urban planning control and governance. The authors of the above mentioned World Bank report (2012) point out the importance of breaking the links between land use, municipal finance and urban sprawl and evaluating the performance of cities more comprehensively. They emphasize the need for more sustainable municipal finance mechanisms—property or land tax—to get away from the dependency on land concessions (Liu and Saltzberg, 2012).

Urban planning

The rapid pace of development is overwhelming for planning practitioners. Master plans often fail to be adapted to the many unforeseen changes and the plans are quickly outdated. Due to rather loose implementation mechanisms, mayors often have the power to deviate from the plans, and they tend to use the rapid development pace as a pretext for modifying plans to fit their own short-term interests (their term in office is usually four to five years). Planning regulation has become stricter after the mid 2000s. Policy changes to better protect farmland, with emphasis

on the coordinated urban-rural development, as well as more public participation and a strengthened sustainability agenda, were introduced with the Urban and Rural Planning Act of 2008 (Yeh et al., 2011).¹ While the urban planning profession has been closely connected to the goal of market-oriented economic development, with the urban planner as a neutral technical professional supporting the economic goals, the profession is changing. American urban planner Daniel Abramson writes, 'I expect the discipline of planning will diversify from the current emphasis on enabling economic growth to include a stronger regulatory function, greater emphasis on maintaining environmental quality, and stronger analytical, communicative, and advocacy roles.' (Abramson, 2006, p. 197).

4.4 ACTORS AND NETWORKS

A conference on landscape urbanism, arranged by the Graduate School of Landscape Architecture at Beijing University in the autumn of 2009, attracted a lot of attention and a huge number of attendees.² This gathering, titled 'Landscape Urbanism in China', was part of the Chinese Landscape Architecture Education Conference & Landscape Architects Congress, and had over 600 participants, including academics, planning professionals, government officials and practitioners from many international design firms. Among the keynote speakers were American professor and architect Charles Waldheim and American regional planner Frederic Steiner as well as Chinese practitioners and academics, among them landscape architect Yu Kongjian. The conference's title, however, was contentious. According to Li Dihua, a researcher and urban ecologist at Beijing University, the name for the conference was chosen because of the collaboration with Harvard, which uses the term 'landscape urbanism'. In China the term is rarely used, says Li, the term is regarded as too diffuse, and its translation into Chinese language also creates ambiguity; 'Forget all about landscape urbanism when you talk to Chinese professionals. Emphasize the methods, then it becomes interesting.' (pers. comm., 2012).

In China it is rare that landscape architects are involved in the strategic decisions to prepare land for development. These decisions are taken by planners and engineers (Stokman, 2012). University degrees in (landscape/urban) planning and design at Chinese universities are distinct and in professional practice there is a clear divide between planning and design. Landscape architecture in China used to be called landscape gardening (*fengjing yuanlin*, 风景园林), with the Chinese

garden tradition at its core, but over the last decade, professionals of landscape architecture, many of them returning from an education abroad, have tried to expand and broaden landscape architecture to include a larger scale and a more diverse mode of operation. The role of landscape architecture in Chinese urban planning practice is currently under debate, with questions such as how to integrate advanced planning knowledge and science with cultural traditions and practices, how to reinterpret the Chinese garden so it better matches with ecological concerns and how to combine scientific landscape planning and creative landscape design. Chinese landscape architect Yu Kongjian is one of the main voices in these debates. Like American landscape urbanists, Yu argues that landscape architecture ought to play a larger role within urban planning.

Leading the Graduate School of Landscape Architecture at Beijing University and running the office Turenscape, Yu is involved in both research and practice. Yu's work directs attention to the value of the ordinary productive landscape, China's agricultural tradition and the human/land relationship. The name of his office deliberately directs attention to the land and its people—*tu* 土 means earth and soil, *ren* 人 means people. For Yu landscape architecture is an 'art of survival' (Yu, 2006). He says; 'My understanding of landscape is that of geography, more about land and ecosystems than about gardens and ornamental horticulture.' (Yu cited in Steiner, 2012, p. 109). Yu studied landscape gardening at Beijing Forest University in the 1980s and later, from 1992 to 1995, pursued a Doctor of Design degree at Harvard with the regional planner Carl Steinitz as his tutor and ecologist and professor Forman as one of his teachers. When he returned to China, inspired by his experiences in the US, he established an 'ecology-based approach to landscape architecture' with a practice operating across scales, from the regional scale to the scale of the building site (Steiner, 2012, p. 106).

As an alternative to conventional urban development that often removes all existing structures on site to make way for new construction—a *tabula rasa*—Yu's approach seeks to interweave the existing landscape with the newly built. Yu says that such an alternative approach could have many names, such as 'agricultural urbanism, landscape urbanism, water urbanism, sustainable urbanism, green urbanism, and certainly ecological urbanism.' (Yu cited in Saunders, 2012, p. 222). He uses the term the 'negative planning approach', *fan guihua*, 反规划, literally meaning 'against planning' (Yu et al., 2008). Here landscape structures and ecological systems constitute the frame for urban development, rather than built infrastructure and population projections, as in the

conventional economic development-oriented planning approach (Ibid).³ To operationalize the negative approach, Yu uses 'ecological infrastructure' (EI), which is a widely recognized planning tool to preserve or restore ecological networks with strategies ranging from protective and defensive when ecological networks are relatively intact, to offensive and opportunistic when those networks are fragmented (Ahern, 2007). The idea of ecological infrastructure is based on concepts from landscape ecology, eco city studies and conservation biology (Yu et al., 2008). Yu Kongjian defines EI as a 'structural landscape network' that consists of 'critical landscape elements and spatial patterns' that can preserve the integrity of the natural and cultural landscape, and thus secure ecosystem services, protect cultural heritage and provide recreational functions (Yu, 2010, p. 62). By overlaying security patterns—understood as areas with 'critical significance in safeguarding and controlling certain ecological processes'—EI can be developed at various quality levels, which can be used to guide urban growth (Yu et al., 2008, p. 945). While researchers are currently exploring EI across scales, and ecological security has become an important research area in China, EI planning is not yet a type of planning that is required by legislation (Ibid).

Wulijie new town

Turenscape's plan for Wulijie in Hubei province, exemplifies a new town based on EI. The new town, located in the outskirts of Wuhan next to a high tech area, is expected to accommodate 100,000 people when completed in 2022 (a 22 km² large site with a 10 km² urban core) (Saunders, 2012). The Wulijie plan is structured around the water systems and landforms that exist on the site. The plan expresses an appreciation for the existing landscape, both in productive and aesthetic terms; the paddy fields, lotus ponds and fish ponds are seen as part of an important vernacular heritage. By strictly controlling land development, through compact and dense development, the plan seeks to reduce land disturbance, maintain the existing productive landscape and protect the water system (Mo and Li, 2011). The water network and the green space structure are intended to retain and clean storm water on site to minimize the impact on the regional water system. Except for storm water management, the EI contains productive fields (lotus, rice, fish), space for recreational use and pedestrian and bike paths that link the new town to the regional public transit system. Through community farm activities—productive agricultural fields and cultivation of vegetables in community gardens—the plan seeks to provide opportunities for employment and promote community integration, communication and participation. The plan also seeks to influence the attitude of developers towards giving more attention to landscape structures (Ibid).

The plan for Wulijie draws on Western ecological planning practice and landscape ecology; McHarg's layering method, Forman's ecological analysis (patch, corridor and matrix) and Steinitz's spatial analysis (security patterns). The methods are adapted to deal with the challenges specific to the Chinese setting, such as floods, shortage of land, high density and rapid urban expansion and inspiration is also drawn from the vernacular landscape and its simple and low-tech principles. The material I have found on the Wulijie new town, however, does not mention much about the mechanisms needed to implement the plan to ensure that the plan is not compromised, as often is the case with conventional land use plans that are modified by construction-project oriented processes.

Yu's work is controversial in China. His approach is regarded as Westernized and his 'negative planning approach' has raised a lot of debate in Chinese planning circles. Many planners do not agree—they see planning as a balanced practice where landscape planning and urban planning are given equal weight. In their view there is no need for a reversed approach to planning. There is another side to the 'negative approach', however, one of polemics, in which the approach is used rhetorically to raise debate. Yu seeks to convince Chinese mayors of the value of taking an alternative approach. He wants to promote landscape architecture to government officials who usually turn to engineers and who follow the conventional, economic development-oriented approach to urban planning. Yu is a communicator, and through his position as a practitioner and an academic, and through his international recognition, he speaks both to the public and to academia (Steiner, 2012).⁴ Yu's work is 'more strategic than scientific', says American professor of landscape architecture Kristina Hill, belonging more to the rhetorical realm, prioritizing decision-making over scientific investigation (Hill, 2012, p. 149).

4.5 CULTURAL CONTEXT

Movement of ideas

American and European planning ideas became influential in China during the Republican era, between 1911 and 1949. Rational, functionalistic planning ideas and techniques were imported, among them the American neighbourhood unit, adopted by Chinese planners in the 1940s.⁵ At the time, Chinese intellectuals were occupied with figuring out how China could take advantage of Western science and technology without sweeping away Chinese traditions (Lagerkvist, 2007). A political modernization framework evolved that provided ways to absorb ideas

from abroad, divided between *substance* (*ti* 体) and *use* (*yong* 用) (Ibid, p. 16). Chinese intellectuals used the catch phrase: 'Chinese learning for essential principles, Western learning for practical functions' (*zhongxue wei ti - xixue wei yong*, 中学为体, 西学为用) (Wang, 2010, pp. 112-113). Ideas from outside China that were regarded as important for modernization, the intellectuals decided, should be included in and adapted to the Chinese context. In the Chinese setting the American neighbourhood unit was therefore modified, losing some of its social connotations, and became more a scheme for rational organization (Lu, 2006). After the Chinese Communist revolution, beginning in 1949, when the ideological links between China and the Soviet Union were strong, Soviet theories and practices of urban planning were adapted, and the neighbourhood unit was replaced by the Soviet micro district, which also was adapted to Chinese preferences (Ibid).⁶ In the Mao period, 1949-1976, an urbanism based on the Chinese work unit (*danwei*, 单位), emerged as the political distance to the Soviet Union grew larger.⁷ These earlier models for residential planning—the American neighbourhood unit, the Soviet micro district and the Chinese work unit—have influenced the development of the modern Chinese residential quarter, the *xiaoqu* 小区. Today the *xiaoqu*, or superblock, with dimensions of around 400 to 600m x 400 to 600m, is the basic unit for urban expansion (Ibid).

Borrowing from other cultures, as the above mentioned examples illustrate, was a means to advance economic development and modernization, notes Chinese scholar Wang Bing (2010). Wang writes that the borrowing was influenced by the political and economic conditions of the time, and ideas introduced were selectively used and modified. The conflicts that followed from the borrowing came to test and broaden 'the receptive capacity of Chinese culture', says Wang (p. 113). In the reform era, from 1976 to today, which is characterized by pragmatism and globalization, the Chinese architecture and planning community has become very open to ideas from abroad. But as many scholars observe, imported ideas are still selectively used and modified, processes of particular interest for Western design firms who seek to develop a deeper understanding about planning practice in China (Friedmann, 2005; Leaf and Hou, 2006; Logan, 2002). China's urbanization can only be understood by considering the contemporary characteristics in combination with historical continuities, says John Friedmann who adopts a civilization perspective in his studies on the Chinese city, China as a civilization with 5,000 years of history (2005). China's endogenous development should not be underestimated, Friedmann says, and despite globalization, China can be expected to largely develop from within, taking on its own dimensions and specificities. In the following sections

Figure 4-1.
拆 (chai),
to demolish,
written on a
building in
Zhongguan-
cun, Beijing.
Source:
Victoria
Sjöstedt
(2009).



I outline a set of ‘cultural continuities’ with implications for landscape-oriented urbanism in the Chinese setting.

Rapid development pace, cellular urban patterns and weak public space
Town planning in traditional China can be characterized by a cellularity principle and these planning principles were described as early as in the Spring and Autumn period (770 BC–221 BC), in the official town planning document ‘Record of Artificers’, *Kaogong ji* 考工记 (Li and Yeo, 2007). The principles in *Kaogong ji* emphasize unity, symmetry, societal order and strict hierarchy of the spatial organization (Ibid). These principles gave the traditional Chinese city a chessboard structure—the centralized power reflected in spatial form—with symmetrical grids and modular units (Ibid). In an essay comparing ancient city-making in the West and in China, Italian architect Pier Vittorio Aureli notes that the urban pattern evolving from the principles in *Kaogong ji* was so efficient that China became the place ‘with the largest cities in the ancient world’ (2007, p. 35). Due to shifting power constellations, Aureli writes, cities in ancient China often changed location and were rebuilt in relatively short periods of time. To move and reconstruct cities at such a pace would have been unimaginable in the West where urbanisation evolved at a slower pace, he writes. Contemporary rapid urban development pace in China has a historical precedent, notes Aureli: the ancient cities were continuously reconstructed, the cities were not intended to be ‘permanent locations’, they rarely ‘survived the foundational political regime’ (p. 36).

Cellular urban patterns found in the Chinese city seem to repeat over time, in terms of both physical structure and governance structure. Compared

to the European city, the Chinese city operates with a more 'introverted spatial culture', says German sociologist Dieter Hassenphlug (2010, p. 144). Space for community, for instance residential and educational space, are developed in a cellular pattern that interrupts the urban fabric, writes Hassenphlug. He notes that such 'community-dominated' spatial development is directed inward: space for community produces introverted and enclosed space (p. 144). Public space, understood in the West to refer to civil society and the right to the city, exists only to a limited degree in China, writes Hassenphlug. Instead, he identifies an engagement with 'open space' and says that commercial and political interests give the open space its character of commercial use, mobility and power. Open space is regarded as 'meaningless space', until it is commercialized or communitized, he writes (p. 27). Centralized power, rapid development pace, cellular urban patterns and weak concern for public space are traits that also characterize contemporary Chinese urbanization. These traits raise questions to urbanism based on landscape systems as such urbanism operates at a slower pace, depends on interconnectedness and requires that attention is paid to the public realm.

The notion of landscape

The notion of landscape has a different origin in the Chinese setting than in the West. Traditional Chinese cultural philosophy builds on a non-dualist epistemology with roots in Confucianism, Daoism and Buddhism, where the relationship between humans and nature is seen as a relationship of harmony; there is no divide between humans and nature (Li and Yeo, 2007). The Chinese word for landscape—*jingguan/yuanlin*, 景观/园林—refers to the traditional Chinese garden with pavilions, artificial mountains, lakes, plants and meandering paths (Ibid). In traditional landscape gardening and painting, nature was a subjective landscape that could be freely created, constructed or deconstructed. The Chinese scholars filled their gardens with subjective understanding of nature. This landscape, both scenic and symbolic, was also expressed in poems and paintings, a category of aesthetics called *shanshui* 山水, translated as scenic mountains and bodies of water (Ibid). The understanding of landscape is as a symbol, pointing to the constructed and artificial landscape. Nature was supposed to have beautiful waters and mountains; constructed nature was better than the original; rebuilt nature was preferred instead of wilderness. To construct in nature and to reshape nature to fit with *shanshui* aesthetics was a way to make nature more beautiful.

Another understanding of landscape is rooted in the agrarian, vernacular,

productive landscape. China has a long tradition of land and water management; to protect settlements from floods and to control water to secure the crops (Yu, 2010). These biocentric traditions are reflected in principles of siting settlements, *fengshui* 风水, a knowledge system that carefully considers the relation between the landscape and the built environment (Ibid). Joseph Needham, an American scholar who laid the ground for much of Western conceptions of Chinese culture, identified principles of *fengshui* practice such as: locating settlements close to a river to access water, food and transport means; locating settlements south of mountains, hills or woods to protect from cold winds; locating settlements on high ground and on south facing platforms to protect from floods and to gain access to light (Needham, 1956).

Figure 4-2.
Yuyuan
Garden in
Shanghai.
Source:
Victoria
Sjöstedt
(2009).



Figure 4-3.
Terraced
rice fields
in Yunnan
Province,
China.
Source: Gao,
Wikimedia
Commons
(2003).



4.6

ANALYTICAL FRAMEWORK

To summarize, this review section has identified site-reading as the investigatory tool to explore possibilities for practising landscape-oriented urbanism in the context of developing new towns in China, based on the way the practitioners work, i.e., the site-readers in the two selected cases. In chapter three a set of site-reading categories is identified, including: physical landscape layers (Bobbink), societal conditions (Ward) and first-hand impressions (Meyer). The physical landscape layers consist of natural, cultural and urban layers. This category places the green system (natural/cultural layers) in relation to the built up structure and the urban infrastructure (urban layer). The societal conditions involve a broader site research, informed in this study by travelling theory—how ideas travel—with attention to political and economic factors, institutional setting, key actors and cultural context, as explored in chapter four. This category looks at the underlying processes that impact the transformation of the physical landscape. The first-hand impressions consist of subjective impressions from a situated people-oriented perspective. This category looks at the involvement of local people from the bottom-up. These site-reading categories, drawn from landscape urbanism theory and theory of travelling ideas, thus constitute the analytical framework with which I structure my empirical investigation. In the case study I compare the practitioners' site-readings to the site-reading categories. I use the site-reading categories thematically to analyse the practitioners' site-readings, to understand the role the green system plays in the practitioners' work.

Notes

1. A comprehensive urban planning system for China was introduced with the City Planning Act of 1989 and updated in 2008 with the Urban and Rural Planning Act. It includes social economic development plans, land-use plans and urban plans, which are comprehensive and detailed. For a diagrammatic overview of types of plans and administrative levels, see Song and Pan, 2009.
2. For additional information on the conference see: english.pku.edu.cn/News_Events/News/Focus/2758.htm
3. Conventional urban land use planning relies on population projections, functional zoning and built infrastructure plans. The green system plan is subordinate to the comprehensive master plan and the interrelation between natural environment and regional development is not particularly recognized (Yu et al., 2008).

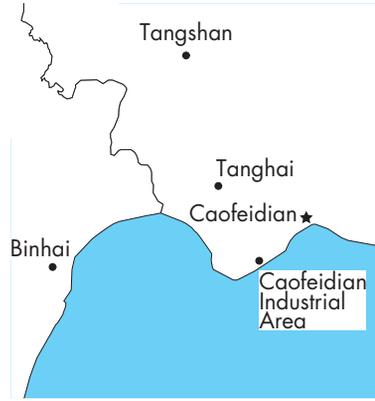
4. Yu Kongjian is an active communicator who speaks through various media such as: books, articles, conference papers, TV interviews, international seminars and conferences. He edits the landscape magazine LA CHINA, he actively supports the translation of American key literature on landscape planning and design into Chinese and he regularly lectures at the Mayors Forum of the National Ministry of Housing and Urban-Rural Development (MoHURD). His book, 'A Path to Urban Landscape: Talks to Mayors', 2003 has been widely distributed among government officials in China (Steiner, 2012).
5. The neighbourhood unit, originally conceived by American planner Clarence Perry in the 1920s, prescribes how to spatially arrange housing, streets and services (Lu, 2006). Planned for 5-9,000 people, the neighbourhood unit intended to bring together 'urban functions and social interactions' and thus strengthen community (p. 22). The unit discourages through traffic and includes various functions such as schools, local shops, parks and community facilities. The scheme became a template for residential planning in the development of new towns worldwide.
6. The micro district, the Soviet version of the neighbourhood unit scheme, became the basic unit for residential planning in China under the influence of Soviet planners in the early 1960s (Lu, 2006). The spatial organization of the micro district was similar to that of the neighbourhood unit scheme, although the scale was larger and the structure more hierarchical: a residential complex consisted of four to five residential units of 5,000-15,000 people (p. 35).
7. The danwei (workunit), owned by the state, became the 'fundamental socio-spatial unit' of the Chinese city in the Mao period (Lu, 2006, p. 2). A 'work-unit based urbanism' emerged with strong cellular patterns as the danwei integrated workplaces (production), housing and social services in areas surrounded by walls (p. 40).

PART THREE

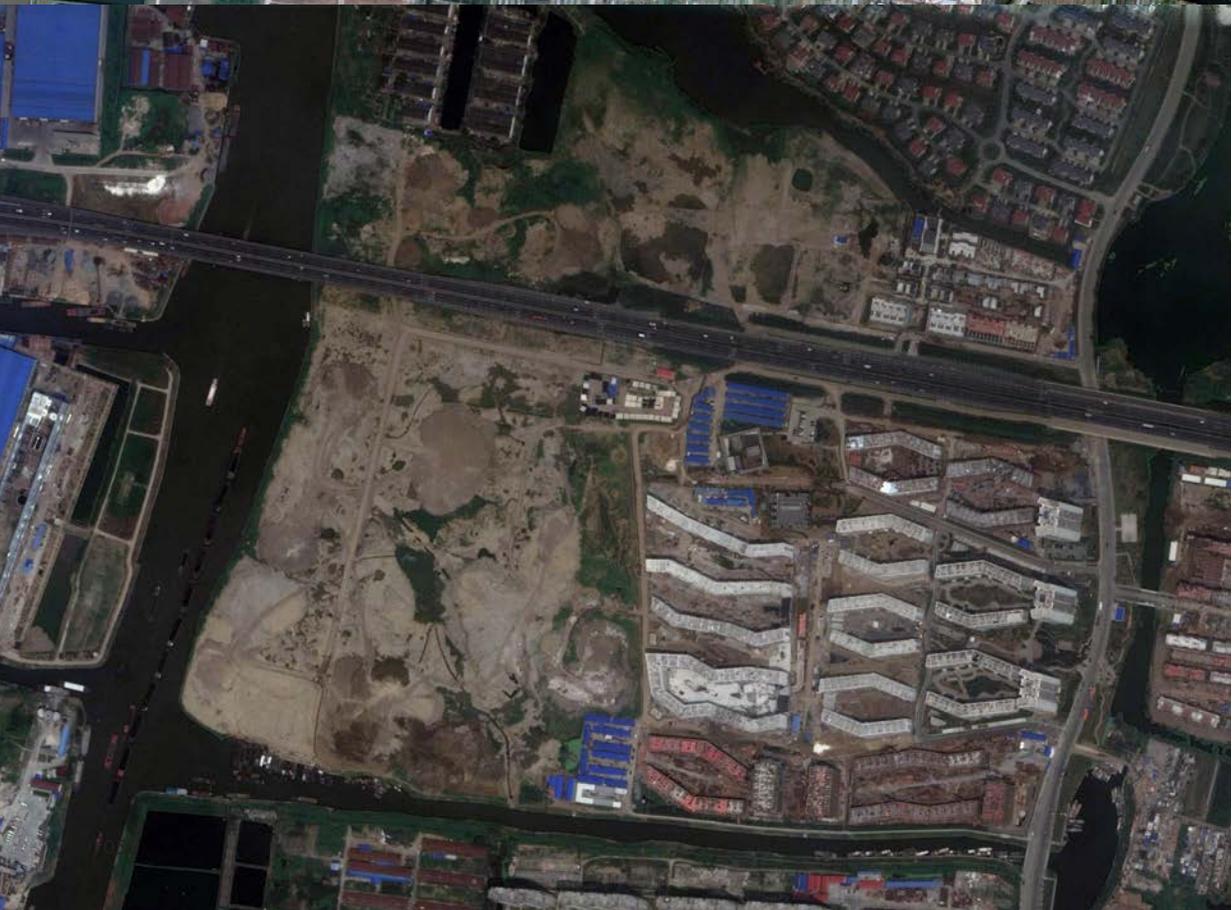
CASES



CASE 1: TIAN YI TOWN, WUXI



CASE 2: TANGSHAN BAY ECO CITY, TANGSHAN



Figures 5-1
and 5-2.

The site for
southern Tian

Yi Town in
2004 and

2010. Source:
DigitalGlobe

CHAPTER 5: WUXI TIAN YI TOWN

FACTS

Location: Tian Yi Town, northern Wuxi, Jiangsu Province, China (31°N, 120°E)

Planning and design: Schmidt Hammer Lassen architects

Landscape design (conceptual stage): pk3

Environmental engineers: WSP Group

Construction drawings, final landscape design: China Electronics

Engineering Design Institute (CEEDI, a local design institute in Wuxi)

Approval of the plan, inspection: Wuxi City Planning Bureau

Client and developer: Sunshine 100

Size: 400,000 m² (Tian Yi Town ca. 1.56 km²)

Time frame: 2007–2017 (Tian Yi Town)

5.1

INTRODUCTION

In the autumn of 2007, the architectural firm SHL won a competition to draw up a master plan for a new residential area called Tian Yi Town in the north of Wuxi, China, as part of the larger urban expansion. At the time the staff followed courses on the topic of sustainability, with the aim to increase environmental literacy and to actively support implementation of sustainability in concrete projects. The residential master plan in Tian Yi Town provided an excellent opportunity to pursue this direction in practice. During the year of 2007-2008, I joined the group of architects at the SHL Copenhagen office as they developed the plan proposal. Since I had my workplace at the SHL office, I could closely study the development of the Wuxi project and participate in meetings and workshops. In the period from December 2007 to August 2008, I carried out interviews with eight architects involved from the SHL side, the landscape architect at pk3 and the environmental engineer at WSP (engineer 1, WSP).¹ With one of the architects at SHL (architect 1, SHL), I had a continuous dialogue throughout my PhD study. The client, Sunshine 100, or SS100, visited the SHL Copenhagen office four days in the end of December 2007 (from the 18th to the 21st), with one engineer and two architects. During their visit I had the opportunity to speak with them informally, and I interviewed the key person from the client side (engineer 1, SS100). I was responsible for coordinating the work of the SHL team with that of the environmental engineers, which among various tasks involved the arrangement of a video conference with the WSP London

office, SHL and the client (engineer 1, WSP; architect 2, SHL; engineer 1, SS100). Later I interviewed the key engineer involved from the WSP London branch (engineer 2, WSP) and during the autumn of 2008, when I was in Beijing, I interviewed the key engineer involved from the WSP Beijing branch (engineer 3, WSP). My main informant from the client side (engineer 1, SS100) left his position at SS100 in 2009, so to follow up on the Wuxi project, I contacted his successor at the SS100 Wuxi branch (engineer 2, SS100), with whom I communicated through mail correspondence. He also put me in contact with a landscape architect at the local design institute in Wuxi (landscape architect, LDI) and an urban planner at the Wuxi City Planning Bureau (urban planner, Wuxi City Planning Bureau) who provided me with answers to various questions through mail correspondence (see informants list for specific date and place for the interviews, informal talks and mail correspondence).

From my initial observations I could see that environmental sustainability was strongly promoted by SHL, while the client was more doubtful about its usefulness. After studying the project for a couple of weeks, I asked myself what sustainability might actually mean in a master plan for a residential area such as the one in Tian Yi Town, where the major decisions with regard to location, infrastructure, density and functions were already taken. As an actor operating on the project level, SHL could not influence those decisions. In terms of environmental sustainability, what is possible for a Western design firm that operates at the project level to actually achieve? What challenges does a Western design firm meet that has an ambition to pursue environmentally conscious planning and design in the particular setting of town development in China? Is landscape-oriented urbanism a viable option at this scale? In the following case study, I explore SHL's site readings and subsequent responses from the Chinese actors involved, as a way to identify opportunities and challenges for practising landscape-oriented urbanism at the small scale of the project level—the neighbourhood scale.

*Figure 5-3.
Master plan
for southern
Tian Ti Town.
Source: SHL
(2007).*

WUXI TIAN YI TOWN

The city of Wuxi (无锡) is located in the south of Jiangsu province in the Yangtze River Delta. The city is part of the urban cluster known as Su-Xi-Chang (Suzhou-Wuxi-Changzhou), three municipalities in southern Jiangsu province with a booming economy, close to Shanghai (Wuxi to Shanghai is 125 km). Wuxi sits on a dense system of waterways, canals and wetlands, with the lake Taihu to the south and the Yangtze River to the north. Located in a flatland delta area, Wuxi has water as its main identity; the city is known as the 'land of rice and fish' (Wuxi Municipal Government website, 2012). While water has been the basis for the

daily life of local people and has long played an important role in the organization of the built environment, the relation between water and the built environment has changed during the last decades of rapid urban growth and densification. Large areas of cultivated land and wetland for water storage have been replaced by new residential areas and road infrastructure, resulting in loss of the land's water retention capacity and in water pollution. In addition, climate change, bringing more intensive rainfall, has made Wuxi more vulnerable to floods. To address the question of how to pursue a more sustainable urban growth path, the local government in Wuxi turned its attention to; strict protection of basic farmland, intensive land use, ecological protection, land remediation and coordinated development of urban and rural areas with focus on regional integration (Wuxi Municipal Bureau of National Land and Resource, text manuscript 2011).

Tian Yi Town is a primarily residential development, with an area of 1.56 km², in the Huishan district, approximately 9 km north of downtown Wuxi.² Tian Yi Town sits in an even larger residential development, and from the urban planner at the Wuxi City Planning Bureau I learned



that this development is part of the overall urban plan of 'southward and northward expansion', from central Wuxi to Huishan New City in the north and Taihu New City in the south, 'to cope with the fast development and population growth of Wuxi City' (urban planner, Wuxi City Planning Bureau, pers. comm.). According to the urban planner the decision to develop the land for Tian Yi Town was taken because of the price of the land, the governmental development plan of urban expansion towards northern Wuxi and the local real estate policy. The land on which Tian Yi Town was to be built was once farmland with rice and fish cultivation. This land was converted from rural land to construction land in the 1990s by the municipality through a land acquisition plan based on the urban master plan for Wuxi City (Ibid, pers. comm.). In this way municipalities can transform rural land to construction land at a low price; the price for rural land is set by the state, based on the revenues from the agricultural production and the costs for relocating the people who live on the land. The municipality connects the land to urban infrastructure (roads, water supply, electricity), and thereafter sells the land-use rights for the serviced land to developers for a considerably higher price.³ Private developers usually acquire land-use rights through bidding, auction and listing, the urban planner tells me. The municipality can, for instance, organize an auction, where developers are invited to present proposals for a specific area.

Figure 5-4.
Site images.
Source:
Masahiro
Katsume, SHL
(2008).



Among the accepted proposals, according to the urban planner, the developer who is willing to pay the highest price wins the land-use rights, usually a land lease for between 40 and 70 years, depending on the land use. The Chinese private developer Sunshine100 (SS100), one of China's largest real estate companies, holds the land-use rights for most of the Tian Yi Town site.⁴

5.2 SITE-READINGS

A: PHYSICAL LANDSCAPE LAYERS: urban, cultural and natural

Urban layer

The land for the Tian Yi Town development is divided into three residential areas. The plot for SHL's plan proposal is the most southern of these, a residential area called a *xiaoqu*, of approximately 400,000 m². A *xiaoqu* typically consists of a mix of high rises, town houses and villas, clearly demarcated by roads and natural borders, often gated. In addition to housing, the *xiaoqu* also provides communal and commercial facilities, such as a kindergarten, a club house, restaurants, sports facilities, landscaped common areas, parking facilities and shops.⁵ While each of



the three *xiaoqu* in Tian Yi Town has its own local shopping facilities, a kindergarten and recreational facilities, they all share a retail zone—a big shopping centre—along with a middle school and an elementary school. There is also a hospital nearby, within 5 km. The SHL site is framed by a highway, Beihuan Road, to the north; a river, Xicheng Canal, and an industrial area to the west; and smaller water canals to the east and south. On the river side, a wetland area, inscribed in the detailed development control plan as a green buffer zone, protects the riverside from construction. The detailed development control plan sets the criteria that come with the land: the floor area ratio (FAR), the green ratio and the land use. The SHL site, dedicated for residential land use, has a FAR of 2.0 and a green percentage of 35%. The public transport connections for the Tian Yi Town development are not optimal, but a subway connection is planned, and it seems as if more services and amenities in the vicinity will be established following the urban expansion of Huishan New City to the northeast of Tian Yi Town.

SHL team

SHL’s competition proposal for the conceptual master plan took two architects at the SHL Copenhagen office five weeks to draw. The background material available for the architects consisted of a brief prepared by the client, a sketch of the programme distribution and an AutoCad drawing of the site of the town’s proposed development. The brief almost exclusively deals with the 400,000 m² building plot and provides detailed descriptions on the building and landscape design. The architects briefly informed themselves about the area by looking up some general information about Wuxi on the internet, including Google Earth images. The client did not provide the architects with photos from the site nor much information about the surrounding suburban setting.

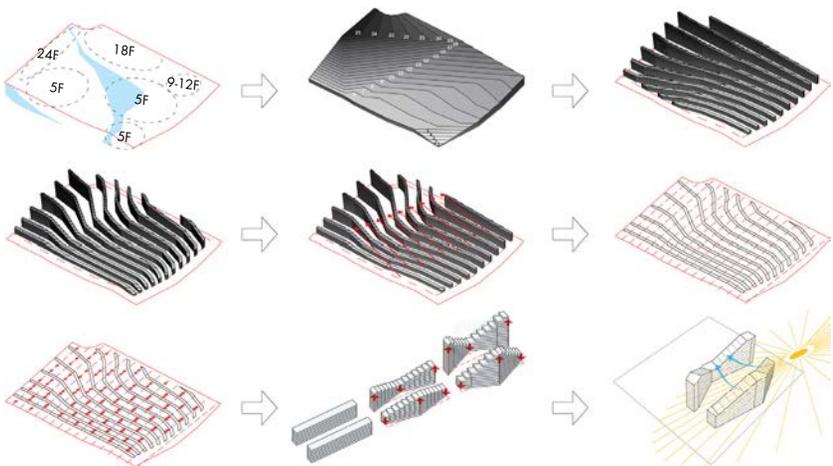


Figure 5-5.
Concept sketches.
Source: SHL (2007).

The architects at SHL said that the requirements on programme, density, building typology and orientation left them with a limited amount of options: 'Dealing with Chinese housing projects is like having a catalogue of rules. The plans are so dense and you need to follow building regulations, sunlight distances and specific requirements of unit layouts etc. so in the end there are not so many possible options' (architect 3, SHL, pers. comm.). The architects were to fit a dense programme on the site. They experimented with solar distances and building heights and came up with a wavy layout for the building blocks. The design was developed in a rational way, following the logics of minimum sunlight distances, where sun and wind conditions guided the orientation and configuration of the building blocks.⁶ The proposal was presented at the SS100 headquarters in Beijing in October 2007, the client liked the design and SHL won the competition. For the schematic design phase a larger team was involved, eight architects in all.

SS100

There are many requirements in the brief provided by the client. The plot should be divided into five areas: an experience area; a townhouse group around a lake; a block building and tower group along the road to the north; a small high-rise group at the eastern side; and a high-rise and block building group at the western side towards the river. To deal with the problems, mentioned in the brief, of noise from the roads, the Xicheng canal and the industrial area, the client suggests erecting block buildings and planting trees and getting the local government to install a soundproof system along the highway, Beihuan Road, to the north. The brief also states that the block buildings and towers along the road to the north should to 'show the urban image of Sunshine 100' (SS100 brief, 2007, p. 2). The brief asks for high rises in a modern style and townhouses of Scandinavian style, located next to a water feature, where the landscape should provide good conditions for outdoor activities and residential use. There should be various landscape themes; the client emphasizes that the landscape should be designed 'to link people into deep parts of the landscape' (p. 3). The client envisions that 'with one look, you won't be able to see the end. Full of imagination' (p. 4). The brief suggests transforming the water canal on the southern and eastern sides of the site and digging out soil to create a large lake surface with an irregular shape in the middle of the site. The brief also states explicitly that a geometric Western-style landscape design should not be used, but instead the landscape should be 'Southern Yangtze River garden style', with 'small bridges, pavilions, water features, hills, islands, plants, tall trees, stones and bamboo' (p. 3). The client hopes that a bus line will be opened to better connect the neighbourhood and suggests a

transfer bus to the bus station in the meantime. The client also suggests investigating if the local government could provide more service facilities since such services are expected to be an important preference for the future residents—‘the white collar middle class’, the target group of SS100 (p. 6). To make Tian Yi Town attractive for future buyers, SS100 lobbies for the establishment of more local service facilities and better access to public transport. While this brings environmental benefits, the primary motive for the client is economic, since good accessibility and good service provision bring up the real estate prices.

Cultural layer

The site has a rice paddy structure with fish pools and small canals. People here have been living from rice farming and fish cultivation, but various small-scale industries have successively degraded the land. The land-use plan from 2008 shows numerous smaller settlements in the surrounding area of Tian Yi Town, most of which are gone in the land use plan of 2020 (Wuxi City Planning Bureau, plan illustrations, 2010).⁷ From the client I learned that a few people were living on the land prior to development (engineer 2, SS100, pers. comm.). However, none of the involved actors probe into existing settlements and uses and how the site has evolved over time. The rice fields, fish ponds, canals, the specific land division patterns and the settlements—all these elements were removed to prepare the way for the larger residential development. Most fish ponds on the site were filled before construction began. Except for a creek preserved to the north of the SHL site, the Tian Yi Town development does not relate to the former productive wetland landscape either. Only the green buffer zone is kept as original landscape, as prescribed through regulation in the detailed development control plan. The SHL architect explains: ‘The green strip depends on the control master plan. It becomes a requirement such as FAR. The developers have to keep the idea. Without this few developers would give land to public use, they would lose too much money.’ (architect 1, SHL, pers. comm.).

When I ask the architects at the SHL Copenhagen office how they think the SHL plan proposal relates to its specific location and its physical surroundings, they mention climatic adaptation (sun and wind) as the main context specific feature. A project architect at SHL says there was not really any context to relate to when they developed the master plan, the development situation on the surrounding plots was still uncertain and they did not have access to the plans for the larger area: ‘The study of context is the practice in the West; in China the decision is already made, the proposals have to adapt, the study of context has to adapt (...) The physical context is decided by the system. People are not involved.

Cultural and traditional ideas are not a matter of the site.’ (architect 1, SHL, pers. comm.). The architect elaborates further: ‘For the SHL design, two physical conditions are the main design inspirations: one is the water system which is transformed into the main landscape feature, the other one is the mountain around Wuxi, which is transformed into the building shape’. The architect is actually referring to Shan Shui, the traditional aesthetic conceptualization of landscape as mountains and water, as depicted in Chinese poetry, gardens and paintings. Although the mountain and water metaphor is put forward as specific for Wuxi, which is called a water city, this is a culturally and historically embedded understanding of landscape: symbolic, scenic and aesthetic. Rational climatic adaptation or cultural Shan Shui, are both general references that do not specifically relate to the Tian Yi Town site. Later, SS100 used the Shan Shui image of the residential area as part of their branding strategy. SS100’s commercially motivated references to the traditional Chinese garden and the water culture of Wuxi are reductive and far from the perspective of landscape-oriented urbanism, where focus is on processes and becomings. To include environmental concerns, the practitioners would need to expand on the client’s narrow understanding of landscape as an aesthetic feature.

Natural layer

CLIMATE: Sun and wind

SHL team

Wuxi has a subtropical climate with four distinct seasons. The temperature is mild with a lot of sun and rain, with most rain falling during the monsoon season in summer (the average annual precipitation is around 1,040 mm). The prevailing wind direction is from the south–southeast in summer and the northwest in winter. For the architects, climatic factors were easy to accommodate in the design process, and the value of considering the climate was easy to communicate to the client since it did not involve any extra cost. Sun and wind conditions influenced the orientation and configuration of the building blocks in the SHL plan proposal. Water canals were drawn along the southern perimeter of the buildings to reflect light into the apartments and to promote air movement for a cooling effect in summer.

SHL followed the local regulations on sunlight distances and the cultural preference for a southern orientation. To face south is the most efficient way to shield off the sun in summer since it avoids the low sun angles from east and west. In addition, the southern orientation (with a tolerance of 30 degrees) relates to tradition, social status and the local custom of

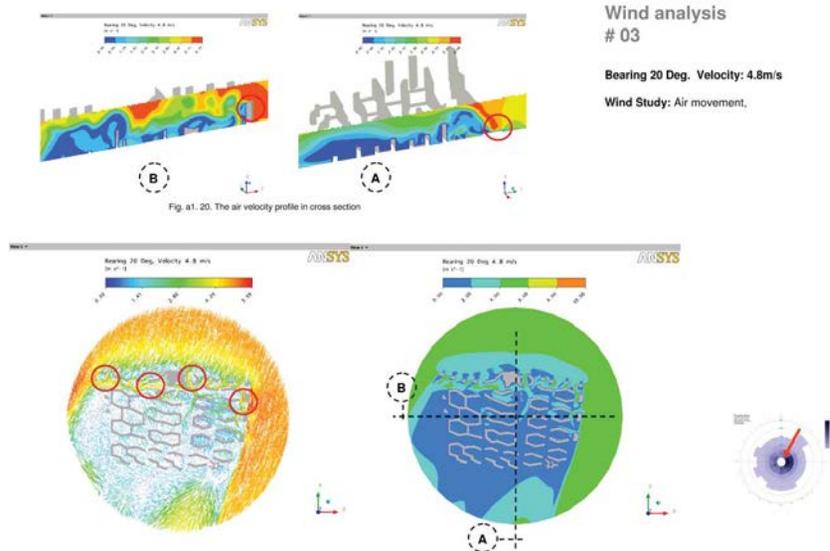
drying the laundry on the balcony. Such cultural preferences became very apparent during the development of the plan proposal. This was also acknowledged by the SHL team, but the importance of cultural preferences was not always understood, and often the practitioners were surprised by the modifying impact of these preferences. SHL proposed, for example, to draw all the entrances to the buildings from within the courtyards, to provide conditions that were thought to make the courtyards more lively and more actively used. This meant that one block would have the entrance on the south side, while the other block would have the entrance on the north side. SS100, however, wanted all the entrances to be south-facing ones, with the result that the architects thought their attempts to set the stage for lively open spaces had been ruined.

The architects wanted to involve environmental engineers to support the sustainability aspect of the project and to further develop their conceptual microclimatic approach. SHL also wished to have more influence on the design process and discussed with the client how their collaboration could be developed; they saw involving environmental engineers as a first step. The architects had heated discussions on the importance of convincing the client about the value of getting environmental engineers involved in the project. 'If we don't get the environmental engineers onboard we stop the project', one said, and 'we have to convince the client about the importance of sustainability' (architect 2, SHL). Environmental engineers had not been involved in any of the earlier master plans SHL had drawn for SS100. There had been some discussion



Figure 5-6.
Sunlight
analysis.
Source: CEEDI,
(2008).

Figure 5-7.
Analysis of
the wind
environment.
Source: Rivetti
et al. (2008),
15.



about involving environmental engineers for the Changsha master plan, and SS100 had also shown interest in such an involvement, but as soon as the costs were presented, the idea was rejected. This time, although reluctantly, SS100 agreed to involve WSP environmental engineers in the schematic design phase. Sustainability was from then on referred to as the material delivered by the engineers, or the WSP sustainability report, which was a set of environmental guidelines and recommendations on both the master plan level and the building level.

The WSP report consisted of evaluations and recommendations covering microclimate (wind assessment, solar radiation studies, shading studies, day light studies), energy strategies (passive strategies, energy efficient strategies, renewable energy strategies) and waste and water strategies. In an interview a WSP engineer explains to me that they came up with two scenarios: 'The first-level involvement is conceptual and advisory; advice is not followed to the letter. Second-level involvement gives the real implications. That we are involved in the second level happens less frequent, but the most successful projects come from second level engagement. We often revisit those projects and learn from them'. He continues; 'Economic aspects are always there, they are important but we do not look at economic constraints from the beginning. That would limit the amount of ideas. We put environment first, we explore the options and then we look at the cost options' (engineer 2, WSP, pers. comm.). The engineer describes a rather general approach that is not particularly specific to the Tian Yi Town development. The general character of the WSP report, not being particularly specific to the site

and not taking the client's perspective much into consideration, was a problem. Unsurprisingly, the proposed high tech measures were rejected by the client as being too expensive.⁸ Except for solar thermal hot water (required by regulation), the client did not consider the high tech options to be feasible investments.

With the low tech, passive measures, WSP were more successful. WSP verified the SHL design in terms of solar conditions and wind environment. They recommended landscaping and distribution of functions in relation to the wind and sun conditions, and their recommendations on microclimatic mitigation gave very clear and valuable guidance to the SHL team. They proposed locating open space activities with solar and wind conditions in mind. Various ways could be used to create cooler and more comfortable outdoor areas, they suggested, such as shading elements in the courtyards and on the roofs; different ground materials to reduce heat reflection in summer and to store and absorb heat in winter; permeable ground materials to improve water infiltration; water features for cooling purposes; and localized landscaping—trees, bushes and hills—in certain areas on the site to mitigate high wind speeds created by the high rise buildings. To improve the wind conditions they also suggested modifications of the SHL design, such as more openings in some of the building configurations in the western part of the plan for better air movement. Bright colours were recommended for the building blocks to reflect sun and to improve the daylight situation of the apartments. Similar microclimatic mitigation strategies can be found in the vernacular fabric of the region. Vernacular buildings use local materials—white ash walls and black tile roofs—to protect from the sun, and galleries and narrow lanes to shade and create cooler outdoor spaces. This was not referred to in the report. WSP also worked exclusively within the borders of the SHL site and did not include effects from or on adjacent plots, while, for instance, the high rises to the south could be expected to affect both the solar and the wind analyses.

However, WSP brought quantifications and a scientific perspective into the project, and these environmental metrics and calculations, the wind analysis in particular, had a convincing effect on the client, for the most part. The environmental engineers' involvement in the project was short though; they came in at a late stage and never became involved in the detailed design, so there was no chance to reach the level of detail needed to realise their initial ideas. Their ambitious and promising material was never fully used in the plan proposal, and the microclimatic strategies were never implemented in the landscape design.

Figure 5-8.
Model of the
residential
area. Source:
SHL (2007).



SS100

At the beginning of the schematic design phase, in December of 2007, the client, SS100, came to the SHL office in Copenhagen for a design workshop. The four days the client spent at the office were intensive, and the SHL team worked much longer hours than usual. Discussions took place around a foam model showing the residential area. The client used a paperknife to cut and change the configuration of the foam blocks. After some quick cuts the client often concluded, ‘now this is fixed’ (engineer 1, SS100). Decisions were rapid and there were many sudden changes; there was no doubt that it was the client who was the main decision maker. On the third day, December 20, they held a video conference with an engineer from WSP in London, who explained the WSP sustainability concept. During the video conference, the client showed interest in passive environmental measures—measures that did not involve high-tech solutions—and asked questions about ways to improve the microclimate on site, to increase wind in summer and to improve the sunlight conditions through building orientation and configuration. The client asked, ‘Can you explain in more detail how the building configuration affects the wind environment? (...) How exactly does this design improve the wind situation?’ (engineer 1, SS100). The manager of the SHL team pushed for high-tech solutions and seemed to view passive measures as the client’s lack of commitment to sustainability. Clearly, expectations and levels of ambition differed with regard to sustainability in the project. When I discussed the sustainability topic with the SS100 clients during their stay in Copenhagen, SS100 confirmed that they did see sustainability as an important issue. Later, however, when the client received the sustainability report from WSP, they expressed meagre interest. In an interview at a later point, the SHL project architect

remarks, 'Sunshine 100 is not happy with the WSP report, they don't have a clear view of how the material is beneficial to them and how to handle the WSP input. The client doesn't believe buyers are willing to pay more for the apartments even though they could have lower running costs. The benefit of green compared to standard is not clear to them.' (architect 1, SHL, pers. comm.). To my knowledge SS100 has refused to involve environmental engineers in other SHL projects after the master plan in Wuxi. The project architect elaborates on why this was so: 'I can feel that they [the client] are not so happy about the sustainability. Certainly they know that sustainability is a good thing but if it requires more time, extra money and extra effort, they're not so happy about this. When I talked with the client about looking into sustainable issues for another project, a large hotel and residential complex, the client said definitely no'. With regard to sustainability, the client went no further than what was required by regulation. On the building level, regulations required a solar thermal hot water system on the roof, insulation of the external wall and double layer glazing. As the SHL project architect sees it, 'the client only adopted passive solutions, with no extra cost and made changes to save money (windows and insulation). The client did not want to spend money on improving cladding performance. For private developers to become more aware of sustainability, the standard seems to be possible to raise only through regulation'. The planner at the Wuxi City Planning Bureau says that reactions from Chinese clients to sustainability ideas in the Tian Yi Town development are typical: 'In general, Tian Yi Town has no big difference from other developments in Wuxi. The building orientation responds to sun and wind conditions, the drainage system responds to the precipitation and maybe the small creek in the landscape as well' (urban planner, Wuxi City Planning Bureau, pers. comm.). In addition, the Chinese clients knew that the climatic benefits of the SHL design were never verified, says the SHL project architect: 'The zigzag layout shape of the building blocks and their internal configuration were intended to have a beneficial impact on solar access and wind movement. How it actually works in the built version has not been tested' (architect 1, SHL, pers. comm.). Not only are further sustainability ideas not legislated, and so not necessary to spend money on, the client also is not convinced.

Considering the client's interest in passive environmental measures, the microclimatic approach holds potential and could perhaps have contributed to environmental sustainability, if it had been expanded to include a wider scale and scope. Passive measures, by means of architecture, building orientation, building configuration, landform, vegetation and water features, all bring in environmental sustainability; in a simple and low cost way they contribute for instance to improving

the quality of the outdoor spaces and to saving energy. The practitioners could benefit from investigating these simple and low-tech measures, which are inherent in vernacular principles, and use them to support their argument for microclimatic mitigation.

WATER

SHL team

The architects did not pay much attention to the existing water network on site; rather, they formed the passage of water according to their own taste. In the plan, water is led in from the south and cross the site in an irregular pattern. As the conceptual renderings show, a rich water landscape is imagined. The SHL team raised the question about the water quality and suggested possibilities for cleaning water on site. The WSP engineers briefly looked into the issue but there was never any clarification of the water quality issue, and specific information on the water quality on site was never obtained. WSP proposed rainwater collection and grey water reuse, but an in-depth investigation of the possibilities for grey water reuse, dependent on the local regulations, was never pursued.

SS100

The large water body proposed in the conceptual master plan became, in the realized design, no more than a shallow pool in the *xiaoqu* entrance area. The rich water culture of Wuxi was sadly reduced to small ponds surrounded by tall residential blocks. The SHL project architect explains what water features the master plan tried to incorporate: 'From the old map, we can see the complete water system going through the site. Although the water system was designed as the main feature of the landscape idea in the SHL master plan, in reality the water was cut from the connection to the outer system, and the main canal was cut into a shallow and narrow stream, just to keep some memory of a water town' (architect 1, SHL, pers. comm.).

A crucial issue for Wuxi is to maintain and re-establish the water retention capacity of the land. The more concentrated rainfall following climate change and the loss of wetland and farmland area for water retention have increased the risk of flooding. These aspects were not addressed by any of the actors involved in the master plan for Tian Yi Town. For the practitioners, sustainability was seen more as a set of technological solutions, delivered by the environmental engineers. When water was discussed it was in terms of its aesthetics or its marketing potential or in technical terms. The sustainability discussions revolved around what was designed as a system in itself, not around how the proposal could contribute to mitigating the water problems in the area. The use of

water—for instance, its social and recreational value—was mentioned very little in the discussions. While the technical and economic aspects are important, they also need to be balanced with more inclusive site readings.

Rainwater collection and grey water reuse were dismissed by the client because of the costs related to construction and maintenance of such systems. Although the abundant rainfall in the region makes irrigation of the green areas unnecessary, collecting and recycling rainwater (storm water) can contribute to decreasing the freshwater need of the *xiaoqu*. Retaining and treating storm water on site improves the water quality and contributes to maintaining the water retention capacity of the land. In fact, a decentralized water cycle model with local rainwater harvesting and treatment has traditionally been used in the Wuxi region. Traces can still be found in the vernacular built fabric, such as patios to collect rainwater for washing and preventing fire; and semi-permeable pavement materials of pebble and tiles to reduce storm water runoff.

Unconventional storm water solutions are initially more expensive, since they involve higher construction and maintenance costs, but they bring cost savings in the long run as they reduce damage from floods, save fresh water and are easily adaptable to changes in weather. To developers who operate with economic priorities and cost efficiency in a short-term perspective, such benefits are less evident. The planner at the Wuxi City Planning Bureau later told me that some new residential areas in Wuxi have implemented local storm water treatment and reuse and that there is a growing interest in the reuse of grey water. However, while these aspects are seen as important, they are not common in residential areas in Wuxi yet, conventional drainage systems dominate (urban planner, Wuxi City Planning Bureau, pers. comm.).

GREEN STRUCTURE

SHL team

At the outset of the project, the architects were told that the site was polluted and that the topsoil had to be removed and replaced. Later I learned from the client that 'there are not really any environmental challenges for the Tian Yi Town site. There are no major industries nearby. There is no big pollution, only general pollution from the city' (engineer 2, SS100, pers. comm.). The client's argument is questionable, considering the large industrial area adjacent to the SHL site. The landscape architect involved told me that the issue was never clarified (landscape architect, pk3, pers. comm.). Nevertheless, earthwork did need to be done. The soft nature of the ground required major earthwork

to install the pilings, and the whole site was dug out to accommodate the demand for underground parking places. A layer of 1.2 meters of soil was placed on top of the parking facilities.

The landscape architects, pk3, suggested a hilly landscape with a wide range of local plants and trees and various types of pavement—permeable surfaces, granite and concrete—and a fine-grained network of paths for pedestrians and bikes. Different garden themes were proposed for the courtyards between the buildings and a mix of modern and traditional Chinese landscape images were referred to. Their landscape design consisted of an outer ring of wetland areas and dense vegetation, an inner green ring with sport and recreational facilities and various civic functions and a central water garden area.

SS100 and the LDI

Later on the landscape design was taken over by landscape architects at a local design institute (LDI) in Wuxi, which totally changed the landscape design. In mail correspondence with the client, I learned that SS100 regarded the original landscape design as impractical and difficult to maintain (engineer 2, SS100, pers. comm.). The client told me that there had been a lack of communication on the landscape preferences, and that the conceptual design proposed by pk3 did not match their preferences. For instance, the grass proposed in the concept design was not appreciated, he told me, since it had seeds in winter—'no seeds, they don't look good in the winter'. I got to know from a landscape architect at the LDI that some of the plants used in the final landscape design do not cope well with the local climate. The aesthetic landscape preferences were difficult to match with environmental concerns. Since the apartments were easy to sell, not much consideration was given to the landscape. If the apartments would have been difficult to sell, more money would have been spent on the landscape as compensation. The LDI landscape architect also told me that 'the landscape is nothing particularly special, as the design and implementation are just an acceptable standard' (landscape architect, LDI, pers. comm.).

To summarize, the physical layers of landscape play only a minor role in guiding the development of the plan proposal. The design intervention is not anchored in physical landscape layers and their processes. None of the existing landscape structures on the site can be traced in the SHL plan proposal. Formal structures are imposed and the needs addressed are those of another social class than the one that used to inhabit the land. To prepare the way for the Tian Yi Town development, the site is cleared and filled. This seems to be common practice and it was not questioned.

To accommodate the changes brought in by the rapid construction pace of the large residential development, existing landscape structures are removed. To handle the high density, a new site has to be constructed. Clearly, the SHL master plan is programme driven, not site driven.

B: SOCIETAL CONDITIONS

POLITICAL AND ECONOMIC FACTORS

Marketing/branding

SHL operates on market conditions, and work is carried out within a commercial frame in which economic motives dominate. The SHL team has to deal with demands on high density for the site and accept a lower level of ambition regarding sustainability than they originally had hoped for. Questioning these conditions would probably have meant that the client would have chosen another firm for the task.

SS100 has a very clear idea about what housing types and landscape features the future buyers appreciate; together with the real estate, they also sell a lifestyle. Through market analyses they know very well the preferences of their target group. The reason SS100 involves SHL has a lot to do with the branding value that SHL adds to the project. SHL's spectacular design makes it easier for SS100 to market the project, to attract residents from high income groups and to bring up the real estate prices. The SHL project architect notes that the client liked the building's facade and the master plan, since it was a 'modern and striking design' and since the project had 'a very unique design for residential buildings in China' (architect 1, SHL, pers. comm.). Since SHL is asked to design

Figures 5-9 and 5-10. Images of the SHL project in southern Tian Yi Town.

Source: Rong Lu, SHL (2013).

Figure 5-11. Image of the SHL project under construction. Source: Adam Mørk (2010).



housing as a product for the market, mainly being a provider of style, it becomes difficult to address sustainability. Getting input on sustainability is not a priority for SS100; perhaps it is not even wanted. To many private developers, sustainability does not add value to their projects, the SHL architect observes. The developers' time is tight; she explains 'there are a lot of revisions which have nothing to do with design; the architects are not always updated and informed because of the time pressure on the developer's shoulder. The quality of design and construction becomes problematic'. Considering that the client did not want to pay for an environmental engineer, it would be beneficial for the design firm to have such expertise in house. For a small firm this is difficult to offer, however, due to limited resources. A short design process with tight deadlines and many changes does not leave much time for extensive analysis and site investigations. Rather, the tight deadlines and expectations of efficiency force practitioners to work with standard solutions and operate with generic typologies as a strategy to deal with work that has to be done quickly.

Communication

After discovering the client's interest in only passive environmental measures, the SHL team began to address a range of aspects falling under the category of low-cost options.⁹ The architects developed a draft proposal to more convincingly present and communicate the content of the WSP sustainability report to the client. The different options mentioned in the WSP report were discussed at the office and listed in three steps, according to how important and realistic they were thought to be in relation to the client's preferences, and linked to cost benefits: running costs, installation costs and time for investments to pay back. In the



first step, of investigating low-cost options, the choice of the buyer was introduced as a possible way to influence the environmental performance of the project. Step two consisted of cost-effective options requiring more investment from SS100, yet the client could still profit since the investments would make the price of the apartments higher. The options in the third step were most costly, but were seen as a good opportunity for SS100 to earn a reputation for being an environmentally conscious developer. The draft proposal with all three options addressed what future buyers could do in terms of sustainable options and what would be the benefit of such choices. For example, if 50% of the apartments are sold as raw shells without any installations, it is up to the buyer to install the appliances. The draft proposal thus drew attention to the role of the residents. Their informed choice and their active participation in the maintenance of the open spaces in their neighbourhood could bring down energy use and could also contribute to sustainability in a broader sense.

KEY ACTORS

Through SS100, the architects connected with a local design institute, or LDI, in Wuxi. In general the communication went through SS100, who also handled all the communication with the Wuxi City Planning Bureau. All Western design firms are obliged to collaborate with an LDI, and the ultimate responsibility for the project lies with the LDI. Since the LDI makes the detailed construction drawings, a large part of the construction process is actually beyond SHL's realm of influence. SHL oversees the construction drawings, but they cannot control the project to its end. Here SHL has to trust their local collaboration partners.

Even if they trust their local partners, however, it is difficult for SHL to pursue environmental sustainability while working for a private developer within the residential sector. The SHL architects wanted a more close collaboration with SS100, better communication and a more transparent process. As seen in the Wuxi project, this turned out to be difficult to achieve. When private developers are involved, the process is often influenced by various external factors and has little transparency. Although some private developers are very concerned about quality and do value sustainability, real estate development for most private developers is quick money. The projects are market dependent, and thinking about short-term profit dominates. To realize sustainability ambitions, SHL would need to seek another type of client and collaboration partner, preferably from the public sector, where the projects are not market driven to the same extent.¹⁰ If the future home owners were to ask for sustainability, and if the implementation mechanisms became more rigorous, then private developers would be forced to act more responsibly. Current tendencies

do point towards more stringent environmental legislation and stricter requirements on implementation. This in turn means higher demands on the ability of the design firms to deliver environmentally conscious solutions. The clients are interested in what is being done abroad, says the SHL project architect, and they do want to see how sustainability can be achieved. 'Developers might continue to ask for style, but environmental sustainability has already started to present itself as a competitive factor and is likely to continue to do so.' (architect 1, SHL, pers. comm.).

INSTITUTIONAL SETTING

SHL operates on the project level and is not involved in the planning process. The SHL team gains access to information mainly through SS100, and the information made available to them is coloured by the interests of this client. SS100 focuses on the building plot and provides only scant information on the urban development situation and the surrounding area within which the Tian Ti Town development sits. The SHL architects asked about the plans for the surrounding plots, but the client did not provide them with the information. Thus SHL worked with a cut-out piece of land and had difficulty obtaining other information on the local context and conditions. The development situation of the adjacent plots was uncertain when they began, and the reliability of the information the SHL team received was also sometimes questionable.

Less complex tasks, for smaller areas such as the Tian Yi Town development, are given to the market. Tracts of land—the superblocks—are filled in by private developers in an uncoordinated fashion; the land for the real estate is not planned in a whole system. The development is fragmented. In addition, private developers favour high-end housing since it gives them the most profit; Tian Yi Town, for example, is built for the middle class. There was no wish from the client side to make connections between the different plots around Tian Yi Town, since the housing areas belong to different price classes. The various plots around Tian Yi Town were developed independently of each other and ad hoc during the process of developing the master plan, building projects started to appear around the site that the practitioners had not been informed about, for instance rows of high rises just south of their site.

The xiaoqu scheme

SHL's drawings were changed and modified according to local regulation and the client's preferences. The specific requirements connected to the *xiaoqu* typology, such as programme, building orientation and floor plan layout, were decisive for the master plan. The SHL plan proposal was modified to match the *xiaoqu* scheme. The SHL team did not consider

the *xiaoqu* scheme originally, they imagined an open neighbourhood. It is difficult, however, to open residential areas and mix them with other functions different from the pattern of the *xiaoqu*. Given the introverted character of the *xiaoqu*, it becomes important to create connections. There are many links and exchanges between the residential area and its surrounding setting that the urban design could support and promote. Here the landscape could play an important role, as the medium through which to connect the *xiaoqu* to larger landscape systems, to support exchanges and activities, to provide good and safe linkages for bikes and pedestrians to public transport nodes and nearby parks and green recreational areas and create links between the neighbourhoods. If we look at an existing *xiaoqu*, in its border area various exchanges occur between the *xiaoqu* and its surrounding setting, activities that provide the *xiaoqu* with cheap goods and services—small scale businesses, such as retail, fruits and vegetable, and building material vendors, shoe repairs, etc. Urban design solutions can support such local economies. Shops and retail facilities located at the edge of the *xiaoqu* can create places of contact between moving economies and people living in the *xiaoqu* and enhance the connections between adjacent neighbourhoods. Entrances and road networks can be placed in a way that supports links between neighbourhoods. The SHL team did not stress particular connections with the surrounding setting—it was not part of the design task and it was not a priority of the client. Consequently, the practitioners worked with a cut-out piece of land and developed their plan proposal without much consideration to connections. The site's border, drawn by SS100 for the sketch of the initial programme distribution, was reinforced during the development of the project and became very distinct in the master plan.

C: FIRST-HAND IMPRESSIONS

There is a large distance between the SHL's plan proposal and the site. There is a lack of situated, local site knowledge. It may be that the situated perspective seems very difficult for the practitioners to obtain, considering the geographical and cultural distance between client and architect, the speed with which the project is developed, the disregard of the existing landscape structures, the preferences of the client and the lack of contact with local people. None of the actors involved investigated existing uses, activities and local economies. There is not much reflection on the involved complexities and challenges. Neither SHL nor SS100 read value into the existing landscape structures. Rather, they saw the land as being waste land, lacking landscape qualities. The SHL team focused on the buildings, the building typologies and the layout of the apartment units. Landscape was seen as the leftover space between the buildings,

Figure 5-12. Model of the Tian Yi Town development shown at the sales pavillion in Tian Yi Town, Wuxi. Source: Rong Lu, SHL (2013).



and played a marginal role. In the representational material from SHL the site's surroundings are often left blank. The renderings show the buildings on the site in great detail, while buildings on the surrounding plots are shown as light, transparent volumes, which actually is very misleading in relation to the built reality. Treating landscape as the leftover space is far from a landscape-oriented urbanism approach in which buildings and landscape are considered in tandem and through which latent structures in the landscape are activated.

5.3 OPPORTUNITIES AND CHALLENGES

In the Wuxi case, the decision making at the small scale lies in the hands of the developer; the taste of the developer decides. The client's preferences, along with regulations and economic rationales, are decisive for the transformation of the physical landscape and overshadow any environmental concerns. The microclimatic approach and the initial attempts to introduce rain water collection and recycling represent urban design strategies that involve the landscape. However, except for consideration to sun and wind, these strategies are not part of the conventional approach and were rejected by the client because of costs. Clearly, the speed, the clients' decision making, demands to optimize plans in economic terms and short-term profit thinking all challenge the long-term perspective and the interdisciplinary approach so important to landscape-oriented urbanism. In addition, the intensity of the development creates space constraints. The high density program requirements for

the Tian Yi Town development give little space for landscape systems to operate. In Europe and in North America, densities are lower and the development pace is slower. Scarcity of land and development pressure in China mean that higher densities are necessary, and lower densities are not an option. To be relevant here, landscape-oriented urbanism needs to develop new models that can deal with high density and a rapid pace of development. Furthermore, landscape-oriented urbanism depends on organizational systems of a larger scale that require access to a strategic level that is not available to a Western design firm who operates on the project level. To address the large scale requires another collaboration constellation, a different kind of involvement.

The practitioners do not refer or relate to landscape-oriented urbanism. The SHL team does not operate with thorough mappings of existing physical landscape structures, but rather with a piece of land, cut out of its surroundings, upon which typologies are imposed. Tight deadlines and rapid development pace give little time for thorough site research. The SHL team has no influence on the planning level. Also the planning process is not transparent and it is difficult for the practitioners to access planning information. Consequently, the SHL team lacks knowledge about the societal conditions that influence and transform their plan proposal. The situated perspective—that of the local people—is also absent in their site-readings. It is difficult for the practitioners to obtain such insight as the planning process does not open up for this perspective.

At the project level, working for a private developer, the possibilities for SHL to operate with landscape-oriented urbanism clearly are limited. The relevance of landscape urbanism on the small scale is also questionable. If we acknowledge that the small scale means construction that follows the taste of the developer, we see that it becomes important for the practitioners to explore the potentials of constructing landscape and buildings in tandem—in constructing landscape systems that make efficient use of the space available. A more integrated way of working would be needed, with the landscape part entering the project from the beginning. To inform landscape construction, the *thinking* introduced by landscape urbanism can be valuable for the practitioners, as it directs attention to connections, passive, low tech/low cost measures, vernacular principles, the situated view, to better adapt to the situation at hand. This potential of landscape urbanism to inform landscape construction, is in the Wuxi case to a large extent unused.

Notes

1. For the reasons explained in chapter one, I maintain the anonymity of all the professionals involved, referring to them by role, number if more than one, and firm: 'architect 1, SHL', etc.
2. Tian Yi Town is expected to be completed in 2017, with an estimated population of ca. 50,000 people. According to the client, in 2011 two thirds of Tian Yi Town had been built, with 3,000 to 4,000 families living there. Around 14,000 people are expected to live in the southern part of Tian Yi Town, which is the SHL site (engineer 2, SS100, pers. comm.).
3. A land use map for Wuxi city from 2005 classifies the land for Tian Yi Town as 'rural residential construction land'. The area's classification was changed in the latest master plan for Wuxi city (2006–2020) to 'urban construction land'. Only a year later, in 2007, the Tian Yi Town development began. For plan illustrations see the *Idea Catalogue* pp. 150-151.
4. When SHL began the SS100 project, another developer had already developed 330,000 m² of the Tian Yi Town site, north of the SHL site, with townhouses and villas.
5. The urban residential area planning code decides the functional distribution within a residential area. Functional distribution for Tian Yi Town (1.56 km²): residential 1.88 km², school/kindergarten/commercial 0.12 km², green area 0.43 km², parking 0.52 km², bicycle parking 0.073 km². Functional distribution for southern Tian Yi Town (the SHL site): residential 686,000 m², kindergarten 2,000 m², commercial 28,000 m², club house 2,000 m², green area 140,000 m² (126,666 m² is park, 13,333 m² is water), parking 91,464 m² and bicycle parking 26,677 m² (SS100 brief, 2007).
6. The concept sketches (p. 62) show how the zoning diagram provided by the client is translated into a stepped terrain model. Maximum building mass is derived by subtracting the minimal distances according to the sunlight regulation. The Housing Act requires at least one hour of direct sunshine on December 21. The building configuration takes the prevailing wind direction into account. A grid is superimposed on the basic massing model, and each intersection between the grid and the building mass becomes a point that is offset. Neighbouring grid points are shifted in opposite directions to form courtyards to break down the scale. The building profiles seek

to create spatial variation and increase each building's surface area, to provide better conditions for natural ventilation and day lighting.

7. For plan illustrations of the land use changes, see the *Idea Catalogue* pp. 158-167.
8. WSP proposed, for instance, the use of ground water for cooling, PV cells on roof areas with an excess of 1,400 KWh/m² and a centralized energy solution. According to the WSP sustainability report, the use of PV cells could reduce CO₂ emissions by 18% (Rivetti et al., 2008).
9. The passive options include roof/external wall insulation and shade elements to minimise unwanted heat gains; thermal mass; night shutters; double glass windows; optimum window size and positioning (ground floor/first floor windows are bigger to allow more daylight); and light, reflective colours to enhance solar protection. According to the WSP sustainability report, these passive options could cut 6% of the CO₂ emissions.
10. SHL began their engagement in China in 2003, and so far all their realized projects in China are within the residential sector. An office was established in Shanghai in 2011 in order to get more involved and locally connected, aiming for another type of project, not residential but cultural/public buildings.



Figures 6-1
and 6-2. The
eco city site
in 2008 and
2010.

Source:
DigitalGlobe

CHAPTER 6: TANGSHAN CAOFEIDIAN INTERNATIONAL ECO CITY

FACTS

Location: Southern Tangshan, Hebei Province, China (38°N, 118°E)
Eco city concept planning: SWECO and Tsinghua Urban Planning and Design Institute (July 2008–February 2009)
Client: Administrative Committee of Tangshan Caofeidian Industrial Zone (Caofeidian gongyequ guang weihui, 曹妃甸工业区管委会)
Other actors: Caofeidian New Area Administrative Committee, Tangshan municipal government (initiator and owner of the eco city), Tangshan Planning Bureau
Size: 30 km²
Time frame: 2007–2020

6.1 INTRODUCTION

The planning of the Tangshan Caofeidian International Eco City began as a two-round international competition from November 2007 to June 2008. Both competition rounds were won by Beijing Tsinghua Urban Planning and Design Institute (THUPDI).¹ After the competition phase, based on a political agreement between China and Sweden, the Swedish engineering consultancy SWECO was invited to jointly develop the concept planning for the first phase of the eco city (30 km²) together with THUPDI. The assignment, carried out for the Administrative Committee of Tangshan Caofeidian Industrial Zone, included four tasks: sustainability guidelines for the 30 km² first phase of the eco city (task 1), conceptual physical planning of the first phase (task 2), conceptual design for the sustainability centre of the eco city (task 3) and conceptual detailed planning of the 12 km² initial area within the first phase (task 4) (SWECO Report 1, 2008).

I was introduced to the competition proposals through a professor at THUPDI, who gave me a set of extensive reports. During my time at THUPDI (2008–2009) I followed the development of the conceptual plan proposal for the 30 km² first phase of the eco city. SWECO and THUPDI met regularly for workshops in Beijing and in Stockholm and I participated as an observer in two of the Beijing workshops in October 2008 and in January 2009. In the workshops I could follow discussions and negotiations and also informally talk with actors involved from both

the SWECO and THUPDI sides. During my time at THUPDI, I carried out interviews with key actors from the THUPDI side: three urban planners, one landscape architect and one engineer. With one of the urban planners I maintained a continuous dialogue throughout my PhD study. At a later stage, in 2011, I interviewed two key actors from the SWECO side, one urban planner and one landscape architect (see informants list for details).

I will in the following case study explore SWECO's and THUPDI's site-readings, in order to identify opportunities and challenges for landscape-oriented urbanism, this time at the scale of the city.

CAOFEIDIAN INTERNATIONAL ECO CITY

Caofeidian eco city is located in southern Tangshan in Hebei province, about 220 km southeast of Beijing.² The eco city is built on the shore by the Bohai Sea, close to a newly constructed deep-water harbour and a large industrial area of chemical, steel and high tech industry. The giant Shougang Steel Factory relocated from Beijing to Caofeidian Industrial Area just before the Olympic Games in 2008. The eco city is built to support the industrial area and provides accommodation and public facilities for the people who come to work there.³ The Tangshan municipal government started the Caofeidian eco city initiative as part of the overall strategy to develop the Bohai Sea region into a key area in China's northern economic growth zone, comparable to other growth zones such as the Pearl River Delta and the Yangtze River Delta.

Eco city initiatives present valuable opportunities to develop models for the many new towns that are to be built in China. A SWECO planner indicates the potentials: 'Through an eco city it is possible to show ideal solutions. It is possible to do this without too many constraints. In China new cities have to be built; you cannot just add to dysfunctional existing cities—new cities are necessary.' (planner, SWECO, pers. comm.). Eco city projects constitute a unique possibility for creating solutions on all levels, the planner notes, such as public transport, car-free nodes, circular models, centralized solutions and energy efficient buildings. SWECO's eco city plan builds on the SymbioCity model, which is an interdisciplinary approach to sustainable urban development that takes advantage of synergies between different systems.⁴ The SWECO planner explains: 'We work with circular models. In addition to environment, economy, socio/cultural aspects, we also emphasize the spatial dimension. The spatial dimension is a particular dimension in the SymbioCity model'. The planning of the Caofeidian eco city emphasizes smart growth principles, such as intensive land use, compact city form, mix of uses,

Figure 6-3.
Plan structure
for the 30 km²
first phase of
the eco city.
Source:
Ranhagen
(SWECO)
(2009), 17.

transit-oriented development (TOD) and closed-loop systems in which energy, waste and water are handled in an integrated fashion. The eco city is a basic standard for today, a THUPDI planner says in an interview. 'Every city must be an eco city. We have to plan and think about nature.' (planner 1, THUPDI, pers. comm.). For Caofeidian the planner mentions water management, decontamination of the soil, infrastructure system, multiple centers, integrated green system, TOD, bikes and recycling infrastructure, as particularly important aspects.

6.2 SITE READINGS

A: PHYSICAL LANDSCAPE LAYERS: urban, cultural, natural

Urban layer

The eco city is located on the flat and sandy coastal plain of the Luan River Delta. Two rivers intersect the site for the eco city, Qinglong River to the west and Su River to the east. Both rivers are polluted from industrial



activities in northern Tangshan. Plans for constructing an eco city on this location encounter many challenges. There is a shortage of fresh water, the soil has a high percentage of salinity and low permeability, and the infrastructural connections are weakly developed. Bohai Bay is polluted and with seismic activity in the area, it is at risk for earthquakes (SWECO Report 1, 2008). There is also oil extraction in the area. The site for the eco city, in other words, is a production landscape, heavily influenced by human activity. Satellite images show a geometric grid of salt fields and fishponds dotted with oil pump stations. The land is reclaimed and artificially constructed, extending into the sea, made possible by the shallow delta.

SWECO

The urban structure of SWECO's conceptual plan is a synthesis of outer, regional conditions and inner conditions on the eco city site. The spatial pattern consists of a superimposition of three main layers. First, the existing structures on the site form a basis for the spatial pattern and give inspiration to the road network and the canals. The SWECO planner explains that the spatial net of the production landscape—fishponds, salt ponds and the canal system—formed the basis of the plan proposal. The rivers were used to create structure. The second main layer of the urban structure is formed by a network of green corridors and urban parks of varying size and character that integrates and improves the existing landscape structures on the site. This multifunctional and organically shaped green structure includes space for ecological services, such as urban agriculture; storm water treatment and flood control; the mobility system that prioritizes walking, biking and public transport; recreational functions and the oilfields. Third, and particularly influential for the organization of the eco city plan, are aspects of infrastructure. A transport grid is placed on top of the existing structure to connect the eco city to the regional and national transportation networks and the industrial area.



An orthogonal grid that includes the public transport (Bus Rapid Transit systems, BRT), is imposed on the site in north-to-south and east-to west directions. The plan seeks to reduce car dependency and to create an environment that promotes walking, biking and affordable public transport, says the SWECO planner. The eco city has a compact and varied mixed-use structure, with urban nodes that serve as centres for the city districts (planner, SWECO, pers. comm.). The structure supports the development of sustainable transportation modes. Residential areas are located close to public transport stations—90% of the housing is located within 300 m of public transport—and a smaller block size, 220 by 220 m instead of the more common 400 by 400 m superblocks, promotes walking and biking (SWECO report 1, 2008). In conventional urban planning the width and density of the roads, the huge building lots and the large set-back lines, all favour the car. The SWECO planner stresses the importance of the bike. ‘In China the bike system has been very active but today the car dominates. SWECO wants to build in the bike in a modern form’ (planner, SWECO, pers. comm.). The walkable city with small units is also emphasized by the THUPDI actors. The client side did not express the same enthusiasm for the bike though, and in one of the design workshops I attended many questions were asked about car access and parking places. ‘All people want a car’, the client says. ‘How to handle the cars when they are there? This is a dilemma’.

Figures 6-4 and 6-5. Images from the eco city site. Source: THUPDI Report 2 (2008), 72, 65.

Figures 6-6 and 6-7. Images from the eco city site. Source: SWECO Report 1 (2008), 32, 34.

THUPDI

At the first workshop I attended, in October 2008, SWECO presented their plan proposal and discussed it with actors from THUPDI, Tangshan planning bureau and the client side. SWECO’s attention to existing landscape structures in the urban grid initially resulted in an irregular grid pattern. The THUPDI actors thought the grid structure was too complicated; they wanted a uniform grid pattern. Variation was to be found within the blocks and not in the grid structure itself. A THUPDI



planner says, 'Distorted intersections are unusual in China. When starting from a white paper there is no excuse to create complicated intersections.' (planner 1, THUPDI). The grid was modified to a more symmetrical pattern and the road structure and orientation were adjusted to better meet the climate situation.

Cultural layer

SWECO

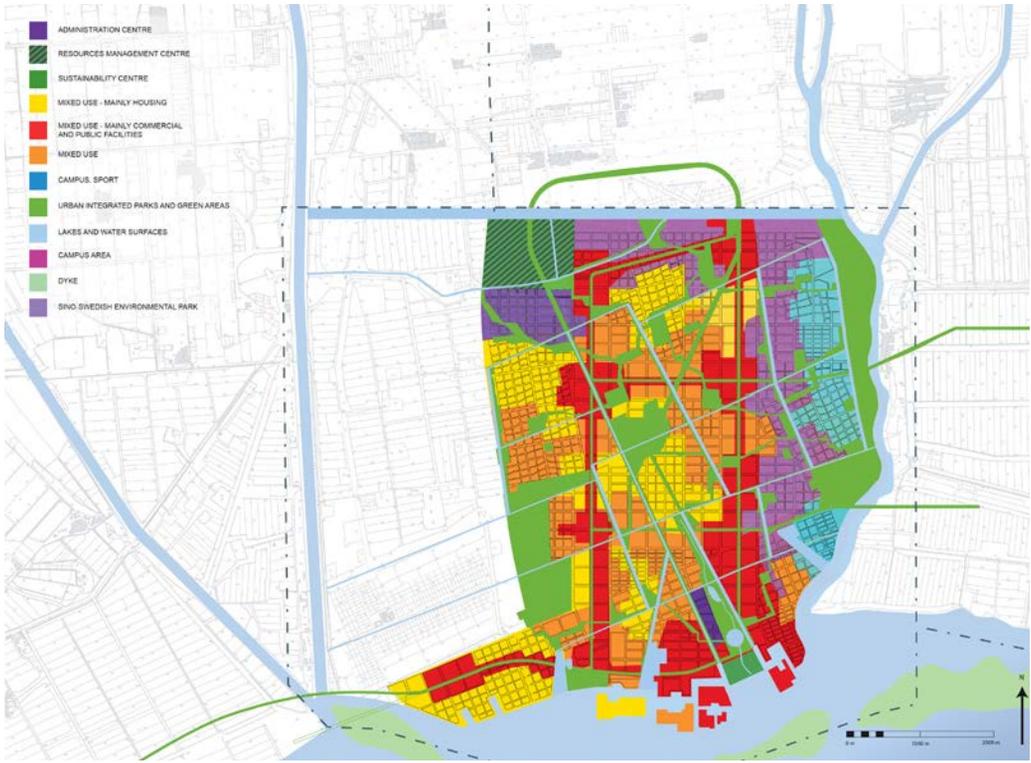
Salt extraction from the seawater and fish farming has been an important source of income for people here, and the coastal area is full of salt flats and fields to raise shrimp and shellfish. A concern for the existing activities on site is expressed in the SWECO reports, for instance SWECO writes that their urban structure seeks to respect the 'genius loci' of the site (SWECO Report 2, p. 19).⁵ The possibility to include existing agricultural and aquacultural activities, such as fish, shrimp and salt farms in the urban structure is mentioned in the report, as well as the possibility to keep some of the settlement patterns and to use the physical patterns in the further planning of the eco city. The SWECO planner notes that 'the area is an old production landscape to produce and extract salt, here values can be recognized.' (planner, SWECO, pers. comm.). Keeping parts of the canal structure and the fish ponds is, according to the SWECO landscape architect, a way to keep something of the history of the site and to create continuity with the past. 'My approach to landscape favours the small and subtle values, transform the buildings, keep the roads, keep the same scale as the production landscape, the old road network (...) As architects we argue for the value of letting people stay on the land, to weave together old and new.' (landscape architect, SWECO, pers. comm.). At the same time, he says that the eco city plan also could have been a plan proposal for a site in Shanghai—that it is not rooted or connected to place and tradition. 'The plan for Caofeidian totally transforms and erases the history. It introduces another pattern. This is guided by formal ideals and another city making ideal (...) The Chinese actors do not see the value of the existing structures and the history. They want the modern.' (landscape architect, SWECO, pers. comm.).

THUPDI

In an interview, a THUPDI planner commented on the role of the existing production landscape in relation to the urban structure. While looking at a satellite image of the area, he noted that 'it looks green, but this should be blue, this is water. These land divisions you see here are very weak—they are not as dominant as they look on this image. Most of them you

Figure 6-8.
Land use,
conceptual
sketch.
Source:
SWECO
Report 2
(2008), 47.

Figure 6-9.
Urban Nodes,
conceptual
sketch.
Source:
SWECO
Report 2
(2008), 53.



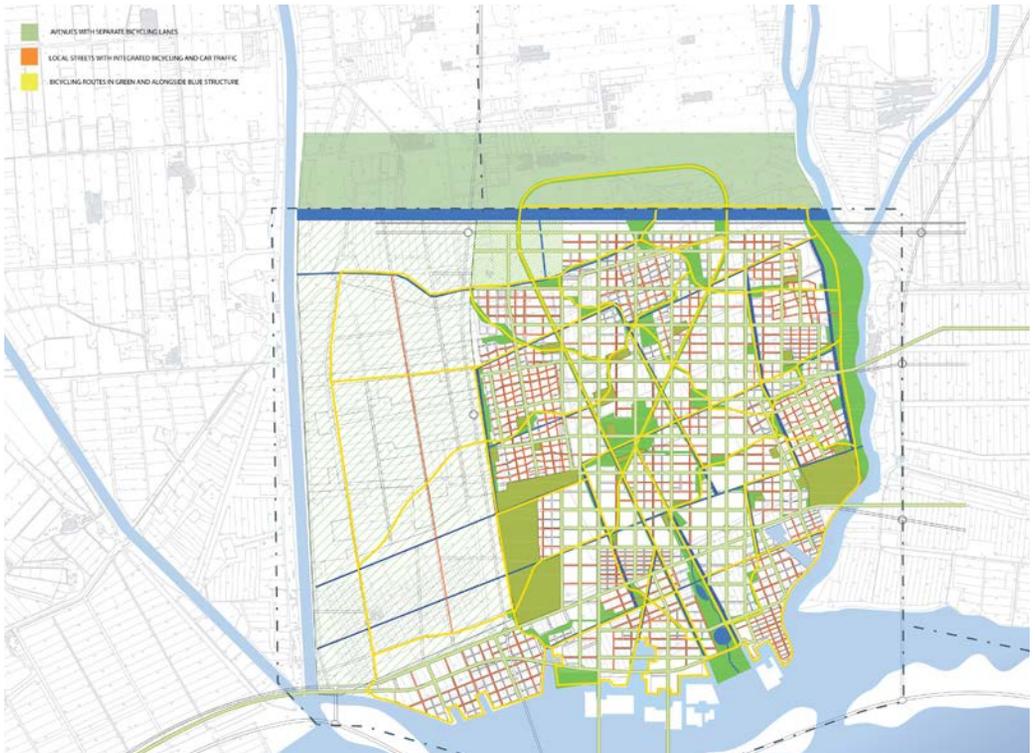


Figure 6-10.
Bus Rapid
Transit (BRT),
conceptual
sketch.

Source:
SWECO
Report 2
(2008), 55.

can neglect. We keep the main structure of the site. Rivers and canals are kept.’ (planner 1, THUPDI, pers. comm.). The site is already landfill, the land is taken from the sea, says the planner. He speaks of the eco city as defined by its canal and river system. ‘If we want to keep the canals connected to the sea and the river, we need to follow natural process. The water canal system supports the landfill, and we have to leave canals, otherwise it doesn’t work. This is traditional technology connected to control of water’. He describes the plan for the eco city as a basic framework that should be efficient, functional and feasible. ‘The area is reclaimed. This area has no social and cultural reserves, no cultural traditions—there is nothing to preserve. We focus on functions, to make it efficient. It is good to support the water development and the industrial area (...) This is not farmland. The land here is just like a factory. It can be replaced by another factory (...) It is empty, there is nothing there. The land belongs to the sea! What do you see as context here?’. He says that people who will live in the eco city will have many different backgrounds and move in from many different places. ‘The plan is just a frame for people to inhabit (...) Context specific about the plan? Nothing. It cannot be context specific. Context is for the smaller scale, it will come gradually with time’.

Figure 6-11.
Bike and
pedestrian
paths,
conceptual
sketch.

Source:
SWECO
Report 2
(2008), 57.

SWECO and THUPDI view the existing production landscape from different perspectives. SWECO reads more value into the existing landscape, drawing inspiration from the landscape patterns. From some of the existing subdivisions they seek to create variation, shape and atmosphere, keeping something of the history and character of the area. They see potential in using the existing subdivisions of the landscape as a base for the phased development. The THUPDI actors do not express the same concerns. They definitely do not speak of a *genius loci*. The larger landscape structures, the rivers and the main canals are kept to support the landfill, while the areas around the rivers are restored to function as ecological corridors to frame and divide the built fabric and to function as buffer zones to absorb water. Smaller scale structures and existing activities are not considered relevant to keep. The activities on the site related to the salt extraction and the shrimp and fish cultivation all disappear, considered out of date. The history of this site seems to be a history that people wish to get away from; the interest is to bring in the new and the modern. This is also acknowledged by the SWECO actors, as a SWECO planner says: ‘The old activities do not continue in the eco city. They are not sought after anymore. Shrimp farms and salt production will disappear. They might become a tourist trap if they are preserved when the main industry is taken away.’ (planner, SWECO, pers. comm.).

Natural layer

CLIMATE

Tangshan has a monsoon-influenced continental climate with cold and dry winters and hot summers. Rainfall is scarce, 500 to 700 mm annually, and uneven, with over 70% of the annual precipitation falling during summer. The very dry climate means the area has a severe freshwater shortage. During winter the prevailing wind direction is from northwest and during summer from south to southeast, so by its location to the northeast of the Caofeidian industrial area, the eco city avoids the wind from the industry. Through the construction of a large windmill park just off shore, the eco city takes advantage of its location by the sea, and a considerable share of the renewable energy for the eco city will come from wind power.⁶ The plan seeks to create streets and outdoor spaces that have a good wind environment, adjusting road structure and orientation to better meet the climate situation.

SWECO

The location by the sea is vulnerable, the weather is challenging and floods are a risk. Large-scale landscape transformation is needed to protect the eco city from floods, and the seashore defence system is carefully planned. An inner dyke frames a lagoon that retains fresh water from the two rivers and mitigates the salinity of the soil and groundwater. An outer dyke, constructed as detached islets, protects the eco city from the sea. In addition to the two dykes, a canal to the north of the eco city, between the two rivers, is built to secure the land from flooding. Water locks and the canal system are part of the coastal defence system. The first 12 km² of the eco city is built on landfill consisting of soil dug out from the inner lagoon and the canals. The next stage, the larger area of 30 km², will be built on landfill consisting of soil dug out from the outer lagoon (SWECO Report 2, 2008). Soil for the landfill will also be transported to the site from the inland and be used for tree plantation. SWECO describes the city as a 'park city', built in steps according to the principle 'first landscape then city' (SWECO Report 2, 2008, p. 173). By starting with constructing the landscape the eco city will gradually build the land.

High costs are involved in the construction of the coastal defence system; huge amounts of energy and resources are needed to construct the new land. Building an eco city on reclaimed land seems to be an enormous undertaking. Is it possible to pursue such large-scale intervention in a sustainable way? In the reports not much is mentioned about the process of transporting soil from the lagoons to the city and the environmental

consequences and implications of changing the outline of the coast. Considering the saltwater intrusion, the risk for floods, earthquakes, liquefaction and the risk for the reclaimed land to sink, is this a proper location for an eco city? There is already a town called Tanghai located close to the Caofeidian industrial area. Why not just expand Tanghai? The main reason for the location by the sea is to protect farmland. 'The fish ponds are constructed, they are artificial—they can be constructed somewhere else', the SWECO landscape architect explains. 'The rice fields to the north of the eco city cannot be substituted.' (landscape architect, SWECO, pers. comm.). In China there is a large discrepancy between population and available farmland, and according to the SWECO planner, China has 20% of the earth's total population on earth but only 7% of the available farmland. 'To build close to the sea, with the help of land reclamation and dykes, is a solution for the future in relation to urban expansion and preservation of farmland (...) In the Chinese context it is relevant to construct nature. We have to get used to that. In China nature is 'fiction'. The Caofeidian area is flat like a desert. The constructed landscape adds qualities.' (planner, SWECO, pers. comm.). China has a similar situation to Holland, says the planner, indicating that Dutch landscape planning also originates from a scarcity of land. Sweden, on the other hand, he continues, has a lot of nature, and the landscape planning does not have the same limitations.

Strict land-use laws prevent construction on basic farmland, so it is necessary to build artificially into the sea, locating as much of the city as possible towards the sea shore.⁷ There has been a long history of constructing and modifying this landscape, says the SWECO landscape architect. 'We cannot talk about natural patterns here, it is a cultural landscape, a production landscape.' The coastline is artificial and the eco system is very disturbed as a result of years of land reclamation and various human activities. 'There is nothing natural left in the area. The landscape is characterized by oil, salt and fish (...) Whatever you do, you improve the state of the environment for the Caofeidian site—the site gets richer through the plan proposal.' (landscape architect, SWECO, pers. comm.).

THUPDI

In one of their reports THUPDI writes that the ecological development of the Caofeidian area will increase the biological diversity on saline and alkaline mudland where human interference has destroyed the native ecological environment. The construction of the eco city is a conscious attempt to protect and organize the habitat system, enhancing its biodiversity and improving the quality of its ecology (THUPDI Report 2,

2008). THUPDI considers that large-scale landscape construction is a necessity. Through urban development the natural environment and the ecological conditions of the site are improved, quality and biodiversity are added and the coastal protection is reinforced. At the same time, farmland is protected. But the large-scale interventions also involve considerable risks—the radical change to the coast line, for instance, threatens to change sea currents and affect flora and fauna. Is constructing an eco city on landfill, at enormous costs, really a solution for the future? THUPDI writes in their reports on the eco city that while land reclamation can solve the land shortage in the densely populated coastal zone, it could at the same time bring severe damage to the ocean and coastal ecosystem that has provided different kinds of benefits to humans. THUPDI writes, ‘Human beings must balance and make a choice between increasing land supply by reclaiming marine area and the other services of the oceans and the coastal zone ecosystems, so as to get the maximum ecological benefits from the ocean and coastal zones.’ (THUPDI Report 2, 2008, p. 71).

WATER

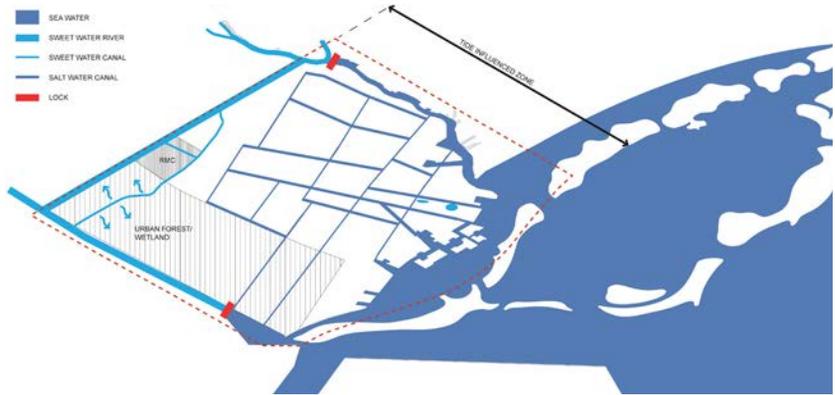
SWECO

Water is a crucial factor in the planning of the eco city. The storm water system proposed in the plan secures the city from floods, stores storm water and removes pollutants. It also improves the quality of the groundwater by decreasing the salinity of the soil and supporting the development of green areas, and will in the long run establish a stable hydrological cycle. Storm water treatment ponds and wetlands are planned from the start, with existing fishponds redesigned to treat storm water (SWECO Report 2, 2008). Waterscapes and green areas are located at the low points in the city, where the ground levels are carefully altered to direct runoff and to minimize the need for pumping. Storm water is collected at the city, node and block levels, and after treatment it is used for irrigation, cleaning streets and carwashes. Due to the low permeability of the soil, possibilities to infiltrate water are limited, and due to the dry climate, plants used in the storm water solutions need to be carefully chosen.

There are differing ideas on the type of water to be used in the canal system. SWECO emphasizes salt water for the canals, while the Chinese side wants freshwater. The landscape architect at SWECO notes that freshwater is costly, especially since the area lacks water in the first place. One of the advantages of salt water, he adds, is that ‘the tide is the pump that makes the water circulate’ (landscape architect, SWECO,

Figure 6-12.
Salt and fresh water canals.

Source:
SWECO
Report 2
(2008), 84.



pers. comm.). A fresh water lagoon was suggested from the client side. The SWECO planner explains that SWECO opposed this idea because it requires many resources and is expensive to construct. The fresh water lagoon was an example of the influence of politicians, the planner observes: ‘This was a political preference, a face project’ (planner, SWECO, pers. comm.).

THUPDI

In an interview a THUPDI landscape architect informs me about the harsh conditions on the site for the eco city. ‘We went to the site and saw the limited environmental conditions. Nothing can grow in the salty soil and the water is polluted. So how to change the environment and create a situation where plants can grow?’ (landscape architect, THUPDI, pers. comm.). THUPDI sought to balance technology and natural process, says the landscape architect, but to do so involved challenges: ‘To improve the environmental conditions by natural process takes a long time. The alternative is to use technology which costs a lot of money.’ The landfill construction relies on a system that can take away salt from the soil. A THUPDI planner shows me a sketch of a section through the landfill. The bottom is large stones, with successively smaller stones above, and finally sand. Rain can then flow down through the landfill and out into the canals and in this way the salt is gradually being cleaned from the soil. ‘We use natural processes to purify the soil. Clean the soil so it can be plant soil. This can only be done by natural forces, not by human force.’ (planner 1, THUPDI, pers. comm.). The planner mentions roof gardens and distributed small pieces of green to provide space for natural rainwater to gradually take away salt from the soil. By working with a natural process, salt will slowly be taken away from the soil and the landscape will gradually be improved, says the planner: ‘I think we should learn from natural processes, for example, the planting of trees in Caofeidian. You could replace the soil and plant trees, but every day those trees would require

irrigation. Or you could wait to plant trees until nature has solved the problem by letting rainwater slowly drain away salt from the soil (...) We should learn from nature, repeat and imitate nature, instead of using our own logic to change natural processes. When we use technology, we should use it properly. You have examples of engineers invoking high-tech to solve every problem, but actually when you go back to traditional human life, it is very cheap and also very eco. Ecology and economy are very much connected—cheap is the key word’.

Natural process is repeatedly mentioned by actors from the THUPDI side: how to construct in a way that follows natural process, to use simple and low-cost measures. Principles from traditional water management and slow natural processes contrast sharply, however, with the fast-paced, technology-focused eco-city construction. The freshwater issue, mentioned above, contradicts the THUPDI actors’ emphasis on low-cost solutions inspired by natural process. Political interests introduce a different agenda. A freshwater environment can support a more lush vegetation, which has a positive impact on real estate prices. While so called ‘face projects’—costly public works that local government officials use to distinguish themselves and to attract investment—are viewed with scepticism by planners, the planners’ influence on the political decisions is limited. Eventually, a combination of fresh, salt and brackish water was used in the plan, where the freshwater canals are part of the program for the desalination of soil by using freshwater infiltration.

To add to the storm water resources, the THUPDI actors suggest reusing grey water in the city and using decentralized grey-water treatment technology through small-scale systems with local processing and recycling of nutrients. THUPDI writes that they aim to develop non-conventional water resources—rainwater, recycled water, sea water. They also aim to strengthen the recycling of water resources and to widely promote the applications of the non-conventional water resources in various fields (THUPDI Report 2, 2008). Compared to the SWECO actors, the THUPDI actors express a greater acceptance for making circular models more local. The THUPDI planner says: ‘Resource management can happen locally, many of these processes can be efficiently managed locally, there is no need for all the transport pipes to centrally located industries.’ (planner 1, THUPDI, pers. comm.). In an interview, a THUPDI engineer expresses similar concern, emphasizing that local solutions reduce the need for pipe systems and save pumping energy. ‘SWECO emphasized central water treatment, but after our discussions they started to investigate local solutions.’ (engineer, THUPDI, pers. comm.).

GREEN STRUCTURE

SWECO

The existing green structure in the area is very poor. The soil conditions, with low permeability and high salinity, make it difficult to establish green areas, as plants cannot sufficiently absorb water and nutrients from the salty soil. The green structure has to be constructed anew. The proposed green structure consists of an urban forest, ecological corridors around the rivers, canals and a finely grained network of green areas of various sizes—continuous green passages, boulevards with alleys of trees, pocket parks, green yards and clusters of trees. The vegetation is chosen to fit with the dry climate and it follows the salinity of the soil that gradually becomes less salty towards the northern parts of the eco city. Both the SWECO and the THUPDI actors emphasize the importance of choosing the appropriate salt-tolerant plants. A SWECO landscape architect elaborates: ‘We have to accept the limits of possibilities given the salinity of the soil. We read areas in the city through the vegetation, water canals and a more strict urban environment in the south, gradually more green and parks towards the north.’ (landscape architect, SWECO, pers. comm.). In the southern part of the eco city a water system of canals and salty wetlands dominates. There are islands of green but the plan has to adapt and accept the conditions given the salty soil, says the landscape architect. In the middle part of the eco city it might be possible to establish larger green areas based on wetlands, successively transforming saline ground water to fresh water. In the northern part of the eco city, agriculture and green areas dominate and rice fields and other types of farming are integrated as urban features, all freshwater based. Since rice is not so sensitive to the salty soil, the plan encourages the development of rice farming near the urban area. In one of their reports SWECO also writes about the rice fields in terms of their beautiful landscape and recreational value (SWECO Report 1, 2008).

In an interview the SWECO landscape architect explains that a goal was to weave together the green structure and the urban public space and distribute the green structure, so the distance to green areas and recreation should not be too great. The parks are connected through canals and green corridors and are easy to access from the neighbourhoods—residential areas are a maximum of 500 m from green areas (SWECO Report 1, 2008). By creating a small-scale, distributed green structure within the city, SWECO seeks to make the green structure more accessible for people to use. The SWECO planner explains, ‘By operating with a finely meshed green structure, our plan seeks to create more green in the dense city. We try to create openness in the

neighbourhood structure.’ (planner, SWECO, pers. comm.). The finely meshed system of canals and parks gives people easy access open water surfaces and green areas, supporting SWECO’s ideas about openness, accessibility and social sustainability. ‘In China ecology is more coupled to environment, ecological biotopes, vegetation. Economy is there, but the link to socio-cultural aspects is weak and the spatial dimension, such as small-scale structures and mixed functions, is more unconscious on the city level. That is more developed on the building level.’ (Ibid, pers. comm.). There is a different approach to green structure in China, the planner notes: ‘The Chinese build giant programs together with large scale green. It becomes neither real nature nor park’. The planner says that THUPDI wanted to have a park that divided the plan in two parts. ‘Thirty years ago we also did this’, the planner says, ‘under the influence of modernism and the idea of towers in parks’. Large concentrated parks are common in China since they can support activities for many people at the same time. However, the long distances for people to reach them, in combination with the often weakly developed connections for pedestrians, tend to make the parks sparsely used.

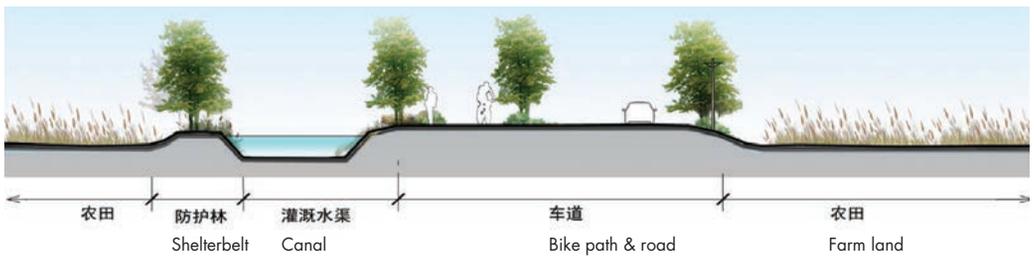
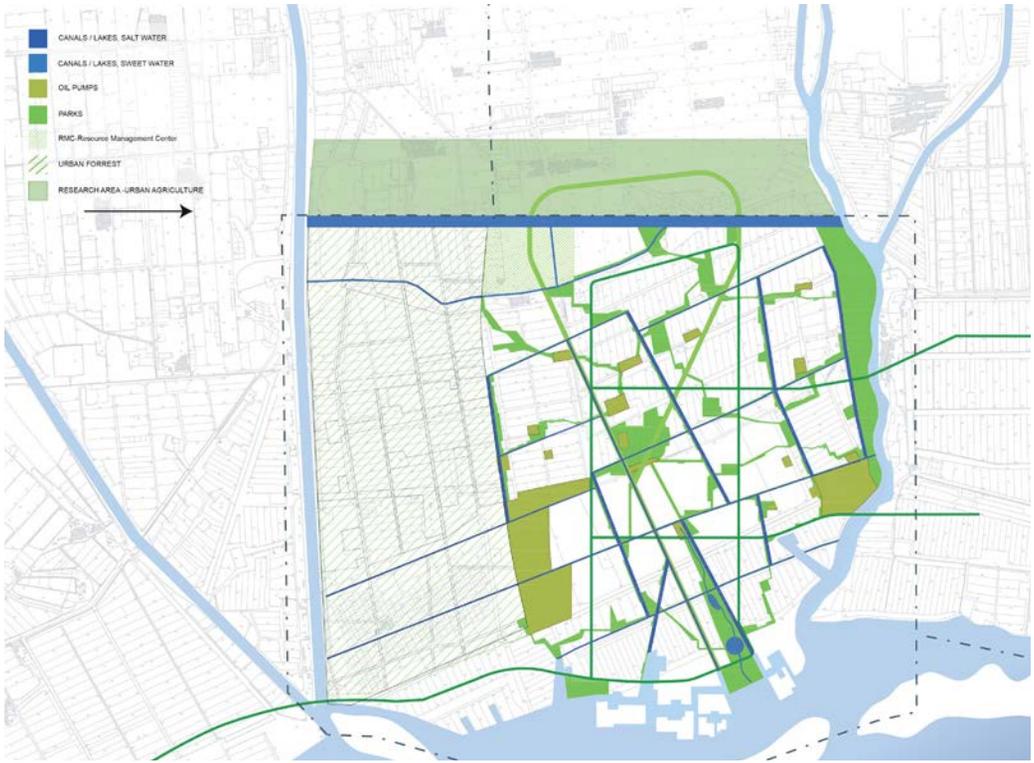
The SWECO landscape architect indicates that the large park in the THUPDI competition proposal was linked to the oil interests in the area. ‘The Tsinghua proposal takes the oilfields into consideration’, says the landscape architect; there are large oil interests in the area and the oilfields will remain in the eco city (landscape architect, SWECO, pers. comm.). The SWECO planner adds that the oil production was a bigger problem than they had imagined. ‘The oil fields were to be phased out gradually and replaced by park—phase out the oil fields, phase in the green. But the oil production issue was never clarified. It was difficult to get answers to when the oil production was to be closed down. The discussions faded out. The 12 km² area was easy to solve since no oil fields were located in that area and the decisions could be postponed to the future.’ (planner, SWECO, pers. comm.).

THUPDI

While the THUPDI competition proposal also has a fine-meshed system of green corridors and canals, a large wetland park divides the eco city in two parts. In an interview a THUPDI planner explains that it was considered to be too expensive to divide the city in two parts: ‘For the infrastructure and expansion in later phases it is better if the urban fabric sits together’ (planner1, THUPDI, pers. comm.). The planner does not mention the oil interests. Oil extraction is the latest active production in the area, and the oil fields, mainly located in the western part of the eco city, will gradually be closed down. The smaller oil pump stations will be

Figure 6-13.
Green and blue system, conceptual sketch. Source: SWECO Report 2 (2008), 59.

Figure 6-14.
Section through the green structure. Source: THUPDI Report 1 (2008), 43.



collected into larger units, and when the oil wells are depleted, the oil field units will be transformed to green areas to be integrated with the green structure of the eco city. When and how to close down the oil platforms was discussed with representatives from the oil company in one of the workshops I attended. A THUPDI planner later expressed that although the challenges related to the oil fields were brought up in the discussions, the problems were eventually 'put under the table' (planner 2, THUPDI, pers. comm.). Although the planners set ambitious targets, the big challenge is to practically implement the plans, he says: 'The practical process of implementing the goals is extremely difficult'.

To summarize, landscape does play an important role in the eco city plan, but rather than using the landscape as found, the physical landscape is constructed. This landscape has been transformed and

modified over a long period of time. It is an intensively hybrid landscape, seamlessly mixing the natural and the man made. The actors describe the landscape of the eco city site as very degraded and stress that they add quality and value to the site through the eco city construction. This 'opportunistic' landscape construction brings biodiversity and contributes to the coastal reinforcement and the protection of farmland. The two rivers and the large canals have an organizational impact on the plan. The open space system is also to a certain degree derived from existing landscape structures, and the storm water strategy that it integrates draws its character from the site and the vegetation adapts to the salinity of the soil. The open space system, however, is not the starting point of the plan proposal—the starting point is the connections in terms of rail and road. Transport linkages dominate the organization of the plan. The site for the eco city has gained importance due to its proximity and relation to the new deepwater harbour and the industrial area through which global economic forces have started to enter and totally transform the landscape and its small-scale local economies. In relation to these forces, the physical landscape layers on site do not seem to have much resistive agency.

B: SOCIETAL CONDITIONS

POLITICAL AND ECONOMIC FACTORS

SWECO's involvement in the planning of the eco city is politically supported. SWECO was recommended by the Swedish government to the Municipality of Tangshan, and their involvement is based on agreements between China's Ministry of Housing and Urban-Rural Development and the Swedish Ministry of Environment, on sustainable urban development.⁸ National leading politicians paved the way for the collaboration, and the eco city is an important initiator of an agreement to promote export of Swedish environmental technology to China. Consequently, technology transfer—the export of green technology from Sweden—is a major part of the eco city collaboration.

The promotional material on the eco city transmits a notion of the eco city as a scientifically developed model city—an optimized technological system. Science and technology are presented as the means through which to address the environmental challenges and reach sustainability. But the high-tech focus is also questioned by actors from both the SWECO and the THUPDI side. Those on the SWECO side say there was pressure from Sweden to focus on technology and to use advanced circular systems. A SWECO landscape architect says their internal discussions are not visible in the reports. 'Technology-driven urban development—it

is a pity that it is read like this (...) Many reflections and ideas are not presented in the reports. High tech was a stronger argument, although in a sustainability perspective it is better with small-scale solutions that give employment opportunities.' (landscape architect, SWECO, pers. comm.). A THUPDI planner also comments on the technology focus. 'The plan represents the belief that technology can achieve an eco city (...) I believe that eco is about the people; it is about people's awareness of their environment. Caofeidian is high tech—not eco.' (planner, THUPDI, pers. comm.). Later, in an interview, the same planner says, 'Let's see how much of SWECO that can be implemented. Technology helps but we must be realistic'. Technology transfer is not neutral. High tech is not a universal good, as it does not equal affordability and inclusiveness. To build an eco city is part of the political strategy for Tangshan municipality to get away from the associations of pollution and non-renewable energy with the industrial area and to show political commitment to sustainability and the political ideology of scientific development. For the Tangshan municipality, the expertise from SWECO also gives them a chance to brand the eco city both nationally and internationally, which attracts investment. In this way the eco city is also part of a legitimization strategy for the pro-growth agenda. Eco city construction and urban entrepreneurialism are very much connected. The question is, to what extent it is possible to balance the demands for economic growth and the concerns about (environmental) sustainability?

Market forces

For investors and developers, the perception of ecology seems to be closely connected to greenery. Green areas increase the land value, and property can be sold at a higher price; landscape has a positive impact on real estate prices. 'It is important that the landscape is green—the colour green', says the SWECO landscape architect, indicating that landscape is an important sales argument. The market dominates, he continues: 'You have to be good at making the argumentation. The developers do not want to take any risks. How an area is designed has a lot to do with the market. Also the regulatory framework is influential.' (landscape architect, SWECO, pers. comm.). In one of the workshops I attended the client commented on the lack of green atmosphere in the SWECO illustrations. The client wanted the plan material to communicate the experience of a green city with trees and parks. Considering the severe freshwater shortage in the Caofeidian area, the focus on greenery is problematic. Sustaining greenery needs large amounts of water for irrigation. The desire to create a beautiful green city to attract investment clearly contradicts the environmental goals. The challenge when it comes to integrating landscape in Chinese new town planning, according to

the SWECO landscape architect, is to 'reconcile the exploitation interests with consideration for the environment'. Exploitation interests set the agenda, he says: 'often the point of departure is balanced but with time the exploitation interests increase and the ambitions have to adapt.' (Ibid, pers. comm.). In Caofeidian the idea of sustainability has to find a balance between access to water, green areas and green character versus the climate. 'Land is scarce', says the landscape architect. 'Green structure often becomes rows of trees along the large streets, not so much more.'

KEY ACTORS

SWECO gained access to valuable contextual knowledge through their collaboration with the Chinese experts involved. The planning process was rapid—reports were handed in every month—and some decisions were taken rapidly and unexpectedly on the client side, without SWECO always being informed. The SWECO planner notes that with directives from the party commissionaires, things could suddenly move very quickly. This rapid pace of development was a major challenge for the collaboration and the follow up on the plan proposal, says the planner. SWECO prepared the conceptual master plan, as they were involved in the initial stages. The plan for the 30 km² first phase of the eco city was finalized by THUPDI, as well as the detailed plan for the 12 km² starting area. With regard to implementation, therefore, the SWECO actors' influence is limited. In a foreign context the classic gap between plan and implementation becomes even larger.⁹ 'We have to accept that this is another context, that it is constructed in a different way depending on the local culture', says the SWECO planner. 'We cannot make demands on how to do things. That is locally taken care of.' (planner, SWECO, pers. comm.).

INSTITUTIONAL SETTING

A THUPDI planner tells me in an interview that the institutional frame necessary to support the construction of eco-cities is not in place. He talks of barriers between the different administrative levels that discourage coordination across scales. He also talks of barriers between planning departments that prevent collaboration and sharing of information. 'The ideas are there but the regulatory framework is not in place. Eco city initiatives contribute to build up such frameworks.' (planner 2, THUPDI, pers. comm.). In contrast to conventional planning, which is road oriented, car dominant, non-recycling, energy consuming, and has extensive land use, the Caofeidian eco city plan operates with mixed land use, and works with transit-oriented, pedestrian-friendly urban patterns, recycling of waste and resources, renewable energy and resource efficiency.

Figure 6-15.
Workshop in
Beijing.
Source:
Victoria
Sjöstedt
(2008).



The land-use patterns are compact, with higher density in the urban nodes to support the transit orientation. The integration of land use, transportation and green and blue structures is a major achievement in the eco city plan. 'The coordination of land use and infrastructure has enormous impact on the efficient use of resources', says the THUPDI planner (Ibid, pers. comm.). In addition, a variety of innovative technologies are applied and a comprehensive indicator system is developed for the eco city, with potential to guide the revision of national standards.

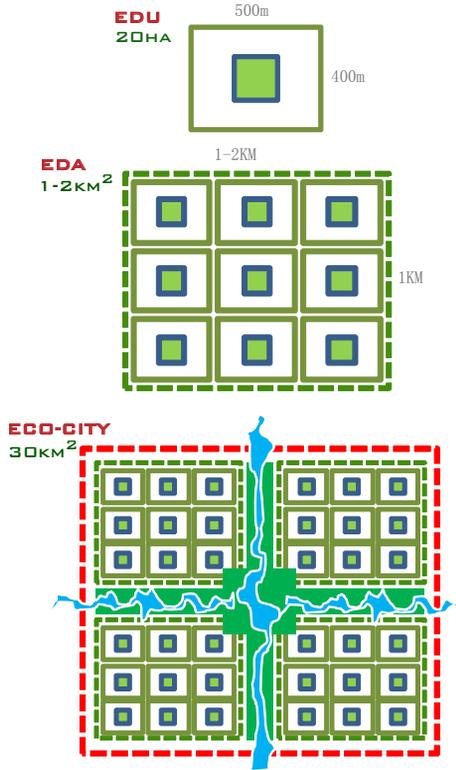
SWECO's integrated approach to land use, transportation and green and blue structures, as well as SWECO's technical and environmental expertise, were well received by the THUPDI actors. SWECO's and THUPDI's approach to the planning task differed, however. 'THUPDI works in a more vertical way', says the SWECO planner. 'In China the conditions are totally different. So many cities are to be built. There is a risk of standardization. New towns are built under enormous time pressure. The project was more unique for SWECO than for the Chinese actors. SWECO chose an experimental approach (...) SWECO tries to connect to the existing but also breaks with the existing. The Chinese are rolling out their cities like carpets, as we did in the 1960s in our Million-Programs.' (planner, SWECO, pers. comm.). SWECO questioned the status quo practice and wanted to change the business as usual model. 'The collaboration was not easy', the SWECO landscape architect says. 'THUPDI wanted to decide a lot in the project and insisted on how they usually do things. THUPDI is closely connected to the state, they know the rules by heart and act accordingly.' (landscape architect, SWECO, pers. comm.). There were a lot of discussions with THUPDI on the overall planning of the 30 km² area and about the urban structure, says the SWECO planner. 'THUPDI wanted to decide. Finally the party secretary intervened and said that the SWECO proposal should be followed. There was more agreement on the planning of the 12 km² area. It was easier when the overall urban structure was already there.' (planner, SWECO, pers. comm.).

In a special edition of the Chinese magazine *World Architecture*, featuring the Caofeidian eco city, SWECO mentions various challenges related to the planning of the eco city, such as the large scale, the complexities related to the regional and local context, the high ambition level from the Chinese side, and the challenge to find ways to fully 'take advantage of the collaboration between highly qualified experts from two different cultures' (Ranhagen, 2008, p. 27). New cities are being built in China, while in the West new urban areas or neighbourhoods are being built. The perspectives are not comparable. Imported Western expertise is based on solutions developed for a smaller scale. The imported models need to be rescaled. On the work of Western design firms in China, a THUPDI planner says, 'There is usually a gap of understanding of the comprehensive planning, the large scale. It is our impression that Western design firms start with the small scale, it is more an architect's way of thinking with focus on form and space.' (planner 2, THUPDI, pers. comm.). Chinese planning makes a clear division between urban planning and urban design. The levels are very distinct. This is apparent in the THUPDI reports, where the eco city is divided into ecological development units (EDU) that aggregate to form ecological development areas (EDA) that in turn aggregate to form the fabric of the eco city, with environmental solutions assigned to each level (THUPDI Report, 2008). In the SWECO reports, these level divisions are more fluid.

Debates

On the current professional debates on the role of landscape planning in relation to urban planning, a THUPDI planner says: 'You mean the reversed process, the reversed planning approach by Yu Kongjian? How landscape can make the city?' (planner 1, THUPDI, pers. comm.). He mentions that there is a lot of debate about this and that many architects and planners do not agree. 'I think it is too childish. It presumes that planners think only about construction', the planner says and points to the many factors that influence planning work and the many negotiations that are needed to reach a compromise. 'As a planner you have to think very broadly. It is about balance. Think in different layers, put the layers together. Construction and green—it is a combination of both—there is nothing to reverse'. Planning has always integrated green structure, he says, and mentions the garden city. China is very diverse, and it is a huge country, he continues. Planners follow national regulations and technology requirements. They have to be pragmatic and practical and do what fits best in the specific situation. 'Since planning practice in China is extremely busy, innovation will come from the Chinese planning practice and not from academia'. The planner pauses at the word landscape: 'Landscape—we say green infrastructure.

Figure 6-16.
 EDA, EDU, eco
 city. Source:
 THUPDI
 Report 1
 (2008), 23.



Landscape includes the built, landscape is a cultural word (...) Landscape is not coming first. It is not either or. It is balanced' (Ibid, pers. comm.). A balance is of course desirable, but considering the many interests that influence the planners' decisions, maybe there is a need for the polemical preference of landscape over the built to shed light on aspects that the market overlooks and that the institutional setting does not sufficiently support?

C: FIRST-HAND IMPRESSIONS

There were a lot of investigations and studies of the existing conditions of the Caofeidian area, investigations on green couplings and couplings between cities regionally. SWECO had plenty of background material to rely on. The conditions of the Caofeidian area had been thoroughly investigated through the study 'Strategic Planning of Southern Coastal Area of Tangshan', commissioned by Tangshan municipal government and carried out by THUPDI, the Chinese Academy of Urban Planning and Design (CAUPD) and the Shenzhen Urban Planning and Design Institute in 2006 (Ma, 2009). In the reports the existing conditions are thoroughly mapped, illustrated and explained in text. The environmental challenges are identified and the objectives are clearly formulated. Very

little is mentioned about people in the plan material, though. People are not involved in the planning process. Their views and daily lives are absent; they figure mostly as abstract numbers. Planning is carried out from the top down, and the situated, experiential view is largely absent.

The SWECO landscape architect notes that as a foreign architect in China the visits to the areas where they plan and design are often very short. The language is a hindrance in the discussions with the Chinese actors, and it makes it difficult to participate in the professional debates at Chinese workplaces and universities. On the difficulties of obtaining a local people perspective in the eco city project, the landscape architect says, 'There were no references to people. No one lives directly in the area. They live in the outskirts, not directly on the site for the eco city. All people who move to the eco city are newcomers' (landscape architect, SWECO, pers. comm.). For the practitioners, the local people perspective—the situated, bottom-up perspective captured through first hand-impressions—seems difficult to obtain, given the large geographical distance between the team and the site and the fact that the plans are developed in a top-down fashion without participation. The perspective of local people is also not obvious for the Chinese planners. A THUPDI planner comments: 'We don't know who the people are. We don't know the customers. They come from different places all over China.' (planner 1, THUPDI, pers. comm.). He notes that in China in the 1950s, industrial areas were developed with the help of planners from the Soviet Union. 'It took time for those areas to become cities', he says. 'People turned them into cities by adapting and transforming them'. Urban planning is something very basic, he says. It offers a basic framework: 'After 30 years, if the industry can prosper, Caofeidian will also be a city' (Ibid, pers. comm.).

6.3 OPPORTUNITIES AND CHALLENGES

To summarize, the practitioners' site-readings pay careful attention to the physical landscape layers and both SWECO and THUPDI operate with thorough mappings of the existing site conditions. The thorough mapping is part of common practice, well-established at the planning level. Yet the existing physical landscape structures are not formative for the plan proposal, the landscape is to a large extent constructed anew. The regulatory framework and the economic and political preferences are decisive for the landscape construction, which is also reflected in the site-readings. The SWECO actors, operating on the planning level, are well aware of the political and economic forces and the institutional

Figure 6-17.
Visuallization
Source:
SWECO
Report 4
(2009), 196.



Figure 6-18.
Visuallization
Source:
SWECO
Report 4
(2009), 84.



setting within which they act. The local people perspective gained through first hand-impressions is lacking in the site-readings. Clearly, the planning process does not open up for involvement, so the local people perspective is difficult to obtain both from the SWECO and from the THUPDI side. When it comes to social processes, people and place, concern for local communities and public participation, the eco city initiative is very silent.

Landscape plays an important role in the development of the plan proposal. But in contrast to landscape-oriented urbanism that operates with found structures and minimal interventions from a bottom-up perspective, this landscape is constructed in a top-down fashion, over a short period of time. When starting to work in China, the SWECO landscape architect tells me, he had the impression in the beginning that everything was possible. 'If we wanted to build a mountain or a lake, then we could do that.' (landscape architect, SWECO, pers. comm.). He indicates that there is

cultural understanding of landscape as a constructed landscape open to continuous reconstruction. Here material forms are exchangeable. Rapid urban development and modern technology, combined with this cultural openness for transformation and change, seem to result in large-scale landscape transformation. For the practitioners it becomes important to look for ways to guide this transformation—to guide the construction of the physical landscape.

The plan applies smart growth principles such as intensive land use, compact city form, a mix of uses, transit-oriented development and closed-loop systems. The decisive factor for the plan is the infrastructural connections which are imposed on the site. There is potential in the coordinated construction of urban infrastructure and landscape, in the couplings between green structure and smart growth principles. Superimposing infrastructure from the top down, with the physical landscape as a new construction itself, seems to open up opportunities for landscape-oriented urbanism in the opportunistic sense, in which landscape is actively constructed in tandem with the infrastructural connections of roads. There seems also to be potential in letting vernacular principles inspire the landscape construction. Without nostalgia, THUPDI, for instance, refers to traditional water management techniques.

However, the politically initiated, high-tech focus seems to overrule a more careful attention to small-scale localized solutions and simple and low-tech vernacular principles. Challenges are also introduced by the speed of development. While both teams seek to match the landscape construction with the local site conditions and adapt the landscape construction to the dry climate, the salinity of the soil and the lack of freshwater, various political and economic interests affect the planners' suggestions and challenge the adaptation. Counteracting the environmental goals is the desire to attract investors by presenting a beautiful and modern city image and feeding the perception held by many developers, investors and local politicians that ecology is greenery. The regulatory framework to support the construction of eco-cities is in the process of being built up. So far it is a huge challenge to realise the ideas and implement the plans. The influential role given to local government officials, combined with non-transparent decision making, introduce many uncertainties.

Notes

1. Several companies participated in the international competition for the planning of the eco city (November 2007 to June 2008). Arup, DHV, ArchA and THUPDI all participated in the second round of the competition (SWECO Report 1, 2008).
2. For information on Tangshan see, www.tangshan.gov.cn/
3. The construction of the initial area, 12 km², of the eco city began in 2009. The eco city is expected to have a population of around 100,000 in 2010, 500,000 in 2020, for the first phase of the eco city of 30 km², and 1 to 1.5 million people in the future (2050–2100), in an area of 150 km² (SWECO Report 1, 2008).
4. The Swedish Sustainable City Concept provides the overall structure for the development of the sustainability guidelines, planning principles and systems solutions for the eco city. The Sustainable City Concept is used by SIDA (Swedish International Development Agency), to develop a methodology for preparing sustainability review and planning for cities in the developing world (www.sida.se). The concept is also used to develop a marketing platform for Swedish environmental technology (www.symbiocity.se) (Ranhagen, 2009).
5. Genius loci or spirit of place. The term expresses the belief, held by critical regionalists, that there is inherent value in place, that the landscape has essentialist value. See Norberg-Schulz (1991).
6. 95% of the energy is generated on site from renewable sources. In addition to wind energy, renewable energy also comes from waste incineration, solar cells and perhaps tidal energy in the future (SWECO Report 1, 2008).
7. Agricultural land is rated at two levels: basic agrarian land and ordinary agrarian land. Basic agricultural land is protected at a higher level compared to ordinary agricultural land. According to the land administration law (LAL), a project which needs to occupy basic agricultural land, or more than 350,000 m² of ordinary agrarian land, needs to have approval from the State Council. See Chan (2009).
8. The Sino-Swedish collaboration within the field of sustainability builds on agreements between the Ministry of Housing and Urban-

Rural Development in China and the Ministry of the Environment in Sweden, agreements signed in 2008 by Swedish Prime Minister Fredrik Reinfeldt and former Chinese President Hu Jintao. On a local level SWECO's involvement in the planning of the eco city is supported by agreements between the Ministry of Enterprise, Energy and Communications in Sweden and the Tangshan Municipal government (SWECO Report 1, 2008).

9. SWECO's engagement in planning tasks in China started in 2001. Qualifications within environmental planning and engineering have made SWECO very successful in China. Today, around 30% of the international activities of SWECO's architecture department are located in China (offices in Beijing, Stockholm and Malmö) (planner SWECO, personal communication).

PART FOUR

DISCUSSION AND PERSPECTIVES





*A bench 'waiting for a view' outside a construction site in Shanghai.
Source: Victoria Sjöstedt (2008).*

CHAPTER 7: DISCUSSION

7.1

SHIFTING BALANCES

In this study, site-reading is used as the investigatory tool to explore possibilities for practising landscape-oriented urbanism in the context of developing new towns in China. As described in chapter three, site-reading is defined as a thorough mapping of a site in terms of physical landscape layers, societal conditions—understanding landscape in the broader sense—and first-hand impressions from a bottom-up, people-oriented perspective. The empirical case study takes its cue for how the specific sites can be read from the work of the practitioners, the site-readers. How did the Western design firms read their sites and how were their site-readings received by the Chinese actors involved? To what extent did the practitioners of this study use or refer to the site-reading categories mentioned above? What did the practitioners emphasize? In the following section I will briefly summarize the site-readings found in the cases, then discuss the implications for site-reading, including its status and scope.

Site-readings in the Wuxi case

Site readings in the Wuxi case were very general in character, and not much effort was directed to map the existing site conditions. The actors in the Wuxi case did not see the landscape as a reservoir of clues or a stack of strata they could activate. They operated as if the *xiaoqu* were a cut-out piece of land and they possessed a limited awareness of the economic, political and institutional setting within which the work was carried out. The development situation on the surrounding plots was uncertain, and the practitioners did not have access to the plans for the larger area. The situated perspective, gained from first-hand impressions with attention to local activities and people, was also not available to the practitioners, who operated from a great distance and relied on information on the local site conditions mediated through the developer. As seen in the Wuxi case, whatever environmental sustainability becomes possible to achieve at the small scale depends very much on the taste of the developer. Developers have a lot of freedom in developing the tracts of land for which they have the land use rights. Li Dihua, a researcher and urban ecologist at the Graduate School of Landscape Architecture at Beijing University, tells me about a friend's experience designing for the developer of a similar residential area. At the outset of the project his friend came up with a lot of ideas on how to integrate the existing

landscape structures—the fish ponds and orchards, for instance—through design intervention. When his friend the designer visited the site, however, he found that all the existing structures had already been removed. His friend was very disappointed: ‘I don’t have a site anymore. My site is erased.’ (pers. comm., 2012).

In the Wuxi case, strategies that involve the landscape include the microclimatic approach and the initial attempts to harvest rainwater. Passive environmental means were appreciated by the developer client, SS100, but high tech solutions were rejected because of the costs. The client changed the SHL design to better adapt the project to the market and to make the project easier to sell. SS100 also made changes to the SHL design to save money, which ended up weakening efforts to make the project environmentally sustainable; SS100 implemented only those aspects that were required by regulation. This indicates the need for more regulatory intervention at the project level to better realise environmental objectives. The implications for planning could be to add locally adapted codes to the detailed plan, with requirements for such things as energy and water savings, utilization of renewable energy and space for storm water treatment and reuse. General regulation on the national level would be needed to make such regulatory intervention effective, since local regulation would create a situation of competition between municipalities, where those municipalities with stricter regulation would have difficulties attracting investment. To attract investments, municipal governments allow a lot of freedom for market forces. As they depend on the revenues they get from land concessions and sales of land use rights, the economic incentives for municipal governments to develop large tracts of land are therefore very strong. This has resulted in urban areas that are not developed in a coordinated system and that lack the necessary services and amenities. Such fragmented, sprawling and resource-consuming urban patterns counteract the objectives of sustainable development and smart growth principles, and limit possibilities to develop urbanism based on landscape systems.¹ It is widely recognized that instead of relying on land to finance urban development, municipal governments would need another source of revenue, they would need a property or land taxation system (Song and Ding, 2009). These are structural aspects though, outside the range of influence of a Western design firm, who can only try to make the best out of the given situations and operate with the given rules.

Cross-scalar practice

It is difficult to talk of landscape-oriented urbanism in relation to the Wuxi case. Landscape systems operate at a larger scale than the small *xiaoqu*

of this project. It is the larger scales that can accommodate and adjust the imbalances that inevitably occur at the small scale. It is the large scale landscape system that brings the ecological services. This again is a system beyond the range of influence of a Western design firm who operates with a cut-out piece of land at the project level. A small site's design to incorporate landscape-oriented urbanism cannot be fulfilled if the design begins from the small scale without the integrated perspective of the larger scales. The planners focus on the large-scale landscape systems and seem to view the small scale, at the neighbourhood level, as irrelevant for an urbanism based on landscape systems. The architects focus mainly on the buildings and do not consider landscape systems to be part of their task. Landscape-oriented urbanism, however, operates across scales. To fulfil its potential, the practitioners—architects, planners, engineers etc.—would need to operate with cross-scalar practice, addressing the small scale as well as the large scale. The current window of opportunity in China to plan new urban developments in a way that consumes fewer resources and to promote more sustainable lifestyle patterns, all require efforts that operate across scales. Who should secure these cross-scalar operations? Due to organizational frameworks, practitioners operate on different levels and apply different lenses, and the cross-scalar operations needed to support an urbanism based on landscape systems are not easy to achieve. The institutional support for practising such urbanism is not in place.

Mapping natural systems at the large scale is a well-established practice, as seen in the regional plans, while it is less established at the smaller scales. There is a gap between the planning level and the project level where developers, operating for profit, are given relatively free rein. As seen in the Wuxi case, at the small scale the practitioners overlook the potentials that lie in operating with the thorough mapping and the search for interconnectedness with larger scales—the *thinking*—that landscape urbanism introduces. There is unused potential here. The search for interconnectedness and the thorough mapping are of course not unique to landscape urbanism; they are part of what could be called 'good practice'. Landscape urbanism has collected these various traditions, and by distinguishing itself as a specific approach, it directs attention to the difficulty of realising the 'good practice'. Its value lies to a large extent in its capacity to create discussion and debate and direct attention to undesirable conditions. When practitioners look beyond the border of their sites, they can see a way, among many ways, to address environmental sustainability. While possible contributions to sustainability at the small scale are modest, perhaps the Western firms to a larger extent would need to acknowledge the modest intervention as an important means

to qualitatively intervene and contribute to environmental sustainability.

Site-readings in the Tangshan case

In the Tangshan case, landscape played a much more important role for the development of the plan proposal, and in relation to environmental sustainability that role was very clear. The site-readings thoroughly mapped the physical landscape layers and the existing site conditions. The practitioners were very aware of the political, economic, institutional setting—the societal conditions—within which the work was carried out. First-hand impressions, the situated bottom-up perspective, however, were more in the background. The planning process does not open up for that perspective. Local people were not involved in the planning process. To access the local learning processes, to gain the situated perspective, is difficult for a Western design firm. While site-reading in this study includes the aspect of learning from local people, from first-hand impressions, operating with the bottom-up perspective, both cases show that this is in reality very difficult for the Western design firms to achieve. They are to a large extent cut off from this aspect. The firms can establish themselves locally and collaborate with local companies, they can learn from the vernacular and from literature and books, but nevertheless, for practitioners to obtain the perspectives of local people, the situated view, remains difficult.

The landscape-oriented urbanism approach in the Tangshan case is also not obvious. The main organizational factors for the plan proposal are the infrastructural connections, the rail and the road. These transport infrastructural links constitute the base around which the physical landscape is constructed. The site, also in this case, is constructed. The eco city is built on landfill, on a vulnerable location at enormous costs. Through the construction of the eco city, the ecological conditions on site are improved, biodiversity is added and coastal protection is reinforced. However, the eco city construction also involves large risks. Decisive for choosing this location are the strict land use laws that prevent construction on basic farmland. It is questionable, however, if the location for the new city is suitable and if building on landfill into the sea really is a solution for the future, considering the risks of climate change and subsequent rises in sea level. The shortage of arable land, increasingly exacerbated by the effects of climate change, is a complex problem for which there are no simple solutions. Some scholars argue that the land quota system for farmland preservation, hierarchically distributed from the top down, is too strict and neglects other uses of land of environmental importance (Chan, 2009). While the growth areas in east China face severe shortages of land, other areas do not have the same development

pressures. The exchange of farm land quotas between various locations has been suggested as a way to cope with the development pressure (Ibid). Confronted with these challenges, *opportunistic* landscape construction starts to play an important role; to structure and manage urban infrastructure in ways that generate ecological services. Such opportunistic landscape construction is seen in the Tangshan case; the plan applies smart growth principles—a transit-oriented urban structure with dense urban nodes—to which the green system is added. The green system is of multifunctional use and contains for instance ecological functions and connections for pedestrians and bikes. Opportunistic landscape construction, however, starts to introduce questions about the role of site-reading. I will in the following section expand on this issue.

The broader site research

In both the Wuxi and the Tangshan case, landscape construction is central—to construct the physical landscape. The existing physical landscape layers, with their natural and cultural processes, have little resistive agency—they provide few clues for the landscape construction. The eco city site, for instance, becomes interesting only because of its proximity to the Caoheidian Industrial Area. There is no ‘genius loci’ to be found in the site’s physical landscape layers. The site for the eco city becomes what it is because of its relation to its context, and various diverting and conflicting interests influence the construction upon it. In both cases the physical landscape layers—territorial factors—are overruled by various societal conditions—relational factors.² Reading only the physical landscape layers is not enough, the practitioners need to grasp the broader site research as well. To contribute to environmental sustainability, the practitioners need to understand the implications of the main forces that transform their sites: the effects of the power-play among key actors—the economic and political forces; the urban planning schemes—the institutional setting and regulatory frame; and the cultural landscape—the landscape understanding that prevails in the specific ‘cultures of practice’ the practitioners confront. For the practitioners to inform the construction of the physical landscape, in a situation where physical landscape structures have little resistive agency and first-hand impressions and the local people perspective are difficult to obtain, the broader site research is essential.

Perhaps it is naïve to think that physical landscape layers would have much agency in today’s intensively networked and globalized society. Sébastien Marot writes that communications and infrastructural interconnectedness have surpassed the physical local site in importance, rendered it irrelevant, but he also points to the necessity of reconciling the

processes that transform and exploit physical sites with the resources that exist locally on the sites, given the urgency of the current environmental crisis (Marot, 2011). Practitioners therefore need to grasp a combination of both. They need to reconcile the impact from larger societal conditions with the physical landscape structures and resources on their sites. They need to address both the territorial and the relational, and seek to interweave the found with the imposed.

Evaluating site-readings

Landscape-oriented urbanism is not about statically preserving existing structures and patterns in the landscape. It is about activating latent processes and making use of what is already there. Site reading is important since it provides practitioners with contextual information and inspires ideas on how to intervene. It provides practitioners with the knowledge to formulate environmental goals and develop convincing arguments with which to persuade the client. The reading of a site indicates a site's potential. Perhaps something of what is found can prove to be useful, inspirational and informative for the interventions. While the site reading provides a certain framework, a direction and a way of understanding of the site, it leaves a great deal of room for further decisions. What is found on site does not equal the design intervention; the site reading does not clearly indicate how to act. Site-readings are evaluated. As seen in the Tangshan case, after the existing landscape systems were thoroughly mapped, the material was evaluated to identify to what extent the found landscape systems were suitable to form structural elements in the plan. This evaluation is influenced by culture.³ As seen in both cases, the cultural dimension is more difficult for Western design firms to grasp than dialogue that is more on the technical level. The physical landscape layers, resources and ecological systems can be mapped by using analytical tools introduced from outside, but the cultural dimension, the capture of the cultural gaze, requires cultural insight and collaboration with local actors.

To summarize, the findings show that at the small scale, the potential of site-reading to inform practice in terms of environmental sustainability is to a large extent unused. The landscape part plays a minor role in the project; the physical landscape and the broader site research are largely unexplored, and the local people perspective is not accessible to the practitioners. Decisive for the development of the plan proposal are the priorities of the developer. At the large scale the practitioners operate with thorough mappings of physical landscape layers and societal conditions. Site-reading is an integral part of their practice. Decisive for the development of the eco city plan proposal, however, is

the construction of urban infrastructure, to which landscape—the green system—is opportunistically added. In both cases the existing physical landscape layers have little resistive agency, the sites are reconstructed, the green system is reconstructed. With few clues to be found in the physical landscape layers and with poor access to the local people perspective, the broader site research—that of societal conditions—becomes essential for the Western practitioners to include in their site-readings and to gather more knowledge about.

7.2

A MODIFIED CONCEPTUALIZATION

For Dutch professor and historian Wouter Vanstiphout, the task of improving and readjusting the legacy of modernist planning is in need of an approach that he calls ‘paradoxical contextualism’ (Vanstiphout, 2006, p. 3). Critics of the modernism movement tend to repeat its key problem, says Vanstiphout, that of constantly ‘beginning afresh, but without any empirical knowledge about what has gone before’ (p. 2). However, in order to modify and qualitatively intervene in the modernist legacy, the practitioners need to know the ‘source code’ of the modernism movement—with nostalgia for its idealism, ideology and belief in progress, and nostalgia for its ‘lack of nostalgia’—as expressed in paradoxical contextualism (p. 3). Western design firms developing new towns in China, could perhaps also adopt an attitude of paradoxical contextualism. With ‘erased sites’, context needs to be brought back through opportunistic construction of green infrastructure in conjunction with urban infrastructure. The task for the Western design firms—as this study focuses on Western design firms and how they can contribute to environmental sustainability—becomes to guide this construction, to bring back ecology and connect tracts of land to their larger landscape setting. To do so, the practitioners also need to know the ‘source code’ of the urban condition they confront and the processes that affect and transform their own planning and design proposals; the power-play of political, economic forces and influential key actors, the institutional setting and the notion of landscape as influenced by the ‘cultures of practice’ they encounter. I will elaborate on these processes and their implications for landscape-oriented urbanism. By doing so, I will point to opportunities in and challenges to landscape-oriented urbanism in the context of developing new towns in China. I will also suggest some modifications to landscape-oriented urbanism to make the approach more viable in this setting.

POWER-PLAY

Interest conflicts

Practitioners need to understand how the involved key actors operate, to understand the power-play. The administrative decentralization in China following the market reforms has made the municipal governments very powerful. Local government officials have a lot of say in the planning of China's urban areas. Decentralization has given the cities capacity to act quickly and with visionary and engaged local leaders, creating opportunities for development leaps. But it can also go the other way. The urban planning decision-making process in China is opaque. The administrative system has been described as amphibious, a mix of public and private interests (Friedmann, 2005). The Chinese government's overall objective for urban development is economic growth, and the performance of local leaders is assessed in terms of GDP growth and FDI (foreign direct investment). This makes local leaders pursue costly image projects and construct for profit with little attention to environmental and social costs. Under such conditions, urbanism based on landscape systems has great difficulty gaining a foothold. The competition between municipalities, driven by the pressure to attract investment, also undermines the cross-jurisdictional planning initiatives that are important for securing continuity of large-scale landscape systems. Chinese planners struggle against the negative effects caused by exploitative market forces. As argued by a wide range of scholars, to support more sustainable growth patterns, the performance of local leaders needs to be evaluated more comprehensively, not only in terms of GDP and FDI, and the objective for urban development as a generator of economic growth needs to be broadened (Song and Ding, 2009; Logan, 2002; Baeumler et al., 2012).

The political influence became apparent in the Tangshan case. The THUPDI actors' loyalty to political preferences resulted in various inconsistencies and contradictions—the fresh water issue, for instance. Economic and political interests overruled the planners' suggestions, derived from their site readings, of how to adapt landscape construction to local site conditions. This illustrates the difficulty of maintaining landscape-oriented ambitions and goals when confronted with powerful actors who do not give weight to landscape structures. Although there might be consensus within the planning profession, the profession acts on behalf of the politicians. In both cases, the Western firms mention the difficulty of getting insight into the decision making processes and the political and economic interests.

Elusive sustainability

The role of the Western design firms and their contributions to sustainable development is ambivalent; the goal of sustainability is coupled to many contradictions. The Tangshan case illustrates this. The plan for the eco city stresses that the eco city is built to support the Caofeidian Industrial Area and to provide housing and services for the people who come to work there. Tangshan municipality is investing in the construction of the eco city and seeks to attract further investments and high income groups. However, the higher standards set by the eco city have made it difficult to attract investors and construction companies. In discussion with a THUPDI engineer I learned that the development of the eco city has been slower than expected (pers. comm., 2013). For the workers the eco city is too expensive, they cannot afford to live there. Instead, they live in temporary barracks in the vicinity of the industrial area. Because of the location of the eco city, it is not easy to attract the high income groups who could afford the sustainability. People who buy property prefer to live elsewhere, in Tangshan or Tianjin. The difficulty of attracting people may be related to the fact that the sustainability makes the city too expensive and also that the city is part of the speculative economy that characterizes other Chinese new towns as well. This sheds light on the ambivalent role of the Western firms. Often the Western design firms justify their involvement in China by stressing that they contribute to sustainable development. What is left out of the equation is that the sustainable development they contribute to is directed to a small fraction of the population. It is not inclusive. The social dimension of the sustainability concept is to a large extent lost.

In China the notion of sustainability is very much connected to the economy; economic development as the precondition for social and environmental sustainability. While the contribution of science and technology to sustainable development is acknowledged, when green ecology is coupled with the economy, for example, the social dimension and participation are much more in the background. The short-term perspective, with short life spans—new residential buildings, for instance, are not expected to survive more than 30 years—does not match well with long-term investments in sustainability (den Hartog, 2010). It is difficult to implement social and environmental goals when planning and constructing new cities and city areas are carried out at such a rapid pace. Speed and density introduce challenges for an urbanism that is based on landscape systems. Exploitation interests disregard both the slower pace as well as the space needed for landscape systems to operate.

Branding

Clients and developers often have a superficial understanding of ecology as equal to 'green'—the colour green, to be precise. The market asks for a certain aesthetics and style, which leads to the construction of resource-consuming green landscapes that are very far from being environmentally sustainable. Sustainability thus becomes an issue of branding. In the Wuxi case, the market orientation clearly limits the possibilities for the practitioners to involve relevant expertise and try out alternative approaches. A SHL architect says, 'No matter how well SS100 understands the wind analysis, they have used this implementation for sales!' The architect tells that she overheard a seller from the SS100 sales department who, when introducing apartments to potential buyers, emphasized the green design of the development and the awards it had won. 'So I think SS100 has gained what they had paid for from the market', says the architect (architect 1, pers. comm.).⁴ In terms of green design, SS100 had implemented only what was required by regulation: a solar thermal hot water system on the roof, insulation of the external wall and double layer glazing. In their own marketing material SHL describes the Wuxi Tian Yi Town project as a 'sustainable neighbourhood'. The residential area is described as an independent, compact and mixed use neighborhood with public transit access. Water is cleaned through reeds, we read, a water-saving system is used and waste is recycled.⁵ If we believe the marketing claims, the developers have realized their sustainability ambitions. However, in reality, Tian Yi Town is predominantly residential and cannot be regarded as a mixed use development. Its large building plots are separated by highways. It is commercially developed housing for the middle class and lacks a combination of income groups. To call the development sustainable is very questionable.

Sustainability reduced to sales promotion and marketing is a general problem that creates obstacles for environmental practice. The rhetoric used in the marketing material obscures problems and undermines credibility, in the eyes of other Western design firms, potential customers and Chinese colleagues. Commercialization and marketization are realities the practitioners have to deal with, but to contribute to environmental sustainability the practitioners cannot only be pragmatic and follow the market. They need to be critical. While we can acknowledge that the work is carried out within a commercial frame and its limitations, the way the design firms choose to reflect and report on their projects is important. To improve practice, challenges must be documented and reflective accounts produced. On the Dutch office KCAP's (Kees Christiaanse architects and planners) engagement

in China, professor and urban planner Kees Christiaanse says, 'When people put vegetables on the street, then you have accomplished something.' (Christiaanse, 2010). Christiaanse emphasizes the power of modest, qualitative interventions that seek to invite local activities and support local economies. Christiaanse suggests that in each case, even though the practitioners follow the developers, there is a certain space, or field of possibility, where the practitioners can act. If the practitioners can support local economies, of course they should seek to do so.

URBAN PLANNING

In the Western professional planning debates, the work of Western design firms in the development of new towns in China is not often discussed. The Western debates on urban planning focus on urban regeneration and incremental interventions, note Vanstiphout and Provoost, not new towns and urban expansion (2010). They write: 'While architects and planners are designing entire cities and constructing architectural icons *ex nihilo* in green fields, 'their' schools theorize mostly about the inability to plan urbanization, architectural acupuncture and bottom up urban politics.' (Ibid, p. 32).

Throughout this study I have repeatedly been confronted with negative attitudes among Western architects and planners with regard to the development of new towns in China. Many Western planning professionals believe that planning in China for new towns is repeating the same mistakes as the post war European new town planning of the '60s and '70s, exemplified, for instance, by the French *banlieux* and their social problems. Such comparison does not seem to be particularly productive though. There are more differences than similarities between the two new town movements. To support the work of Western design firms in China, urban expansion and new towns would need to be revisited by the Western planning debates. There is a need for more insight into Chinese planning practice and planning conditions, subjects about which Western practitioners in general are not particularly well informed.⁶

Ecological infrastructure

None of the practitioners in the studied cases refer to the term landscape urbanism, instead they use terms such as green/blue structure, green system or ecological infrastructure. In my interviews with the Chinese actors, I perceived scepticism towards ideologies. The Chinese practitioners seem to consider isms, such as ecological urbanism, green urbanism, landscape urbanism, to be too ambiguous. The content of these ideologies is not easily understood. In China the ideological dimension

is also problematic, as it is the political leadership who formulates the ideology, expressed in the five-year plans, not the practitioners or the research community. Instead, it is more productive to focus on pragmatic concepts, to be concrete and action oriented, to emphasize practical applications such as scientifically grounded methods and tools, science-based landscape ecology, environmental technology and smart growth principles. The content is important. The terms can be shifted about. As a more pragmatic middle-way, this study therefore suggests to approach landscape-oriented urbanism through ecological infrastructure (EI); to begin with ecological infrastructure (EI), and then through it, get to landscape-oriented urbanism.⁷

EI, defined as a critical green/blue structure that supports abiotic, biotic and cultural functions, guides at the regional scale decisions about where and where not to urbanize (Yu et al., 2008). At the scale of the city, the EI is integrated in the urban green space system, and at the scale of the neighbourhood, EI is built into the land use schemes to guide site specific design (Ibid). Considering the focus on infrastructure development such as road, rail and industry, adding landscape and its ecological dimension to large infrastructural projects, as noted by Kelly Shannon, holds great potential for achieving environmental sustainability (Shannon, 2012). EI—informed by science-driven landscape ecology and inspired by vernacular principles—is described by Yu Kongjian as a powerful tool for smart preservation and smart growth. While smart growth often comes to equal an acceptance of technical solutions, the technical solutions need to be placed within a broader framework of design solutions; EI can be that comprehensive frame. Although EI plays an important role in current Chinese professional planning debates, the political and economic interests often change the priorities. In reality, EI is in a weak position, given rapid urban development, strong market forces that profit from total removal and new construction, low levels of transparency and collaboration across planning departments and governance jurisdictions, loose implementation mechanisms and influential local leaders with tendencies to deviate from plans. The challenge for EI lies in its practical implementation. The institutional framework to support the implementation of EI is not in place. While the central Chinese government's economic and social development plans (FYPs) strongly focus on sustainability, it is important to note that there are big gaps between the national policy goals and the implementation at the local, provincial, city and district levels. There is a lack of cooperation vertically between different administrative levels, and there is also a lack of cooperation horizontally across departments and jurisdictional boundaries (Song and Ding, 2009). All this is problematic for implementing EI and urbanism based

on landscape systems, which depend on coordinated interventions at the larger regional scale and require a high level of control and collaboration across administrative and jurisdictional boundaries. Among scholars it is widely acknowledged that to effectively guide China's urban growth, reforms supporting the development of more integrated plans are needed, especially more coordination between economic and social development plans, land use plans, urban plans and transportation plans (Song and Ding, 2009). Such coordination between plans is also necessary to support EI-initiatives.

CULTURAL CONTEXT

Selective borrowing

Chinese society is undergoing rapid transformation. The traditional Chinese culture is searching for modernization. The argument that China is an example of a new global reality where imported ideas get through easily and with little friction, might be true in certain respects, but the picture is more complex. Swedish sinologist Johan Lagerkvist convincingly argues that China is both globalizing and non-globalizing (Lagerkvist, 2007). While economic globalization is promoted by the political leadership, globalization in political and cultural terms is viewed with much more scepticism. His point is that Westerners ought not to underestimate neither the resistance of Chinese culture nor the dynamics of modernization. Although Chinese planning and design professionals demonstrate openness to ideas from abroad, various scholars point to the fact that 'foreign' practices and ideas are selectively chosen, to a high degree, by the Chinese planning community (Leaf and Hou, 2006; Friedmann, 2010 etc.). As a case in point, former party secretary of Tangshan municipality and the political force behind Caofeidian eco city, Zhao Yong, says in an interview in *China Daily*, 'We do not copy others blindly. We always adapt others' success to our own circumstances.' (cited in Zhou, 2008).

In both cases, it was observed that the Chinese actors continuously modified the planning and design proposals introduced by the Western teams. For the Western design firms, these modifications often seemed to come as hindsight or surprise. The modification and adaptation of the planning ideas, did not seem to be fully grasped by the practitioners; they emphasized their own planning approaches and designs. In the Wuxi case, for instance, the client continuously changed the SHL design to match the *xiaoqu* scheme, while the SHL team did not reflect much on the implications of the cellular character of the *xiaoqu*. In the Tangshan case, SWECO sought to turn the university area into a node for the development of the first 30 km² of the eco city and recommended a mix of

educational, research, housing and service facilities of the campus with commercial, retail and other service functions of the city. 'Our university is a part of the urban fabric and overlaps with other functions', the interviewed SWECO planner said (planner, SWECO, pers. comm.). In China, university areas are seen as independent structures with their own character and are not fully integrated with the city (a form of *danwei*). An open campus area, fully integrated with the city, is probably not easy to realise. Instead of relying on Western schemes, it seems more fruitful to study the implications of the dominating Chinese urban schemes, and then carefully seek to modify those.

Constructing the physical landscape

In a densely populated country, the *construction* of the physical landscape for human use becomes central. In the Chinese tradition physical structures are viewed as exchangeable; society is more open to change and transformation than in the West. The cultural dimension does not lie so much in the preservation of physical structures but in the action, in the construction. Physical structures on site might be removed, but the way the new construction is added is coloured by culture. In this sense the Western design firms are not dealing with a 'tabula rasa' when they confront sites that have been cleared from their prior uses and functions. As seen in the Tangshan case, great effort is directed to construct, or reconstruct, the physical landscape. While the mapping of the existing physical landscape structures is very thorough, many of the mapped physical structures are actually not preserved in the plan proposal. Rather, they are constructed anew. While site-reading, in the tradition from McHarg, operates with the idea of mapping landscape structures to find valuable structures to *preserve*, the site-reading, the mapping, in the Tangshan case is more about informing *how to construct*. Under conditions where it is legitimate to constantly intervene in the landscape, in a setting of fast paced urban development with high densities, site-reading becomes more a tool to inform the practitioners on how to opportunistically reconstruct or restore natural systems, continuities and connections, rather than a tool to map what to preserve. To what extent then is it possible to construct natural systems? While preservation of natural systems is essential at the large scale, the smaller the scale the more the construction. Inevitably the construction involves risks; the larger the scale the greater the risks. Given the development pressure in China, the decision makers obviously take on the challenges and confront the risks.

Vernacular principles

The references to the Chinese garden were used superficially by the client

in the Wuxi case. The preference for the artificial, aesthetic and symbolic landscape in the Chinese garden tradition seems to be easy for market forces to exploit. There is much more to the Chinese garden, however. Chinese landscape architect Stanislaus Fung writes that the Chinese tradition presents a relational understanding of landscape (*yuanlin* 园林), where the landscape includes that which is built (Fung, 1999). This understanding of landscape is based on polarism, the one becoming the other and vice versa—not dualism (Ibid).⁸ Architecture and landscape as a dichotomy is ‘incongruent with traditional Chinese views’, writes Fung (p. 143). Certain voices in the current professional debates on Chinese landscape architecture, stress the importance of recovering the process notions of the Chinese garden, to make the landscape of the Chinese garden more closely match contemporary ecological concerns. By recovering these important aspects of the Chinese garden, creates the possibility of bridging Chinese and Western interests, says Fung, as the process notions represented by landscape urbanism reveal a mutuality of thought.

In the case study, cultural differences became apparent. In the Tangshan case, while the Sino-Swedish collaboration created valuable opportunities for mutual learning, the cultural differences in the way planning work was done, were difficult for the practitioners to grasp. The SWECO and the THUPDI actors valued the existing landscape differently. The SWECO actors paid more attention to existing structures, patterns and activities, while the THUPDI actors read less into the existing landscape, they focused more on large-scale structures, functional relationships and opportunistic construction of the physical landscape. SWECO emphasized technology, while THUPDI to a larger extent focused on technology combined with vernacular principles—hybrid decentralized circular systems, low tech, low maintenance, low-cost principles following the logics of natural process. It is interesting to note that THUPDI referred to traditional water management techniques, while SWECO did not. Actually the plan leans toward a preference for combining technology and vernacular principles as expressed by the THUPDI actors: the plan proposal for the eco city is full of hybrid systems that combine the natural and the engineered, for instance, the storm water system and the constructed wetlands.

Fast transformation and modernization, large-scale removal of physical fabric and imposition of new construction—does it make sense to learn from the vernacular in a setting of such dynamic modernization? Or is learning from the vernacular hopelessly nostalgic? While the vernacular does not match well with the modern city image that Chinese government officials and developers promote, vernacular principles

do have relevance, perhaps mostly due to the fact that they are low cost. Certain voices in the current Chinese planning and architecture debates emphasize the importance of reconciling modern science and technology with vernacular principles—survival strategies from China’s long tradition of land and water management. Although not part of any broad movement, these professionals, such as for instance Yu Kongjian, who is an influential landscape architect in China and internationally, value using vernacular principles. In both the Wuxi and the Tangshan case, vernacular principles play a role. Western design firms could benefit from paying more attention to such principles, as they complement scientifically informed landscape strategies in low cost ways.

To summarize, the findings of this study indicate that in a setting of fast paced urban development, high densities and cultural openness for intervention in the landscape, site-reading becomes more a matter of mapping landscape structures to inform how to opportunistically construct, or reconstruct, the physical landscape. Pragmatic approaches are needed; hence ecological infrastructure (EI) is suggested. On the one hand, the innovative and dynamic urban development situation with possibility for development leaps; the growing interest in EI-initiatives reflected in current professional debates and practices in China; the acceptance of the concept of EI among Chinese government officials and planning professionals; the administrative integration of city and countryside introduced with the 2008 Urban and Rural Planning Act; the potential market opportunities related to EI; the indigenous landscape urbanism with its vernacular principles, all this support EI planning and point to opportunities for developing urbanism based on landscape systems. On the other hand, the economic centred objective for urban development; the opaque decision-making system; the lack of cooperation vertically between different administrative levels and horizontally across departments and jurisdictional boundaries; the weak implementation mechanisms; the influential local leaders with capacity to deviate from plans; the fast urban development pace; the high densities; the superficial branding; the risk of overexploitation following the openness for construction, all this counteract EI-initiatives and point to major challenges for developing urbanism based on landscape systems.

7.3 TACTICS

What are the implications for Western design firms? How to operate with landscape-oriented urbanism in the setting of developing new towns in China? What becomes possible for Western firms to achieve

in terms of environmental sustainability depends very much on who the firms collaborate with.⁹ Environmental expertise is important to open up opportunities for collaboration with municipalities and universities and more environmentally conscious developers. However, for a small firm it is difficult to have such expertise in house. Western design firms in China are small actors on the Chinese architecture and planning scene and they are often involved only in beginnings; they cannot fully pursue and control their projects and plans to implementation. For instance, SHL's design drawings are finalized by a local design institute in Wuxi, and SWECO's conceptual plan is finalized by THUPDI. To operate in China successfully Western design firms seem to be left with tactics instead of strategies that require access to more powerful positions.¹⁰ As recommendations for Western design firms this study therefore develops a series of tactics. The tactics rely on a basic orientation framework consisting of *identification*, *anticipation* and *modification*: first to identify the underlying processes that influence the construction of the physical landscape such as the power-play, the urban planning practices and the cultural preferences; second to anticipate the effects of these processes; and third to formulate planning and design responses that tactically modify the effects. This framework builds on theory travelling, as it pays attention to the circumstances that change, modify and resist ideas proposed by the Western firms. I develop on the tactics in the following section.

ADDRESS KEY ACTORS

In both cases the Western design firms return to the importance of supporting their planning and design proposals with convincing argumentation. Landscape urbanism in North America and the negative planning approach (*fan guihua*, 反规划) in China, despite differences in context and content, both debates direct attention to the lack of consideration to landscape structures in conventional planning practice. In this sense both landscape urbanism and the negative planning approach, function as rhetorical tools. Actually there are interesting parallels between Kongjian Yu and Ian McHarg; Kristina Hill's descriptions of the work of Yu (2012), are strikingly similar to the way Anne Whiston Spirn, an American landscape architect, describes the work of McHarg (2000). McHarg was also an active communicator, using his knowledge to raise debate. While his efforts were controversial, they did contribute to raising environmental awareness (Spirn, 2000). Similarly, Yu uses the negative approach—an approach to planning that reverses the relationship between landscape and urban planning—to convince developers and city mayors of an alternative approach (Hill, 2012). **Recommendation:** This study recommends the practitioners

to use ecological infrastructure (EI) as a communication tool to convince decision makers—clients, private developers, government officials—of the value of paying more attention to landscape structures, the green system. Western design firms can thus contribute to environmental sustainability by changing the values of decision makers. EI might also be part of the marketing strategy for Western design firms to distinguish themselves on the Chinese market as providers of ecologically informed plans. Tap into China's current debates on EI. Use terminology carefully—along with pragmatic conceptualizations rather than discussions about ideology.

FOCUS ON INFRASTRUCTURE

The way the Tangshan case integrates land use, transport planning and green/blue structures has an enormous impact on the efficiency of resource use. Smart growth principles such as high density nodes, mixed land use and public transport networks, are key approaches for sustainable urban development. **Recommendation:** This study recommends the practitioners to focus on ways to more strongly couple ecological infrastructure (EI), with smart growth principles. Construct EI in tandem with compact settlement patterns and transit-oriented developments to tap into its potential for achieving environmental sustainability across scales. Acknowledge the larger openness for construction and intervention in the landscape, give the same attention to the green infrastructure as to the urban infrastructure.

MODIFY THE URBAN SCHEMES

At the small scale, decentralized ecological infrastructure (EI), is valuable, even if limited in scope and with modest contributions to environmental sustainability. Decentralized EI can guide small-scale interventions such as the creation of localized circular systems (parcel solutions) and connections with the surrounding setting. Parcel solutions with localized circular models are possible given the large size of the superblock. Although limited in scope, such parcel solutions can reduce energy consumption and reduce negative environmental effects. **Recommendation:** This study recommends the practitioners to use decentralized EI to inform parcel solutions and create better connections between neighbourhoods and better connections to larger green areas and to public transit nodes. Decentralized EI can be a way to modify urban patterns the Western design firms cannot always influence. Study the implications of the dominating urban schemes and typologies, such as for instance the xiaoqu scheme, and operate with careful modifications to those, instead of relying on Western schemes and typologies that eventually are changed anyway to fit the Chinese preferences. Look at

the border area of the *xiaoqu* and place roads, entrances, commercial and service facilities in a way that can support various interchanges.

MAKE USE OF VERNACULAR PRINCIPLES

The notion of landscape in China is coupled to the artificially constructed landscape, as seen in the garden tradition and in the agricultural heritage. Hence, there is a large acceptance for human intervention in the landscape; to construct and reconstruct the physical landscape. To guide the construction of the physical landscape in a way that makes sense in environmental terms, vernacular principles from the agricultural heritage—low tech and simple land and water management techniques—are valuable. **Recommendation:** This study recommends the practitioners to make more active use of vernacular principles. Tap into China's indigenous landscape urbanism. Investigate the culturally attuned art of survival strategies, look for the simple, low tech and low cost principles found in the agricultural heritage, combine these principles with modern technology to discover valuable guides for the construction of the physical landscape.

Notes

1. 'Smart growth' has its origins in North America, where it emerged as a response to the problem of urban sprawl. Smart growth principles focus on compact and mixed land uses; transit oriented development; pedestrian and bike friendly urban structures; urban infill and redevelopment; conservation of natural resources; and citizen participation (Knaap and Zhao, 2009).
2. The use of the terms 'territorial' and 'relational' refers to a lecture by American professor Andrea Kahn titled: 'Slower than tourists or: the city considered at altered pace', Malmö Form and Design Center, 9 April 2013.
3. Culture can broadly be defined as expressions of human activity: ways of thinking, actions and expressions of these. Patsy Healey (2010) talks of 'cultures of practice' referring to 'communities of experts, advocates, officials and lobbyists' within different disciplinary fields. The 'culture of practice' within such communities is influenced by priorities formulated by the national government, the governance culture and the disciplinary background, writes Healey (Healey, 2010, p. 2). In this study, following Healey, the use of the term culture refers to such 'cultures of practice'.
4. For more information see: www.ss100.com.cn/ss100/en/index.

php

5. For more information see: www.dac.dk/en/dac-cities/sustainable-cities-2/all-cases/master-plan/tian-yi-masterplan-with-optimum-housing-location/?bbredirect=true
6. There are many challenges connected to involving in the Chinese building sector, ethical dilemmas for instance, as the effects of the building sector on local communities are very controversial.
7. EI is a category that is part of other ideological positions such as green urbanism. See the review section for further explanation on EI (p. 46).
8. Dualistic thinking has roots in European philosophy. Stemming from this tradition is the rational application of universal principles to particular sites and the use of geometric principles to imitate nature.
9. The direct collaboration between municipalities is a promising constellation for Western actors to impact environmental sustainability. The collaboration between Tangshan and Malmö municipality—TangMa—is an interesting example. For more information see: www.malmo.se/Medborgare/Miljo--hallbarhet/Miljoarbetet-i-Malmo-stad/Hallbar-stadsutveckling/TangMa.html
10. In his book *The Practice of Everyday Life* (1984), French philosopher Michel de Certeau makes a distinction between strategy and tactics, linking strategy to structures of power and tactics to the individual's use of the environments the strategies produce. In relation to this study, without referring to Certeau's subversive use of the term tactics, I find the distinction useful; the practitioners operate within a given set of rules which they hardly can influence or change, but instead need to adapt to tactically.

CHAPTER 8: PERSPECTIVES

8.1 CONTRIBUTIONS

This study deepens the understanding of the prospects for landscape-oriented urbanism in the context of new town development in China and sheds light on the implications for Western design firms. More specifically the study contributes with recommendations on how Western design firms can use landscape-oriented urbanism in their urban planning and design tasks in China. The study demonstrates that ecological infrastructure (EI) is a more pragmatic conceptualization than landscape-oriented urbanism, and formulates an orientation framework—a set of tactical approaches—for Western practitioners to operate with EI in this setting. More broadly—by bringing a theoretical conceptualization into the realm of the practitioners and by seeking to make landscape-oriented urbanism more easily applicable and more accessible to the practitioners—this study also adds new perspectives to Western landscape urbanism theory and advances the development of a more ‘reflective’ mode of practice. I will in the following section expand on these contributions and their further implications.

From ideology to ecological infrastructure

The study shows that the Western ideas about landscape-oriented urbanism are not directly transferrable to the Chinese new town development setting. Both the understanding of such urbanism and the context for practising it, differ from the Western situation. In China the notion of landscape is intensively cultural, seamlessly mixing the man-made and the natural (*renzao jingguan* 人造景观, *yuanlin* 园林), based on an epistemology of polarism instead of Western dualism, with roots in the agricultural landscape and its art of survival strategies. Hence there is a larger cultural acceptance for change, transformation and intervention in the landscape compared to the West. The Chinese practitioners accept larger interventions in the landscape, they couple landscape to construction. Western practitioners, who seek to practice landscape-oriented urbanism in the setting of developing new towns in China, need to recognize and adapt to this culturally based landscape notion. Furthermore, landscape urbanism as ideology is not productive in China, where ideology is complicated and politically loaded. Instead, more pragmatic conceptualizations ought to be used. Rapid development guided by the political ideology of scientific development, high densities, pressure for land development and shortage of arable

land, all require pragmatic approaches. This study therefore suggests to approach landscape-oriented urbanism through ecological infrastructure (EI) as a more pragmatic middle way. Informed by landscape ecology, inspired by vernacular principles and more clearly coupled to smart growth principles, EI provides a comprehensive framework for smart growth. With China's current focus on infrastructure development, EI holds great potential for achieving environmental sustainability in the development of new towns and urban areas: at the regional scale EI guides urban growth; at the city scale it informs opportunistic construction of green infrastructure in conjunction with urban infrastructure; and at the neighbourhood scale it gives direction to site specific design. However, the institutional framework that is needed to support EI planning is not in place. The successful application and implementation of EI as a guide for developing new towns, and advance urbanism based on landscape systems, depend on major structural reforms and change of practice mode: reform of the regulatory framework, urban planning practice, revenue sources for local governments and change of the economic-centred objective for urban development. Without reforms the prospects for any landscape-oriented development of new towns in China are poor, while with reforms the prospects could be promising. Any prediction can only be speculative.

From preservation to construction

The discourse around Western landscape urbanism has only recently begun to include urban phenomena outside the Western perspective. Investigating landscape-oriented urbanism in a situation of urban expansion raises questions and adds new perspectives to the Western debates. The need for urban planning to intervene in unrestricted capitalism and uncontrolled sprawl is very clear in the Chinese setting. Planning is essential to safeguard landscape systems from exploiting market forces and to set the necessary limitations to ensure the protection of large scale landscape systems. This raises questions about the viability of the scepticism towards governmental intervention and the acceptance of decentralizing trends put forth by scholars and practitioners of landscape urbanism.

In China building transit-oriented compact new towns is an urgent necessity to preserve farmland. Maintaining a physical distinction between city and countryside is a survival strategy for preserving enough land to feed the population. China's massive landscape transformation and the natural disasters triggered by the effects of modern technology offer a sobering perspective. The extent to which the landscape has been modified is striking. In an intensively cultural landscape such as China's,

with its openness to change and with little resistance in the built fabric, the transformative power of modernization and globalization becomes very strong. The humanized landscape with no natural or cultural divide, together with a commercially driven society, introduce the risk of over-exploitation. The balanced human–land relationship expressed in the traditional Chinese landscape was connected to a responsible way of living. It was based on an ethical stance, which seems remote in modern society. To operate in such an intensively cultural landscape, with its tradition as a seamless hybrid of the natural and man made, practitioners need to introduce difference and distinction. The development of new towns in China actually brings McHarg’s environmental planning methods into new light. In the tradition inherited from McHarg, and implicit, or hidden, in the site-reading, landscape systems are mapped in order to identify what to preserve. In regional planning there is a long tradition of operating with a thorough mapping of natural systems such as water systems and various biotopes, etc. In China high densities, the fast pace development, space limitations and a landscape understanding coupled to the constructed, artificial and manipulated landscape, all contribute to legitimize interventions in the landscape. Instead of mapping landscape structures to inform what to preserve, as in the tradition from McHarg, site-reading becomes more a mapping of landscape structures to inform how to construct. Site-reading shifts focus to construction, to map and construct landscape systems as part of a dynamic reconstruction. While site-reading moves beyond the environmental determinism of McHarg, acknowledging the hybrid character of the landscape, it still operates with his distinction, not as a preserved distinction but as a constructed one.

As seen in this study, landscape urbanism has little direct impact on the practitioners’ work; the practitioners in the cases studied do not refer to it. Partly this can be explained by the fact that landscape urbanism, as an accumulation of various traditions that are part of what could be called ‘good practice’, such as the thorough site research, the cross scalar practice, the focus on interchanges and connections, are aspects the practitioners do operate with, but without calling such practice landscape urbanism. Although there are examples of practitioners whose work points in a landscape urbanism direction—Yu Kongjian, for instance—those practices do not constitute any dominant movement. Landscape urbanism is not well established among the practitioners, it is not a general guiding principle. To a large extent its potential remains unused, although some of its ideas are applied, notably more on the large scale than on the small scale. To better filter through to the practitioners, the theoretical ideas need to be condensed into simple and easy to use

principles. The practical methods need to be clarified and communicated and the complicated language needs to be abandoned.

Towards reflective practice

So to return to the main research question of this study: Can landscape-oriented urbanism provide the practitioners with tools to address environmental sustainability in the development of new towns in China? The answer to this question is inevitably mixed as the realization of the potentials of landscape-oriented urbanism to guide towards environmental sustainability depends on major structural reforms and change of practice modes. The institutional support for practising urbanism based on landscape systems is not in place and the approach is not well established among the practitioners. However, approaching landscape urbanism through the concept of EI, with focus set on gathering knowledge about underlying processes (power-play, institutional factors, cultural preferences), opens up possibilities. EI has a role in the debates and practices in China, there is a growing interest in EI-initiatives. Western design firms can tap into these debates. There is potential here.

The findings of this study suggest that EI, adapted to the fast paced urban development situation, can be valuable for the practitioners as a *communication tool* to convince decision makers of an alternative approach; the importance of paying more attention to landscape systems. As a communication tool EI has potential to contribute to environmental sustainability in terms of value change among decision makers. EI could perhaps also be part of the marketing strategy for Western design firms to distinguish themselves on the Chinese market. To operate with EI, however, depends on thorough site-research, it requires a more reflective mode of practice, i.e. a *modus operandi* where the practitioners actively probe implicit assumptions and values and revise and learn on the spot through their practice (Schön, 1983). Here the orientation framework and its tactical responses formulated in this study—with reference to travelling theory—can provide the practitioners with basic guidance, supporting the practitioners to formulate arguments and reach agreements. The findings of this study suggest that site-reading, informed by landscape urbanism theory and theory of travelling ideas, can be an *inspirational tool* to inform the development of such reflective practice, through which the practitioners in a more fundamental sense can contribute to environmental sustainability. The reflective practitioner stays attentive and listens during the collaboration dialogue and seeks to avoid stereotypical readings. The reflective practitioner documents, critically reflects and discusses the project experiences and gives resistance to uncritical pragmatism. However, to do thorough site-research, to gather knowledge on societal

conditions—political and economic preferences, urban planning norms and regulations and culturally embedded understandings of landscape—not being in a powerful position, is difficult.

To point at the moon

The title of Danish sinologist Carsten Boyer Thøgersen's book, *To Point at the Moon*, refers to the old Zen Buddhist saying, 'to point at the moon, only to see your own finger', used by Thøgersen to direct attention to the often stereotypical way Westerners see China, viewing reality through a strictly Western frame of understanding (Thøgersen, 2001). During this study I have repeatedly returned to this. The way I approach this topic of investigation, the way I interpret the cases and the criteria I use to analyse and criticize the cases, are all coloured by the Western planning tradition and its underlying values. I am aware of the risk of over-simplification and generalisation, and I have tried to address this by always discussing my interpretations and findings with relevant Chinese actors. As a traveller I moved into the Chinese setting to obtain a better understanding of the planning realities there. As a traveller I also moved between academia and practice, trying to produce reflective accounts of my experiences, searching for mutuality of thoughts and interests. It has been my ambition to investigate possibilities for practising landscape-oriented urbanism in the context of developing new towns in China. The more I study this topic, however, the more I understand the complexity of moving into the Chinese setting and the difficulties in understanding the conditions there. In addition, the dynamic character of Chinese planning practice, with its rapid development and change, quickly makes the study's findings outdated. Introducing landscape-oriented urbanism in the Chinese setting is perhaps 'to point at the moon'. Introducing concepts in new contexts will always involve this risk, but on the other hand, concepts can also be developed when placed in a new context and viewed through an attentive lens.

In the case study I do not capture all the elements that I seek to capture with site-reading. While I gather a lot of information on the planning of the physical structures, information on societal conditions—economic and political interests—is much more difficult to access, and the local people perspective is absent in both cases. The difficulty of accessing information when doing research in China, forced me to work with abductions. To choose the abductive approach is to acknowledge that some aspects cannot be directly investigated, and therefore there is uncertainty connected to the conclusions. Western design firms operating in China, face the same difficulty. They are also forced to work with abductions, drawing conclusions while knowing that all the cards are not on the table,

operating with clues like the detective. To gather knowledge on societal conditions, the firms need to operate tactically through collaborations based on mutual trust. Reflective practice, long-term engagement, collaborations and tactics, can be ways for the firms to deal with the uncertainty, iteratively revisiting the field, gradually gathering knowledge on the urban planning and urbanization processes in the places where they involve.

8.2 IMPLICATIONS

This study opens up a research field and creates a base for others to investigate further and reach deeper. While this study deals with conceptual beginnings, it became very clear in the case study that the real challenges lie with implementation. Further study, beyond these conceptual beginnings, is needed to focus on implementation mechanisms. The many processes that modify projects and plans from concept to implementation introduce a great deal of uncertainty among practitioners, so a study following projects and plans over time would balance this cross-sectional study. Further investigation is also needed to develop, refine and practically test the tactics formulated in this study. Moreover, the processes that modify ideas and concepts that travel, need more investigation, as does how to disseminate this knowledge to the practitioners. The theory of travelling ideas introduces a fascinating research agenda. Do we really understand the implications of the urban models that we apply in different contexts? Western design firms could learn a lot from thick descriptions of underlying processes behind EI-initiatives, and descriptive accounts of local planning practices in China.

Bringing landscape urbanism into the realm of the practitioners and into a situation of urban growth, this study points to a setting within which there is potential to further develop landscape urbanism. Responding to China's environmental challenges, where urban expansion is somehow reconciled with the scarcity of land, has made the planning profession turn away from work primarily determined by economic and engineering considerations to ecologically informed plans. Landscape has come to play a more important role; landscape architecture is a growing profession in China. The work of Yu Kongjian illustrates this. His landscape designs and regional plans have improved environmental models, recovered vernacular practices and developed interconnected approaches spanning across scales. To direct urban growth towards sustainability, landscape-oriented urbanism has a lot to offer, but as shown in this study, there are also many challenges. The realisation

of a landscape-oriented development of new towns in China depends on shifts in values and practices and major structural reforms. Perhaps the development of new towns in China could provide the stage to test and refine ecologically based planning approaches and to strengthen and encourage theoretical efforts that further could develop landscape urbanism. These prospects lie in the future.

Idea Catalogue

To illustrate potentials and limitations of site-reading as an investigatory tool, an 'Idea Catalogue'—a set of conceptual drawings based on the Wuxi case material—is added to this dissertation (pp. 143-200). The Catalogue is an attempt to do site-reading, intended to be of inspiration for the practitioner. The drawings in the Catalogue consist of mappings of physical landscape structures and local site conditions. Through the conceptual drawings I direct attention to exchanges that take place at the border between the *xiaoqu* and its surroundings and I point to the importance of supporting local networks and economies. I bring in vernacular references and indicate the potential of combining rational microclimatic studies with local vernacular principles. I point to the importance of the bottom-up perspective, well aware of the fact that such a perspective would require considerably more engagement and local study from my side. Reflected in the drawings are my own time-consuming efforts, from afar, to thoroughly map the Tian Yi Town site and its urban context. After initial attempts to obtain planning material through a contact at the Wuxi City Planning Bureau, I was directed to planning material and low-resolution maps available at the Wuxi Municipality official website. To make the maps presentable they all had to be redrawn. Poor access to planning material limits the scope and accuracy of the site-reading. The non-transparent institutional setting is an obvious limiting factor. GIS data (high resolution DEM) was only available through purchase (SPOTMaps) and among the analysis programs that I used for the catalogue—Ecotect for sunlight analysis, Phoenix for wind analysis and ArcGIS for surface water flow accumulation analysis—perhaps only Ecotect is readily available and feasible in terms of investment for a smaller design firm. Site-reading requires investment in terms of time and money, along with specialized expertise and local engagement. Here the resources available among the practitioners themselves become a limiting factor. To realise the potential that lies in the site-reading, and landscape-oriented urbanism at large, requires a more reflective mode of practice, in parallel with structural reforms.

IDEA CATALOGUE

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IDEA CATALOGUE

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ABBREVIATIONS

- BRT: Bus Rapid Transit systems
CAUPD: China Academy of Urban Planning and Design
FAR: Floor Area Ratio
FDI: Foreign Direct Investment
FYP: Five-Year Plan
GDP: Gross Domestic Product
GIS: Geographic Information Systems
INTI: the International New Town Institute
K&B: Kragh-Berglund (landscape architects)
KCAP: Kees Christiaanse (architects and planners)
LAL: Land Administration Law
LDI: Local design institute
MEP: Ministry of Environmental Protection
MoHURD: Ministry of Housing and Urban Rural Development
SHL: Schmidt Hammer Lassen (architects)
SS100: Sunshine 100
THUPDI: Beijing Tsinghua (Tongheng) Urban Planning & Design Institute
TJUPDI: Shanghai Tongji Urban Planning & Design Institute
TOD: Transit-Oriented Development

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INFORMANTS

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- Architect 4, SHL (senior project architect) [interview]. 7 August 2008, Copenhagen.
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SUMMARY

LANDSCAPE-ORIENTED NEW TOWN DEVELOPMENT IN CHINA –prospects and implications for Western design firms

Serious environmental degradation has followed China's rapid urban growth. In the wake of unprecedented urbanization, modernization and economic development, new models to expand cities in more sustainable ways are actively being sought. This study addresses the question of how Western design firms can contribute to raising the level of environmental sustainability in the development of new towns in China. The main research question explores whether landscape-oriented urbanism can provide tools for Western design firms to approach environmental sustainability in this setting. Hence, the study aims to shed light on the prospects for landscape-oriented development of new towns in China and the subsequent practical implications for Western design firms.

Landscape-oriented urbanism is understood as a mode of practice that allows landscape to give direction to urban development. It brings the practitioner's attention to 'found sites' and thus provides a guide—in the complex idea of 'landscape'—for how to build on such sites. This study introduces site-reading, inspired by site theories and 'travelling theory', as the investigatory tool to explore landscape-oriented urbanism in concrete cases, following the lead of the practitioners—the site-readers. When applying site-reading, practitioners' attention is directed towards such aspects as the physical landscape (natural, cultural, urban layers), the societal conditions (various processes, the broader site-research) and the first-hand impressions (the situated view, from the bottom up).

Through a qualitative case study of two conceptual plans for urban expansion in the Chinese cities of Wuxi and Tangshan, this study explores how Western design firms read their sites and how the Chinese actors involved respond. The empirical material consists of planning documents, drawings, interviews and observations from project workshops and meetings. The cases are strategically selected, and cover different scales and development modes. The first case is a master plan for a residential area in Wuxi (400,000 m²), a plan drawn by a Western firm operating on market conditions at the project level through a collaboration initiated by a private developer. The case explores possibilities for practising landscape-oriented urbanism at the small scale of the superblock, the basic unit for urban expansion. The second case is a plan for an 'eco city' in Tangshan Caofeidian (30 km²), drawn by a Western firm operating at the planning level through a government-initiated collaboration. The

case explores possibilities for practising landscape-oriented urbanism at the large scale of a new town.

The study shows that Western ideas about landscape-oriented urbanism are not directly transferrable to the setting of new town developments in China. Both the understanding of such urbanism and the context for practising it, differ from the situation in the West. Fast-paced development, demands on efficiency of construction, and high density all place pressure on the sites where urban expansion is to take place. The physical site and its operations are found to have little resistive agency, and Western design firms have difficulty obtaining a situated view of their sites. The existing physical structures and social activities disappear, and no participation can capture those voices and interests of people connected to the land. Culturally, in China there is a larger acceptance for intervention in the landscape. Thus, site-reading becomes more a matter of informing practice of how to construct the physical landscape rather than a matter of identifying landscape structures to preserve.

The findings of this study indicate that landscape-oriented urbanism in the setting of developing these towns needs to be understood in a more pragmatic sense; as opportunistic landscape construction. As a more pragmatic middle way, the study therefore suggests to approach landscape-oriented urbanism through ecological infrastructure (EI), informed by landscape ecology, inspired by vernacular principles and more clearly coupled to smart growth principles. To tactically operate with EI in this setting, a basic orientation framework is developed. The framework consists of identification, anticipation and modification: to identify the main forces influencing landscape construction (the power-play, the urban planning schemes, the cultural preferences); to anticipate the effects; and, to formulate planning and design responses that tactically modify the imposed construction—instead of relying on Western ideas about landscape-oriented urbanism that inevitably change in the encounter with the setting of new town development in China.

The findings suggest that EI, pragmatically adapted to the fast paced urban development situation, can be used by the practitioners as a *communication tool* when advocating to decision makers for an alternative approach—the value of paying attention to landscape systems. As a communication tool, EI has the potential to contribute to environmental sustainability because it can cause value shifts among decision makers. EI might also have market potential, as part of a strategy for Western design firms to create a competitive advantage for themselves on the Chinese market as providers of ecologically-informed plans. To operate

with EI, however, depends on thorough site-research, it requires a more reflective mode of practice. The findings therefore suggest that landscape-oriented urbanism, and the broad landscape understanding it entails, can be an *inspirational tool* for the practitioners to advance such reflective practice. Landscape-oriented urbanism can be a way, among many ways, to inform the development of the reflective practice, through which the practitioners in a more fundamental sense can contribute to environmental sustainability.

However, the potential of landscape-oriented urbanism to guide urban development towards environmental sustainability is found *not* to be actively used by the practitioners. In particular, it is overlooked at the small scale. The approach is not well established among the practitioners and the institutional support for practising urbanism based on landscape systems is not in place. The development of new landscape-oriented towns in China depends on a major reorientation of policies and practices, including reform of the regulatory framework, urban planning practice, revenue sources for local governments and change of the economic-centred objective for urban development. Without reforms, the prospects for the development of new landscape-oriented towns in China are poor; but with reforms, the prospects and subsequent opportunities for Western design firms could be promising. Coupling EI with China's current focus on infrastructure development has wide-ranging implications for environmental sustainability. China's dynamic environment of urban planning practice presents unique conditions for the further refinement of Western landscape-oriented urbanism, not only in its practical application but also as inspiration for related theory. These prospects lie in the future.

Key words: landscape-oriented urbanism, environmental sustainability, theory of travelling ideas, urban planning and urbanization in China.

DANSK RESUME

LANDSKABSORIENTERET UDVIKLING AF NYE BYER I KINA

–muligheder og implikationer for vestlige designvirksomheder

Alvorlige miljømæssige forringelser har efterfulgt Kinas hastige urbane ekspansion. Som en konsekvens af den fortsatte og hurtige urbanisering, modernisering og økonomiske vækst, er det derfor blevet nødvendigt aktivt at søge alternative og mere bæredygtige modeller for byudviklingen. Denne undersøgelse fokuserer på spørgsmålet om, hvordan vestlige designvirksomheder kan bidrage til at øge niveauet af miljømæssig bæredygtighed i udviklingen af nye byer i Kina. I denne sammenhæng er det primære forskningsspørgsmål: Kan landskabsorienteret urbanisme udstyre vestlige designvirksomheder med værktøjer til at nærme sig miljømæssig bæredygtighed i udviklingen af nye byer i Kina? Undersøgelsen har til formål at kaste lys over mulighederne for landskabsorienteret udvikling af nye byer i Kina og de efterfølgende praktiske konsekvenser for vestlige designvirksomheder.

Landskabsorienteret urbanisme forstås som en form for praksis, der tillader landskab at give retning til byudvikling. Tilgangen tiltrækker praktikerens opmærksomhed til fundne steder og den komplekse idé om 'landskab' giver således en vejledning for, hvordan man bygger videre på sådanne steder. Undersøgelsen introducerer 'site-reading' (aflæsning af sted) som det undersøgende redskab til at udforske landskabsorienteret urbanisme i konkrete cases ved at følge praktikerne, aflæserne af de forskellige steder. Når praktikerne anvender 'site-reading', er de opmærksomme på aspekter som: det fysiske landskab (naturlige, kulturelle og urbane lag); samfundsmæssige forhold (forskelligartede processer, den bredere udforskning af stedet); samt førstehåndsindtrykket (det situerede indblik, nedfra og op) af stedet, hvorpå den urbane ekspansion skal udfolde sig.

Gennem et kvalitativt casestudie af to konceptuelle planer for urbane ekspansioner i de kinesiske byer, Wuxi og Tangshan, udforsker denne undersøgelse, hvordan vestlige designvirksomheder aflæser deres sites, og hvordan de involverede kinesiske aktører reagerer. Det empiriske materiale består af planlægningsdokumenter, tegninger, interviews og observationer fra projektworkshops og møder. Casene er strategisk udvalgte og dækker forskellige skalaer og udviklingsformer. Den første case er en helhedsplan for et boligområde i Wuxi (400,000 m²). Planen er udarbejdet af en vestlig virksomhed, der opererer på markedsvilkår på projektniveau gennem et samarbejde, der er indledt af en privat bygherre.

Casen undersøger mulighederne for landskabsorienteret urbanisme på lille skala i forhold til 'superblokken', som er den grundlæggende enhed for den urbane ekspansion i Kina. Den anden case er en plan for en 'øko-by' i Tangshan Caofeidian (30 km²), der er udarbejdet af en vestlig virksomhed, der opererer på planlægningsmæssigt niveau via et regeringsiværksat samarbejde. Denne case undersøger mulighederne for landskabsorienteret urbanisme på den store skala af en ny by.

Undersøgelsen viser, at den vestlige opfattelse af landskabsorienteret urbanisme ikke direkte kan overføres til rammerne for udviklingen af nye byer i Kina, da både forståelsen og konteksten for at praktisere denne form for urbanisme ikke modsvarer den vestlige. Hektisk udvikling er afhængig af en effektiv opbygning og høj densitet, dette medfører et øget pres på de steder, hvor den urbane ekspansion skal foregå. Det fysiske sted og dets processer yder ringe modstand i forhold til den hurtige vækst og vestlige designvirksomheder får dermed svært ved at bevare et situeret indtryk af deres sites. De eksisterende fysiske strukturer og sociale aktiviteter forsvinder og ingen deltagelse kan indfange interesserne fra de mennesker, der er forbundne til området. Kulturelt set er der i Kina også en større accept af indgreb i landskabet. Det vil sige, 'site-reading' bliver mere et spørgsmål om at informere praksis om, hvordan man konstruerer det fysiske landskab, snarere end et spørgsmål om at identificere landskabsstrukturer, som skal bevares. Resultaterne af denne undersøgelse indikerer derfor, at landskabsorienteret urbanisme, under nuværende omstændigheder og i udviklingen af de to pågældende byer, nødvendigvis må forstås som værende mere pragmatisk; som opportunistisk landskabskonstruktion. Et skifte til økologisk infrastruktur (EI), informeret af landskabsøkologi, inspireret af lokale land og vand håndterings principper og mere klart koblet til 'smart growth'-principperne, foreslås derfor som en mere pragmatisk middelvej.

En grundig forståelse af de processer, der påvirker udbygningen af et sted, er essentiel for de vestlige virksomheder: indflydelsesrige aktørers politiske og økonomiske interesser, planlægningsnormer og forskrifter samt de kulturelle præferencer. Til at guide konstruktionen af landskab anbefaler denne undersøgelse derfor taktikker i form af en basal orienteringsramme bestående af identifikation, forventning og modificering til: identificering af de vigtigste kræfter, der indvirker på konstruktion af landskab og foregribe virkningerne samt formulere planlægnings- og designløsninger, der taktisk modificerer den pålagte konstruktion i stedet for at bygge på vestlige ideer om landskabsorienteret urbanisme, der uundgåeligt ændres i mødet med de forudsætninger byudviklingen i Kina er underlagt.

Undersøgelsen peger på potentialerne i tilgangen. For praktikerne kan EI være et *kommunikationsværktøj*, der kan hjælpe med at overbevise beslutningstagerne om værdien af at give landskabssystemer mere opmærksomhed. Som et kommunikationsværktøj—og måske også som en del af de vestlige designfirmaers markedsstrategi for at skille sig ud på det kinesiske marked—kan EI bidrage til miljømæssig bæredygtighed, fordi det kan lede til holdningskifte blandt de kinesiske beslutningstagere. EI afhænger dog af en grundig site-research; at operere med EI kræver en mere reflekterende form for praksis. For praktikerne kan landskabsorienteret urbanisme, og dens brede forståelse af landskab, således være et *inspirations værktøj* til at udvikle en reflekterende praksis. Landskabsorienteret urbanisme kan være én måde—blandt mange måder—for de vestlige designvirksomheder at udvikle en reflekterende praksis, der kan bidrage til at realisere potentialerne i EI og dermed nærme sig miljømæssig bæredygtighed.

Undersøgelsen peger også på udfordringerne. Landskabsorienteret urbanismes potentiale til at vejlede den kinesiske byudvikling i retning af miljømæssig bæredygtighed har i studiet vist sig *ikke* at blive brugt aktivt af praktikerne. Især er det overset i den lille skala. Tilgangen er ikke veletableret blandt praktikerne og den institutionelle støtte til at udøve urbanisme baseret på landskabelige systemer er ikke på plads. Udviklingen af nye landskabsorienterede byer i Kina afhænger af en større omlægning af politikker og praksis herunder reform af de lovgivningsmæssige rammer, byplanlægningens praksis, offentlige indtægtskilder og regeringens målsætning for byudviklingen. Uden reformer er udsigterne for udviklingen af nye landskabsorienterede byer i Kina dårlige, men med reformer kan udsigterne og de efterfølgende muligheder for vestlige designvirksomheder være lovende. Kobles den landskabsorienterede udvikling med Kinas nuværende fokus på udviklingen af infrastrukturen har det vidtrækkende implikationer for den miljømæssige bæredygtighed. Kinas dynamiske miljø for byplanlægningspraksis repræsenterer unikke muligheder at videreudvikle vestlig landskabsorienteret urbanisme—ikke kun i sin praktiske anvendelse men også som inspiration for relaterede teorier. Disse muligheder ligger i fremtiden.

Nøgleord: *landskabsorienteret urbanisme, miljømæssig bæredygtighed, teori om rejsende ideer, byplanlægning og byudvikling i Kina.*



The Royal Danish Academy of Fine Arts
Schools of Architecture, Design and Conservation
School of Architecture

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