

OPERATIVE LANDSCAPES

**OPERATIVE
LANDSCAPES**

Building
Communities
Through
Public Space

Alissa North

PREFACE 6

INTRODUCTION 10

CONCEPTUALIZE

24 Introduction

30 Cristal Park, Biel, Switzerland

34 Licht-Garten, Berlin, Germany

38 London Guerrilla Gardens, London, UK

42 New Farm, Brisbane, Australia

44 New Suburbanism, Any Big-Box Store, USA

48 Poptahof, Delft, The Netherlands

52 Serenbe Selborne Center, Georgia, USA

PLAN

56 Introduction

62 BedZED, Borough of Sutton, UK

66 Chongming Island, Shanghai, China

70 Masséna-Grands Moulins, Paris, France

78 Grünewald-Kirchberg, Luxembourg

82 Markeroog, IJmeer-Markermeer, The Netherlands

86 Masdar City, Abu Dhabi, United Arab Emirates

92 Pujiang New Town, Shanghai, China

94 Thu Thiem, Ho Chi Minh City, Vietnam

98 Xeritown, Dubai, United Arab Emirates

DEVELOP

102 Introduction

106 Discovery Green, Houston, Texas, USA

110 Hellenikon Metropolitan Park, Athens, Greece

114 Jenfelder Au, Hamburg, Germany

116 Reininghaus Brewery, Graz-Reininghaus, Austria

120 Sabana Grande, Caracas, Venezuela

124 The High Line, New York City, New York, USA

130 Tokyo Midtown, Roppongi District, Tokyo, Japan

CONSTRUCT

134	Introduction
140	Arbolera de Vida, Albuquerque, New Mexico, USA
142	Belval-Ouest, Luxembourg
146	Bo01, Malmö, Sweden
148	Green Square Town Centre, Sydney, Australia
152	Lower Don Lands, Toronto, Ontario, Canada
156	Nanhu New Country Village, Jiaxing, China
158	Southworks Lakeside, Chicago, Illinois, USA

EVOLVE

164	Introduction
170	Dockside Green, Victoria, British Columbia, Canada
174	Eco-Viikki, Viikki, Finland
178	Ecobay, Tallinn, Estonia
182	Expo-Settlement Kronsberg, Hannover, Germany
184	Mentougou Eco Valley, Mentougou, China
186	Monnikenhuizen, Arnhem, The Netherlands
190	Whitehill Bordon, United Kingdom

ABOUT THE AUTHOR	194
ILLUSTRATION CREDITS	195
INDEX	196
COLOPHON	200

Preface

Landscape and the practice of landscape architecture, beyond providing an aesthetic component for public spaces, create an ongoing series of systems, patterns, and interactions between living things within designed spaces. Landscape and its design are operational – they have the ability to perform, in an intentional manner, through a dynamic rather than prescriptive design process. The operative landscape is an inherently dynamic and continually evolving medium that takes into consideration programmatic and ecological dynamics and uses landscape to direct communities toward resilient outcomes. The operative landscape approach accepts and incorporates change over time to reduce the need for continual material and maintenance inputs, while maintaining an active project agenda.

Community landscapes are most effectively designed as operative landscapes: able to be continually remolded to foster resilient urban ecologies, to suit relevant community needs, and to further the notion that urban open space is an ideal medium for positive environmental and community transformation. Premised on the phases of design as related to community building through public space, the chapters of this book have been organized to emphasize the different design phases. Each design phase can assist the evolution of communities, from their social networks, building structures, economic vitality, visual presence and cohesion, to vegetative communities, environmental health issues, and urban ecologies.

The visual communication of operative landscapes plays an important role in the conception of a project and is critical for relaying the project's structure and evolution over time. The layering of functional levels such as vegetation, pedestrian and automobile circulation, water flow, and built and projected structures reveals the material components and ecological processes along with the strategies for, and evolution of, increasingly resilient landscapes. Throughout this book, the various designed landscape layers of each project have been diagrammatically dissected to reveal their operative structure. The individual layers help provide an in-depth reading of materials, proportions, and densities of these evolving, yet formally cohesive spaces.

Operative landscapes will be of particular relevance with ever-increasing urbanization, where viable design solutions must account for growing populations through ecologically informed techniques able to foster resilient landscapes that are critical to effectively functioning urban environments. Landscape architecture, with its ability

to relate and adapt to the many forces and complexities that comprise public space, is aptly positioned to guide solutions with and for communities. The operative landscapes approach aims to increase the diversity, habitability, and ecological resiliency of cities – and therefore the vitality and welfare of communities.

The groundwork for this publication was initiated in the context of a graduate seminar course for Master of Landscape Architecture students at the University of Toronto. Students were required to select three case studies from a list of projects for which landscape was critical to the healthy functioning of the community.

They researched these communities, delved into their landscape structure, found drawings of the proposals and photographs of the constructed projects, drew up site plans, and created diagrams of the community's landscape qualities and built structures. Many projects revealed themselves to be technically proficient but less innovative in terms of public space. Discussion ensued regarding what makes a community landscape sustainable, along with a questioning of this elusive but ubiquitous term. In the end, only a small fraction of the hundreds of communities studied have been included in this book. Many of these students are now working in landscape architectural firms where they aspire to design and foster resilient landscapes, and I am sure that some day these too will be published in a similar compendium.

A number of people were vital in supporting this publication, and they deserve much gratitude. A generous grant from the Landscape Architecture Canada Foundation (LACF) made it possible to realize this publication. Thank you to my colleagues Liat Margolis, Richard Sommer, and Charles Waldheim. Special thanks for the assistance from University of Toronto students Martina Braunstein, Fionn Byrne, Michael Cook, Marc Hardiejowski, Hashem Hosseini-Mousavi, Sally Kassar, Kiana Keyvani, Melissa Lui, Mary Liston-Hicks, Elnaz Rashidsanati, Kyle Xuekun Yang, and the University of Toronto 2010 Master of Landscape Architecture class. It was a pleasure working with the expertise of Andreas Müller as editor for the publisher. Also thank you to Birkhäuser for belief in the publication of architectural works and to graphic designer Anita Matusevics for visual precision. I will be forever grateful for the unending support from Pete North, who provided considerable advice, and to the two people to whom this book is dedicated – Aili and Owen – thank you for your boundless enthusiasm. It is ultimately for your generation that exceptional communities must be created.





Design proposals that are premised on landscape as operational aim at guiding the transformation of urban environments over time.



Introduction

By Alissa North

Landscape – specifically the design discipline of landscape architecture – has exploded with potential to act as the leading organizational device to shape and direct urbanism, develop adaptable and resilient ecologies, capitalize on innovative technologies, advance economic restructuring, reclaim, and remediate spoiled lands, improve and reimagine antiquated and over-engineered infrastructure, and build and strengthen social and cultural capital. Contemporary landscape architectural works have advanced an agenda for landscape to intervene operatively through the design of frameworks, in contrast to the widespread perception of the designed landscape as a solely aesthetic endeavor. The ability to solve complex globally challenging issues in an era of extraordinary urbanization, at scales adequate to the issues at hand, is the likely reason for the leading role assigned to and taken on by landscape architecture. The operative quality of landscape can be considered common theory within the design disciplines, however, this process is less documented and celebrated at the community level. As exemplified by many practicing academics, the current design work found at most schools of landscape architecture, the proliferation of landscape proposals for international design competitions, and by a growing number of built projects demonstrating this theory, the design and implementation of canonical large-scale parks have significantly and beneficially transformed their urban contexts. And yet the community unit is not only a comprehensible scale to design self-sufficient and evolutionary systems, but also a scale at which their effects can be recognized, understood, and easily adapted further.

Design proposals that are premised on landscape as operational aim are guiding the transformation of urban environments over time. Related to this strategy, operative landscapes exhibit concepts regarding self-organization, emergence, ecology, systems, performance, and function. This specific approach tends not to focus on fixed landscape form, but rather develops a landscape framework that allows for future uncertainties to be adapted within a space over time. One of the earliest initiatives of landscape architects to theorize and propel this trajectory was that of James Corner, positing landscape as an agent of change without end, “a cumulative directionality toward further becoming”: a constant process of unfolding rather than a rigid reality.¹ Michel Desvigne interprets this notion as an indeterminate nature, a “long-time frame of landscapes and cities” and especially “the play with time: the highlighting of successive phases, the emphasis on early phases, the coexistence of different stages of development that concentrate and condense, in a short period, processes with historical rhythms.”² This approach can provide the clues to a landscape-premised reorganization of the societal territories of cities.

Julia Czerniak suggests that these landscape frameworks register as “strategic organizations, dynamic infrastructures, provisional programs, and participatory processes.”³ With landscape acting as framework for continual process, it is important for the designer to remain involved, along with the client and community participants, in pointing the site toward a desired trajectory. Nina-Marie Lister outlines this approach as “adaptive design [which] emerges from a deliberative, integrative, cyclic, and continuous – rather than deterministic and discrete – approach to planning, design, and management. The adaptive context is one where learning is a collaborative

and conscious activity, derived from empirically monitored or experientially acquired information, which in turn is transformed into knowledge through adaptive behavior.”⁴ Elizabeth Meyer combines the idea of the resilient evolving landscape with the cultural importance of beauty and experiential perception as a critical component of design, stimulating environmental understanding to promote action: “designed landscapes need to be constructed human experiences as much as ecosystems. They need to move citizens to action.”⁵ Charles Waldheim, whose formulation of landscape urbanism has reached widely within the design disciplines and beyond, regards the operative potential of landscape as the “medium through which the contemporary city might be apprehended and intervened upon,”⁶ through his often quoted description of his theory regarding landscape urbanism.

At the urban scale, the city is typically understood by its major components including built form, infrastructure, transport systems, and its public spaces – both formally civic and unattended nature. At the scale of the community, the above universal components can be further understood characteristically, where detail expressions of architectural form, amenities, movement networks, and distinctive ecologies provide personality to the various communities that compose a city. The varied everyday needs of community members and how they change over a lifetime, as well as the generational shifts of a community, dictate that the public realm in which their activities unfold is able to adapt to evolving uses and demographics. In this sense the operational landscape can be easily comprehended through the community unit, since the iterative processes that its members impose on it can be clearly recognized. While the city certainly experiences this reciprocal relationship with its public realm as an operative landscape, an entire city necessitates interpretation of a larger scale, a greater complexity, a morphing boundary, numerous units, and longer durations to effect change and adaptation. A community, as a unit within the city, can be perceived relatively easily by its defined borders, its current condition, and recent demographic shifts.

Communities

Communities rely on their surrounding resources for their function; resources originally in the forms of intact ecologies of forests, bogs, rivers, and grasslands, and through cultivation transformed into reserves, channels, acreage, and plots. Within the context of expanding urbanity, these vital green elements necessitate planned and designed insertions into cities, as large regional parks and smaller community open spaces, which continue to effect health and viability for the communities, although often with a limited functional operation. In our current situation of globally shifting goods arriving at and fueling megalopolises, and the inherent carbon issues, a new paradigm for publicly accessible land is called for: a rethinking from the singularly functional or solely representational, to a multifunctional evolutionary landscape that can perform infrastructurally, while also providing the attendant benefits that seeing and breathing vegetative biomass provides, and the ensuing cultural formation. Serving as an easily understood unit within any civilization, communities provide individuals a structure of identification in which to function. While this cohesion can be fulfilled in many ways – online, or through ethnic affiliations, a group of friends, or shared interest associations – this book concerns itself with the territory on which one sets foot most recurrently, where the home is situated, and with the proximate spaces in which routine life unfolds. The degree of investment in one’s physical community, or neighborhood, is largely dependent on its quality, and particularly the

characteristics of the collective public realm. Whether it is a park, a river corridor, community gardens, a plaza, or a streetscape, the public spaces where people interact provide a shared sense of ownership, and the qualities of these spaces influence how the communities operate and evolve. There are infinite ways to build a community, but public space, designed as the core for directing successful community development, is increasingly prevalent, making use of a landscape framework to support an operative landscape. The open-ended landscape framework strategy, as opposed to a traditional fixed-form landscape plan, is able to accommodate the flexibility essential for the community and its ongoing vitality. It lends insight on the effects of community input and sustained involvement. In this sense, community landscapes operate functionally in the constructive transformation of communities. The ongoing performance of the community's landscape then serves as a clear success indicator of the multifunctioning infrastructure. Intentionally designed as catalyst for community building, public landscape space as landscape framework can sustain continual evolution.

Therefore, as public open spaces evolve with their communities, they can be understood as dynamic rather than static and prescriptive. Alternately, and still common practice, a community plan will reveal the itemized infrastructure of pipes, sewers and electrical transmission, precise layout of roads and curbs, and the detail design of each building, but leave the key landscape spaces unresolved, as the last spaces to be designed in detail, manifesting on the plan as anonymous green shapes, or using temporary place-holder designs drafted to hurry the plans through approvals. With this conventional approach, the landscape will be limited in what it can achieve operationally for the community – likely serving as monofunctional public space punctuations, but lacking in connection, cohesion, and multilayered potential.

Process and Approach

This book is particularly interested in the phases of the design process as they relate and reciprocate with the specific public space design approaches that can evolve the many aspects of community life: its social networks, building structures, economic vitality, visual presence and cohesion, and environmental health. A well designed open space tends to foster strong community pride and involvement, inviting improvement of existing buildings or the addition of new structures, a process which simultaneously ingrains a strong sense of community that demands exceptional landscapes. This cyclic process has a crucial function in propagating the constructive development of the community. Organized by chapters of Conceptualize, Plan, Develop, Construct, and Evolve, the description of the phases of the design process, particularly in relation to the community involvement in this process, is followed by a trajectory of design approaches and case studies.

Within the design process, Conceptualize typifies the first phase of inventory, analysis, and conceptual design; Plan is where consultation and site planning lead to schematic design; Develop focuses on the design development phase of further evolving the design and refinement of details; Construct realizes construction drawings and specifications leading to construction along with its administration; and Evolve involves ongoing maintenance, management, and possibly design adaptation. The case studies following the chapter essays are then based on design approaches that are most aligned with the above outlined phases of design: Conceptualize relates to project approaches with strong histories and resultant narratives; Plan to projects

An operational landscape can be easily comprehended through the community unit and the iterative processes that its members impose on it.



with an emphasis on an overall master plan; Develop to public space projects intended to provoke intense private investment of their surrounds; Construct to projects necessitating technical innovation or remediation strategies; while Evolve relates to projects with particularly flexible, resilient, and adaptable landscapes. Public space as a focus for successful community development has set a course for the design of these landscapes to occur early on in the development or redevelopment process as a medium to structure the overall community development. Understanding community impact throughout the design phases of a project can lend insight on the effects of community input, development, and sustained involvement, and therefore guide the design of public landscape spaces as intentional catalysts for community building. Each case study communicates the basic project details of location, date, size, designer, and client. A plan drawing with layered components relates consistent design elements across all projects, while providing a scale-based understanding of the projects as situated in their immediate contexts. In recognition of community health through goals of sustainability, the case studies point to the relevant social, economic, and environmental functions of the exemplary community approaches. With landscape as driver of urban form corresponding with the theoretical discourse of the 1990s, the case studies reach back to this decade, and as such, are either still relatively new, just recently built, or in the planning and design stage. While most design processes commonly follow the above-mentioned phasing sequence, the design process is not always linear, with each project revealing its own unique circumstances. Similarly, the approaches as categorized within each chapter can involve characteristics from several chapters. However, the prime organization of pairing the issues of designing public space, from the point of view of a designer in charge of a typical project and a community member involved in this process, with individual case study approaches, in order to describe and analyze the exemplary aspects aligned with the particular project phase, aims to highlight the effect of the design process on community development for both the designer and community member. The pairing also intends to promote the idea that designers and community members can continue to work together to evolve a well-adapted community.

Involvement

The current capabilities of digital visualization used by landscape architects have increased the effectiveness and relevance of input from community members during the design process. Particularly in times of economic recession, where governments rely on the public sector to invest in their communities, the participation of the community, from a major corporate benefactor, to small business owners, to the individual community volunteer, is critical to generating connection and long-term vitality. This is not at all to say that governments should step away from supporting and investing in civic space and infrastructure, nor is it to say that community can or should take over the role of design. A lead designer can adeptly handle the requests of the client, fulfill the requirement of municipalities, accommodate stakeholders, and ensure that developers and contractors comply with the design vision. Beyond the design and its construction, the landscape architect acts as the mediator of the entire project process to ensure effective cooperation. A talented designer has the ability to organize the multitude of required elements, but within hierarchies to ensure that public space can provide multiple functions. Design by committee tends to try to satisfy all equally, bringing a jumble of competing interests and elements into the public realm. However, guided involvement by many in the design process is critical

to ensure that governments are supporting the needs of their constituents, that the needs of communities are fulfilled, and that designers are receiving meaningful information by which to base their design decisions.

Conceptualize Involvement

A case in point involving critical community input and support is the increasingly prominent shift from massive and centralized engineered infrastructure toward ecology-based design solutions that actually increase in effectiveness over time. Due to the stresses on antiquated stormwater systems in North America, many of which are combined with sewage that is directly discharged into lakes and rivers in high storm events, the United States Environmental Protection Agency has set compliance requirements for stormwater disposal in cities. Some cities have decided to remain on the conservative side with the precisely calculable engineering strategies they have relied on since the inception of the city. Those cities have pursued the long-term introduction of increasingly deeper and larger stormwater tunnels, which come at exorbitant cost and with a degenerative lifespan. On the other hand, many cities are aiming to meet the mandated stormwater requirements through multivariate and dispersed stormwater management strategies premised on the introduction of a landscape network coalescing as green infrastructure. Consisting of spaces such as rain gardens, absorptive parks, vegetated bump-outs along roads where once only sewer grates existed, bioswales, and gravel beds under sports fields and parking lots, the green infrastructure moves from singular engineering solutions toward decentralized landscape-based solutions. Here the community benefits include cleaner air, mediated urban heat island temperatures, enjoyment of plants and the attendant benefits of increased biomass, and lower taxes due to the massive disparity in costs of conventional infrastructure versus green infrastructure. Additionally, community members can see the stormwater as operative in the landscape, comprehend its function, and participate in its production and upkeep. These types of programs require small-scale investment, with collectively significant results. They also rely on educating their communities on these infiltration strategies, to engage direct participation in the re-conceptualization of their cities through the addition of landscape as a new supportive and beneficial layer.⁷

Plan Involvement

In parts of the globe where populations are rising dramatically, the planning of communities is paramount to the continued functioning of existing cities. In places like Singapore, China, India, and the United Arab Emirates, satellite cities are housing exponentially increasing populations, and while the master planning of these cities and towns is very much from the top down, the government planning authorities and landscape architects are intensely aware that community integration is essential to the continued vital functioning of these new developments. Community bonding is encouraged through specific programs centered within civic spaces, and by direct involvement in the greening of community through planting programs and horticultural interests. Since everyone is new, a neighborhood focus premised on the public realm can develop a shared sense of community, particularly since the democracy of public space promotes the mixing and coalescing of diverse economic backgrounds and ethnicities.⁸ In the context of established cities in Europe and North America, the master plan strategy tends to be one of smaller-scale insertions into urban cores, by making use of derelict, obsolete, and otherwise overlooked sites.

The approach here is a careful integration into the existing contextual urban form to design new connections, stitching formerly disassociated and inaccessible districts into a continuum, often promoting a better functioning of the city as a whole, while maintaining and reinforcing the unique characteristics of each community. Again, it is characteristically the landscape that forms the central and critical binding element.

Develop Involvement

The effective functioning of connective corridors within and between communities is a crucial factor for community and urban success. The adept planning of transport through public investment can entice considered development, gathering private investment to complete the urban fabric. This framework approach, hinged around public transport, provides a pinpointed investment strategy based on this crucial city functioning service, while leaving open relatively predictable possibilities for growth with room for individual requirements and aspirations as developed by the private sector. In Brazil, Curitiba's renowned bus transportation system transformed a concentric development direction that was contributing to congestion into linear reaches that effectively dispersed nodes of density while maintaining a stronger connectivity.⁹ The strategy of using the transportation system as framework for dictating intentioned city growth has also been used in Bogotá with a particular emphasis on bicycle transport along with an investment in associated pedestrian public spaces, parks, sports facilities, and river corridors, which in turn has renewed investment in the urban composition.¹⁰

The European Commission has adopted initiatives for further improving their transport system as competitive, by removing significant barriers and through increased mobility, to drive employment and growth for a functioning internal market and integration with the global economy. The initiatives simultaneously aim to cut transportation-based carbon emissions by 60 percent, thus significantly reducing Europe's imported oil dependence.¹¹ While these continentally scaled initiatives might seem out of community reach, their implications for community development and mobility of community members play a significant role in everyday activities, as most people use these networks on a daily basis. Most importantly, effective transportation can minimize negative environmental impacts that degrade communities, and instead entice their improvement.

Construct Involvement

Complex projects, such as industrial remediation sites, often require multi-disciplinary teams to solve site issues. Community alliances can prove seminal in getting this work off the ground, pushing forward approvals and serving as crucial participants by sharing their opinions and experiences. The United Kingdom's Post-Mining Alliance, based at the Eden Project in Cornwall, may have started with the reclamation of a single Cornwall mine site, but now operates globally to assist in transitioning blighted former mine-site towns by providing new economic focus, primarily through engaging the community in the mine's rehabilitation. The strategy is most successful when integrated into the business plan of the mine from the outset, directly involving the community (especially considering that most were former employees at the mine) and ultimately enabling the progressive rehabilitation of both mine and community over time.¹² Many American industrial sites are also recognizing that when a development plan is in place for post-mine closure, the reclamation efforts are more likely to receive both public and private funding and support, particularly with community



assurance of continued association.¹³ Landscape architects are increasingly making use of advanced digital technologies to visualize what was formerly hidden in dense environmental reports, allowing renewal options to be demonstrated to the community to engender consensual directive agreement.¹⁴

Evolve Involvement

Some of the youngest community members can also participate in the design of their communities by providing information on their activity levels and preferences in public spaces. Particularly in regards to rising child obesity, researchers are looking to obtain information on how children use schoolyards and local playgrounds. They are tracking school children with GPS and activity tracking meters, along with asking the children to record their activities in a diary to understand why and when children use school playgrounds, and to determine if they are engaging in enough activity to provide health benefits. The study will continue to track students in various seasons, as well as in urban, small town, and rural settings.¹⁵ The children become active participants in the metrics that will see their schoolyards transform from asphalt deserts with catalogue-chosen play equipment, to imagination-provoking play structures and elements interspersed with vegetation, water, and even wildlife.

Design

As of late, the design process is being applied by other disciplines as a critical mode of creative thinking. The flexible but systematic process is able to be inclusive of many perspectives, extremely amenable and pursuant of innovation, while nevertheless resulting in a clear direction and palpable result. The creative component and inclusivity are the prime reasons that community can be easily and effectively involved. Community members are not bound to conventions of knowledge, and this seeming lack of expertise can actually add unimagined potentials to a project. Even without a direct contributing idea in relation to the design, the daily experience of a community member can provide valuable information toward the outcome of the design. The professional discipline of landscape architecture is particularly suited to public involvement in the design process, as the majority of landscape spaces are located in the public realm – from large parks and green infrastructures, public precincts, urban plazas and squares, schoolyards, streetscapes, neighborhood parks and allotment gardens, even down to parking lot medians. It is important for communities to recognize that they can demand more of this public space, as the benefits it will provide them.

Community involvement ranges from an opinion survey, where the project designer decides hierarchies of importance for the desired uses based on how they can work together in space, to a multiple-day charrette, where all decision makers are present, allowing for compressed feedback loops and therefore minimal rework on the design. In the former, the landscape architect typically presents a plan to the community for approval, to be revised based on further community input. In the latter, the community collaborates on design, with the landscape architect as an overseer, providing technical expertise when necessary. Such involved participation often results in demonstration projects that serve as catalytic developments. This community-driven momentum successfully garners political support followed by funding that will permit the design and construction of the project.

With either approach, exemplary and sustainable landscapes are a result of thoughtful design and quality materials that will remain resilient to time – both aspects requiring committed investment. Vegetation is a crucial component of this investment to form

Urban open space is an ideal medium for positive community transformation, in its ability to be continually remolded and shaped to suit community needs.



Top: Lower Don Lands, Toronto, Michael Van Valkenburgh Associates.
Middle and bottom: Masdar City, Abu Dhabi, Foster+Partners.