RE-ENVISIONING THE RELATIONSHIP BETWEEN LANDSCAPE ARCHITECTURE AND THE POLITICIZED FOOD COMPLEX

by

JENNIFER S. WALKER

(Under the Direction of Marianne Cramer)

ABSTRACT

The built environment has a profound impact on society's food systems through exerting influence on social, political, and economic discourse and the ordering of spaces that inhibit/promote the production and consumption of food. Landscape architecture, as a discipline concerned with the design, planning, and management of the landscape, presents a significant potential for contributing to the creation of a food complex that is socially just, environmentally restorative, and contributes to the betterment of public health. The work of Leberecht Migge—an early 20th century German landscape architect who explicitly addressed the food complex—is presented and critically evaluated as a case study. A framework is proposed that situates the contemporary food complex as a multivalent phenomenon and describes its incorporation into the process and practice of landscape architecture through increased attention to landscape management and professional activities that involve mediation and advocacy in addition to design and planning.

INDEX WORDS: landscape architecture, agriculture, Leberecht Migge, food, landscape architectural theory, politics, economics, cultural society, Olmsted, multivalent design

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JENNIFER S. WALKER

B.S. North Carolina State University, 2001

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JENNIFER S. WALKER

Major Professor: Marianne Cramer

Committee: Andrew Fox
Nikolas Heynen
Craig Page

Electronic Version Approved:
Maureen Grasso
Dean of the Graduate School
The University of Georgia
May 2009

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. Introduction

While the design and ordering of the built environment is a practice as old as human-kind, the profession of landscape architecture has been in organized practice for a relatively short period of time. Growing out of the strong reformist traditions of the 19th century social democrats and a climate of scientific inquiry, the early design profession embodied the optimism of the time. The research of this thesis points to a profession that originally sought to combine the artistic tradition of Camille Sitté, the engineering of Andre LeNotre, and the social consciousness of Mikhail Bakunin and Henry George (Campbell, 1978; Hall, 2003; Haney, 2007; Lejeune, 1996; Macrae-Gibson, 1985). Frederick Law Olmsted was the most prominent of the early American landscape architects, advocating for an integrative approach to urban social reform through the design and management of the landscape. However, in the roughly 150 years that followed the founding of the profession, landscape architecture has proven to be debilitatingly conservative in its ability to participate in the broader social discourse of contemporary social issues, and has subsequently fallen far short of its potential. This non-engagement of the landscape architect in social discourse overlooks the potential of the profession to speak directly to the condition of society through the medium of the built environment.

One major facet of contemporary society that has been at the forefront for today's social reformers, environmental advocates, and urban planners is the production and consumption of food. Although landscape architecture does not currently offer an active

presence in this realm, the profession is unparalleled within the design community in its capacity to simultaneously address social, political, environmental and cultural issues through the design, planning, and management of the built environment whlie specifically speaking to food system concerns. The complexity of the production and consumption of food in today's society provides fertile ground for landscape architects to re-establish the potential of our profession as a translational discipline, interpreting the political, social, economic, and cultural aspects of society into built works that work towards, not against, our cultural ideals. Additionally, where our cultural ideals have not evolved to incorporate increased understanding of economic, social, and environmental systems, landscape architecture can act as an instigator of dialogue, revealing the contestation of resources and the incongruity between cultural ethics and public policy, especially as these issues are embodied in the everyday act of eating.

The research and interpretation of this thesis builds a conceptual framework for the profession to re-establish relevancy by adopting the multidisciplinary rigor of its founders through specific attention to the production and consumption of food. The thesis addresses the question of how the practice of landscape architecture can incorporate the contemporary reality of a highly politicized food production and consumption complex. First, the relevancy of the food complex to the profession of landscape architecture is established using scholarly research from a variety of disciplines, building the case for increased involvement as both a discipline and a practice. A critical analysis of a specific case in landscape architectural history is presented as an example of the application of this increased understanding. A framework for a more explicit involvement on the part of

landscape architecture in the politics of food is then proposed, applied to process and practice, and critically evaluated.

Although the subject matter involved draws from various disciplines, the goal of the thesis is to continually relate the content to the profession of landscape architecture—what that knowledge means for the discipline and for the practice. The purpose of this thesis is to contribute to the existing body of work that encourages a more thorough process of design within the profession, including the incorporation of disciplines and relationships that are often considered outside of the scope of landscape architecture by many practitioners. Those disciplines, including economics, political science, public health, and social, cultural, and environmental studies, are already utilized within our professional discourse; however, their relationships to one another through the design and management of the built environment are not fully understood and exploited. This thesis focuses on the production and consumption of food as a focus area ripe for the application of a multidisciplinary approach to landscape architectural process. A generalizable solution to the issues outlined is not proposed, as sound design solutions to any concern must always be tailored to the specific needs and characteristics of a community and its environment. Instead, this thesis proposes a framework by which to comprehend the relationships between seemingly disparate aspects as they relate to the production and consumption of food in contemporary society. Ideas for incorporating this framework into the practice of landscape architecture are offered as examples of assimilating this relational knowledge to the process of design, with the intent of creating built works that are economically, politically, culturally, and environmentally relevant to contemporary society.

Relevancy and timeliness

The issue the thesis seeks to address—how the landscape architectural profession can incorporate the complexity of food production and consumption into practice—first demands an answer to the question of *why* the food complex is relevant to the profession. Past researchers have examined the historical relationship between agriculture and landscape architecture as well as contemporary ideas of the design and management of the agricultural landscape.[1] However, this thesis rests on the idea that *agriculture* is no longer the primary component of the contemporary food complex. The production of food in contemporary society does not occur explicitly on farms, and farm operations that do exist are more akin to factories than to the systems of husbandry that were employed during the time of Olmsted and Downing. Furthermore, the food complex now includes methods of processing, transporting, acquisition, and consumption that are not addressed through a narrow focus on agriculture. With this broader definition of the modern food economy, it is clear the relationship between the food complex and the profession of landscape architecture has de-evolved to a degree that a thorough re-examination is needed. As a practice that is involved in the preservation of culture, the negotiation of natural resource distribution, and the design and planning of landscapes that promote public health and well-being, an examination of how the practice of landscape architecture intersects with the food complex is relevant and timely. A review of the literature within the discipline of landscape architecture reveals that this remains a small and unexploited avenue for the practice. However, a survey of contemporary literature and issues among a wider array of disciplines provides the knowledge necessary to

[1] See Jackson, 2008; Mougeot, 2005; Nassauer, 1989,1997; Patterson, 2001; Strum, 2005; Westmacott, 1974, 1984; and Viljoen, 2005.

comprehend the relevancy of this topic to the profession of landscape architecture. A thorough exploration of political, economic, social, cultural, public health, and environmental disciplines and how that knowledge provides a bridge between landscape architecture and the food complex is presented in Chapter Two.

Thesis structure

This first half of this thesis is inductive in nature. Chapter Two provides the necessary background information to situate the thesis topic within the discipline of landscape architecture as one that is relevant and timely. Significant events, movements, and built works within the profession of landscape architecture and among allied disciplines that speak to the current state of the politicized food system are explored through the perspective of landscape architecture: both in their effect on the profession and how the profession helped shape the nature of the complex. Chapter Two seeks to answer the question of *why* this issue important to the profession now, and *how* it is currently being addressed.

After establishing this relevancy and background, Chapter Three provides an historical interpretation of the events during the early 20th century in Germany surrounding the Modernist movement and the highly politicized discourse regarding the production of food amidst the onset of industrialization. The work of Leberecht Migge, a German landscape architect of the time, is presented as a case study of a practitioner who incorporated food production and consumption and whose work challenged the political economy of the food complex through the design and re-ordering of the built environment. Chapter Three seeks to answer the question of how the practice of landscape

architecture has been employed to address the food complex in the past, in an effort to obtain insight for the contemporary profession.

Drawing on the information presented in Chapters Two and Three, Chapter Four proposes a framework for classifying and categorizing the issues embedded in the food production and consumption complex, establishing a basis for a more integrative practice. Chapter Four answers the question of how the knowledge can be categorized in a manner that makes an explicit connection between the practice of landscape architecture and the food complex. The framework proposed is graphically re-interpreted as a data dial, or *vovelle*, intended for incorporation into practice and professional study.

Chapter Five presents examples of incorporating the proposed framework into the practice of landscape architecture, acknowledging the diversity and complexity within today's profession. The profession is conceptualized as both a *discipline* and a *practice,* capable of the intellectual rigor of building a body of theory, as well as the everyday, applied practice of designing the particulars of the built environment. Indeed, the author suggests that it is this inherent duality that positions landscape architecture as uniquely suited to the diversity of challenges presented by the 21st century.

Chapter Six presents an analysis of the thesis research and findings, identifies major themes, and suggests opportunities for further research.

Delimitations of the research

The focus of this thesis is the food complex within contemporary Western society, although insight was gleaned through historical study going back to the onset of industrialization—loosely defined as the last 150 years. The gradual and disorderly onset

of industrialism is relatively recent and the exponential rate of technological innovation continues to create a "techno-shock" that is qualitatively different from previous eras in human history. This specific delimitation was chosen for several reasons, with the most obvious being that this era saw landscape architecture evolve as a named profession—as a distinct discipline and with a mandate for working toward the health, safety, and welfare of the general public in a period of rapidly changing environmental conditions (CLARB, 2007).

An examination of the early 20th century is also relevant to this thesis because the change in the meaning and practice of agriculture coincided with a change in the meaning and practice of landscape architecture. These transformations were due in large part to the spread of capitalist industrialism and technological innovation—most pronounced during the world wars. New methods of production and ways of living altered both agricultural and landscape architecture. Agricultural production was perhaps most drastically affected by the new understanding of the nature and property of soils; the three main nutrients required for plant growth—nitrogen, phosphorous and potassium—were isolated and named, and technological science allowed for their artificial creation from fossil fuels (Pollan, 2006). Much like the adoption of draft animals for farm labor or the use of canals for irrigating the arid Sumerian wheat fields in previous centuries, the ability to manufacture the main chemical elements necessary for plant growth without relying on the biologic cycle of manure and compost resulted in a radical increase in farm productivity.

Although agribusiness operations of an enormous scale became possible, they were predicated on the standardization and the commodification of agricultural products. The

"get big or get out" mantra of American progress was the new order for food production by the mid-twentieth century. The "green revolution" followed, made possible by further advances in industrial technology. However, the verdict is still out on the efficacy of the "green revolution" solutions to solve more problems than they create (Navaro, 2006). Taken to the extreme, the technological production of food crops turned food into a commodity like any other, capable of being used as a ruthless bargaining tool. As Earl Butz, U.S. Secretary of Agriculture under Nixon and Ford, observed, "Food is a tool. It is a weapon in the U.S. negotiating kit (Pollan, 2008a)." The thesis asserts that conceiving food as a commodity is detrimental to the environmental, social, political, and economic health of the global population. Landscape architecture is implicated as an explicit contributor to this ideology of environmental commodification through professional activities that degrade environmental services and contribute to the manufacture and maintenance of false cultural metaphors that undermine the resiliency inherent in a sustainable global system.

The effects of industrialization on the profession of landscape architecture were also predicated on the evolution and adoption of new technologies. The automobile had a pronounced effect on the practice of environmental design and planning, as did the introduction of new household technologies that allowed for women to enter the workforce and subsequently opened the market for convenience goods such as prepared and pre-processed food and refrigeration. No longer dependent on home or local production of daily provisions and relieved of the necessity of living within minimal distance from places where those resources could be acquired, housing developments moved outward. Landscape architects were at the center of many new street car and

subdivision developments that incorporated newer modes of transportation such as the automobile. This shift in professional focus meant that more landscape architects were engaged in public projects and solutions for middle-class living conditions than the previous aristocratic concentration on private estates and country homes (Lay, 1920; Tobey, 1973). However, it is possible that the professional shift to common concerns within the landscape was temporary, as much of the contemporary practice of landscape architecture is now concerned primarily with the *new aristocracy*: corporations, industry consortiums, and governments with political power. The thesis suggests that landscape architecture refocus professional attention to the food complex as one part of a larger re-alignment with the concerns of the majority. Just as food has become increasingly commodified throughout the last century, so has design, creating a dangerous scenario in which landscape architecture is simply a tool to reinforce the will of the minority.[2]

The cultural focus of the thesis is that of Western society—primarily focused on the United States and Western Europe. While the study of food, design, and politics among other cultures in various stages of development along the agricultural-industrial-technological continuum is certainly necessary, this thesis focuses specifically on Western society for several reasons. First, the amount of relevant cultural knowledge afforded by writing about one's own society can be seen as a strength when completing research. However, in some instances, cultural biases and oversights may also be produced by that same proximity. The thesis makes every attempt to account for these shortcomings through explicitly stating the author's biases and perspectives where relevant.

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[2] Ideas of the subversive role within landscape architecture are not new. For precedent, see Fromme & Landers, 2009; Hohmann & Langhorst, 2005.

Secondly, while the political nature of food production and consumption can be discussed among all cultures throughout the world, the profession of landscape architecture as a political phenomenon has a more narrow and culture-specific story, especially considering its historical context. To maintain consistency and relevancy to the profession, the thesis is limited in scope to the Western society from which today's environmental design profession emerged. However, even within that research focus, *culture* is not easily defined and society is often more heterogenous than not. The thesis, therefore, rests on an examination of process, not a generalizable product. The global connections that are created and revealed through the food complex are not ignored, although they are examined specifically from a Western perspective. This thesis proposes that the proposed framework for understanding the relationships between various aspects of society as they relate to the food complex is indeed transferable to other cultures, subgroups, and perspectives.

Finally, the thesis attempts to draw a connection between the established profession of landscape architecture and a politicized food complex. The American Society of Landscape Architects, the International Federation of Landscape Architects, and the Landscape Architecture Foundation are all referenced. As such, this thesis exists as a small piece of a larger body of work. The discipline of landscape architecture is growing, and further research into the relationship between politics, food, and design is needed and warranted.

Definitions

Several terms warrant an explicit definition as they are used throughout the following chapters. Those terms are defined below for the purpose of this body of work with the recognition that all words can hold additional meaning within varied contexts.

Agriculture v. Food Complex

The use of the word "agriculture" is one that requires clarification, since it appears so infrequently throughout a thesis that is presumably written on that very topic. As defined by Merriam-Webster, agriculture refers to "the science, art, or practice of cultivating the soil, producing crops, raising livestock, and in varying degrees the preparation and marketing of the resulting products (*The Merriam-Webster Dictionary*, 2004)." Our cultural understanding of the term connotes farming, agrarianism, and most notably, the production of food. On deeper reflection, many people may also include fish, timber, and animal and vegetal fiber to a list of possible agricultural products. However, only in the past few decades has the agricultural sector grown to include the manufacture of a vast and wildly diverse selection of products. The list of products that fall under the purview of the USDA now includes fuels, pharmaceuticals, and the raw materials for industrial products like paint, cosmetics, plastics, explosives, and tires. Therefore, while industrialization created the mega-farm and agribusiness, the current technological era utilizes agricultural production as a new source for consumer goods, not all of which have been traditionally linked to agriculture. Our own U.S. American cultural mythology links *agriculture* to a Jeffersonian ideal—that of the yeoman farmer—a concept that appears incongruent with the *agribusiness* production of fuel, explosives, pharmaceuticals, and

cosmetics, among other non-food or fiber products. For the purposes of this thesis, the author believes that it is imperative to make a clear separation between *agriculture the myth* and *agribusiness the reality*.

Although the focus of this thesis is on both the production and consumption of food, our society's involvement lies overwhelmingly on the consumption end. As Nichaolas Kristof states, while only two percent of U.S. Americans are farmers, 100 percent of them eat (Kristof, 2008). Considering agriculture from this consumption perspective, its end product—food—has changed drastically. Author and journalist Michael Pollan estimates that 17,000 new "food products" are released each year in American supermarkets (2008a). Furthermore, our culture is no longer sustained on agricultural *products*, but on agricultural *by-products*. For most Americans, food receives more input and manipulation post-harvest than it ever did on the farm. Corn, as an example, is mechanically separated into its constituent parts, then reformulated into a diversity products that can vary from explosives to soft drinks.

Additionally, the term agriculture carries with it a certain degree of cultural mythology surrounding the food we eat, visually promulgated by supermarket images of impossibly clean, caucasian, and overall-clad small farmers clutching the day's harvest of fresh vegetables—a food group rarely seen by most Americans. A truer but less marketable image would be that of a mechanized factory run by immigrant labor churning out processed cheese "product" and fruit juice sans fruit. Futurists of the 1960s predicted that by the turn of the century, humans would obtain their daily nutrition from a single pill, eliminating the need for the labor-intensive act of eating food. While society is nowhere close to giving up the act of eating, we have made great strides in giving up the eating of

food and replaced it not with a pill, but with thousands of food *products*. In this light, agriculture was first transmuted into agribusiness by the industrial revolution, and now, to something that can simply be described as *business*.

At its basic Latin root, the word agriculture implies a connection between farm, field, or land ("agri-") and the act of inhabiting or cultivating ("-culture"). Uncritical use of the word may obscure the modern-day gulf between the acts of production and consumption, and between the environment and cultural society that are so entrenched in today's food systems. For the purpose of this thesis, the author has chosen to use the term agriculture only when referring to practices that embody the cultural connotations as noted above. All other descriptions of a food system are described according to their stage in the capitalist framework: production, acquisition, and consumption.

Politics

Politics is another term used throughout this thesis that requires clarification. The author finds Arthur Bentley's definition of politics and government as outlined in his seminal book, *The Process of Government: A Study of Social Pressures*, to be one of the clearest and most useful (1908). Bentley defines all governance and politics as the explicit result of the activities of groups who hold vested interest in the outcome, not of individual ideals, collective will, or some transcendent public interest. Bentley maintained that his theory of politics holds true no matter the form of government—democracy, dictatorship, or monarchy. The relevancy of Bentley's operative definition of politics to this thesis is the elevation of the term to one that is removed from today's ideologic rhetoric so heavily laden with dialectical ideas of good and evil, rich and poor, corporate and populist. These

ideologies are only useful for fear-mongering politicians and the manipulation of a media-saturated public. Politics as it is used throughout this thesis refers to the specific interests and goals of groups—either highly organized (as with the Bauhaus and Werkbund of early 20th century Germany and the American Society of Landscape Architects (ASLA) in modern day America) or loosely organized segments of a population (such as "green" landscape architects and "locavores").

This thesis perceives politics as the social phenomenon of negotiated governance that exists solely through the interests of groups, whether explicitly stated or not. Therefore, even though political discourse in the reform climate of early 20th century Germany was set in terms of the Modernist "spirit of the age" versus the Nazi "blood and soil" rhetoric, the lens of history allows us to see beyond the ideological to what Bentley identified as the constant negotiation of power between many groups, each with their own interests and level of transparency in their actions. Likewise, within this thesis, today's political economy is not perceived in the dichotomies of liberal/conservative, moralist/individualist, or local/corporate because those "groups" only exist in the artificial sphere of news pundits, not in the complexity of everyday life. Much more realistic is a society made up of *individuals* who, although they may identify with one group or another, embody the complexity of the negotiated systems which they inhabit. In this thesis, the goal is to examine the intersection of politics (as the negotiation of power among interested players, however organized), the profession and practice of landscape architecture, and the food production and consumption complex. With this definition of politics, events are not seen as inevitable, or as controlled by an outside, omnipotent source, but as the culmination of the daily workings of a political machine, of which landscape architecture—through its

direct involvement in resource allocation within the built environment—is a key, even if reluctant, participant.

Sustainable v. Restorative

It is difficult to navigate a topic relevant to the 21st century without succumbing to the use of words that already are, or will shortly become, buzzwords. The decontextualization of the term "sustainability" from its formal debut in 1987 in the *Report of the Brundtland Commission* to a term that produces 92 million hits on a Google search today may mark the end of its usability as an indicator of a specific condition[3]. The Brundtland Commission defined sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland, 1987)." Incidentally, the Commission's Report specifically addressed food security—the challenges faced and strategies for its sustainability. In 1992, the *Hannover Principles* established a set of statements that loosely defined sustainability specific to the built environment (McDonough, 1992). Bryan Norton offers an integrative view of sustainability that is perhaps the most relevant to this thesis in that it addresses the role of environmental designer as an "adaptive manager," actively engaged in learning and interdisciplinary solutions (Norton, 2005)." The importance of this perspective is that it allows for and expects the evolution of a system, recognizing that environmental designers do not work in a static media. In this thesis, the term *sustainability* borrows from all three foundations - Brundtland, McDonough, and Norton. It is meant to convey a general sense of continuation of quality across generations as well as the processes that contribute to

[3] Google search conducted December 11th, 2008, using the words 'sustainable' and/or sustainability.

that continuity. As such, the term as presented here includes environmental, social, economic, and political persistence.

In a search for greater precision than "sustainability" affords, the word *restorative* is utilized throughout this thesis to indicate a situation in which the system—whether economic, ecological, social or otherwise—not only persists, but acts as a force for the regeneration of health of itself or a related system. Stephen Kellert, Professor of Social Ecology at Yale University described restorative environmental design as a practice that

> ...seeks to construct buildings and landscapes in ways that minimize harmful impacts on the natural environment while also providing people with positive opportunities for beneficial contact with nature in places that also have ecological and cultural meaning (Shorb, 2004).

In this context, the intention of the built environment is to act as a regenerative agent to the ecological systems on which it relies, as well as a physically and spiritually restorative mechanism on the human and cultural systems that depend on it.[4] Throughout this thesis, the food production and consumption complex is seen not only as capable of achieving the highest standards of sustainability, but also as an opportunity for cultural, political, and environmental restoration.

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[4] For a more detailed look at the implications of restorative landscapes specific to landscape architecture, see Rowe, K. (2008) *Toward a Restorative Community* (Masters Thesis, University of Georgia, 2008).

Similar to restorative landscapes, John Lyle, a late 20th-century landscape architect, proposed a focus on "regenerative" design in his 1994 book, *Regenerative Design for Sustainable Development*. Lyle's use of the word "regenerative" is similar to the use of "restorative" throughout this thesis. Regenerative design, according to Lyle, "provides for continuous replacement, through its own functional processes, of the energy and materials used in its operation (Lyle, 1994)." In short, regenerative design not only sustains the ecological functions of the environment for future generations; it repairs and enhances that which was lost from previous use.

Although Lyle's eloquent definition of regeneration serves well to define the environmental goal of a healthy food complex, the author chose to use the word "restorative" throughout this thesis. The notion of restoration not only invokes ideas of ecological systems, but also the cultural, economic, political, and social systems that comprise the food complex that are so heavily influenced by the design, planning, and management of the built environment.

Author's bias

This thesis examines the role that a diversity of interconnected interests, ideologies, and movements have played in the construction of the social reality of the built environment. There are many ways that history can be re-presented, with the perspective of the author unable to ever truthfully escape her own shadow. Therefore, in order to communicate the ideas intended, in a manner that will spark the reader's interest without negating the need for further exploration, it is important to state from the start the

philosophies and values that have brought this body of work to the point where it currently resides.

The first caveat is to explicitly state that this thesis is intended to further the profession and discipline of landscape architecture as a progressive and socially relevant practice. As a relatively new profession, the history and place of landscape architecture in the context of world events and social movements has been explored neither deeply nor broadly. The intention of this thesis is to explore a discrete set of events from the explicit perspective of landscape architecture, with the understanding that this perspective may give the appearance of bias or of too narrow a focus. However, the author believes that a temporary delve into an exploration of events from the perspective of landscape architecture will, in the end, contribute a more educated and informed self-awareness to a discipline that is influencing, sometimes unknowingly, the public discourse on resource allocation and human stewardship of the environment. In an age of increasing globalization brought about by technology and travel, the ability to facilitate global-scale destruction is matched only by the ability to provoke a global level of healing. The works of landscape architects are inexorably linked to global processes on many levels, and are both the harbinger and the offspring of change.

The second caveat is the disclosure that the author holds access to basic human needs to be a human right. Clean water is not a commodity, although it was labeled as such by the World Trade Organization (WTO) in 2000. Neither is basic nutrition, clean air, or biological genomes. The commodification of the source of life—water—is contrary to Article 25 paragraph 1 of the *United Nations Declaration of Human Rights* (1948), yet efforts to privatize and withhold access to water are spearheaded by developed nations

with the backing of the WTO. Additionally, corporations have been granted the rights to genomes as a commodity to be traded within the market system, not only putting the well-being of the current human population at risk, but endangering the ability for future generations to adequately adapt foodways to changing environmental and social conditions. Recognizing that this thesis research began from a perspective similar to that of early social democrats and reformers (of which our own Olmsted was one), the information presented is accurate, but makes no apologies for what some may view as a partisan position. Human rights are rights indeed; the author makes no pretense for their negotiation. The author recognizes that opposing systems as entrenched as global capitalism and the tyranny of multinational corporations may not seem relevant to the discipline and practice of landscape architecture, but nevertheless maintains that appropriate boundaries of capitalist commodification have yet to be made, and she asserts that the environmental design sector wields more power in this regard than has previously been recognized or utilized.

The author's interest in landscape architecture evolved from previous experiences in social justice and human rights efforts, and this thesis is an extension of those values and beliefs. The early writings of Frederick Law Olmsted were particularly influential for the author, and it is out of a similar social consciousness that she undertook the research and writing of this thesis.

II. Relevancy and Background

This thesis rests on the perception that the profession of landscape architecture has neglected its relationship with political and social discourse, especially as it relates to the production and consumption of food within a society. The design and management of the built environment holds great potential for addressing social and environmental conditions, but only to the degree that both practitioners and scholars of the discipline recognize that potentiality and actively work toward advocating for their incorporation into the professional consciousness. It is imperative that landscape architects not only build landscapes that live up to this potential, but also explicate the non-tangible social, economic, and political aspects of their work through writing and speaking to a wide audience of other landscape architects, the larger design community, and the general public—including public decision makers and developers. This chapter summarizes a broader examination of the profession and its allied disciplines, searching for and describing the relevant connections between landscape architecture, the food complex, and social and political discourse. Where it exists, examples of designers engaging these boundaries are noted and described. While completing this research, the author noted that although there is a lack of professional work and literature specific to landscape architecture on this subject, there are landscape architects working on these issues who are simply not publishing or publicizing their work. Far from disproving the assertion that there is a lack of professional interest and activity in this realm, the paucity of *published*

and *critiqued* work underscores the need for this level of critical analysis and writing in the profession of landscape architecture if it wishes to be considered more than a skilled trade, and instead viewed as a genuine and discrete discipline.

Prior research and publication

Although there has been an overall lack of explicit discourse on the connections between the food complex and the profession of landscape architecture, there are a few notable exceptions that are worthy of mention as a foundation to this thesis. One significant piece of work is the American Planning Association's (APA) *Policy Guide on Community and Regional Food Planning* (APA, 2007). In this comprehensive document, the APA describes the major linkages between the built environment and food planning as an important aspect of community life and preservation. The document summarizes the reasons for an historical omission of food issues from planning discourse and provides specific policy suggestions for the improvement of the current food complex. Although the practice of planning is different than that of landscape architecture, the research and findings of this closely related discipline are worthy of deeper exploration by landscape architects.

A masters thesis authored by Emily Patterson, *Agriculture, Landscape Architecture, and Ecological Design: A Foundation for Collaboration Between Ecologists and Landscape Architects,* establishes many of the links between landscape architecture and agriculture, with a focus on the early profession and ecological awareness (Patterson, 2001). Additionally, a thorough exploration of the relationship between ecology and landscape architecture as expressed through the practice of agriculture is presented. For an

exploration of the cultural dimensions of the built environment through one aspect of the food complex, see Brian Strum's thesis on roadside farmstands, *The Roadside Farmstand in the Cultural Landscape* (Strum, 2005). This work provides a framework for understanding the role of perception, change, and landscape within an agricultural context.

John Lyle is perhaps the most widely-known landscape architect to research and write on issues that connect ecological principles with agricultural production. In *Design for Human Ecosystems* (1999), Lyle cites two case studies in California—University Village and North Claremont—that address the changing nature of food production and consumption. The North Claremont case study examines a method of predicting the effect of economic and social factors on the land use patterns of an agricultural area, recognizing the inevitability of landscape change. The University Village presents a case study of a 150-member community that sought to provide for most of its own food, water, and energy needs using multiple avenues for waste recycling and integration with biological cycles. Lyle's work serves as one of the most complete attempts to address the production of food within the practice of landscape architecture.

The relevancy of the food complex to landscape architecture

The evolution of human culture from an Agricultural Age, to an Industrial Age, to the Age of Technology and Information has had a profound impact on the manner in which societies produce and consume food. Due to the quality of these transformations, this thesis holds that the change has been so radical as to warrant the disuse of the term "agriculture" in regard to the production and consumption mechanisms of modern food systems. The current shift in dominance from information technology to energy technology

will further influence the relationship between food and society, and by extension, increase the potential role of landscape architecture in mediating the two.

This current shift in western culture from a concentration on *information* technology to *energy* technology places a greater innovation and policy focus on the production and consumption of energy resources, although information availability remains a significant aspect (Friedman, 2008). The focus on energy, however, is recognized across disciplines and at all levels of society. Indeed, thinkers and policy leaders versed in the language of international affairs hold that the end of the Cold War only marked the beginning of the Resource Wars, sometimes referred to euphemistically as the War on Terror (Le Billon, 2007).

No matter the label, global civilization has been in an extended period of rapid and profound change. Aspects of cultural identity, human relation to nature, environmental degradation, and attitudes about social justice and public health are particularly worthy of further examination as they illustrate the strengths of landscape architectural process in solving the contemporary food crisis. In order to properly place this thesis as relevant and timely to the profession of landscape architecture, each of those aspects are examined in greater detail, highlighting both the historic precedent as well as contemporary literature, projects, and crises.

During the research phase of this chapter, a diagrammatic model evolved as one way to conceptualize the relationship between landscape architecture, the food complex, and political and social discourse (Figure 2.1). Although the profession of landscape architecture as a whole has not been a consistent participant in either of the other two realms, this model serves to represent the *potentiality* of that relationship, and acts as a

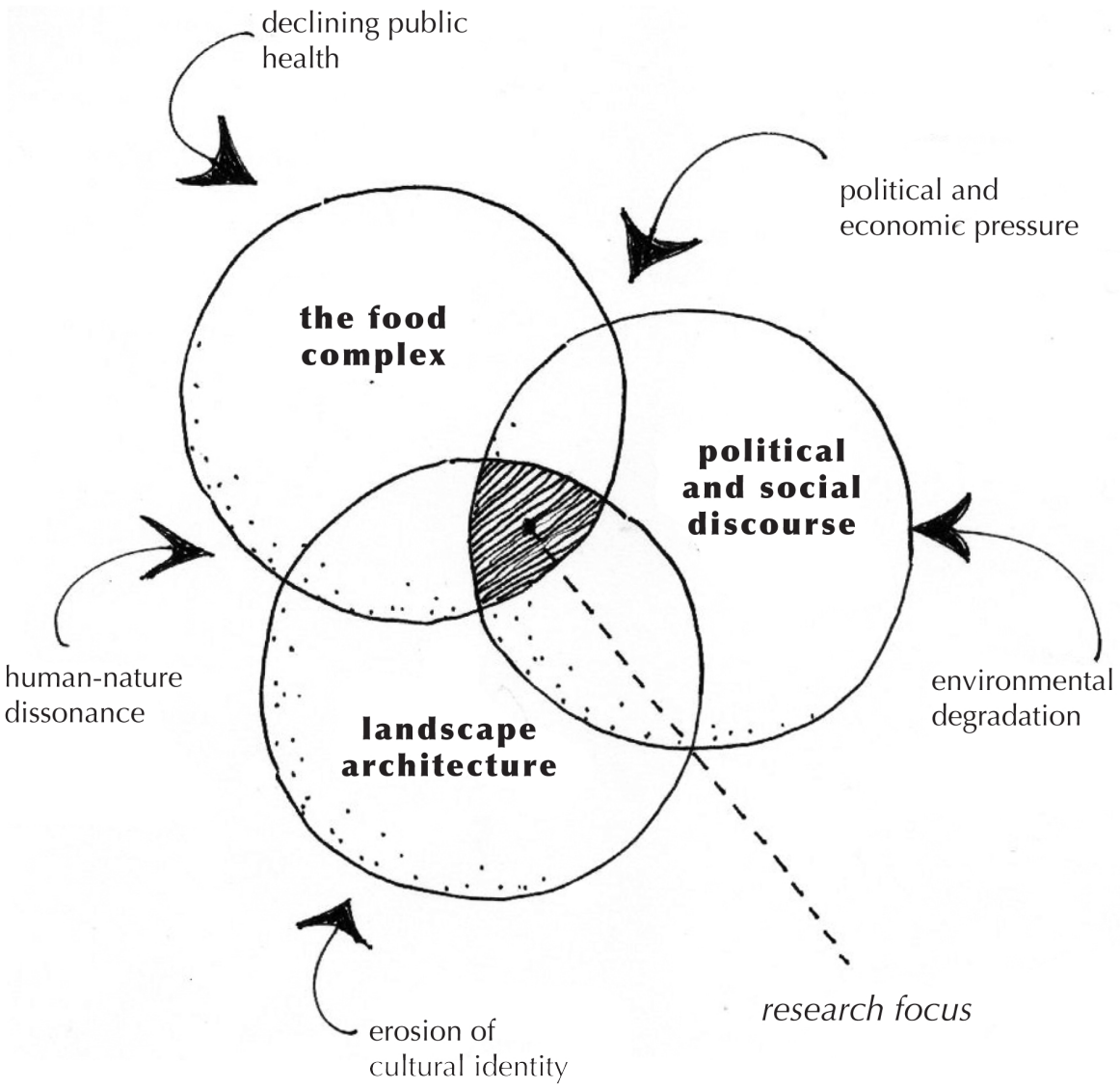

Figure 2.1 The research model. Relevant research was gathered by examining the intersection of landscape architecture, the food production and consumption complex, and political/social discourse. Factors that were considered influential on this relationship include: declining cultural practices, human/nature relationships, public health, the political economy, and environmental degradation.

visual framework to describe the research of this chapter. Five "pressures" that exert influence on the relationship create categories by which the relationship can be conceptualized, and are considered internal as well as external factors in their influence on the system. The pressures examined in this chapter are: the erosion of cultural identity, human-nature dissonance, declining public health, political/economic pressure, and environmental degradation. The focus of this chapter is on the center of the diagram, the place at which the entities of the food complex, landscape architecture, and political and social discourse meet. As such, the chapter continually references the question, *What are the relevant connections between landscape architecture, the food complex, and political and social discourse, and how are those connections expressed in the built environment?*

From agriculture to the production and consumption of food

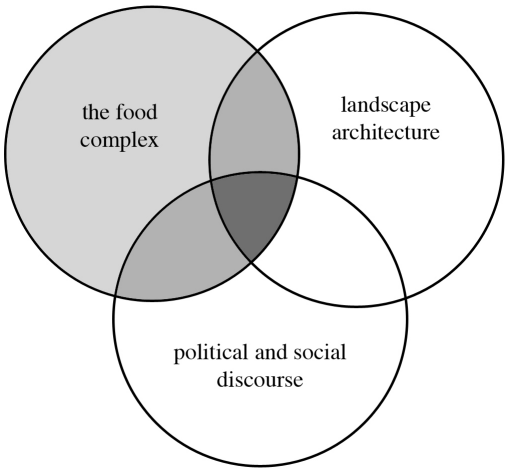

Figure 2.2 The component of the food complex.

The onset of agriculture was one of the more pronounced examples of the reordering of the human relationship to nature, and its continued evolution provides one of the main reasons for an examination into the position of the food complex within the discipline of landscape architecture. With the development of agriculture, humans gained a modicum of control and dominance of natural processes an estimated 12,000 years ago (Antiei, 2007). However, agricultural production methods have not remained static. New agricultural methods were continually adopted, with better

tools and the incorporation of draft animals resulting in increased productivity for the same expenditure of human labor. Increased travel and trade catapulted genetic resources around the globe, creating purely domesticated species of plants and animals and increasing the diversity of the human diet. Later, the usefulness of large-scale commodity agriculture was recognized to be one of the main assets in maintaining an imperial army, placing agriculture firmly in the realm of nation-building, not merely nutritional sustenance. Mechanization and the availability of intercontinental shipping also furthered the evolution of agriculture as a cultural phenomenon. Although the change has been great, humans still eat daily, and eating remains the most basic and the most direct interaction an individual has with the landscape.

The evolution of agriculture and the subsequent changes in the human diet are two topics studied thoroughly in many other disciplines: sociology, anthropology, and cultural geography are just a few pursuing this line of inquiry. Popular interest in these topics is also on the rise. The Slow Food Movement and an increased interest in local and sustainable agriculture are general examples of an increase in cultural awareness of the food complex as a phenomenon that incorporates more than just the food on our plates. The existence of a growing list of non-fiction and journalistic works on today's best-seller lists regarding food issues also point toward an increased acknowledgement of the cultural shift toward a new understanding of food production and consumption. The Oxford American Dictionary named "locavore" as the 2007 Word of the Year, defined as a person who primarily consumes locally grown and seasonal food (Oxford University Press, 2007). The media prominence of celebrity chefs such as Alice Waters and journalists, food

writers, and critics such as Michael Pollan and Mark Bittman have also contributed to a more food-conscious public.

The current publicity and increased attention has strengthened the connections between the food complex and political and social discourse through popular literature, as well as increased scholarly examination by a variety of disciplines. However, the intersection of the contemporary food complex with landscape architecture remains largely unexplored as a professional field of study and practice.

Political and social discourse

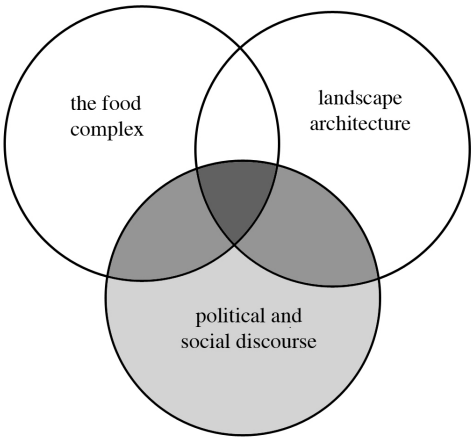

Figure 2.3 The component of political and social discourse.

As with the production and consumption of food, political and social discourse has also evolved. The political and cultural implications of the contemporary food complex owe a great deal to the energy and resource scarcity now facing most societies and which dominates much of the global discourse. Energy independence, "clean" energy, and the cost of energy all dominate the media and political rhetoric. This discourse is at times associated with an explicit discussion of the food complex. For instance, food purchase decision making is often framed in the language of energy used in shipping (the "food footprint") with the assumption that the closer production is to consumption, the less energy is used (Breslau, 2007). Also, many writers and thinkers are speaking to the correlation between increased

farmland usage for ethanol and other "bio" fuel products and subsequent increases in food prices.

Lowered energy consumption is popular with consumers, and also—if only rhetorically—among U.S. American politicians, thereby establishing a basis for support for local and regional food production. This call for food with a smaller "footprint" has been made for economic reasons, although recently it has also been framed as the *moral* choice, along with other energy-conservation tactics. National self-reliance for energy and food has been touted as patriotic, especially when their acquisition is reliant upon nations deemed "unfriendly" to American interests. Many environmental designers have responded to the call for lowered energy consumption through embracing initiatives like Low Impact Development (L.I.D.), L.E.E.D. (Leadership in Energy and Environmental Design) certified projects, and transit-oriented development. However, recognizing the energy use inherent in food consumption and production and how the landscape influences decision-making in this regard has not been fully exploited.

Another political issue that has sparked public interest is the indictment of contemporary agriculture as an energy drain, especially corn-dependent enterprises like Contained Animal Feedlot Operations (CAFOs). Manufactured sources of nitrogen and the fuel inputs of massive farm machinery are two of the more prominent examples of large scale and mostly non-renewable energy use. This discussion has taken yet another turn with the debate over "biofuels"—agricultural commodities such as corn and soybeans that are able to be converted (with a large input of fossil fuel energy) into fuel for cars and machinery. Should we eat the corn, or put it in our gas tanks? This question is at the heart

of the convergence of contemporary agriculture and political distribution of scarce resources.

While the use of fossil fuels in agricultural production is one example of the resource scarcity inherent in the intersection of agriculture and politics, water is possibly even more urgent of an issue. Even when the predicted effects of climate change are ignored, there is simply not enough fresh water to grow the food the world needs under the current production model. Already, there are numerous political confrontations over water rights. In the United States, these disputes usually take the form of endless litigation between states and municipalities, but in many other nations the disagreements have turned into long-term regional and national conflicts, often including the use of violence. The ongoing conflict in the Sudan is one example of a political struggle that has, as its roots, a disagreement over access to resources and has been exacerbated by the continued degradation of the environment (Suliman, 1997).

Many of the political aspects of the U.S. American system of food production and consumption, as well as industrial agribusiness at large, were addressed in the 2008 US Farm Bill (H.R. 2419, formally named the "Food, Conservation, and Energy Act of 2008"). This massive piece of legislation is so confusing, so riddled with seemingly unrelated statutes, spending measures, and subsidies that for most Americans it slipped by unnoticed. However, even a cursory reading of the legislation will reveal the highly political nature of the contemporary food complex, largely stemming from the necessity and use of two of the scarcest resources on the planet—water and fossil fuel. Additionally, the Farm Bill is not limited to the *production* of food and agribusiness commodities, but also includes a prescription for their *consumption*. School feeding programs (subsidized

breakfast and lunch), state and local farmer's markets, food stamp regulation, dietary recommendations, and labeling restrictions are just a few of the components of the Farm Bill that directly affect food consumption. If there is any doubt left as to the politically charged nature of contemporary agribusiness, a glance at the congressional record will reveal the farm bloc and agricultural lobbyists to be among the most well funded in Washington (Dorning & Martin, 2006).

Because of this engagement by governing bodies in addressing food issues and the public/private negotiation of resources for food production and consumption, the political economy is intimately intertwined with the food complex. The connection is explicit and the existence of organizations and publications devoted to the related cultural discourse attests to a high level of awareness among the general public. Within the profession of landscape architecture, there is an established basis and a recognized need for increased attention toward social consciousness and attention to the politically charged nature of the landscape. Brown and Jennings have explored the opportunities and need for social consciousness and political discourse within landscape architectural education (2003). What may be less explicit, however, is the role of the *food complex* as a political phenomenon in the design, planning, and management of landscape. The work of this thesis is to further illuminate the connections between landscape architecture and the production and consumption of food as an explicitly political phenomenon, in order to explore how the profession can incorporate the food complex into the design, planning, and management of the built environment.

The practice and process of landscape architecture

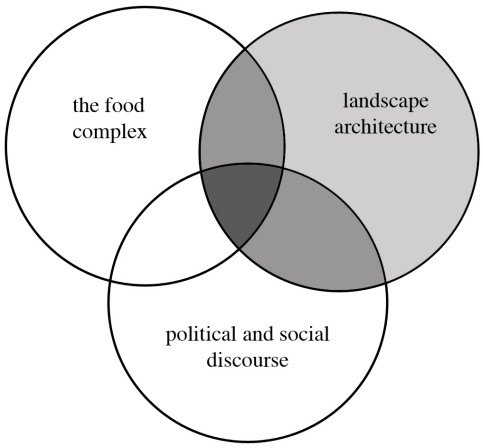

Figure 2.4 The component of landscape architecture.

Most landscape architects are aware of the history of our profession. What is generally less discussed are the varied roles of the landscape architect in contemporary society. The American Society of Landscape Architects (ASLA) defines the profession of landscape architecture as one that "encompasses the analysis, planning, design, management, and stewardship of the natural and built environments (ASLA, 2008)." The Landscape Architecture Foundation (LAF), is a professional organization more directly geared to being a catalyst for change than the ASLA. The LAF states on their website the belief that "the major environmental crises facing the world today can best be addressed through application of the landscape architectural approach (LAF, 2008)." The author suggests that increased attention to food production and consumption falls into the category of "major environmental crises" and agrees that this is an aspect of contemporary society in need of the landscape architectural process.

Process and *practice* are two words used throughout this thesis in relation to the profession of landscape architecture. The author loosely defines *process* as a designer's personal method of gathering information, opinion formation, and the selection of a direction to approach the design. Many designers articulate their process, while others do not. Either way, the author proposes that all processes involve both intuitive and rational aspects, whether implicit or explicit. *Practice* encompasses the act of designing, planning,

and all attendant activities: management and design communication are a part of practice along with drawing plans for design proposals. Practice, like process, also involves rational and intuitive aspects.

With these definitions, both process and practice can and should utilize what Aristotle first described as techne and poesis. James Corner, landscape architect and educator, proposes that a unity between techne (the craft, or making) and poesis (the aesthetic, bringing forth) existed prior to the adoption of the scientific method; he asserts that their separation was the "death kneel" for theory in landscape architecture (1999). The author feels that while Corner's statement is true in one sense, for the purposes of this thesis a more general conceptualization of techne and poesis is useful. In this working definition, poesis is defined as creation according to process allowing for change, and techne as creation according to an ideal plan—the process of making. While other definitions draw direct correlations between poesis and process, and techne and practice, the author's interpretation allows for a more integrated perspective. Process is seen as an ongoing effort of conceptualization, management, and integration of different types and sets of knowledge. Process can incorporate *poesis* in that it is an intuitive and circular activity, and *techne* in that it can involve the implementation of technologies, methodologies, and rational principles. Similarly, practice incorporates poesis when the landscape is allowed to "unfold" through appropriate management and when "feedback loops" are incorporated into design. Practice incorporates techne through the acts of manipulating, building, and using technology in the creation of the built environment.

Ideas of process and practice have evolved since the formal inception of landscape architecture as a discipline. In the author's estimation, the contemporary profession of

landscape architecture places too great an emphasis on techne—the production, manufacture, and immediate manifestation of the designer's ideals onto the built environment—and too little attention to poesis—the subtlety of encouraging the landscape to unfold and utilizing design as a management tool to encourage social and landscape evolution. This second focus requires a deeper understanding of social, economic, political, and environmental processes than most landscape architects currently employ. This thesis presents an exploration of incorporating the food system into the awareness of landscape architects, and thereby provides one outlet for the integrated expression of both techne and poesis in process and practice.

Formative pressures on the design-food-discourse complex: Five themes

The production and consumption of food is a multi-faceted element of society that takes many forms and serves many purposes. In addition to providing nutritional sustenance, contemporary food systems in the United States can serve to generate and preserve cultural identity, whether it is that of the agrarian tradition popularized by Thomas Jefferson or of recent immigrants who rely on their native diet as the most direct connection to the culture they left. Other possible social benefits include political and community organizing through the creation of farmer's markets, cooperatives, and community gardens, and the increased public health that stems from a better diet. Furthermore, from a purely environmental perspective, the production of food can have either devastating or restorative effects on natural systems. For instance, industrial-scale monoculture farms in California's Central Valley have polluted the groundwater, released chemical toxins into the air, and in many cases denuded the landscape through soil

salination. By contrast, derelict urban lots that have been reclaimed by urban farmers or community gardening collectives have been shown to mitigate stormwater, control heavy metals in soil, and slow erosion. And unlike commercial operations, small farmers, community gardeners, and home growers are more likely to utilize seed-saving techniques and grow varieties of plants that are most suited to their geography and provide for cultural and nutritional needs, thereby preserving and enhancing the genetic diversity of foodcrops. This pool of genetic information as well as the indigenous knowledge of cultivation and use is an important part of maintaining the resiliency of ecological and social systems. For all these reasons and more, the contemporary food complex serves as one of the most important fronts for the protection of the environment, the improvement of public health, the preservation of cultural identity, and the practice of political process. The following sections examine contemporary methods of the production and consumption of food in America through an exploration of the five pressures outlined in Figure 2.1.

The erosion of cultural identity and connection to place

The rate and quality of cultural change has been fostered by many cultural phenomena, including new technologies and the allocation of scarce resources. Richard Thayer expounds on the landscape effects of technology and the new energy society, establishing the effects those changes will have on the cultural perceptions of "time, scale, and sense of place (Thayer, 2008)." The cumulative effect of this new technological society has created a cultural confusion that is expressed throughout society and in the landscape. Cultural ideals are conveyed in a manner totally divorced from their origin, instead relying

almost exclusively on symbol and metaphor to convey a coherent cultural identity. Landscape architecture has not been immune to society's urge to construct the symbolic landscape, sometimes at the expense of the actual landscape it attempts to symbolize. For example, small farms have been replaced by subdivisions sporting bucolic, albeit ironic, names like *Ellis Farms* and *Anderson Estates* in Atlanta—not to mention the *Indian Hills* subdivision. Furthermore, cultural geographers have theorized that the ubiquitous subdivision single-family home is a symbolic metaphor for a farmstead, with lawns acting as a stand-in for a field of grain, and garages as barns (Chapman, 2007; Hess, 2004). From the perspective of food consumption, the addition of a romantic narrative to many food labels alluding to an arcadian origin of the product—a practice that author Michael Pollan termed "supermarket pastoral"—is indicative of the widening gap between the reality of contemporary food systems and the manufacture of cultural placeholders (Pollan, 2006).

As the example of subdivision development suggests, landscape architects are complicit in the construction of a social narrative that describes the production and consumption of food. Most are simply responding to the existing cultural practices and trends, without the realization that metaphors utilized in the built environment have a profound impact on the overall construction of cultural and political identity. It is a power that most landscape architects wield unknowingly and without the clarity of understanding the strong effects of cultural metaphor. M.M. Eaton described the need for new landscape metaphors in a 1990 Landscape Journal article, and established the role of metaphor within our profession. Anne Spirn also addressed what she identifies as the "language of landscape," asserting that designers have the ability to express the "natural and cultural processes of a place (1998)."

Outside of the discipline of landscape architecture, social research has shown that human foodways are a component of the construction and maintenance of cultural identity and bonding (Anderson, 2005). Even food banks, known for their adherence to utility and the practical task of getting food to people in need, are recognizing the role that food plays within cultural units and are changing the manner and form in which they provide food to the nation's hungry. A *New York Times* article reported on recent trends that include food banks partnering with local farms, increasing the stock of fresh produce over processed products, and allowing recipients more selection in the food they receive (Zezima, 2008). The article specifically cites the need to "accommodate the dignity and preferences of the people," and recognizes the need to think about specific cultures, such as recent immigrants who "don't relate to canned food." There is a place for cultural myth and collective identity, and the production and consumption of food provides a fertile ground for consciously acknowledging its importance and reinforcing social ideals.

J.B. Jackson wrote extensively about the importance of maintaining a sense of place in *Sense of Place, Sense of Time,* a book that many landscape architects practicing today have read (Jackson, 1994). The landscape architect and educator Terry Harkness is known for innovation in distilling the sense of a place and creating a landscape that captures that essence (Harkness, 1990). Landscape architects often interpret the cultural sense of a place in creating concepts for landscape design. A prime example of this is *California Scenario,* the design of Isamu Noguchi which sought to capture the essence of Southern California. It is worthy to note that Noguchi's design implicated the agricultural landscape of California, as well as specific agricultural products such as the lima bean. Susan Herrington provides a detailed review of the role of meaning in landscape architecture in

her 2007 article, "Gardens Can Mean" (2007). Based on this dialectic on place within the discipline, landscape architects have played an active role in the maintenance of cultural identity. However, doing so within the specific context of the food complex is not an area that landscape architects have fully explored.

Perhaps one of the most ambiguous—albeit most relevant—aspects of the cultural role of the landscape is that gardens that supply *material* sustenance can and should also supply *spiritual* sustenance, reinforcing our intuitive subconscious. There is a certain "magical" quality found in truly successful restorative gardens that transcends a factual understanding of science and speaks directly to the human soul. Will Hooker, a landscape architect and permaculture advocate, has spoken to this quality over his career promoting sustainability and a new relationship with Mother Earth. Far from being an objective exclusively for the well-heeled, delight in the landscape provides the necessary link between the cultural and the environmental. Thompson, in *Ecology, Community and Delight,* expounds on the relationship between the elusive quality of delight, political process, and environmental concern (Thompson, 2000).

The Puritan heritage of U.S. American culture is often blamed for the continued lapse in attention to environmental delight, but it has not undermined the reaction that individuals in our culture generally have toward beauty and life. Joan Nassauer has written on the collective tendency toward managed landscapes—neat hedgerows, weed-free fields, organization of the farm—and an aversion to the chaos and complexity associated with "ecological agriculture" such as permaculture (Nassauer, 1988). However, the desire for organization and "neatness" as described by Nassauer is not in conflict with the magical and productive landscapes as described by Hooker. Rather, there are simply not

many built and publicly-accessible examples of well-executed permaculture food gardens in existence. Most are completed by talented farmers and gardeners who understand the technology of their ecosystem so completely that they tend to lose sight of the other roles of the garden—the magical ambience, the cultural significance, and the place of the spiritual within the landscape. Permaculture [5] is the design strategy that speaks the most clearly to these aspects, and one whose principles are expounded upon by Bill Mollison, John Lyle, and Jerome Rodale.[6] When well applied, the principles of permaculture provide an outlet for human expression that goes far beyond production of food, and enters into the production and maintenance of delight in the landscape that draws people in and encourages physical and spiritual participation. These landscapes are neither the neat hedgerows of conventional farming systems nor the unmanaged chaos of experimental production. In contrast, these magical landscapes represent a largely unexplored outlet for attentive designers where delight is considered an organizing principle for food production and consumption systems, possibly uniting the techne of technical production with the poesis of natural and human-scaled phenomena.

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[5] By definition, permaculture is "permanent agriculture" a theory of design that elevates human intervention in the landscape to the foreground, as participant in the natural system, not as a competitor (Holmgren, 2002).

[6] For an overview of their work, see Mollison, B.C. (1990). *Permaculture: a practical guide for a sustainable future*. Washington, D.C.: Island Press; Lyle, J.T. (1999). *Design for human ecosystems: landscape, land use, and natural resources*. Washington, DC: Island Press; and Rodale, J.I. (1961). *How to grow vegetables and fruits by the organic method*. Emmanus, PA: Rodale Press.

Human-nature dissonance

Increased attention to the potential of the food system to create and preserve cultural identity will also contribute to the closure of the perceived and experienced gap between humans and nature. When landscapes refer to cultural metaphors that are themselves disjointed and construed, the disconnect between contemporary realities and landscape perception becomes more pronounced. Attempts have been made by numerous landscape theorists and cultural geographers to account for this cultural amnesia[7]. The rapid rate of change and subsequent globalization are two trends often cited as deepening the divide between current reality and cultural myth. That divide has continued to manifest itself in an increasing alienation from nature matched only by our desire to connect to the environment around us, however meager the results. E.O. Wilson coined the term "biophilia" to describe human affinity for nature (Wilson, 1984). Stephen and Rachel Kaplan established the basis for preference theory, while Richard Louv has written extensively regarding the "nature deficit" among children in Western society[8]. The ASLA has become politically involved in this issue by lobbying for the passage of the *No Child Left Inside Act* (H.R. 3036), a piece of legislation that promotes environmental literacy. Through this research, writing, and advocacy—as well as personal experience—most landscape architects are aware of the human need for a connection to the environment.

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[7] James Kunstler, Yi Fu Tuan, and JB Jackson are three notable scholars who have written extensively regarding the change in landscape perception during the 20th century. See Kunstler, J.H. (1993); Tuan, Y.F. (1974); and Jackson, J.B. (1970). William Irwin Thompson's *The American Replacement of Nature* (1991) is a particularly interesting and relevant read in this regard.

[8] See Kaplan, R. and S. Kaplan, *The Experience of Nature: A Phycological Perspective* (1989) and R. Louv, *Last Child in the Woods* (2006).

As apparent as the need for a human-environmental connection may be, the place of the production and consumption of food in our society presents a vast untapped outlet through which landscape architects can provide the public with a genuine connection to nature. By design, landscapes can not only encourage a passive interaction with nature, but an active and profound relationship by way of participation in the natural life-cycle through vegetable and fruit gardening. Beyond home gardening, urban agriculture and local food economies that are visible in the landscape also provide a meaningful connection to one's surrounding environment. Eating is the most frequent and direct interaction that we have with our environment; a transformation of the concept of eating also transforms our relationship with nature. There is no more personal connection to nature than the recognition that our sustenance depends on our environment *every time we eat*. The opportunity for landscape architects to make that relationship visible in the landscape occurs throughout the food complex, at a variety of scales, and across cultural, socio-economic, and political lines. Eco-revelatory design and related design practices that aim to unveil processes and social phenomenon in the landscape have demonstrated the potential for this visibility integrated within a built work. A thorough examination of the involvement of landscape architecture in the food complex becomes exceedingly important once those opportunities are recognized.

Declining public health

An increased understanding of the design of the built environment on the health of the public is another reason why it is timely and relevant to reassess the place of landscape architecture within the contemporary food complex. A significant impetus for

the design of early public parks was the urban reform and public health movement, a cause with which Frederick Law Olmsted was highly active. His tenure as General Secretary of the United States Sanitary Commission (later, the American Red Cross) introduced Olmsted to the idea of public health as "social and practical good will (Jackson, 2001)." He continued with his commitment to increased public health through attention to accessible greenspace, sanitation, and mitigating the effects of poor air quality through design and advocacy for urban reform.

Many of the public health issues that Olmsted faced are no longer major concerns; preventable sanitary diseases are generally not the main focus of public health activists in Western nations. However, a new threat has emerged which is a direct result of the contemporary food system. Recent investigative study focuses specifically on the food complex as a cause of decreased public health due to poor diet and lack of access to fresh and nutritious food. Cancer, heart disease, stroke, and diabetes are four of the leading causes of death in the United States, all of which can be directly attributed to food intake (Pollan, 2008b).

The connections between the built environment, public health, and the food production and consumption complex are numerous and well-documented. The American Planning Association (APA) has recognized these linkages and has published a policy guide naming suggestions for a healthier food complex and drawing specific links between the food environment and other facets of society (APA, 2007). As the APA documents, the effects of the food complex on public health are inexorably linked to economic, social, environmental, and political conditions. However, these connections are not limited to the developed world. As the Food and Agriculture Organization (FAO) explains in a 2006

article, *under*nutrition and *over*nutrition are the double burdens of many societies, especially those facing economic transition and the subsequent availability of the cheap, empty calories of processed food (FAO, 2006). One billion of the world's population are malnourished, and one billion are over-nourished, resulting in the health problems outlined above (Shiva, 2007). Landscape architecture's role in addressing the public health impact of contemporary food systems is one of the more complex relationships, but is nonetheless clearly relevant to the goals of the profession since increased involvement can better provide for the health, safety, and welfare of the public—an oft-stated professional goal. Additionally, the legal statues of many states that have licensure laws governing the practice of landscape architecture specifically outline professional activities that can be addressed through increased attention to the food complex. In the state of Georgia, Title 43, Chapter 23 of the State Code describes landscape architecture as the act of "consultation, investigation, planning...in connection with the preservation or determination of proper land uses, natural land features...This term shall also include the consideration of environmental problems involving land areas, as such problems relate to the public health, safety, and welfare" (Georgia State Government, 2009). The investigation and consideration of activities that influence the production and consumption of food affect the health, safety, and welfare of the public directly and also through their impact on the overall quality and integrity of the environment at large.

Food production and consumption systems profoundly affect public health on two basic levels. The first and most obvious is the issue of food consumption from a nutritional perspective. How food was produced, the distance it travels from farm to table, and the amount and type of processing all affect the nutritional quality of modern food. A 2007

United State Department of Agriculture (USDA) report states that there has been a marked decline in the nutritional content of the 43 major crops it has tracked since the 1950s (Pollan, 2008a). Furthermore, food choices are based on a variety of factors—what foods are available, affordable, and familiar are all major factors in food purchase decision-making. More fresh, local, and readily available produce would provide, at least in part, alternatives that would help limit occurrences of diet-related disease epidemics such as heart disease, cancer, stroke, and diabetes. Evaluating the built environment based on the degree to which it supports or negates the cultivation of healthy eating choices is crucial to creating a restorative food complex for the 21st century.

The second manner in which the food complex affects public health is in the *production* of food. In communities where residents are actively engaged in gardening, there are more opportunities for physical activity. Acknowledging this benefit, occupational therapists employ gardening in rehabilitation programs, and many U.S. American prisons have horticulture projects that center on the production of vegetables for use at the prison complex or for sale to the community. The health benefits of these gardens are not limited to physical exercise, but also provide for emotional and psychological well-being (Cooper Marcus, 1999; Koepke, 2008; Pappas, 2006).

Political and economic pressure

In addition to his activism for public health reform, Frederick Law Olmsted was an advocate for social democracy, a movement that exerted a strong influence on the direction of the early landscape architecture profession in the United States. Laurens H. Seelye, President of St. Lawrence University, gave a commencement address in 1939 that summarizes the ideals of social democracy and describes democracy's protectors as

"citizen-artists" called to "design and execute new compositions in the historic art of the United States, the art of social democracy (Seelye, 1939)." It was from this political perspective that Olmsted and subsequent generations of designers worked to create a just and pluralistic society. Carol Nicholson published a thorough article on the political and social philosophy of Olmsted, how those philosophies influenced his work as a landscape architect, and conversely, how his work as a landscape architect influenced his political philosophy (Nicholson, 2004). Nicholson also cites Olmsted's voyage to England in 1850 as the point at which the then-farmer Olmsted realized that the rapid growth of cities necessitated a shift in focus from rural landscapes to scientific agriculture and urban reform, documented in *Walks and Talks of and American Farmer in England* (Olmsted, 1859). The publication of *The Cotton Kingdom* (1861) and the tour of the South that led to that publication further documents Olmsted's ability to connect issues of landscape, agricultural production and the political economy of society. As early as 1853, he described himself as a Social Democrat, opposed to the "corrupting influence of lassiez-faire capitalism," and was able to put his philosophy into action with the commission to design New York's Central Park in 1858 (Nicholson, 2004). The built landscapes and innumerable writings of Frederick Law Olmsted demonstrate the historical relevancy of the practice of landscape architecture to political processes, the agricultural complex, and social justice. Another designer, urban reformer, and prolific writer made an even more explicit connection between environmental design and the food production and consumption complex of the early 20th century. Leberecht Migge, a German landscape architect, is the subject of the following chapter that presents an historical case study of landscape architecture and the food complex.

A more recent example of the influence of the political economy's influence on the built environment through the food complex is found in the story of the South Central Farmers and their 14-acre, 350-family community garden in Los Angeles. This oft-cited and thoroughly researched case study reveals the level of political organizing inherent in the creation of such as space, a well as the political mechanisms that brought its ultimate demise. The project was conceptualized by the Los Angeles Regional Food Bank, an organization that recognized the multiplicity of benefits that would come from a community garden: improved nutrition and food access, environmental restoration, cultural practice and expression, income generation, and community cohesion, especially in the wake of the 1992 riots spurred by the Rodney King verdict (Lawson, 2007). The garden's ultimate demise in 2006 is a testament to the very real and immediate role the political economy plays in the production and consumption of food, especially at the scale of community production within an urban environment.[9]

A study of the effect of trade tariffs, subsidies, and other protectionist policies for food and agricultural products presents another worthwhile study for landscape architects interested in an integrative practice. A measure known as the Producer Subsidy Equivalent (PSE) is utilized to compare the amount of subsidization across international boundaries. Pietro Nivola reports that in 1995 the PSE per hectare of agricultural land in the United States was $67, the average for the European Union was $761, and in Japan, a staggering $12,286 (1999). Nivola illustrates these figures by describing the contrasting views from a plane entering Manhattan (one can see no agricultural use of the land, save for a few

[9] The Garden, a film by Scott Hamilton Kennedy, provides a thorough introduction to the South Central Farmers and the socio-political aspects of collective gardening (Kennedy, 2008).

boutique vineyards on Long Island) and standing atop the Eiffel tower in Paris (farmland is still visible to the naked eye). It is important for landscape architects—not only those engaged in farmland preservation or food production—to understand the impacts of subsidization on the built environment because, as Nivola states, the PSE has just as great if not greater of an impact on the use of ex-urban land as does land-use regulation and zoning (Nivola,1999).

Environmental degradation

Perhaps the strongest link between the food complex and landscape architecture is made by examining environmental concerns—a contemporary focus of many design professionals. Most landscape architects are attuned to the language of sustainability, green design, and eco-design. Although the exact definitions of these words are vague and debatable, their prominence in today's practice demonstrates the adoption of a contemporary environmental ethic within the profession of landscape architecture. Likewise, the "greening" of the food system through increased public awareness of organic, sustainable, local, and otherwise environmentally-friendly food products presents the linkage between the food complex and environmental concerns. It follows that landscape architecture's position as an environmental design profession would include meaningful attention to the ecological concerns brought about by contemporary food production and consumption.

The dwindling availability of natural resources such as water and fossil fuel, massive erosion of topsoil, global climate change, and the loss of genetic diversity (especially among food crops) are a few of the main environmental concerns explicitly linked to the

food complex. These issues have already been addressed by numerous landscape architectural practitioners and critics, although not always related to the food complex. However, agriculture is responsible for using 70% of the world's fresh water supply, a percentage that is expected to increase as world-wide population grows and as a greater number adopt a western-style, meat-centric diet (Kirby, 2004). Additionally, agricultural waste is responsible for an enormous amount of greenhouse gas emission and water and air pollution, becoming more pronounced after the onset of industrial agriculture during World War I. According to a 1996 report published by the Food and Agriculture Organization (FAO), agriculture is a major cause of surface water degradation through erosion and chemical runoff. The report also cites a 1994 Environmental Protection Agency (EPA) study that identified agriculture as the primary contributor to the pollution of rivers and lakes, and the third largest contributor to contamination of estuaries (FAO, 1996). Additional research particular to landscape architecture has demonstrated the need for an increased attention by environmental design practitioners toward the use of the land for agricultural production, most recently in a *Landscape Journal* article by Laura Jackson (2008).

From a purely environmental perspective, the production and consumption of food has enormous implications. The methods utilized determine either the degree of degradation or the opportunities for restoration of Earth's ecosystems. Some operations, such as Concentrated Animal Feeding Operations (CAFOs), entail an enormous ratio of energy expended to energy produced and often release highly toxic pollutants into their surrounding environment. Other practices, such as ecosystem-based diversified farms have been shown to improve soil fertility, increase groundwater infiltration, and augment

ecological diversity in their immediate vicinity. Knowledge of the opportunities and limitations of the environmental effects of food production and consumption systems will help landscape architects make informed design decisions by adding another layer of understanding to their cache of ecological awareness.

Resource scarcity is perhaps the biggest limiting factor in the food complex. Farmland is currently lost not only to development, but to soil salination and nutrient depletion. In the San Joaquin Valley of California, for instance, an arid climate, high water tables, and inefficient irrigation methods all combine to create a soil that is irrevocably salinated and calls into question the sustainability of irrigated agriculture within the region (Schoups et al., 2005). Due to the current drought conditions, a State of Emergency was declared in June of 2008 for the Central Valley Region (the larger region that includes the San Joaquin Valley), an area within which the Governor declared agriculture to be a $20 billion per annum industry (Schwarzenegger, 2008). As with many areas of the world, water scarcity is becoming a larger agricultural problem, especially for highly industrialized and concentrated operations.

The production of food and other agricultural commodities in the United States is also responsible for an alarming portion of the nation's fossil fuel use, as well as the subsequent carbon emissions. As cited on the website *Sustainable Table*, a 2002 study by the Johns Hopkins Bloomberg School of Public Health found that under the current industrial model of food production an average of three calories of energy are needed to create one calorie of edible food; 35 calories are required to produce one calorie of grain-fed beef (2008). This estimate does not include the energy used in processing or transporting food, a factor that would further increase that ratio. Another study, cited on

the webpage *Food and Water Watch*, estimated that the American food industrial complex uses roughly the same amount of energy as the total energy consumption of France (2007). Michael Pollan has written that the United States food sector accounts for 19% of the nation's fossil fuel consumption, second only to automobile usage (2008b). Interestingly, *Food and Water Watch* reports that only one-fifth of that energy input is used in the production of food; the other four-fifths are expended "moving, processing, packaging, selling, and storing" the food post-harvest (2007). This is an important distinction because an examination of the details of energy use within food production and consumption reveals opportunities for lowering the overall carbon footprint throughout the complex, not just at the point of production. In light of the scarcity of water and fossil fuel, a food industrial complex that relies so heavily on the constant and low-cost availability of these inputs can rightly be judged non-sustainable. Conversely, those practices that encourage rejuvenation of the biological cycle should be investigated and encouraged by designers and policy makers.

The management of storm water has become a practice familiar to many landscape architects over the past few decades. The impact of food production on localized stormwater systems is an area that is beginning to receive more attention. Michael Nairn, a landscape architect and educator at the University Pennsylvania's Department of Urban Studies, has studied urban community gardens in Philadelphia since the 1990s and his research draws a direct connection between the management of urban stormwater and the role of community gardens. West Philadelphia, in particular, possesses failing stormwater infrastructure that has resulted in the collapse of several city blocks and the structural failure and subsequent condemnation of a large portion of the local housing stock. Nairn's

theory, supported by geologists and other researchers, is that the surrounding urban and suburban development has resulted in a huge increase in surface runoff, which has placed too great a load on the urban stormwater system. The city of Philadelphia has stated that the cost of completing the necessary improvements to the stormwater infrastructure of West Philadelphia is in excess of six billion dollars—a sum completely out of reach even with federal assistance. In an effort to mitigate the effects of the stormwater in a fiscally reasonable manner, Nairn combined his background as a landscape architect with his research on community gardens and has established a case for the conversion of derelict and abandoned property into actively cultivated community gardens. Indeed, the runoff coefficient for compacted abandoned grassland can be four times that of cultivated gardens (Harris, Dines, & Brown, 1998). It is clear that food production systems, especially in urban and suburban environments, could significantly support environmental services such as stormwater mitigation.

Yet another environmental role of the food complex is that of the preservation of genetic diversity. Thousands of years of agricultural cultivation left the remarkable inheritance of an extremely diversified pool of food genetic resources. However, with the advent of modern industrial agriculture, the need for such diversity dwindled. Only a handful of varieties of each crop were selected to fulfill the needs of the entire population. An historical example can be seen in the Incan Empire's selection of certain species of potatoes specifically for their ability to produce tubers that would last well into the winter with minimal rot, allowing for the feeding of large populations of troops and conquered civilizations (National Research Council, 1989). Later, potatoes were selected specifically for their ability to be mechanically harvested. Karl Zimmerer has written extensively on

the loss of biodiversity, specifically among landraces cultivated by Andean farmers, and details the complexity of factors that contribute to the erosion or the preservation of genetic resources (1996).

Other fruits, vegetables, and commodity crops have been bred over the last 50 years to increase transportability, maintain a longer shelf life, and to produce certain characteristics that may not be germane to the nutritional or cultural nature of the food. The classic shape of the Red Delicious apple is a good example of this genetic dead end. Although this apple produces a consistent dark red skin and possesses an exaggerated "apple" shape, it is notoriously lacking on flavor, texture, and nutritional quality. According to Michael Pollan, a century ago there were thousands of different varieties of apples in production; today, most commercial varieties share the same five or six parental varieties (Pollan, 2006).

However, the preservation of the genetic resources of food crops goes far beyond the preservation of flavor. A large diversity of genes that are adapted to specific micro-climates is the best insurance against changes in food production and consumption brought about by climate change, new production techniques, and discovery of new nutritional and social needs. Of the 3,000 tropical fruits routinely consumed by humans only four are produced on a global scale; out of roughly 10,000 grasses, we use only seven; and out of 18,000 legumes, only six are utilized (Vietmeyer, 1990)[10]. Moreover, several strains of those crops are genetically modified to contain the "terminator" gene—the gene that renders the next generation of seed non-viable (Crouch, 1998). There is no

[10] The plant species that we rely on for human sustenance: Fruits - banana, mango, pineapple and papaya; Grasses - wheat, rice, maize, barley, sorghum, rye, and oats; Legumes - peas, beans, soybeans, peanuts, alfalfa, clover.

conclusive evidence that the terminator gene does not jump to non-cultivated wild parent varieties of crop plants, resulting in their inability to reproduce and creating a domino effect of unknown environmental consequences. Creating vast networks of monocultures that exclusively use only a few varieties of these crops places the future availability of genetic resources of food in jeopardy, endangering the ability for subsequent generations to adapt to changing climatic, pathogenic, and social conditions.

The growing body of work relating to resilience theory supports an interdisciplinary approach to understanding the need for functional diversity within broadly conceived systems. Gunderson and others have written extensively regarding the application and systematic identification of processes through systems theory, especially as it relates to interactions between built and natural systems (Gunderson, Holling, Pritchard, & Peterson). Resilience, when defined as "the maximum amount of disturbance a system can experience and still return to the same equilibrium (Allison & Hobbs, 2004)" is necessarily linked to the degree of diversity maintained in both natural systems (the gene pool) as well as in cultural practices. One significant consequence of our contemporary food complex is the simplification of biological and cultural processes to the degree that resilience, and therefore sustainability, is compromised.

Contrasting with large corporate operations, small farmers, community gardeners, and home growers often utilize seed-saving techniques and grow varieties of plants that are most suited to their geography and that provide for their specific cultural and nutritional needs. Dr. Virginia Nazarea, an environmental anthropologist, has documented the role that seed saving and small scale gardening play in protecting biodiversity and preserving cultural traditions (Nazarea, 1998, 2005). In the early 1900s, a farm in Iowa

typically raised more than a dozen plant and animal species for market, excluding the species produced for home consumption; today the typical Iowa farm produces only two: corn and soybeans (Pollan, 2008a). The effects of this specialization are numerous, ranging from decreased on-farm sources of soil fertility (through the presence of animal manure), the loss of ecosystem diversity that a multiplicity of produce encouraged, the loss of heirloom, region-specific varieties of food crops, and the cultural traditions that were passed along through the production, marketing, and culinary preparation of each species. This multiplicity of effects reflects the integrated aspects of the challenges facing the food complex, and also points toward the adoption of a multifaceted approach that includes environmental design.

Summary

The profession of landscape architecture has the potential to make significant contributions toward the improvement of the contemporary food complex through the design of landscapes that incorporate ideas generated from this chapter. Additionally, the ability of the landscape architect to comprehend and translate the complexity of these concerns provides another potential outlet for professional work and broadens the scope of practice. This chapter presents the basis for the professional inclusion of issues surrounding the production and consumption of food into the design process. The promotion of public health, preservation of cultural identity and the human connection to nature, the creation of a restorative natural environment, and the continuation of political and economic systems that support social justice and equality of opportunity are a few of the relevant avenues through which landscape architects can engage the food complex.

The following chapter examines an historical example of one landscape architect whose research and work spoke specifically to the political and social discourse and conditions of the food complex, resulting in a body of work that remains a relevant study for today's practitioners interested in incorporating the contemporary production and consumption of food into practice.

III. An historical study: Leberecht Migge and early 20th century Germany

In order to explore the ways in which landscape architecture can incorporate the contemporary reality of a highly politicized food industrial complex, this chapter investigates the work and impact of a landscape architect on the political discourse of German society during a period of rapid change within both the agricultural and socio-political sectors. Throughout the period roughly delineated by the end of the 19th century through the rise to power of the National Socialist Party in the 1930s, political discourse regarding both the ideology and the practice of food production and consumption was at the center of rebuilding a broken Germany. Contributing to that discourse, modernist architects and progressive social thinkers proposed numerous solutions to the problem of establishing adequate standards of living for Germany's new urban working class. Although the work of the design community during this time was broad, within the realm of landscape architecture it largely took the form of work that attempted to integrate the landscape, its biological processes, and the cultural and social needs of the population through community planning and the design of public parks and residential living systems.

Because of Germany's transition during this time from an agrarian society to one based on capitalist industrialism, the design of the built environment reflected this state of transition. The design discourse became increasingly divided along ideological lines, either retaining a sense of 19th century national identity through nostalgia and political rhetoric, or propelling the nation into the 20th century, utilizing modern science, mass

production, and industrial planning to meet social goals. To many Germans, especially those in the East, the national agrarian identity was threatened by the effects of industrial capitalism. The discourse became increasingly polarized and incorporated anti-foreigner and anti-semitic rhetoric: two groups that were seen as antagonistic to the national agrarian ideal. It was against this backdrop that Leberecht Migge emerged as an accomplished and prolific German landscape architect whose impact on the political landscape of Germany is still apparent through his body of work. Migge proposed a "revolution of gardens" that not only rejected the National Socialist's anti-Semitic and conservative rhetoric, but also called into question the efficacy of the Modernist philosophy of his peers. In addition to the design of communities, residences, and parks, he advocated for social and political reform through polemical writing and the publication of his extensive research. This chapter proposes that his work provides an historical precedent for, and relevant insights into, landscape architecture's contemporary involvement in the production and consumption of food.

Research structure

The locale and time period of this historical research were chosen for several reasons. First, this period in western history was one in which industrialization caused European economies to shift from agricultural production to a largely manufacturing based economy. The resulting change in development and land use patterns, housing types, and the manner in which people produced, acquired, and consumed food make the study of the politics of land use during this time particularly relevant to this thesis.

Secondly, early 20th century Germany provides a vivid example of the intersection of design, land reform, and politics because of the rise of modernism, including the work of noted architects Walter Gropius, Martin Wagner, and Theodor Fischer, as well as the often overlooked landscape architect and subject of this chapter, Leberecht Migge. These pioneers worked collectively toward the creation of a "new way of living" that embraced both emerging technologies and the populist politics of social democracy. Many organizations and schools were founded that furthered their design ideals; the Deutche Werkbund, the Bauhaus, the Worker's Council for Art, and the November Group are just a few.

Providing a counterpoint to the modernist movement in Germany, the early 20th century was also the period in which the National Socialists rose to power under the leadership of Adolf Hitler. The influential Nazi Minister of Agriculture, Walter Darré, whose primary focus was the large-scale reordering of food production and human settlement patterns, was a key player among those who sought to use design as a tool to reinforce the policies and ideals of the party. Although some overlap occurred in their designed work, the modernists and the National Socialists presented largely conflicting political goals as well as differing methods of achieving those goals through the design of the built environment.

The decision to utilize early 20th century Germany as the primary case study for the illustration of landscape architecture's inherently political nature within the food complex seems the most logical in light of the well-researched political events of the time, our relative temporal proximity, and the polemical nature of the design professions during that period. Furthermore, more research is needed in regard to the life and work of Leberecht

Migge, a talented and visionary landscape architect whose work—although largely unknown—offers a great deal of practical and theoretical relevancy for today's practice, especially in regard to the focus on the production and consumption of food presented within this thesis. This portion of the thesis works toward that end while situating the practice within a political and social framework of a specific time and place.

It is understood that significant events took place throughout the wider world politically, economically, and culturally as well as within the realms of landscape design and food production and consumption. However, this chapter is presented from a Western perspective and for a Western audience. Germany, as well as the United States, contributed to the evolution of the profession of landscape architecture that grew out of the European gardening tradition and into the practice formalized by Frederick Law Olmsted and his contemporaries. Downing, Olmsted, and Loudon are the landscape designers most familiar to American landscape architects that applied scientific agriculture, gardening, and science, to the design of country estates, thereby establishing the early profession. There exists a wealth of historical research available that delves deeper into the links between the early profession of landscape architecture and agriculture in Europe and America[11]. The author acknowledges the complexity of influences that contribute to the cultural formation of professions such as landscape architecture, and accepts that the German practice of landscape architecture was materially different than that of the United States during the early 20th century. However, the German design community exerted a strong influence over European and American

[11] For a more detailed review, see Tunnard, C. (1938) *Gardens in the modern landscape*; Patterson, E. L. (2001) *Agriculture, landscape architecture, and ecological design: A foundation for collaboration between ecologists and landscape architects*; and Solomon, B.S. (1988) *Green architecture and the agrarian garden*.

design, especially after many noted architects of the Modern Movement emigrated to the United States at the onset of the second world war. Additionally, the prominent German designers at the beginning of the 20th century were professionally engaged with their European and American counterparts, traveling and working on many of the same projects, as well as actively reading and writing about contemporary theory. Therefore, it is useful and relevant to examine the work of a German landscape architect in order to further understanding of the contemporary American practice.

This chapter's exploration of Leberecht Migge's conflation of landscape architecture, political discourse, and the food complex begins with a general discussion of relevant political and social issues of the time, narrowing to German-specific concerns in order to provide cultural context and meaning for his process and work. Likewise, the relationship between political discourse and design is examined first in the general terms of the early Modernist Movement, then narrows to a discussion of the political goals of the National Socialist Party and how they were contested by Modernist rhetoric and built works, specifically the work of Leberecht Migge. As with the history of any evolving profession, events and boundaries are never discrete and delineated, and cause and effect are sometimes unclear. This chapter attempts to provide a logical and clear synopsis of the interaction of design, political and social discourse, and the food complex, while still remaining true to the reality that there are indeed many ways to interpret the historical events outlined in this chapter.

The political climate of the early 20th century: Transitions

The state of the world at the turn of the 20th century was a time of immense change in political power structures. The banking and finance industries were transformed from a system of private banks and lending based on personal relationships into the capital-intensive system of joint-stock companies and industrial banking during the mid-1800s (Landes, 1970). Industrialization spread from England to the European mainland beginning around 1800, but was not truly embraced until 1914 (Crouzet, 2001). The "techno-shock" of the rapid growth and development of an increasingly mechanized technological society produced a wide range of cultural changes. The population nearly doubled during the 19th century, and due to the rural-urban migration spurred by industrialization, cities swelled to a size that was not able to be supported regionally (Jellicoe, 1987). The population of London, one of the earliest cities to embrace industrialism, grew by one million each decade from 1871 to 1901, and the pressure to convert residential areas in the city to offices and railway buildings caused an acute housing crisis (Hall, 2003). This scenario was repeated throughout Europe and America. Food became scarce and the cities lacked infrastructure to deal adequately with sanitation. Urban life deteriorated even as citizens flocked to the cities by the thousands.

The changes in European agricultural production during industrialization gained momentum toward the end of the 19th century. Improvements in land cultivation were first seen in England, where the manorial institution gave way to a capital-based economic system in which landlords had a greater incentive to "improve" the land through new techniques (Crouzet, 2001). Agricultural change happened mainly through the adoption of higher yielding and hardier crop strains, higher concentrations of animals that increased

the fertilization potential of farms, and land improvement and reclamation (i.e. the draining of wetlands); however, large-scale mechanization of agriculture did not occur until after the second world war (Crouzet, 2001). The increased production of food was not great enough to keep up with the increase in population in most European nations, but those that were able to import food through the newly introduced steamships and railroads thrived (Crouzet, 2001).

The growth of populations beyond what could be supported regionally was caused by a shift in methods of agricultural production as well as the development of off-farm technologies (such as steamships and railroads) that opened up new possibilities for economic and political structures. Furthermore, Crouzet asserts that agricultural improvements were the foundation for industrialization in European countries and he uses Germany as an example of that phenomenon: increases in land and labor productivity and the availability of capital for agricultural improvement led to the release of labor and capital for industrial purposes, as seen by the influx of rural-urban migrants (2001). In countries where agricultural practices remained conservative, however, industrialization did not occur as rapidly, thereby establishing a link between the capitalization of agriculture and the overall industrialization.

Crouzet proposes that another factor for industrialization was the capitalization of farming through the consolidation of estates and the urban migration of the now-landless peasants. This consolidation of land was termed the "Prussian Way," contrasting with the "French Way," in which most of the land was held by small owner-occupiers, usually supported through subsidy schemes and regulation (Crouzet, 2001). Crouzet notes that peasant farming and the presence of small farms did not hinder the adoption of

agricultural improvements, merely the ability to capitalize those advances within the new industrial economy.

The magnitude of these social and environmental changes resulted in new cultural attitudes, especially in the search for a sense of cultural identity. The agrarian social roles and moral values were replaced by new urban norms, creating new and unfamiliar problems that were widely held to have as their root cause the corrupting influence of urban life and its detachment from the land and community. Later, nationalism took root among many Germans as a way to maintain their ideas of heritage, largely based on the Nordic peasant idyll.

However, urban reform movements also sought to address these social and environmental changes. The garden city movement, the design of public parks, and the improvement of working class housing standards are a few examples well-known to landscape architects. Each of these movements resulted in built works in Germany and throughout the West that provide examples of landscape architecture responding and contributing to the re-formation of society's balance of political power. The Garden City Movement, pioneered by Ebenezer Howard, had as a primary goal the decentralization of financial profit from London to the public/private developments being proposed. Howard himself subscribed to the political philosophy of Peter Kropotkin, the "Anarchist Prince of Russia," and was heavily influenced by leading political agitators like William Morris and Henry George (Hall, 2003).

No longer solely an amenity for the rich, the profession of landscape architecture broadened to include the design of space to improve the quality of life for all people, including the urban working class. In the United States, Frederick Law Olmsted worked to

improve urban conditions through public parks and greenbelts that would improve air quality and access to green space. Haussmann's plan for Paris set the stage for drastic changes to city planning based on the industrial and military needs of the late 19th century, and other architects, landscape architects, and city planners continued to modernize city planning into the 20th century, contributing to a new urban form based on vehicular traffic and capitalist commerce (Rogers, 2001). Throughout Europe and America, each contested political ideology presented examples of environmental design that reflected their position onto the landscape and promoted an urban form that contributed to the manifestation of a specific political order.

Throughout the industrializing world, environmental devastation caused by new industry was rampant and unprecedented, resulting in dust bowls, massive deforestation, and denuded landscapes. Much of the destruction was brought about by the extraction of fuel resources—coal mining and logging being the most prominent. The massive industrial utilization of these resources brought the devastation from the remote points of extraction to the urban areas of utilization, where they powered factories and resulted in cities covered with soot and smog. Large scale erosion and soil loss were possibly the greatest environmental impacts, especially considering the direct impact on the struggling agriculture sector. W.C. Lowdermilk documented the world-wide crisis of soil loss in his monumental 1938 report, *Conquest of the Land Through 7,000 Years*. Lowdermilk traveled around the globe gathering data, and his report laid the groundwork for many subsequent scientists and social thinkers to draw the direct connection between soil loss and the decline of nations. Franklin Roosevelt recognized the importance of soil erosion on civil society, and proclaimed to the nation's governors, "The Nation that destroys its soil

destroys itself (Roosevelt, 1937)." As the quality and quantity of arable land declined, so did the social and economic fabric of the 19th century industrializing nations.

The expression of environmental ideology within the design professions today is much less explicit in the built landscape than the urban reform movements of the early 20th century. Its influence is nevertheless present, usually taking the form of the manufacture and promotion of a specific cultural mythology within the built environment. For example, garden suburbs, with their views of pastoral landscapes and presence of individually owned, albeit underutilized, agricultural land can be seen as a cultural placeholder for the bucolic ideal of sustenance farming and rural life (Burns, 1989; Meinig, 1979). Indeed, these garden suburbs were mostly built on former farmland, but never lived up to the original expectation of Howard and other planners of being economically self-sufficient to the extent that they could provide the food and/or income for residents (Hall, 2003).

Likewise, the design of urban parks during the early 20th century evolved to incorporate a similar environmental ideology. These parks not only included manicured lawns and promenades, but also areas designed and constructed to appear natural—replete with picturesque and sublime elements that reflected the ideal of an untouched and pure nature. In the art and literature of the time, the dialectic of nature and industrialization was evident as social discourse revealed the tension between the sublime landscapes of the frontier and rampant industrialization, captured most notably in the paintings of Thomas Cole and George Inness and the writings of Thomas Buchanan Read (Marx, 1964). Differing perspectives regarding the meaning and quality of nature emerged, and the role of technology was both reviled and embraced. Nevertheless, urban parks

provided a small respite from the congested and industrialized city life, serving as a proxy for the landscape that was being denuded by that same urbanizing civilization.

The rapidly deteriorating environmental conditions throughout the Western world during the early 20th century were a primary impetus for the contestation of environmental ideologies and resource allocation. As stated in the introduction, the allocation of scarce resources is at the heart of a political economy. The environmental conditions exacerbated by industrialization during the early 20th century created mounting scarcity at many levels, which led every facet of society—including the design professions—to participate explicitly in the political economy.

Methods of food production changed due to a variety of pressures: the capitalists' push to industrialize agriculture, land and resource scarcity, and an urbanizing citizenry are just a few. Food was no longer grown regionally, but had become an industrial commodity as new avenues for its production, storage, transportation, and consumption evolved. The ability to produce, store, and transport large amounts of food to the swelling urban centers allowed the population to continue growth and avoid the predicted Malthusian Catastrophe[12]. Due to that rapid and unchecked growth, farmland at the urban fringe was increasingly developed for housing or for new industrial operations. In this way, the industrialization of food production and consumption was in part a result of urban industrialization, and also a cause. As such, the profession of landscape architecture was engaged in the food complex through the promotion/rejection of nostalgic reference, the

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[12] The Malthusian Catastrophe—named after Thomas Robert Malthus, an early 19th century English political economist—is the theory that human population growth will outpace agricultural production, resulting in the inevitability of famine and poverty. Subsequent economists declared that advances in scientific and industrial agriculture had thwarted the Malthusian prediction.

development of urban fringe land, and the mediation of resource allocation through creating and promoting landscape types.

In summary, the changing nature of the world at the turn of the 20th century was due in large part to the continued effects of industrialization and the expansion of capitalist policies as well as the deteriorating environment and subsequent scarcity of resources. The involvement of the design professions is evident throughout this period, most notably through new ideas regarding urban social housing and participation in the capitalist commodification of the built environment, including the industrialization of food production and consumption.

Germany in transition

At the turn of the 20th century, Germany was a nation in cultural, economic, and political transition. Even though the rule of Napoleon and Bismarck had both served to cement the nation's boundaries, populations maintained a sense of independence through language, customs, and local political organizations well into the 20th century (Stürmer, 2000). These differences were displayed through housing construction and village layout that reflected older agricultural practices, as well as through food consumption traditions. The varieties of bread, cakes, meat, fish, wine, and beer that were consumed, their production, and even the time of day they were taken all reflected the identity of not only distinct ethnic groups, but also that of different economic and social classes (Stürmer, 2000). The introduction of technologies such as the bicycle and the railroad served to diminish these differences, especially those based on class distinctions. Although barriers to social mobility and differences among geographically and culturally disparate groups

diminished, the population of Germany nevertheless remained more fragmented than those in other European nations.

The impact of German industrialization on agriculture is complex and deserves to be understood in the context of this social and cultural fragmentation. The massive urban immigration spurred by industrialization mainly involved the relocation of eastern small-holding farmers to the urban centers of the west (Kitchen, 1978). The productivity of Germany's agricultural sector improved threefold since 1816, while the population doubled during the same time frame, resulting in decline in economic opportunity among small land holders in rural areas. Additionally, advances in scientific agriculture continued to render farm labor unnecessary. By the turn of the century, synthetic nitrogen had largely replaced saltpeter and guano from South America as the primary non-farm source of nitrogen, the construction of railways and the invention of refrigeration allowed for improvements in transportation, and hybrid seed breeders came into prominence, introducing crop strains that were higher yielding and hardier (Kitchen, 1978).

The emigration of Germany's rural population from the eastern countryside left a labor shortage among seasonal and casual workers—a gap filled predominantly by Polish immigrants (Kitchen, 1978). The desire for economic independence from foreign sources of labor and goods resulted in strong anti-immigrant sentiment among many rural Germans. Consequently, the "expulsion law" of 1886 forced the relocation of tens of thousands of Poles, many who were living on former Polish territory that had been annexed by Prussia (Kitchen, 1978). The expulsion effort failed due to the lack of feasibility in removing two million Poles, humanitarian outrage from the left and private property rights arguments from the right, and most importantly, because the German citizenry

realized they were indeed dependent on immigrant labor (Kitchen, 1978). However, the anti-Slavic and anti-Semitic outcry did spur a long term "inner-colonization" movement to repopulate rural Germany with Nordic small-landholders at the government's expense, as well as provide the groundwork for the National Socialist's racial cleansing agenda.

Cultural attitudes at the turn of the century also reflected the national pride in Germany's rural identity. As early as the 1830s and continuing well after the first world war, "peasant literature" was popular among both the urban public and the literate rural laborers. This literature reflected the widespread belief in the importance of a strong peasantry; their values of authority, order, and German culture were presented as a link between past and present (Sagarra, 1977). This literature provided the popular basis for the rampant nostalgia present in the inter-war period, and also contributed significantly to the "blood and soil" rhetoric of the Nazi party in the 1920s.

Nationalism in Germany relied largely on this agrarian identity and the elevation of the peasant to an idyllic status. Similar to the Jeffersonian yeoman farmer, the German agrarian myth of the Nordic peasant was useful primarily as a cultural metaphor and political organizing principle. Jefferson himself—made an honorary member of the Bavarian Peasant League in 1810—had furthered the cause of the peasant on both sides of the ocean during the previous century (Bramwell, 1985). So often looked upon with disdain today, nationalism in Germany was acceptable among the right and the left, including the communists, socialists, and capitalists. It was viewed as a benign but necessary means of boosting the morale of the country, only later to take on the form of racial superiority during the Nazi regime (Haney, 2007). Germany was struggling with an identity crisis on a national scale, attempting to redefine itself as progressive and of the

20th century, but still clinging to an agrarian past and unable to industrialize at the pace of the rest of the Western world. The rhetoric of nationalism became the language within which political leaders competed for power. The anti-Slavic and anti-Semitic sentiments that were bolstered by the shift in agricultural production in the late 19th century combined with a deeply felt agrarian mythology to produce a toxic hatred during the socio-economic crisis after the first world war (Crouzet, 2001; Sagarra, 1977).

In Germany's urban areas, increased knowledge of sanitation and public health also contributed to the reformulation of social ideals. Aside from the ability to turn perviously inaccessible scientific concepts into tangible objects for the betterment of everyday life, the "new way of living" of the modern 20th century was advanced by medical breakthroughs in sanitation and germ theory. The knowledge of Pasteur's 19th century empirical research into the causes of disease and their relationship to public health was the touchstone that resulted in a number of reform movements in Germany and abroad. A wealthy Berlin physician named Franz Oppenheimer was a leading advocate for the urban working poor who worked with the German landscape architect Leberecht Migge and other progressive reformers of the time (Haney, 2007). Through the design and promotion of public parks, greenbelts, and garden suburbs, these environmental designers were the vanguard of the urban reform movement. They advocated against the overcrowded and overbuilt city, which was often seen in physical as well as moral terms. The old city, with its industrial lifestyle divorced from the land, enveloped by a denuded landscape and poor air quality, insufficient sanitation, and lack of access to clean food and water, was deemed not only physically, but morally corrupting by most reformers of the time. Indeed, even the Garden City movement in Britain started as a private venture based

on the promotion of middle class moral values—values that were incongruent with the early 20th century urban condition (Jellicoe, 1985). The swelling population of Germany's cities in the early 20th century exacerbated these conditions.

The conflation of physical and moral deterioration is exemplified by the problem of urban hunger in Germany's larger cities. The need for adequate nutrition was one of the biggest struggles, and resulted in a national examination of agricultural policy. The discourse regarding its production was never far removed from the political and moral reality of its role in the social construction of the German identity. The majority of the new urban dwellers came from Germany's small-holder agricultural lands. In 1882, over 43% of Germans worked the land and 34% worked in industry; by 1925, the figures were inverted: only 31% worked in agriculture while 42% worked in industry (Sagarra, 1977). As the recent rural immigrants were living a life divorced from the land and their village community, urban reformers saw their own national identity being corrupted as self-reliant peasants assumed their new role as proletarian factory workers. Since the German national identity—along with most Western countries of the time— relied heavily on the imagery of the peasant ideal as the predominant cultural metaphor, it followed that the rhetoric of the reformers would take on an agrarian moral tone. The impact of industrialization was felt acutely through the internal migration and shift away from agricultural production as a livelihood at the turn of the century and contributed to the fear that Germany was losing its agrarian identity.

It is interesting to note that a similar rhetorical invocation of "small town self-reliance" was evident in the 2008 presidential election in the United States. In a September 10, 2008 commentary for Time Magazine, Joe Klein illustrates the

contemporary use of the Jeffersonian agrarian myth when Sarah Palin, republican vice-presidential nominee, quotes Westbrook Pegler—an anti-Semitic newspaper columnist of mid-20th century America—by saying "We grow good people in our small towns (Klein, 2008)." Palin goes further and describes the activities that take place in "our small towns," including the growing of food. As Klein points out, America hasn't been a nation of small towns for over a century, but the small farmer and the small town continue to be embedded in our cultural identity. The moral overtones inherent in invoking the agrarian myth are loosely disguised as a disdain for intellectualism, professionalization, and elitism —traits easily conflated with urbanity and the moral opposite of the simple, self-reliant, and resourceful yeoman farmer. This is the same polarizing discourse based solely on myth and rhetoric that was present at the beginning of the 20th in Germany and turned the politics of feeding a hungry population into a debate between using industrialized methods of production and returning to an agrarian past—an "either/or" argument unhelpful in solving the problems at hand.

Another political fear—that of a decline in national autonomy—was perceived to be one of the biggest threats of industrialization in Germany at the turn of the century. The 19th century socialist Wilhelm Liebknecht predicted that due to the influx of cheap American corn made possible by new Midwestern rail systems that granted easy access to seaports, peasants would be driven from their rural homeland, be forced into the industrial proletariat, and consequently become social militants (Kitchen, 1978). Additionally, there was fear of the loss of national freedom: as industrialized nations lost their ability to produce agricultural goods, they would become dependent on a declining number of agricultural countries for imports. This would lead to mass starvation, as well as the loss of

moral values that would come with the embrace of industrial society at the expense of the "old, virtuous, and satisfying rural values (Kitchen, 1978)."

The Farmer's League, organized in 1893, was one of the largest and most influential organizations of its kind. The League was aligned with the conservative party, and gained political support through denouncing "Jewish Industrial Capitalism" and banned not only Jews, but also "capitalism, liberalism, socialism, interest payments, and cattle dealing" (Kitchen, 2006). Politics in Germany became increasingly polarized between rural and urban society, with the rural agrarians aligned with the State whose policies were in opposition to the ideologies of liberalism, democracy, and industrialism (Sagarra, 1977).

The Modernist contribution to socio-political discourse

Modernism, as it evolved across Europe and America at the turn of the 20th century, was at first as varied as the cultures that contributed to it. Many critics have argued that Modernism became as "theory-driven and rule-governed as the styles it replaced," resulting in yet more "top down" design that ignored the individuality of the users (Thompson, 2000). However, a narrow focus on the development of the International Style or the *Modular* of Le Corbusier ignores the larger contribution of the movement. The author concluded from the thesis research that a greater attention to process and the explicit incorporation of social and political ideology produced works that, although they may seem awkward or clumsy from our present perspective, nevertheless provide a blueprint for contemporary landscape architects to resume the pursuit of an integrative design practice.

Nikolas Pevsner, a contemporary of the Modern Project, named three main sources of inspiration for the Modern movement that the author believes serve well to illustrate the relevancy of the movement toward today's design issues. The first influence, Art Nouveau, provided the basis for the rejection of historical design precedent and styles. The second, the Arts and Crafts movement, although it shunned machine production, exemplified the social duty of art to provide useful objects for the masses. And the third, the technological and engineering innovations afforded by industrialization, provided the means by which to accomplish the implementation of "new" styles as well as the call for socially-relevant design (Thompson, 2000; Pevsner, 1949, 1968).

For landscape architects who subscribed to the development of Modernist theory, their main point of departure from the position of the conservatives was to reorient the focus of the design from aesthetics to function. The social, political, and environmental conditions outlined earlier in this chapter became intimately connected to the idea of modern design as landscape architects, city and regional planners, architects, and other environmental designers applied a social awareness to the design process.

Christopher Tunnard wrote the first manifesto on Landscape Modernism in England, *Gardens in the modern landscape* (1938), in which he made an explicit case for Modernism in landscape architecture, and most importantly, notes the failure of predominant Modernist architects such as Loos and Corbusier in addressing the landscape not as an object, but through accounting for the complex relationship of needs that people have with their surroundings. Tunnard drew a distinction between the ability to apply principles of rationalism, order, and functionalism to a building, and the altogether different task of applying those principles to the landscape.

Garrett Eckbo, Dan Kiley, and James Rose were students of Tunnard at the Harvard School of Design who continued the exploration of Modernism's role in the landscape. In a series of three articles that discussed landscape design in the urban, rural, and primeval environments, they laid the groundwork for addressing social issues through landscape design in America (Eckbo, Kiley, and Rose, 1938/39). The author proposes that a revisitation of this decisive period in history would behoove contemporary landscape architects in reviving the debate over the practice and meaning of landscape architectural process, specifically as it applies to a highly politicized food complex. Further developments in Modernist design theory may provide interesting and relevant ideas and case studies. However, as the practice of Modernism became increasingly codified and led to new movements and iterations, the interest in and the quality of responses to the original question of Landscape Modernism remained largely untouched by the profession at large. Borrowing from Pevsner's three main influences of the original movement, that original question could be posited as: *How can landscape architecture remain vigilant of the tendency toward nostalgic influence, acknowledge the social duty of our practice, and critically evaluate and appropriately utilize new technologies, materials, and methods?*

An examination of the development of Modernist thought in German landscape architecture up to the rise of the Nazi regime in the late 1920s provides a unique opportunity. The emigration of Gropuis, Van der Rohe and others to the United States has been studied extensively in regard to the effects on the American Modernist movement. The author suggests that an alternative perspective—an exploration of the design discourse they left behind—could be of great benefit to contemporary landscape architects concerned with the design of a politicized food complex. The tumult and contestation of

the landscape immediately preceding the second world war raised important questions regarding the role of landscape architecture in the industrialized food complex that remain largely unanswered. This line of inquiry initiated by Leberecht Migge, Adolf Loos, Bruno Taut, Theodor Fischer, and others was disrupted by the confusion of war; however, the basic question of how the profession can better engage social issues through design remains of relevancy to all cultures to this day.

German Modernism

The response from the Modernist design community in Germany to the political, social, and environmental turmoil of the early 20th century was to embrace empirical research and design, place technology and industrial progress in the hands of the common man, and to reject a nostalgic adherence to style. These three principles provided a link between the political, economic and social realities of the early 20th century and the built works generated by the Modernist artists and architects. Landscape architecture as a profession is largely absent from most literature regarding early German Modernism. However, as mentioned earlier, there was one exemplary landscape architect who drew explicit connections between the political discourse of Germany and the design of the built environment. Leberecht Migge worked to explicate the necessity for modern design to respond to the urban crisis through an emphasis on self-sufficiency and local-scale food production. Migge was a prolific writer, designer and researcher who demonstrated that there was a specifically German—and inherently landscape architectural—way to apply Modernist design principles to the new paradigm of food production and consumption.

Migge collaborated with numerous architects and planners responding to the economic, cultural, and political shift to an industrialized economy.

Modernism and the "new way of living"

In order to place Leberecht Migge within this climate of change, it is important to examine the role of the broader German design community in addressing the political discourse of the time. As was the rest of Europe, Germany was searching for meaning and a "new way of living" in the 20th century—a call that was increasingly answered through scientific enlightenment. Although Sir Isaac Newton had ushered in the Age of Enlightenment with his scientific discoveries in the early 18th century, the old Aristotelian ways of thinking still lingered well into the 19th century (Rogers, 2001). With its belated industrialization, Germany had not fully embraced the "modern" concepts that stemmed from the technological improvements of the turn of the century. Indeed, the ideas of the Enlightenment were not fully expressed in a tangible form until the early 20th century, when modern technology combined with new methods of production to allow the products of innovation to be mass produced and widely distributed (Macrae-Gibson, 1985). The "new way of living" became the catch-all phrase for not only material changes in German culture, but a shift in moral and cultural values, including those regarding the production and consumption of food. It is in this manner that the discussion of agriculture became explicitly politicized. The "new way of living" called for higher standards of living and responded to the immediate need for greater nutrition among a largely impoverished population. Also during this time, German interest in vegetarianism, nudism, nutrition, homeopathy, and exercise experienced a great deal of attention. The *Lebensreform* ("life

reform") movement began in earnest in 1870 and achieved widespread popularity by 1900 (Williams, 2007). The "naturists" (people interested in hiking, nudism, vegetarianism, or the healing arts) provided much of the initial support for the early Garden City movement as well as urban reform projects in general. However, this modern approach clashed with conservative Germany's reluctance to abandon an agrarian past and culminated in the development of increasingly polarized ideologies in the search to rectify agricultural self-reliance with the technological existence of the industrialized society.

Modernism in Germany during the early 20th century began as the embodiment of the scientific empiricism; research and design were to benefit the common citizen through the increase in mass production technology. An awareness of public health and sanitation resulted in practical reforms for urban life—a professional interest of many Modernist designers and reformers. On an ideological level, Modernism contributed to the larger political discussion regarding the place of agrarianism within the new German society. With its rejection of historical style and its embrace of modern technology and materials, modernism offered a concrete reality to the abstract notion of a "new way of living." Set within the political and economic turmoil of the early 20th century, modernism played an active role in the mediation of cultural identity through the design of the built environment by rejecting the strict adherence to nostalgic design.

Within the modernist movement of the time there were nevertheless differences of opinion regarding the expression of the "new way of living" within the built environment. For example, Leberecht Migge, the German landscape architect who promoted self-sufficient gardens for every household, was critical of the German Garden City movement. He felt that garden cities were largely comprised of non-productive landscapes and

therefore more suited to the old, 19th century picturesque city represented by the work of Camille Sitté[13]. However, both the Garden City movement and Migge's self-sufficient settlements were influenced by Henry George's 1880 publication of *Progress and Poverty*, which held that the "solution to social inequality lay in the collective ownership of land" (Haney 2007). Peter Kropotkin, the Russian "Anarchist Prince" was often cited as a major influence on the ideas of both designers. However, far from being communist sympathizers, most Germans in the early reform movement held that neither a communist revolution nor a full conversion to capitalism was necessary if land reform and resettlement were to be carried out (Haney 2007). It is in this application of political discourse to the built environment that the modernists most widely and clearly disagreed with the policies of the National Socialist party that rose to power after World War I. Both the ideology and the implementation of land reform became fertile ground for demonstrating and furthering the political beliefs of each.

Both Modernist designers and their conservative counterparts contributed to the discourse on moral ideology as evidenced by the design of buildings, city planning, and social organization. To the Modernists, there was no inherent moral problem with urban living itself; they saw the cause of urban reform as one in which the "old city"—something that they viewed as an ideological holdover from the last century—was not at all suited to the rational, empirical, and technology-driven "new way of living." Their goals, therefore, were to use methods of scientific inquiry and production to produce buildings and cities based solely on function and devoid of the affectations and unnecessary ornament of the

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[13] Camille Sitté, an ideological competitor of Le Corbusier, believed that modern technology could be embraced by designers, while still adapting the Old World architecture and aesthetics. This, obviously, was counter to the ideals of the Modernists who rejected all nostalgic reference.

previous century (Macrae-Gibson, 1985). The political implications were clear; the "new way of living" embraced the predominant ideal of early 20th century Germany modernists, and strove to become "classless, rigorously utilitarian, polemical, and anti-authoritarian" (Rogers, 2001). Illustrating this ideal, Macrae-Gibson references Le Corbusier in *Towards a New Architecture*: "...Tools are the result of successive improvement...We throw the out-of-date tool on the scrap heap" (Le Corbusier, 1931). New materials and technologies contributed to the cache of new "tools" that shaped the Modern movement. This "Utopian Modernist" view of design combined with the urgent need to adapt and create a society suitable to the "new way of living" contributed to a remarkably prolific period of architecture, and one which saw the profession of landscape architecture emerge as a significant force in the convergence of politics and the design of the modern built environment.

In contrast, the ideals of conservative Germans were embodied by their connections to right-wing agrarian movements and leagues. As outlined earlier in this chapter, these agrarian organizations and their sympathizers worked toward inciting the rural populations against the liberalism, democracy, and capitalism of the modernists and urban populations. One of the main tactics of the conservative party in gaining the support of the rural populations was to incite anger and hatred toward all things foreign. The increased industrialization of Germany resulted in two opportunities to harness the frustration of the rural laboring class: anger directed at recent Polish immigrants who filled the labor shortage created when many Germans fled to the urban centers, and the perception that Jews were profiting unequally from industrial capitalism. These two perceptions led to the moral outrage and rejection of any work of architecture, city

planning, landscape design, or technology that was not rooted in the "authentic" German culture defined by the idyllic caricature of the Nordic peasant. The popular literature of the time reflected a peasant similar to Jefferson's yeoman farmer, and was summarized by the call for "blood and soil"—a phrase attributed to Walter Darré, the Nazi Minister of Agriculture that served to unite Germans around the notion of authenticity and exclusivity of the Nordic race. The work produced by the Bauhaus and other leading designers and architects who held that the rejection of nostalgic reference and the embrace of new technology were central to progressive design theory would be labeled as soulless, non-German, and morally corrupt by the conservatives and their agrarian base.

Modernism in city and regional planning

In addition to the re-tooling of the architecture and landscape architecture professions, the Modern movement saw the birth of city and regional planning—largely a result of new technologies and methods that allowed the city to be conceived at a scale larger than ever before. Benton MacKaye's publication of *The New Exploration: A Philosophy of Regional Planning* in 1928 was influential in its suggestion that regions be conceived of as existing on a continuum from indigenous to metropolitan, each as necessary as the other (MacKaye, 1928). MacKaye's work enlarged the scope of Ebenezer Howard's "three magnets" that he popularized with the publication of *To-Morrow: A Peaceful Path to Real Reform* in 1898. Howard's diagram of the three magnets is a prime example of the early Modernist organization of thought in that it explicitly states the planning objectives, as well as acknowledging the complexity of the problem through graphically organizing the advantages and disadvantages of each "magnet," shown here in

Figure 3.1 (Howard, 2003). Additionally, Howard explicitly addressed food production within the Garden City, intending for local farmers to have access to local markets. This was a popular scheme utilized by numerous planners and designers, including the Regional Planning Association of America (Hall, 2003). However, improved transportation to supply cheaper food from distant competitors undermined the financial feasibility of local production, a problem that was not accounted for or anticipated by Howard and many other planners.

Nevertheless, the work of Ebenezer Howard provides a specific example of the politicalization of city and regional planning. Often cited for his design of the ideal "Garden City," Howard was also a consummate social thinker and reformer who named the work of Peter Kropotkin as a primary influence for the design scheme he proposed. In fact, the text of *To-Morrow: A Peaceful Path to Real Reform* contains more detail of the financial structure of the "New Town" than it does of the physical design. Howard wrote *To-Morrow* for an audience of Victorian-era businessmen who conceived of the project as a financial venture packaged in the rhetoric of morality, and not solely as a selfless utopian project, as many landscape architects contend when invoking this body of work. As Hall and Ward point out in the 2003 edition of *To-Morrow*, Howard intended the Garden City to be far more than a town; to him it was the physical iteration of a "third socio-economic system" which, like the "Third Way" politics mentioned earlier, was superior to both industrial capitalism and communism in that it would be a true exercise in Krotopkin's idea of anarchist co-operation in which local self-government would assume fiscal control of the community instead of remitting taxes to the central government (Howard, 2003). In order to succeed in wresting control from the existing central government in London, the

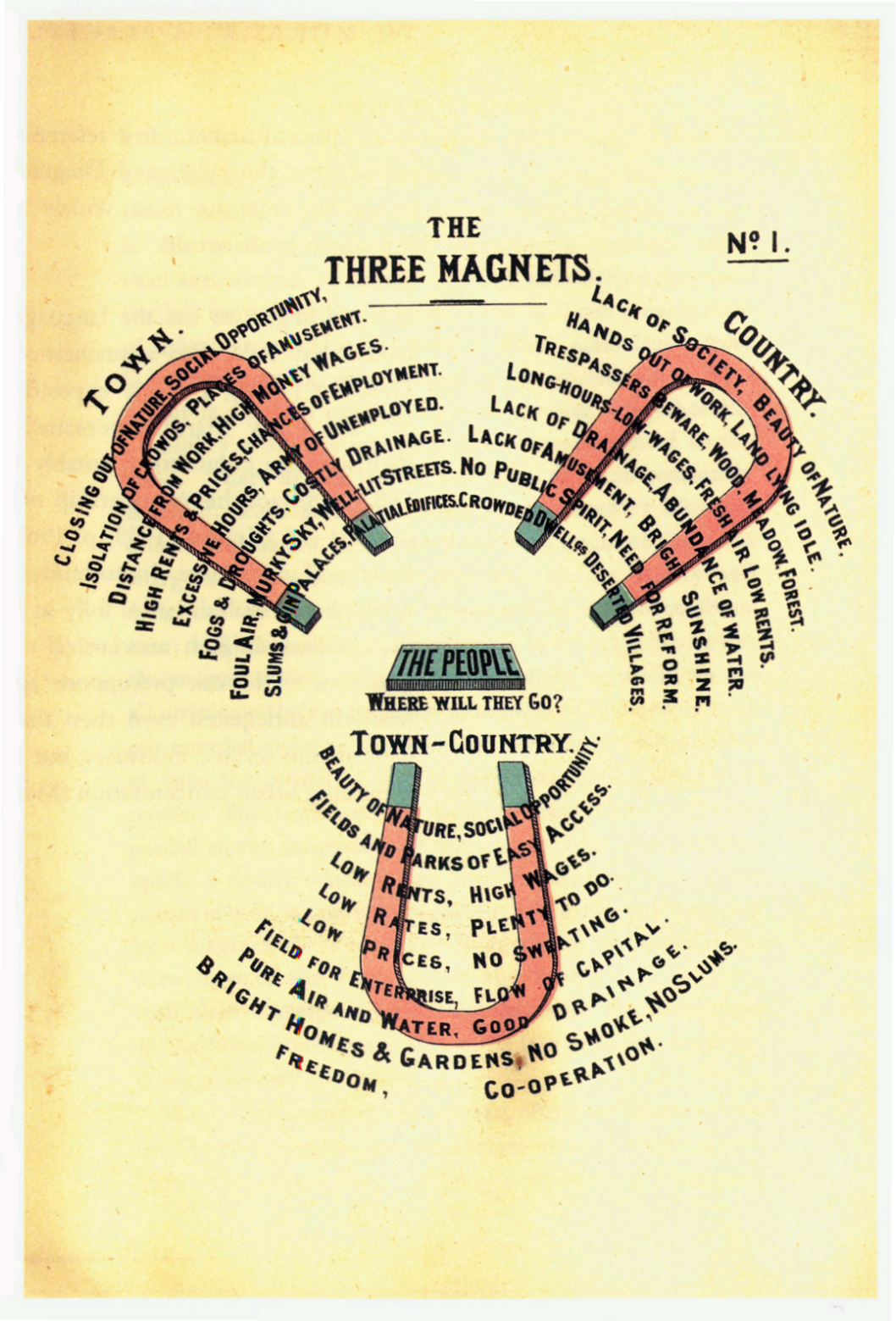

Figure 3.1 The three magnets of the Garden City. Ebenezer Howard's 1898 graphic representation of his concept of the Garden City clearly illustrates the advantages and disadvantages of the town and country, and how the "town-country" (i.e. Garden City) addresses the problems of each. Source: Howard (2003).

success of the early Garden cities such as Lechtworth was dependent on the ability of these Garden City corporations to change the national tax code so that taxes were based on the value of the land; improved property would be taxed at a higher rate, with proceeds going to newly formed local governance (the Garden City), not the central government (London). The reformers were successful, thus paving the way for Howard's version of "planned colonization" to address the crisis of the British agriculture system through the exportation of the locus of industrial production to former agricultural land while maintaining, at least for a while, small farm holdings (Howard, 2003). Ebenezer Howard's Garden City movement is an example of early modernist social reform that incorporated explicitly political ideals and polices and had a great effect on the production and consumption of food through the repurposing of agricultural land as well as presenting—and making possible—alternative avenues for its acquisition.

Howard's work provided the impetus for the German Garden City movement, of which there was a chapter established in 1902. Although Howard's ideas were an outgrowth of his concern for social betterment, the Nazi planners utilized his ideas for the Garden City in an entirely different form: to establish "German order" in the conquered areas of Poland during the second world war (Hall, 2003). This example of the retooling of Modernist design illustrates the complexity in the political discourse of the time; how a design scheme influenced by Kropotkin and George could become a tool for the autocratic invasion and subversion of a sovereign society is a testament to the power of Nazi political rhetoric. Although Howard's principles for garden cities involved altogether modern technology and rational thought, an embrace of a new, non-agrarian way of living, and reliance on capital and industrial advances, the National Socialists nevertheless found

ways to assimilate the scheme into their goal of establishing "German Culture" through force.

Taking Howard's ideas in another direction, Eckbo, Kiley, and Rose applied the concept of "city-rural-primeval" directly to the profession of landscape architecture with the publication of the *Landscape Design* series in Pencil Points (1938/9). Also influential were Patrick Geddes and Lewis Mumford, who applied "biologic analysis" of regional plans, the later most notably with his 1938 book, *The Culture of Cities* (Jellicoe, 1987). The impact of the creation of the new city and regional planning professions wasn't limited to the design community. The next generation of environmental designers that were influenced heavily by this Modernist perspective produced work that incorporated even newer technological capabilities. Ian McHarg incorporated ecological analysis into the planning of regional developments (McHarg, 2002), and Randall Arendt has explored opportunities for the use of creative design as a conservation tool (Arendt & Brabec, 1994).

Governments became more involved in city and regional planning than in previous times because of the enormous capital required to complete projects; the new methods and tools allowed for design on a scale that had exceeded the limitations of private enterprise and necessitated state involvement in urban planning, infrastructure development and regional design (Jellicoe, 1987). This change created more explicit channels for the design community to influence the political discourse of resource allocation and management. Furthermore, with the expansion of cities and growth of new forms of transportation, farmland was among the first resource to be challenged. This contestation of place resulted in increased pressure to create an increasingly industrialized and commodified food complex due to the development of the land that had previously

supplied food to the urban centers. Through the design of exurban land, the Modernists challenged, and were challenged by, the political discourse of the time on a regional scale within the realm of the food industrial complex. These changes and challenges were felt in large part because of the transition from the agriculture age to the industrial age, and the subsequent geo-political reordering that was spawned by that transformation.

Modernism and the professionalization of design

On a site-specific scale, Modernists were adverse to historicism, and any references to the past were deemed morally inferior and to be avoided. Ornament and type, which the 19th century city was based upon, were considered symbols of power and superfluity —the direct opposite of everything the new architecture stood for. In regard to the place of ornamentation and the old city, Adolf Loos, Modernist architect from Vienna, captured the sentiment of the Modern architects with his 1908 book, *Ornament and Crime*, in which superfluous ornamentation was cited as a source for immorality (Rogers, 2001). In effect, "good" architecture would result in "good" people. The Modern architects used the methods of rational design to solve the very real problem of urban deterioration through the application of technology to improving health as well as their version of moral uplift (Macrae-Gibson, 1985). Because of these concerns for the moral well-being of the urban class, numerous artists and architects founded organizations to stimulate cultural and political change such as the Worker's Council for Art and the Werkbund (Haney, 2007). However, as the dialectics of moral and immoral were continually anthropomorphized between people and architecture, the social effects of the discourse became increasingly

distorted, especially in the cultural confusion that ensued in Germany after the first world war.

Like politicians, industrialists, and reformers, the modernist artists and architects were occupied with defining the future during a time of rapid social change, where the roles of architect and planner were elevated beyond the level of artist or technocrat. Organizations were formed by artists and architects for the express purpose of social and political agitation. The November Group, The Worker's Council for Art, The Deutche Werkbund, and the De Stijl movement were all founded during the early 20th century. Walter Gropius, a member of the Worker's Council for Art and vocal proponent of the developing New Style, became head of the progressive Bauhaus in 1919, where architectural instruction and industrial design shifted from a focus on craft and the individualized design of the Beaux Arts and Arts and Crafts eras to a focus on mass production and art for the everyday man (Rogers, 2001). As with the urban reform movement, the focus shifted from traditional design to the possibilities of machine-technology, and the client shifted away from wealthy aristocrats to "Everyman"—the urban working class. These ideals of the Modern architects lacked a specific reference to German culture, and as such, were in direct opposition to the newly formed—and increasingly popular—National Socialist Party. The National Socialists relied on the historic imagery of classical architecture and what they referred to as the German tradition, which was picturesque, heavily ornamented, and defiantly aristocratic. On the other hand, the Modernists' rejection of nostalgia contributed to a growing body of "style-less" work that eventually came to be known as the "International Style," named for its lack of reference to any particular culture. Opposed to the egalitarian ideals of the Modernist movement, the

National Socialist Party eventually closed the doors to the Bauhaus and precipitated the exile of its most prominent architects in 1933 (Rogers, 2001).

The National Socialist agenda and the built environment

Although they responded to the same issues of the early 20th century, the Modernist political perspective was in stark contrast to the attitudes and goals of the National Socialist Party, both in rhetoric and in practice. The politics of morality and the industrialization of the food complex both played a role in the design of the German landscape of the time, and the Modernists and the National Socialists each expressed their political ideals through the design and actualization of built works.

The importance of morality as an ideology played a significant role in the politics of Germany throughout the early 20th century. To Walter Darré, the influential Minister of Agriculture of the National Socialist Party, morality was embodied by the peasant ideal; urban dwellers were viewed as materially and morally inferior to the peasant class. It should be noted that peasants were not thought of in a pejorative sense in Darré's rhetoric or in Germany at the time. The use of the word was more akin to Jefferson's "yeoman farmer"—productive, independent, and resourceful. And as with the yeoman farmer, the function of the peasant as a romantic ideal was the primary importance (Bramwell, 1985). Through this lens, Darré and his colleagues within the Nazi party labeled the Nordic peasants still engaged in agricultural production (or at least living in rural communities) as the moral ideal of Germany, and later utilized racial hygiene and eugenics in an attempt to maintain their "moral purity" (Bramwell, 1985). In the early 20th century, however, this ideology of the peasant as the ideal citizen was central to the resettlement and "inner

colonization" efforts which involved the design and construction of new communities and towns. Darré held that once peasants had been to the city, they were tainted with the immorality of the urban environment, and as a result, had forever lost their "peasantness;" it could not be regained through resettlement in their native villages. Darré's plan largely ignored the problems of the cities in favor of protecting the rural peasant lifestyle and expansion through the invasion of neighboring countries (Bramwell, 1985). This was in direct contrast to Leberecht Migge and his collaborators whose plans were based not only on the resettlement of urban dwellers to exurban gardening communities, but also on the conversion of urban wasteland into garden plots and other productive landscapes. Migge, like his English and American contemporaries, realized the necessity of a new landscape type which he called the *Stadt-Land* ("City-Land", where the emphasis is on *City*). The concept of *City-Land* was to unite the modernity of the city with the food production and self-reliance of the county. Although there were many reasons attributed to the Nazi Party for its imperialistic policies, Darré made clear the need for more land explicitly for these rural peasant settlements, with no solution given for urban conditions. In this way, the fundamental difference regarding resource allocation and the value and place of the peasant as a cultural signifier was central to the design and planning of communities and food production systems. In addition to the design of Siedlungen and other gardening communities, both Darré and Migge published books and pamphlets that illustrated how their political beliefs were carried out within the landscape.

Leberecht Migge, "Architect for Horticulture"

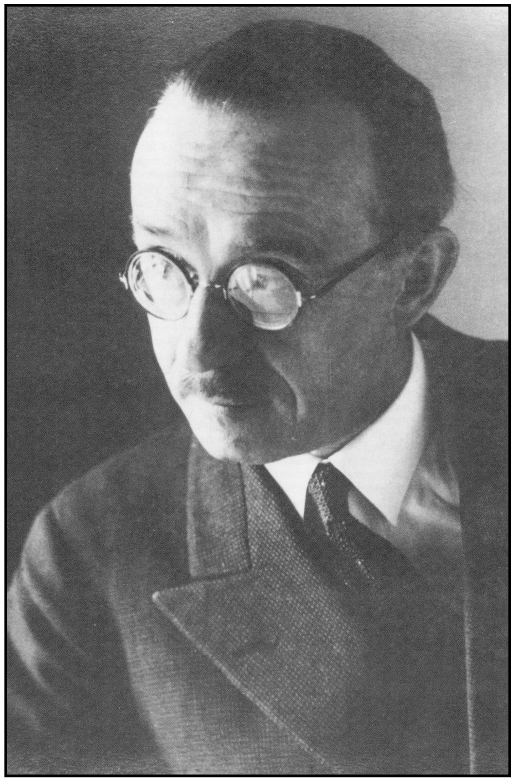

Figure 3.2 Leberecht Migge, 1881-1935. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

Against this backdrop of political and economic turmoil, the urban reform movement in Germany turned to the design of public parks in the first decade of the 20th century. One of the nation's primary proponents of these new "public health gardens" was Leberecht Migge, a landscape architect whose life and career would have a significant and profound impact on the German landscape as well as on the practice of landscape design (Haney, 2001). Through his polemical writings and extensive agricultural, housing, and design research, Migge situated his work within the political context of early 20th century Germany. His work remains one of the most concrete examples of the relevancy of landscape architecture to politicized food systems.

Leberecht Migge (1881-1935) started his career as a landscape designer at the prestigious Hamburg firm of Jacob Ochs in 1904. During his tenure with Ochs, he established himself as a competent designer where he excelled at relating gardens to residences and creating living spaces in outdoor areas (Collins, 1982). Although Migge grew increasingly ambivalent about designing villas and other gardens for the wealthy during the first decade of the 20th century, he was later able to utilize the skills he gained throughout his early career, most notably his talent for the sensitive location and scale of small gardens and for recognizing opportunities to connect inside with outside. He joined

the Deutche Werkbund in 1912, although he had been engaged in social and political reforms of public parks and urban conditions since the previous decade. The design competition for the Hamburg Stadtpark in 1908 was perhaps the first time that Migge made a public statement about his design philosophy (De Michelis, 1991). The results of the Hamburg competition sparked a German debate that was already occurring in other parts of the world regarding the role of the 20th century public park. With the increasing public health concerns present in the industrialized city, many architects, planners, and public officials placed the role of public parks and green space firmly in 20th century reform movements. Migge, like his progressive contemporaries, saw in public parks a cure for the public health crisis as well as a mechanism for expressing the "new way" of modern living. As Migge wrote in 1909 in response to the Hamburg Stadtpark competition,

> The practical function of a park, its value to the people, is to provide a place for walking and relaxation in the sunshine and fresh air...its ideal function is as an environment in which plants and the natural world, and life itself, can be enjoyed to the full. The satisfaction to be derived from its ideal function is infinitely more important that its practical function. And it can happily live in concord with it (Migge, 1909, as quoted in DeMichelis, 1991).

As a progressive rationalist committed to the benefits of technology and empirical research, Migge viewed the Victorian landscapes of late 19th century parks with as much contempt as his architect counterparts viewed the picturesque architecture of the 19th century city. He viewed geometry in the garden as reflective of the garden's ancient

origins, and the faux-naturalistic gardens currently in vogue as an outcome of a debased, industrialized society (Haney, 2001). Although equating geometric forms with the native form of a garden and natural landscapes with an industrialized society may seem counterintuitive at first, the theoretical basis for his conclusion was similar to that of the Modernists: geometric gardens with regularity derived from the nine square grid and not from symmetry alone (for example, the gardens of Ur) were based on function and production, while the 19th century picturesque landscape only served to evoke a historical mood through purely aesthetic and nostalgic means (Collins, 1982). The "new way of living," although based on technology and the machine, was concerned with the objectification—and subsequent production—of everyday life for the express purpose of improving the lives of the working class. Function and production were valued as the true core of any modern design, while emotive landscapes were seen as merely aesthetic playthings for the wealthy. Technology was viewed as a tool best placed in the hands of Everyman, but rampant industrialization that ignored the needs of the proletariat was seen as a morally corrupting influence. Migge's membership in the Deutche Werkbund in 1912 further fostered the discussions that lead him to incorporate the relevance of gardens, landscape, and biological principles into the Modernist ideology (Sohn, 2003).

Differences in ideology among contemporaries

The landscape architectural community of Migge's era was largely conservative. Most either remained beholden to the feudal tradition of the Junkers (land-owning aristocracy) or became entrenched in the budding National Socialist movement that monopolized on the agrarian sentiment among conservatives and worked to maintain the

"cultural heritage of the Fatherland (Hölbusch, 1980)." Jacob Ochs, Migge's early employer, fell squarely into the first category. The attachment to 19th century ideas of nature, pastoralism, and the European gardening tradition of the landed classes remained the foundation for much of the profession. Additionally, many landscape architects adopted the rhetoric of the National Socialists and designed settlements for "inner-colonization" that utilized the symmetry, form, and ornamental aesthetic of the feudal tradition.

Leberecht Migge subscribed to neither school of thought of his colleagues. Instead, Migge tended toward the adherence to function and production of the Modernist community. For example, at his own house in the artists' colony of Worpswede, Migge instructed his wife and children in the production of vegetables surrounding their house instead of planting the "natural" gardens that were in vogue among most residents of non-urban communities. In his involvement as a garden architect at Worpswede, Migge made it explicitly clear that he had no intention of beautifying the community, or in making it an attraction for North Germany. On the contrary, his stated goal was "to conduct an experiment in order to show that the basic conditions of life in postwar Germany could be improved" (Hölbusch, 1980). These experiments—many of which were self-published by Migge—led him to place a greater emphasis on the ability for the land to sustain and improve human life in both the city and the country.

Migge's insistence that there was a role for the small garden in the city led to hostility from his urban reformist counterparts as well as the conservative politicians of the National Socialist party. As for the later, he was admittedly not an admirer of the romantic countryside popularized in the literature of the day, and nor did he idealize peasant life.

He credited many of his ideas to Chinese agricultural technology and East Asian concepts of intensive land cultivation, and desired to see living conditions improved in urban as well as rural locations. Migge responded to the conservative's call for a return to an agrarian culture by turning their argument for "blood and soil" into a call for urban gardens: "If it is true—as our politicians are almost unanimous in thinking—that a genuine civic sentiment can grow only out of the soil, then logically it follows that the citizens can be educated to a solid civic consciousness only on their own urban soil" (Hölbusch, 1980). Migge took issue with Siedlung residents who wanted to only consume the life of the country without participating in the production of economic goods, and saw the value in a *network* of small gardens that would extended throughout the whole of Germany—urban *and* rural. Continuing with his idea of self-sufficiency, Migge declared the desire to "transform the large city into an autonomous entity that would not exploit the adjoining countryside," because, as he noted on a separate occasion, "Our cities are really the inborn supporters of economic colonization" (Hölbusch, 1980). In response to the urban reformers who saw the city as a corrupting influence and would have had the whole population move into idyllic garden suburbs, Migge undermined their premise by stating, "...apart from the fact that the city may be useful or harmful, is the reality that it exists, and must therefore be made suitable for living in" (Hölbusch, 1980). These pragmatic ideals and adherence to the belief that the garden could and should lighten the financial burden of the working classes made Migge quite unpopular with conservatives and reformers alike; his unique perspective of gardens as a way to achieve both national and family self-sufficiency was counter to the polarizing political rhetoric of the time. It is interesting to note that Migge was highly political in his design and advocacy not by simply subscribing

to one of two polarized positions, but through generating an explicitly designed solution that worked toward the betterment of society. His numerous design proposals for gardens, settlements, and urban plans that could produce food for localized consumption was unique among his peers. The democratization inherent in the maintenance of small, humble garden plots among all classes and geographies provides a vivid example of the power of design to offer creative solutions independent of polarizing political rhetoric.

Differences with modernists

Migge also encountered criticism from his colleagues at Worpswede and the Werkbund. Although the concerns that Migge raised in relation to the state of urban parks were consistent with other emerging Modernists of the time—sanitation and hygiene, nutrition, physical health and exercise, and adherence to the "modern" design aesthetic of functional spaces—there were nonetheless significant differences (DeMichelis, 1991). What Migge added to the conversation of park reform was the link he drew between a park's function as grounds for organized recreation and its ideal manifestation as part of a national system of productive gardens, a theme that he continued in his later work on community and regional planning and the development of self-sufficient family gardens. Specifically, his views as a landscape gardener with a technical horticultural background led him to apply the functionalist aspirations of Modernism to the profession of landscape architecture (Haney 2007).

Migge's main thesis was that the design and utilization of public and private vegetable gardens could solve the social and economic problems of the German nation (Haney, 2007). He emphasized the importance of incorporating social and political ideals

and reforms in the new "people's parks" in a 1909 pamphlet, and it is thought that this stance may have led to the 1913 dissolution of his relationship with Ochs, whose clients would have most likely been opposed to these populist ideologies (Collins, 1982).

Migge's ideas built upon the Schreber[14] allotment-type gardens popular since the mid 19th century, but through his polemical writing, Migge transformed the humble vegetable garden into a tool for social and economic reform (Haney, 2007). As noted in Jellicoe's *Landscape of Man* (1987), the 20th century saw the role of landscape design emerge as a synthesizer between the situational and the universal, as well as the birth of the modern science of city and regional planning. Leberecht Migge was perhaps a harbinger of that change. He was a tireless advocate for comprehensive community planning that would include green belts, self-sufficient gardens, and communal spaces for physical health and exercise. Additionally, he drew an explicit connection between the universal and the situational through his advocacy of a network of self-sufficient gardens; each garden would help an individual family meet its nutritional needs, and a *network* of small family farms would effectively transform the whole of Germany into a garden nation. In rhetoric, his plan sounded familiar to Jefferson's ideal of a nation of yeoman farmers. The difference, however, was Migge's empirical basis for design, the incorporation of modern methods and tools, and attention to urban production. Migge was a man of his time, and as such, empirically calculated the exact amount of land needed, the quantity of produce that could be cultivated, and methods of providing fertilization from composting household waste within individual plots and throughout cities and towns.

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[14] German Schreber gardens are widely held to be the origin of allotment gardens in Europe. Begun in the mid-19th century and mainly concerned with children's health and recreation, Schreber gardens were named after Dr. Daniel Schreber of Leipzig, an advocate of allotment gardening for children and families (Hall, 1989).

Ironically, Migge was criticized by some of his contemporaries for "trivializing social problems." Heinrich Vogeler, a colleague of Migge's at Worpswede said in reference to Migge, "He believed a revolution was not necessary if people were enabled to build through their own efforts and around their own homes the basis for their own sustenance" (Hölbusch, 1980). Today, this concept no longer sounds so far-fetched; historical and sociological research has demonstrated the significance of self-determination within a population, even if it only partially fulfills their needs for sustenance. Furthermore, Migge *was* advocating for revolution—a revolution of *gardens*.

Leberecht Migge's work had its share of critics outside of the design community as well. Walter Rathenau, a contemporary of Migge, was perhaps one of the most outspoken critics of his work. Rathenau was a wealthy industrialist who felt that Migge's concepts of self-sufficient Siedlung housing were "destructive romanticism" (Haney, 2007). As an industrialist, he was instead a proponent of supporting young German farmers in large-scale production. Even though Migge's designs were based on Modernist principles and rational planning, some contemporaries, including Rathenau, felt that they nevertheless belied the "romanticism of the vine covered cottage" (Haney, 2007). Migge contended that Rathenau simply didn't understand his work; as Migge had explained in his pamphlets and manifesto, he was not advocating for a return to Germany's agrarian past. On the contrary, he employed the latest scientific techniques of small scale mechanization (such as tillers and irrigation pumps) as well as ancient technologies applied to the modern scientific principles of soil nutrition (composting toilets and organic soil management through crop rotation). According to Migge, Rathenau's understanding of the new way of farming and

self-sufficient food production was limited to the "old-fashioned and wasteful" practices of an agriculture still in transition to the new age of technology (Haney, 2007).

Among his own professional peers—German garden architects—the progressiveness of Migge was even more pronounced. In reference to the 1927 gardening exhibit in Liegnitz, Migge wrote, "Yet another exhibition of gardens for the rich—when will we have a modern exhibition for the poor?" (Hölbusch, 1980). He remained highly critical of work that did not respond to contemporary social, economic, and political realities, especially after the first world war when hunger—especially among urban populations—was rampant. Migge eventually resigned his membership in the German Association of Garden Architects in 1928 (Hölbusch, 1980).

However, Migge's collaboration with modernist designers at the Deutche Werkbund was not much easier. He felt that the vast majority of work produced by the Werkbund neglected the garden and its function, focusing solely on formal and aesthetic aspects. The Stuttgart Exhibition of 1927 showcased Werkbund designs that placed primary importance on the "new form," while Migge felt that the pressing priorities of the time were "improved technique, cheaper building, and appropriate gardens." In a critique of the exhibit, Migge wrote, "And new gardens annexed to the new buildings were evidently held to be superfluous. Were they not indeed part of the work, esteemed Werkbund workers?!" (Hölbusch, 1980). Although he collaborated on the design of numerous projects including public parks, settlements, and seidlung, Migge had a progressive vision that few in the Werkbund were ready to adopt. Hölbusch writes that while Migge fought to improve economic and social conditions within the framework of the existing social, cultural, and economic conditions, many members of the Werkbund

were seen as simply trying to smooth things over. Ludwig Roselius, a businessman and member of the Werkbund advised fellow member and Migge's contemporary Heinrich Vogeler, "Go on painting; give vent to your feelings in color. Leave it to men who have studied practical work to realize socialist ideas" (Hölbusch, 1980). Meanwhile, the authorities that oversaw Worpswede in 1920 labeled Migge a "pure communist speculator," due to his tireless and outspoken engagement in promoting self-sufficient gardens. While Vogeler, so long as he remained painting, was allowed a wide berth for the expression of political ideals, it was Migge and those who used landscape architecture and environmental planning as their canvas who would be accused of communist sympathy in their efforts to promote the betterment of the human condition.

Design, research and publication

By the 1920s, the concept of community gardens as an element of public parks in Germany was well established (DeMichelis, 1991). But that the family vegetable garden would become the backbone of siedlungen (settlements for workers) and a national system of planning is a testament to the political and social influence of Migge and his ability to collaborate with the most progressive architects of his time. After the end of the first world war, Migge turned his full attention to the creation of self-sufficient family gardens. In 1913 he published *Everyman Self-Sufficient*—a pamphlet that was widely circulated and used extensively as a manual for gardeners and planners interested in the details of creating small garden plots attached to family housing (Figure 3.3). The book contained detailed plans, charts and instructions on how to create a self-sufficient family garden that would provide nourishment—a need that was felt by many German families of the time.

A primary theme throughout the work of Migge was the human participation in the biologic cycle (Figure 3.4). Migge saw the city—and the German nation—as one large garden, with the capacity to produce food for the people who would then in turn use their waste to nourish the land. He perceived the ideal garden to be one in which its occupant was intimately connected to the land not only through the consumption of food grown on the property, but through the reincorporation of his or her waste back into the soil. At the site-specific scale, Migge designed garden and community plans that included the facilities that would allow each family to collect, store and reuse their waste, using dry toilets and compost silos (Figures 3.5 and 3.6), which Migge considered to be infinitely superior to the urban wet sewerage systems (Haney, 2007). On the level of community and city planning, Migge incorporated elements of larger scale waste reuse. In *The Green Manifesto,* Migge declared, "The city may not only take from the land, the city must also give to the land...All city waste to the land. Unify city and land. We should create our own 'earth'" (Haney, 2007).

Figure 3.3 The cover of *Everyman Self Sufficient!* (1918) by Leberecht Migge. Source: Haney (2007).

A significant influence of Migge's application of the biologic cycle to landscape design was the work of Raoul Francé, a German biologist and cofounder of the German Monist League. He promoted his ideas through written and graphic interpretation of the

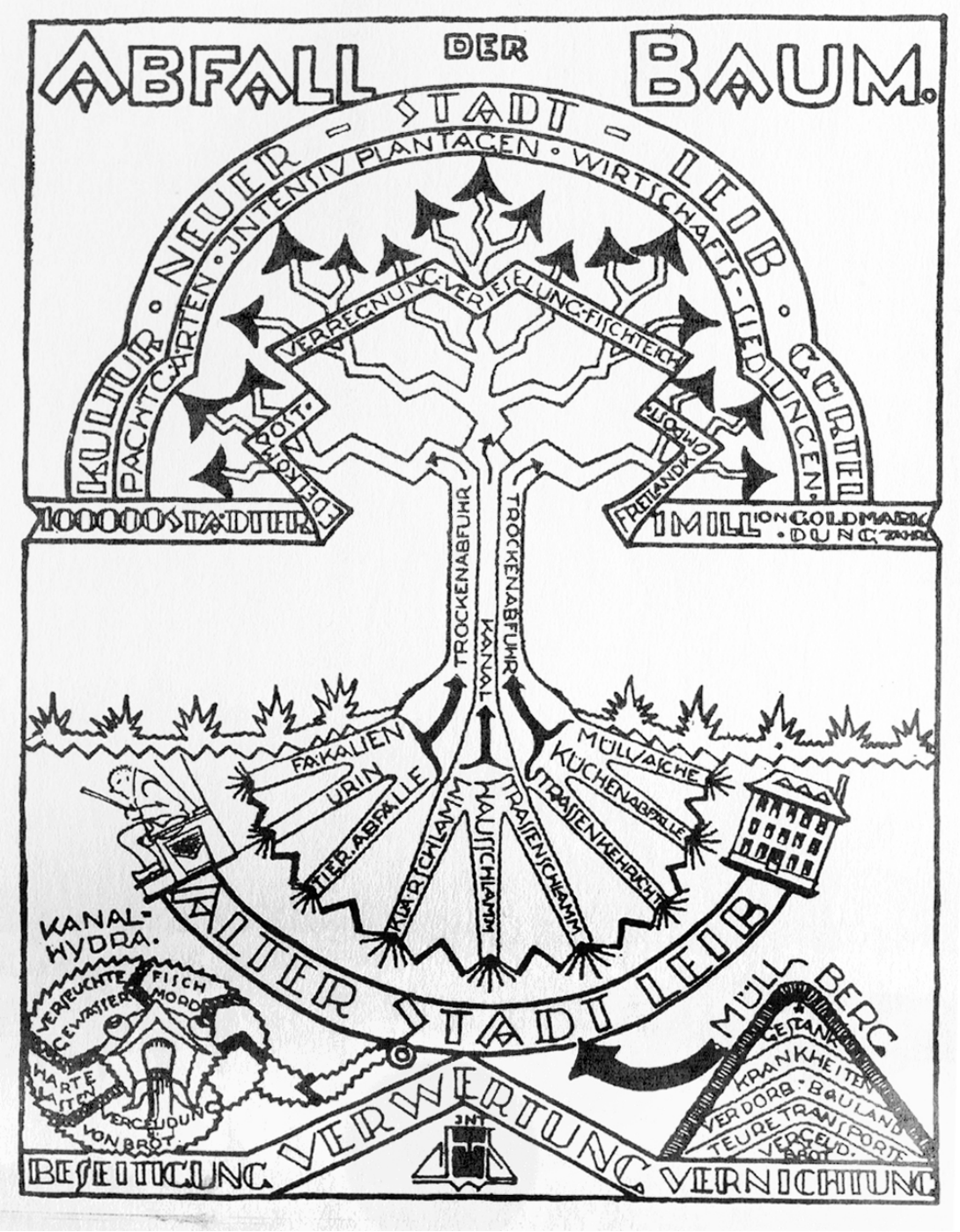


Figure 3.4 "Tree of Waste" diagram. This graphic explains Migge's proposal for the reuse of human and food waste and was central to his plan to make homes, settlements, and cities self-sufficient. "Alter Stadt Leib" (the bottom half, translated *The Old City Body*) is contrasted with "Kultur Neuer Stadt Leib" (the top half, translated *The Culture of the New City Body*). Source: Haney (2007).

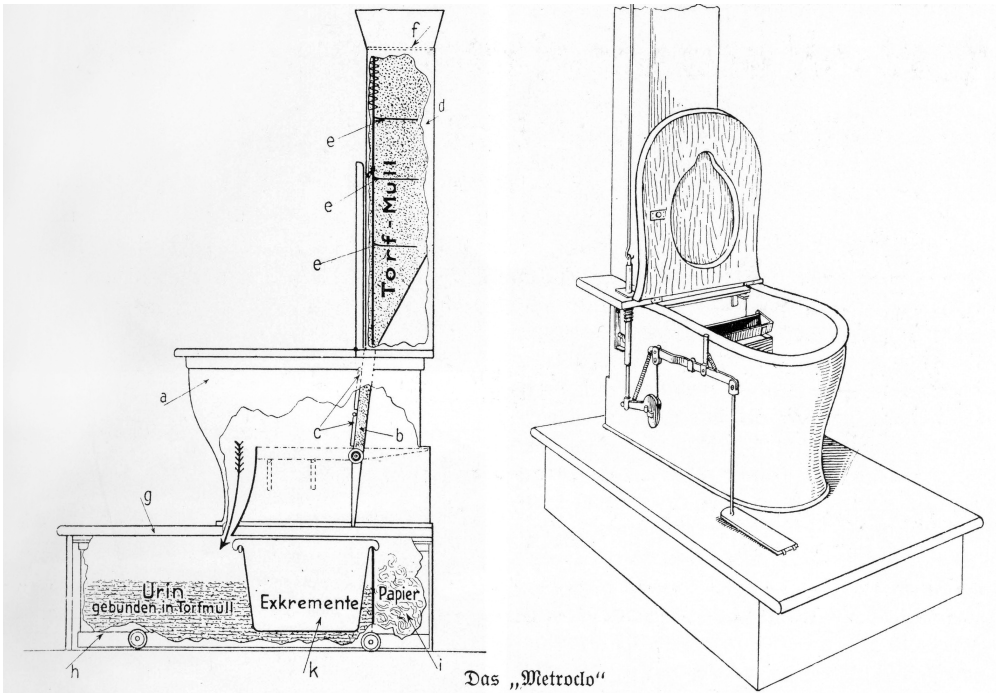


Figure 3.5 Dry composting toilet. The reuse of human waste was central to Migge's plan for self-sufficient homes and gardens. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

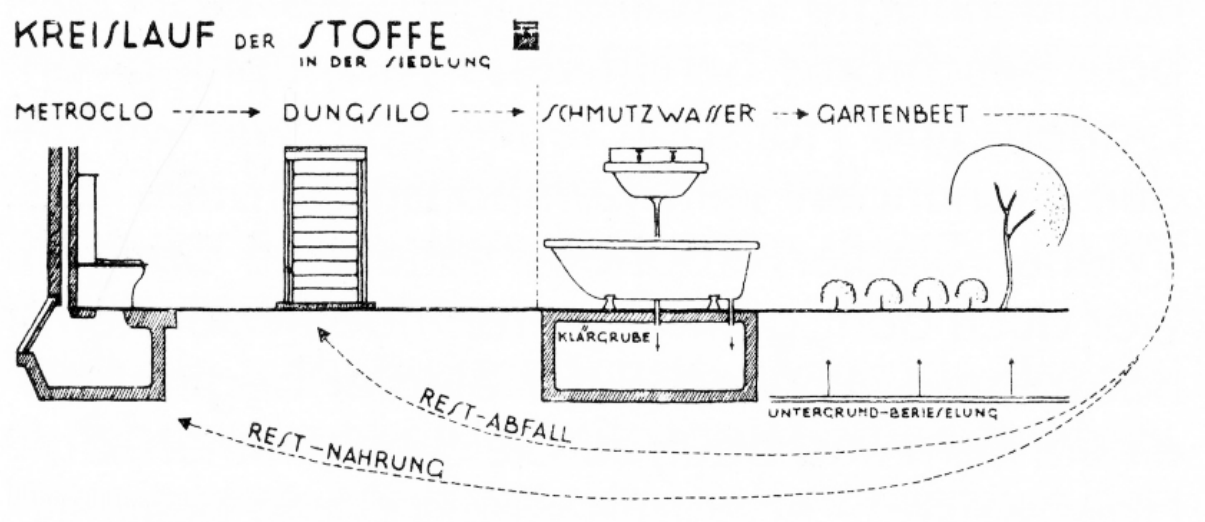


Figure 3.6 Waste composting, storage, and reuse diagram. Migge applied the scientific developments in soil fertility to home and garden systems that utilized the biologic cycles. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

natural cycles (Figure 3.7), and it is interesting to note the similarity between Francé's "biologic cycle" and the present-day interpretation by the permaculture movement (Figure 3.8). Both rely on the inclusion of the human as a part of the natural cycle and reject the notion that the human is either separate or superfluous.

Francé's books were widely read by many early modernists, including Walter Gropius, Mies van der Rohe and the members of the German Garden City movement (Sohn, 2003). Migge based his early small garden systems on Francé's concept of "Biotechnik," which embraced the idea that plants and organisms could be the prototypes for human technology (Brouwer & Moulder, 2007). Similarly, contemporary environmental designers have embraced the concept of "biomimicry"—the utilization of nature as a learning tool that can provide inspiration and instruction for designers (Benyus, 2002; Smith, 2007).

Migge was also critical of artificial means of fertilization; he felt that synthetically-derived nutrients interfered with the biologic cycle and therefore was contrary to the natural order of the earth (Haney, 2007). Much like Le Corbusier embraced the idea of a house as a "machine for living," Migge saw the garden and its productive capacity as another type of machine, on both large and small scales. This pattern was repeated within the smaller scale of individual family garden plots, where Migge designed communities that incorporated low-rise housing, each residence with its own self-sufficient garden that Migge had determined (through extensive research and experimentation on his own farm) to be of a size that could supply all the nutritional needs of the typical family (Figure 3.9). A more contemporary iteration of this degree of garden planning can be found through the work of John Jeavons, an American who developed the "Grow Biointensive" method

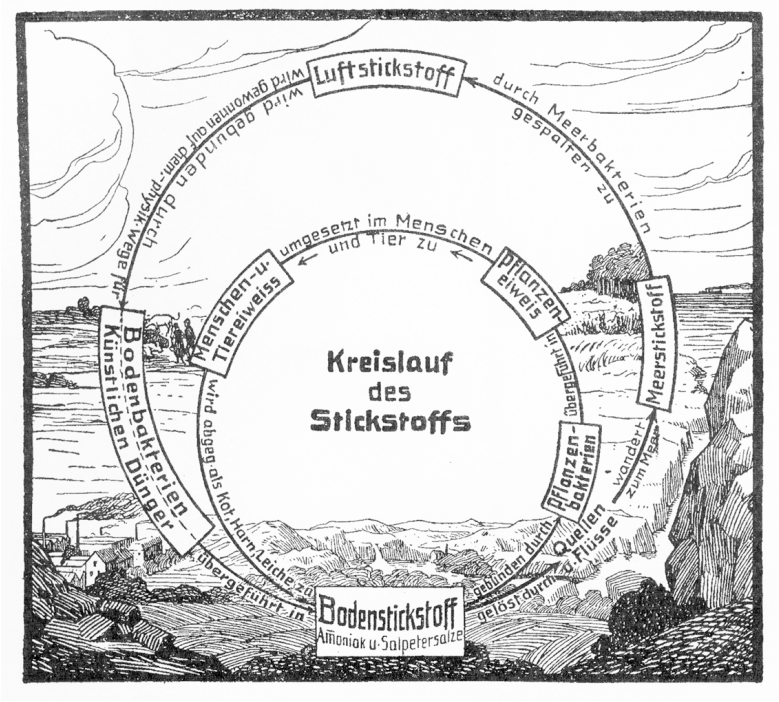


Figure 3.7 Raoul Francé's "Cycle of the Elements" diagram. "Kreislauf des Stickstoffs" (translation, *Cycle of Nitrogen*). Source: Haney (2007).

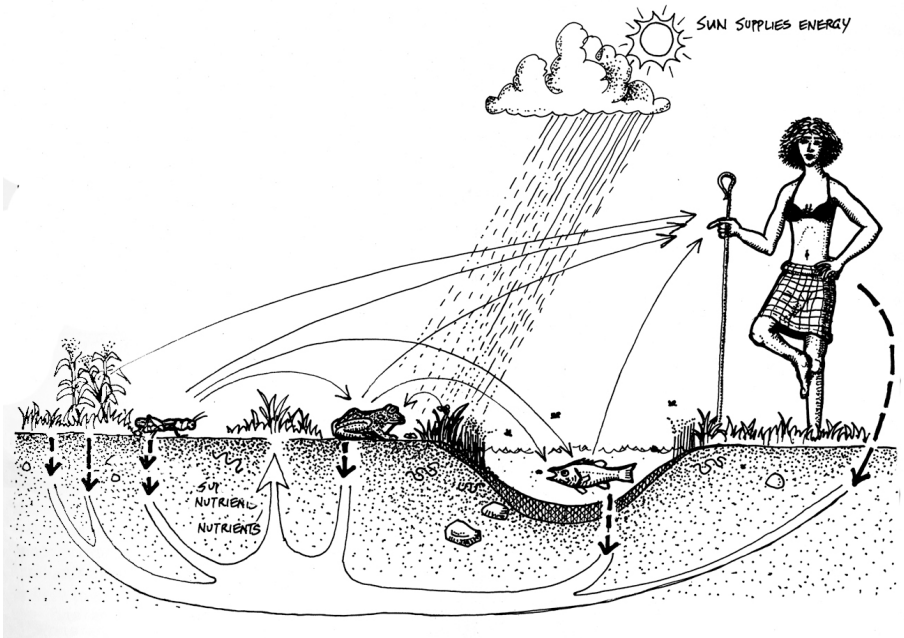


Figure 3.8 Permaculture diagram of the nutrient cycle. Like Migge, current ecological production systems include and account for human participation in the biological cycles. Source: Mollison (1990).

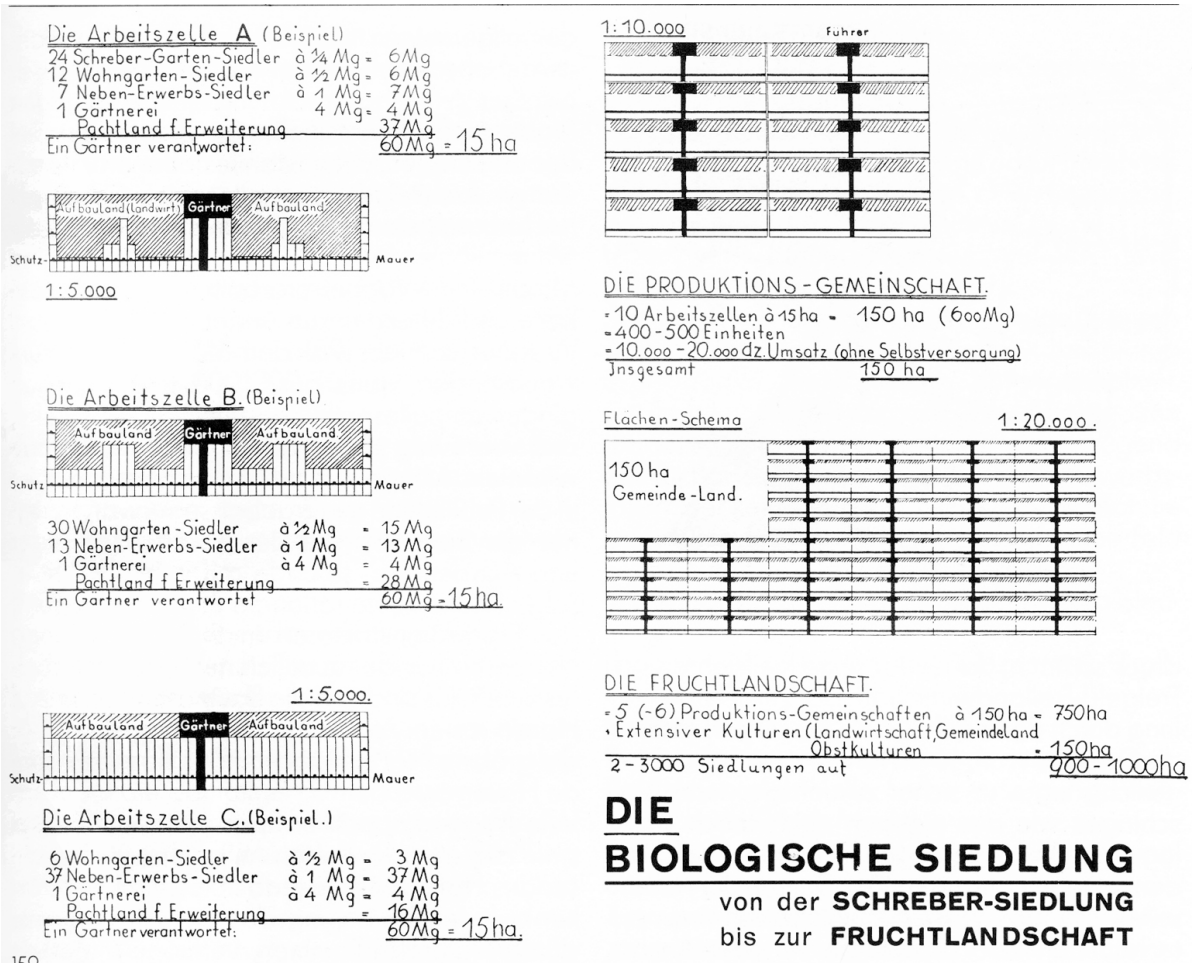


Figure 3.9 "The Biological Seidlung." Calculations of high-production gardens inside the seidlung, illustrating Migge's utilization of empirical research in design. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

(Jeavons, 2002). Jeavons developed a body of work that includes charts, maps, lists and techniques for acquiring the maximum amount of nutrition from a minimal plot of land (Figure 3.10).

Migge designed different areas for both "Intensive" horticultural crops that required more attention than the "Extensive" crops that required larger acreage, but less attention (Figure 3.11). The concept of design "zones" based on the quantity and quality of attention needed from the residents is another concept used widely in designs based on permaculture (Figure 3.12). While generations of farmers around the world intuitively arrange their crops in this manner, it is important to note that what Migge designed weren't *farms,* they were *planned communities*; the order and arrangement, scale and program of the entire Siedlung was designed by Migge. Although he had extensive horticultural knowledge from his years of horticultural training, Migge continued to research and improve upon his design ideas through the founding a Siedlerschule (school of seidlung principles and methods) to experiment with new techniques of fertility and cultivation, constant collaboration with a wide range of architects and planners, and the publication of a magazine that reported the results of his research (DeMichelis, 1991).

At a larger scale, Migge designed communities that would cultivate community intra-dependency base on food production and waste-as-resource concepts. All waste was to be reused; matter that was not feasibly incorporated into the family garden was composted collectively, to be spread throughout the community and on the larger farms and orchards (Figures 3.13 and 3.14).

After the publication of his first pamphlet in 1909, Migge was introduced to Werner Hegemann, a young city planner who returned in 1910 from a two year stint in America

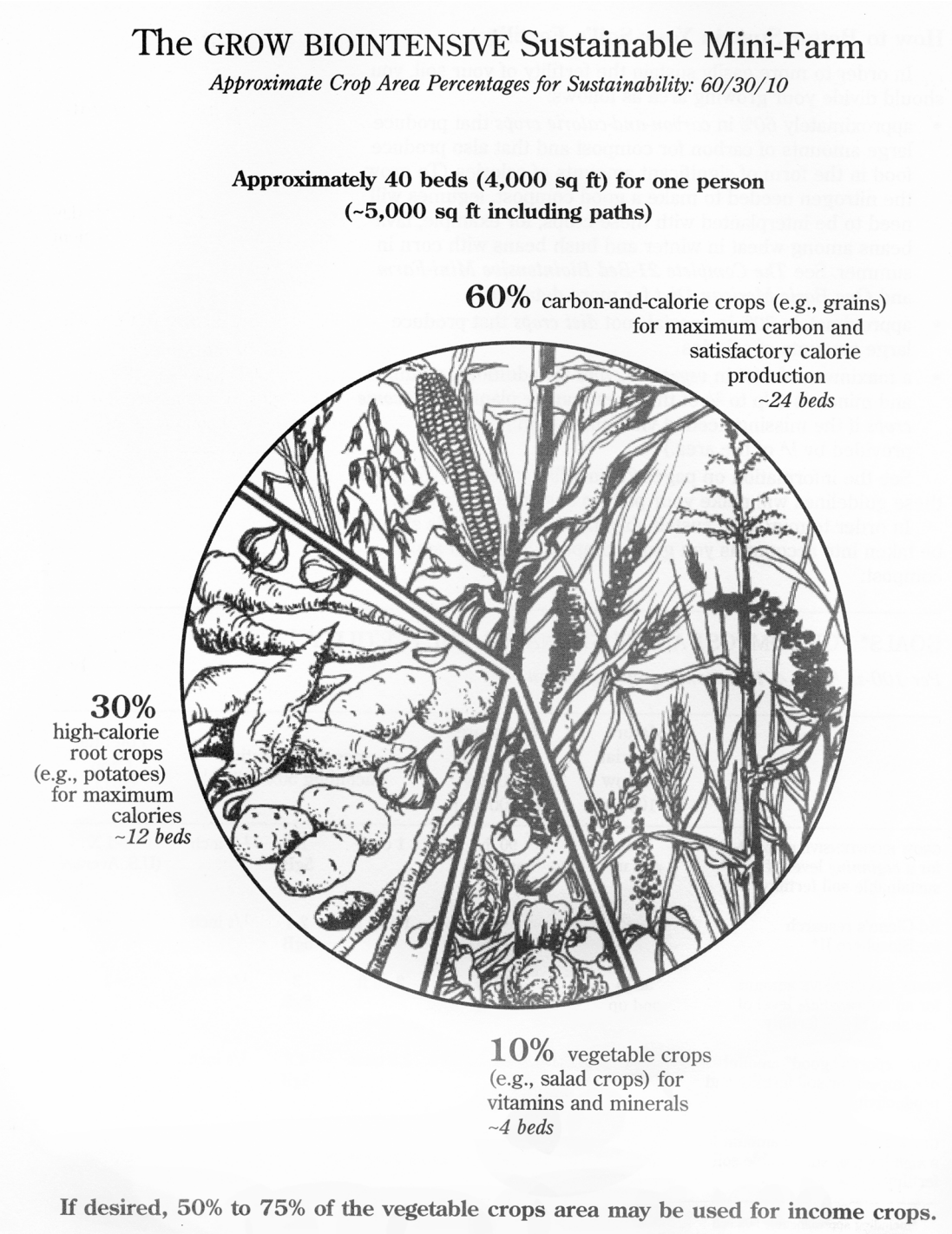


Figure 3.10 "Grow Bio-Intensive" crop calculations. John Jeavons developed the "Grow Biointensive" method in the second half of the 20th century that, like the work of Migge, was based on the goal of providing a sustenance-level of production on a small plot of land. Source: Jeavons (2002).

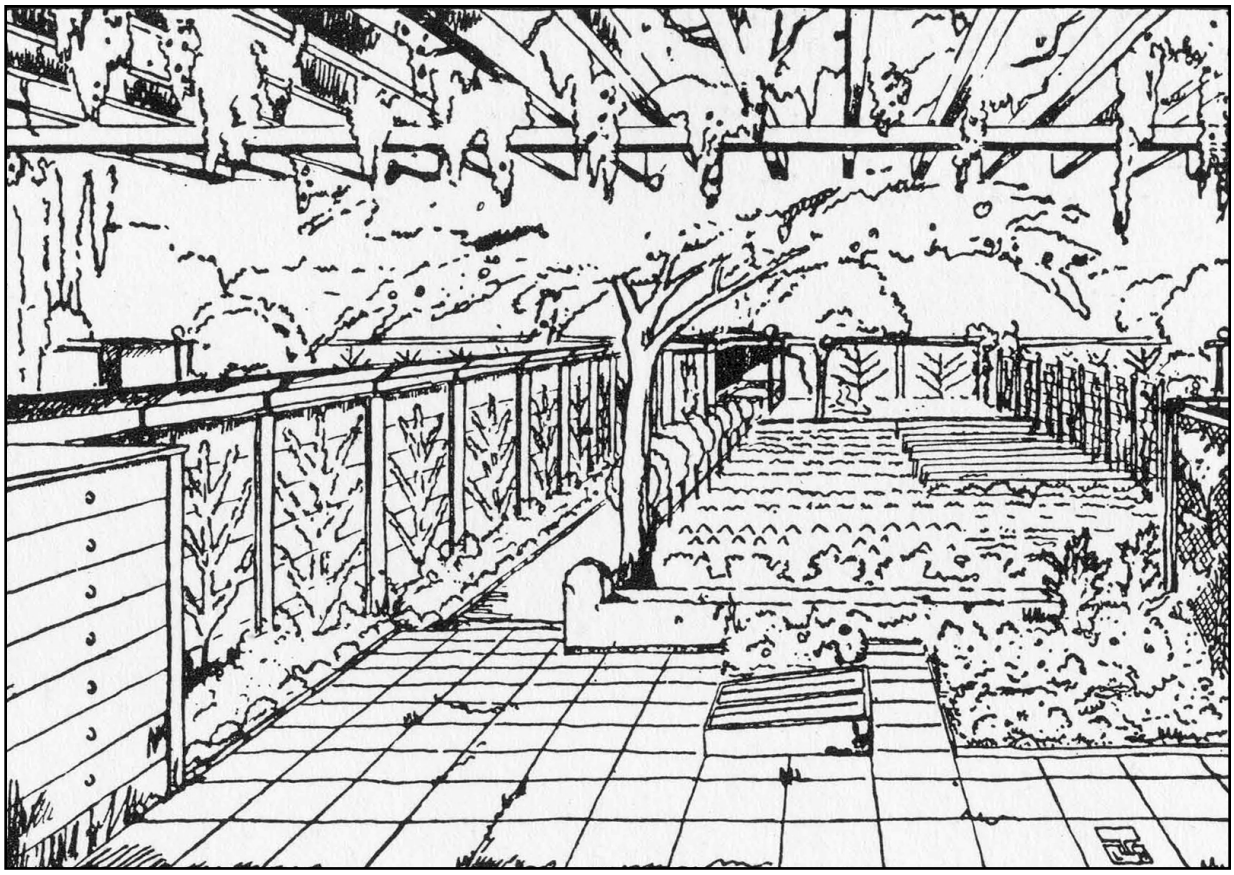


Figure 3.11 A standard garden at Dessau-Ziebigk Siedlung. The vignette shows espaliered fruit trees, compost silo, cold frame, and garden plots. Note that the elements that require greater human attention—vermicompost on the left, the coldframe towards the right—are closer to the house than elements that require less attention, such as the orchard and grain crops. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

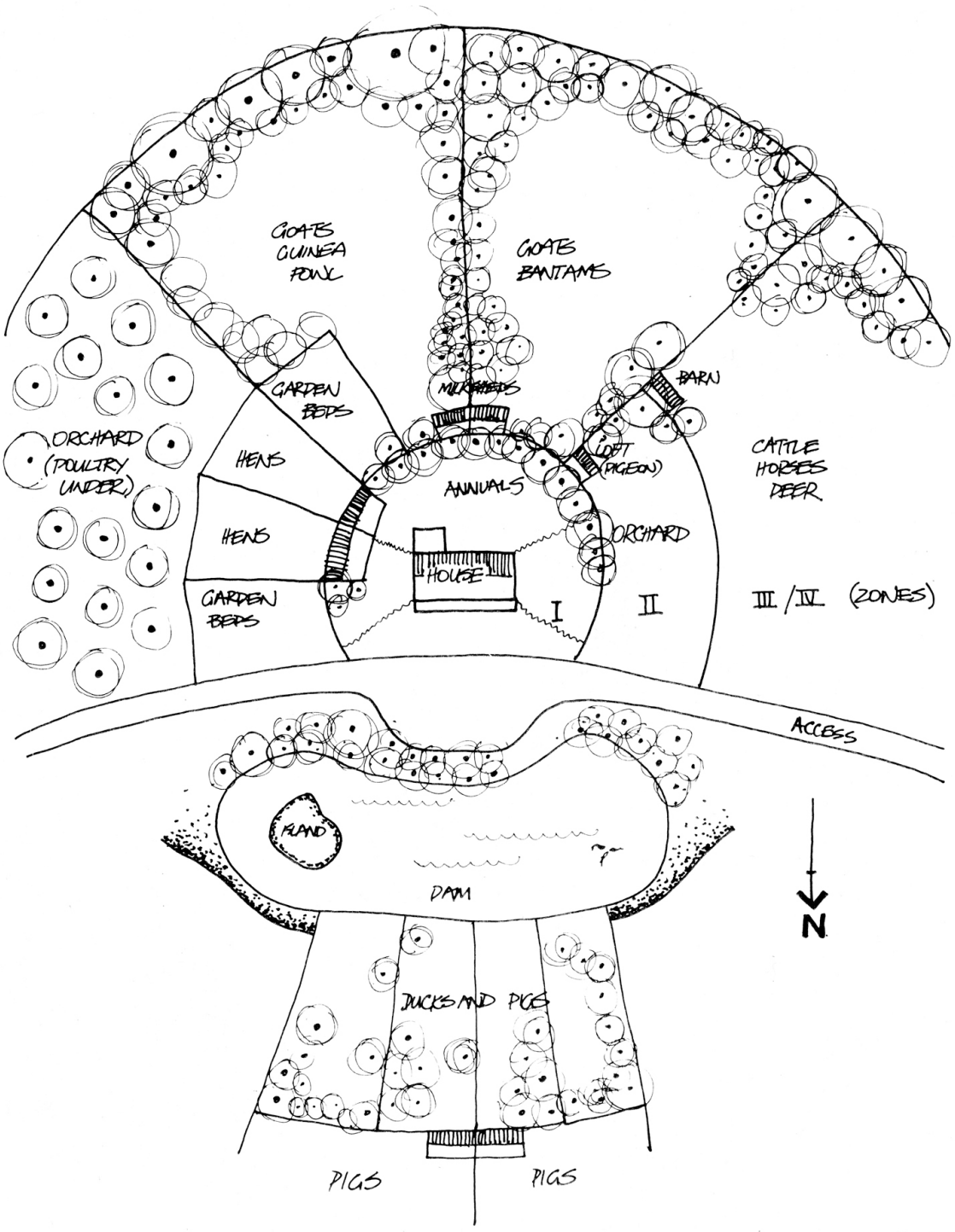


Figure 3.12 Permaculture zones. Permaculture principles also indicate that for the most efficient design of a productive space, activities and land uses should be organized in "zones" where the least intensive (zone 0), take place closer to the residence. Source: Mollison (1987).

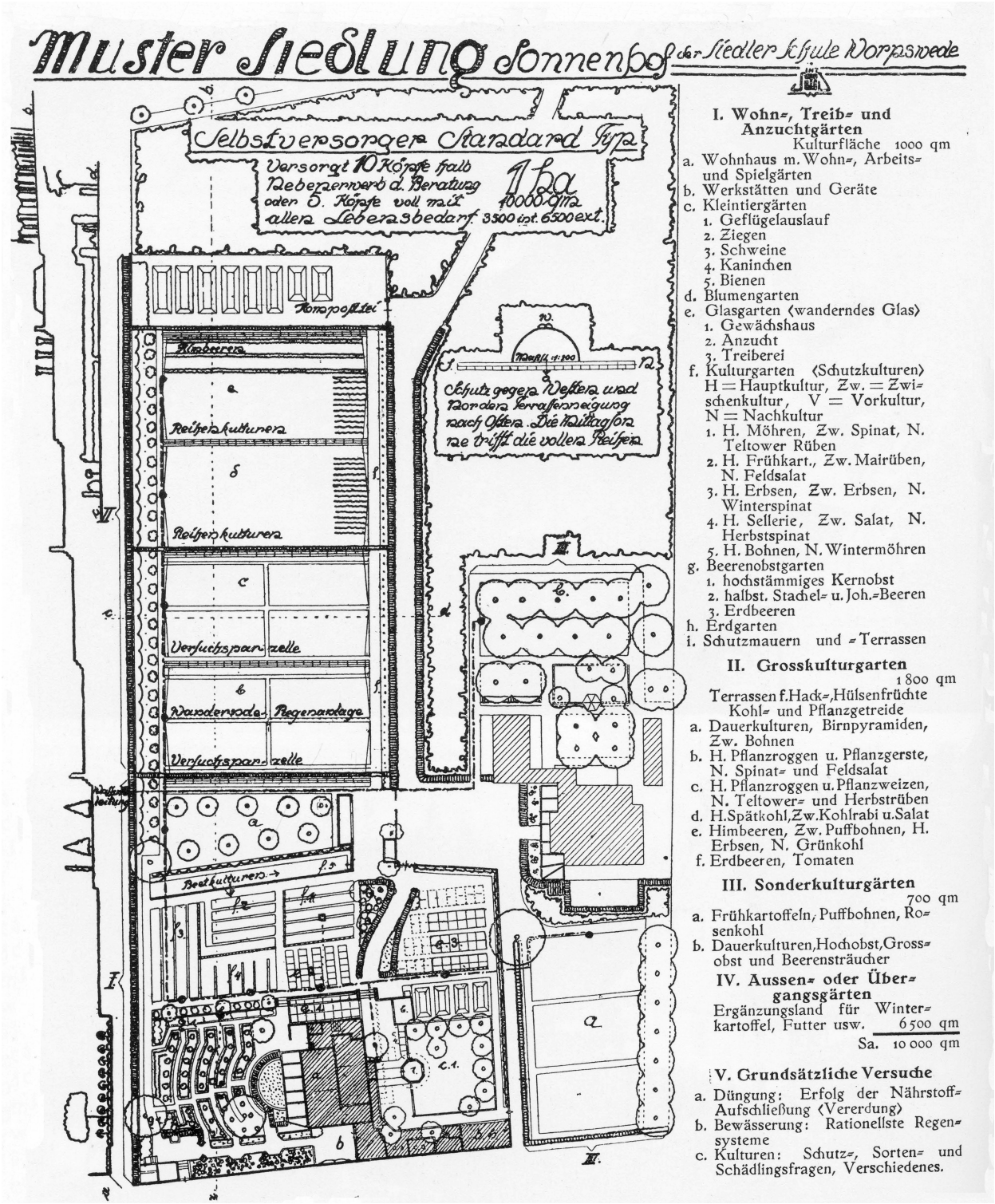


Figure 3.13 Example settlement at the Siedlerschule in Worpswede. Migge designed an efficiency of space in which the production of food and the recycling of waste takes a predominant place in the design scheme. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

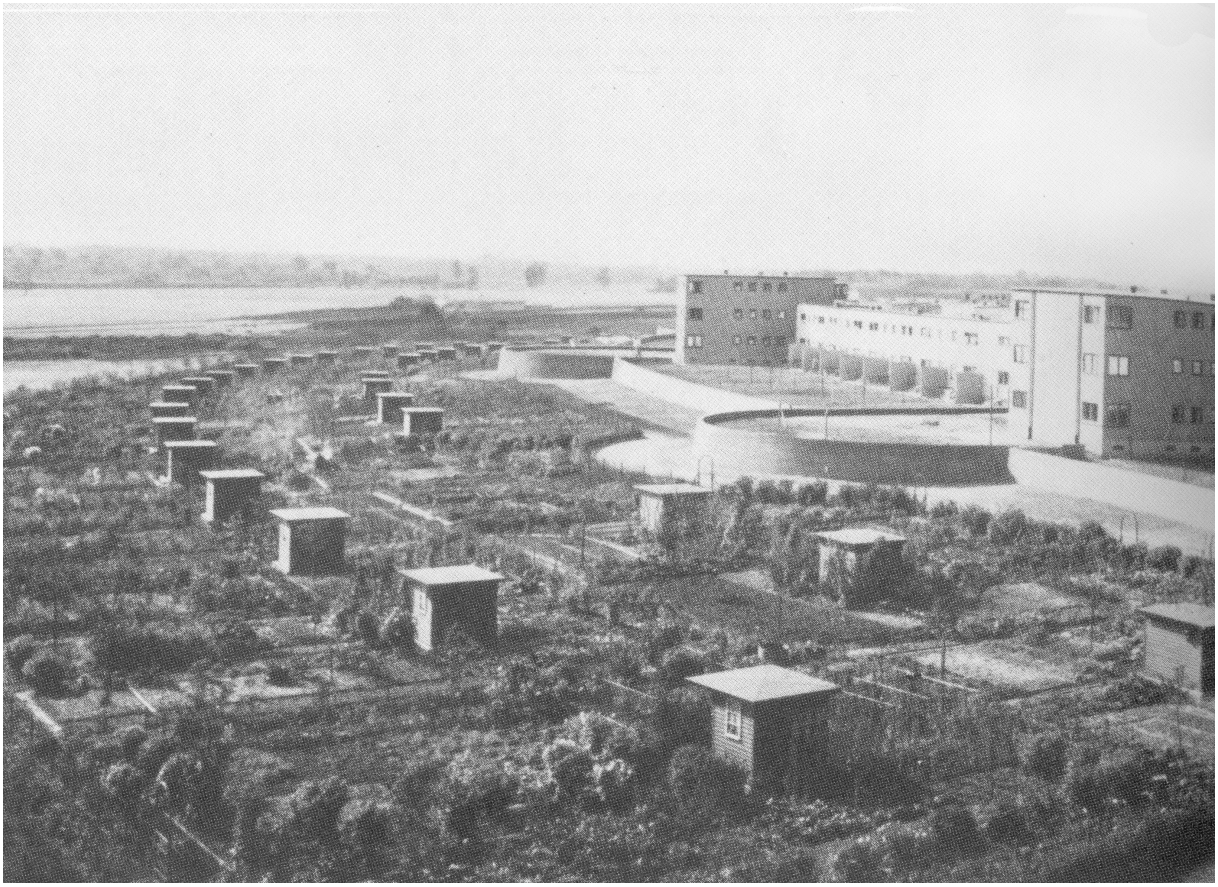


Figure 3.14 Siedlung Rōmerstadt in Frankfurt. An example of Migge's work in context with modern architecture. The architecture and the production gardens relate to one another in both scale and location. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

studying city planning and the landscapes of Olmsted, mainly in Boston (Collins, 1982). Migge attended the city planning exhibition that Hegemann organized upon his return, and from that point on they collaborated on the design and promotion of many public parks and gardens (Collins, 1982). Migge and Hegemann also shared a kinship with Adolf Loos, the noted Viennese architect and another devoted social reformer. In 1922, Loos, as the Vienna City Architect, invited Migge to deliver a series of speeches in Vienna to city planning officials and the public, promoting the small garden movement to a broader

audience. At that point Migge started a long-term partnership with both Loos and his protogé, Theodor Fischer, a founding member of the German Garden City Society (Haney, 2007; Sohn, 2003).

Migge also collaborated extensively with Martin Wagner and Bruno Taut in Berlin on the creation of siedlungen—German housing settlements for workers. His partnership with Wagner began in Berlin collaborating on the design of youth parks and public gardens, and continued through the design and construction of innovative Siedlungen, such as Lindenhof outside of Berlin (DeMichelis, 1991). In 1920, Migge and Wagner established the *Stadtland Kulturgesellschaft Gross-Hamburg und Gross-Berlin,* committed to the ideal of a nation of single family, self-efficient gardens through the resettlement of 10 million urbanites to rural villages (DeMichelis, 1991). The goal of this organization was similar to the goal of inner-colonization proposed by the conservatives and later, the National Socialists, with the exception that many conservatives were opposed to the idea of re-population of rural areas by urban dwellers, believing them to be irrevocably corrupted by the excesses of the city. Additionally, the National Socialists implemented seidlung using highly referential design ornamentation and effects in the architecture and the layout of the communities. However, as with Ebenezer Howard's Garden City movement, the National Socialists co-opted the ideas promulgated by Migge and Loos for the purposes of the "Germanization" of newly acquired territories, beginning with Poland.

Migge collaborated with Ernst May on the design of Praunheim Settlement and Heddernhein Seidlung, which utilized walls and trellises for the creation of microclimates that facilitated food production (Hölbusch, 1980). For Migge, as with Corbusier and other modernist architects, the wall was the basic unit for design. Migge's housing units started

with one wall and were followed by a simple structure built with the wall as one side. Additionally, walls were used extensively as solar capturing elements for the extension of the growing seasons, in the same manner as the high-yielding East Asian gardens that heavily influenced Migge (Figures 3.15 and 3.16).

Another social concept of Migge that is apparent through his design proposals is that of self-determination. He felt that access to a small plot of ground—whether in the city or country—would allow the working class to provide, at least in part, for their basic needs of food and shelter. As opposed to self-sufficiency for the sake of non-dependence

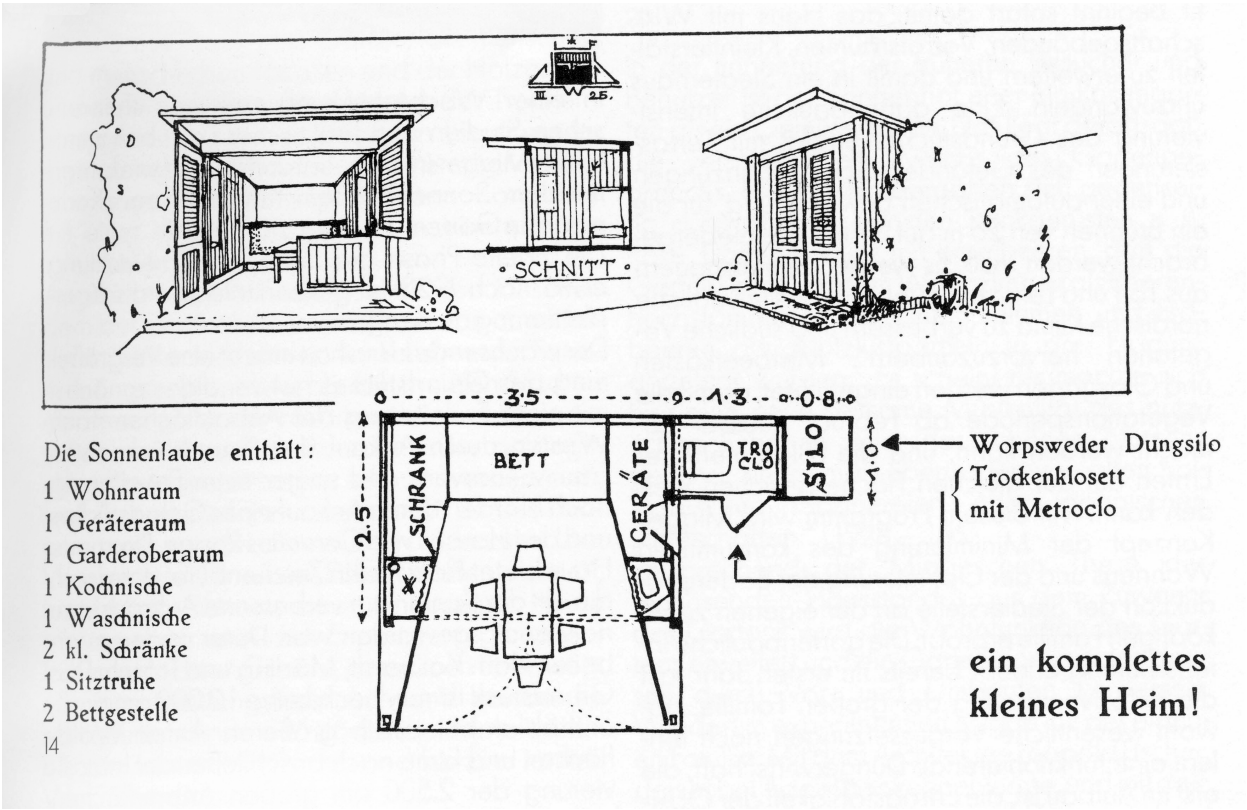


Figure 3.15 "Ein Komplettes kleines Heim!" (translation: *A Complete Small Home*). The basic structure of a self-sufficient home. In Migge's designs, every homeplace started with a wall, and living structures were to be added as they were needed. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

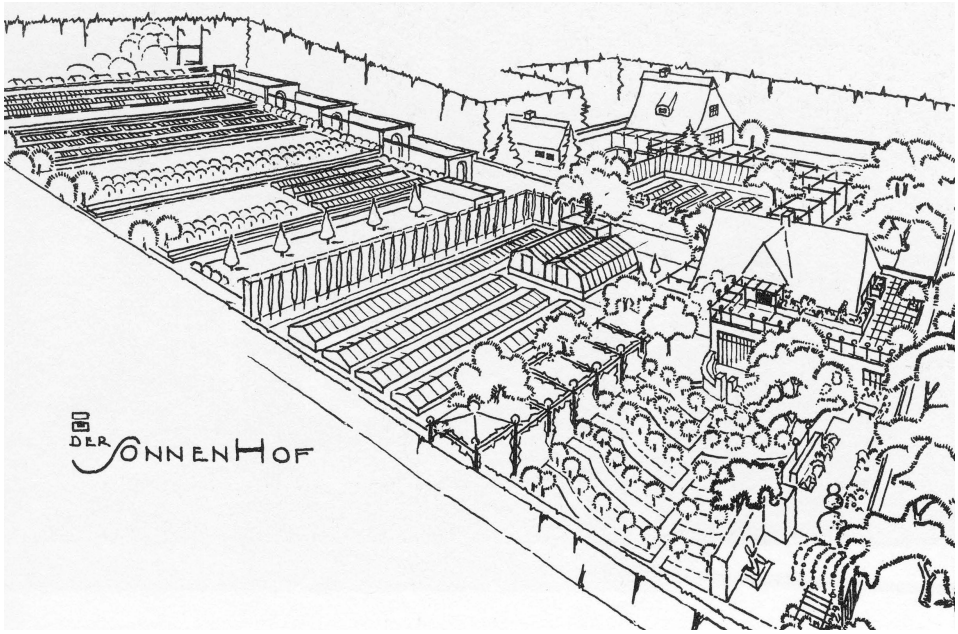


Figure 3.16 Der Sonnenhof, Migge's residence at Worpswede. An axon shows the organizational structure of Migge's self-sufficient gardens. Note how predominant the wall is, and that it is employed as a way of increasing production of food, not merely as an aesthetic device. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

on foreign supplies of food and raw materials, Migge advocated self-sufficiency because he felt that the best way to ensure that the needs of the citizenry were met was to grant them the means and the knowledge to provide for themselves. Therefore, although his work was highly programmed, he allowed for and encouraged additive construction that would see the home-place expand as the family grew or as the means were acquired (Figures 3.17 and 3.18).

In 1919, Migge published a defiantly political piece—*The Green Manifesto*. This work was written mainly for politicians and intellectuals, and explicated his theory of small gardens as a social panacea. In the manifesto, Migge made a clear statement that he was not advocating for a return to an agrarian past. On the contrary, his call was for the

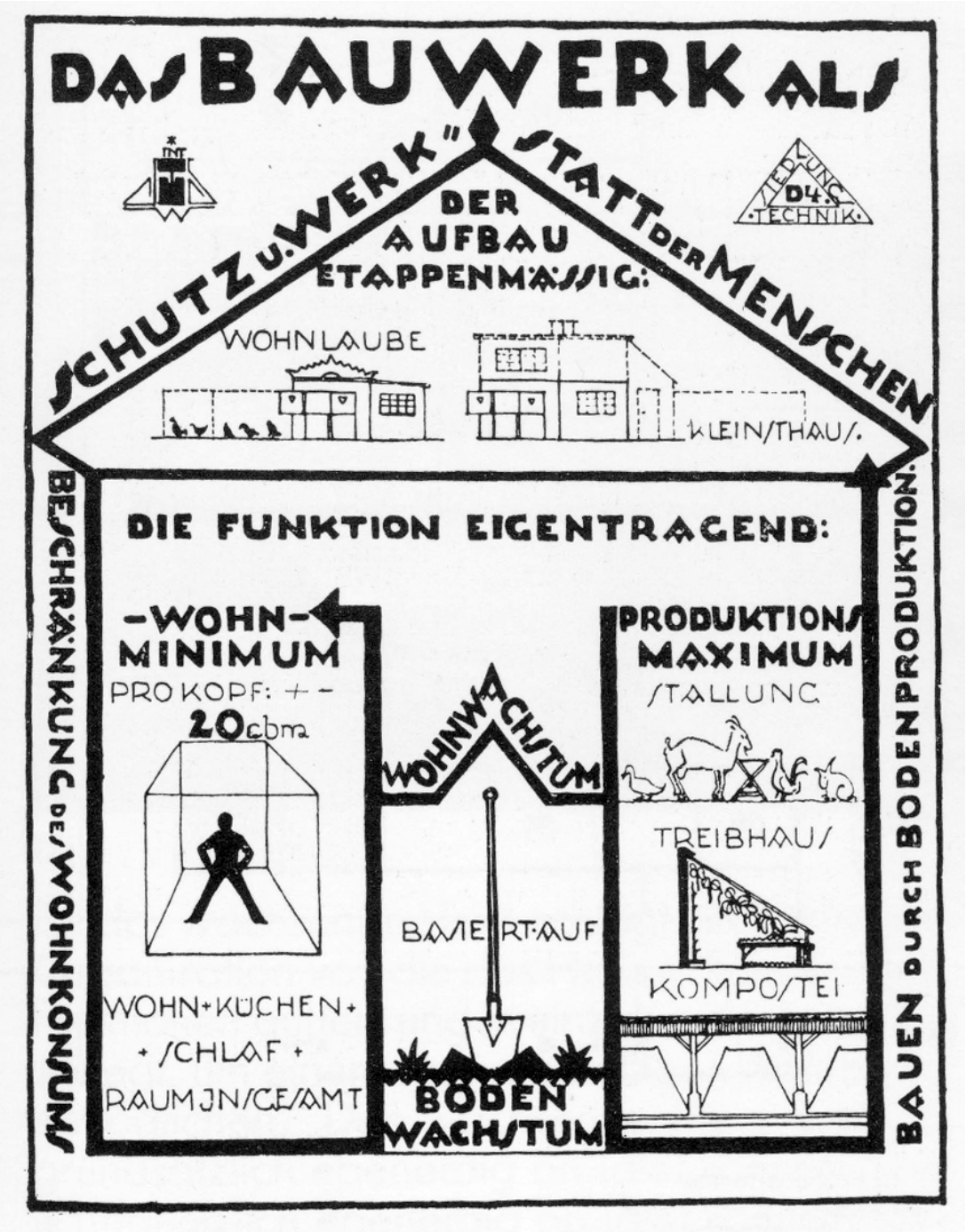


Figure 3.17 "The Building as Protection." Migge's diagram illustrating the self-sufficient and technological functions of the house. Note the evolution of stages of the house structure presented in the top half: Wohnlaube (trans. *apartment* or *summerhouse*)—a single room structure next to the wall, and, Klein Haus—additions to the original structure create a bigger living space. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

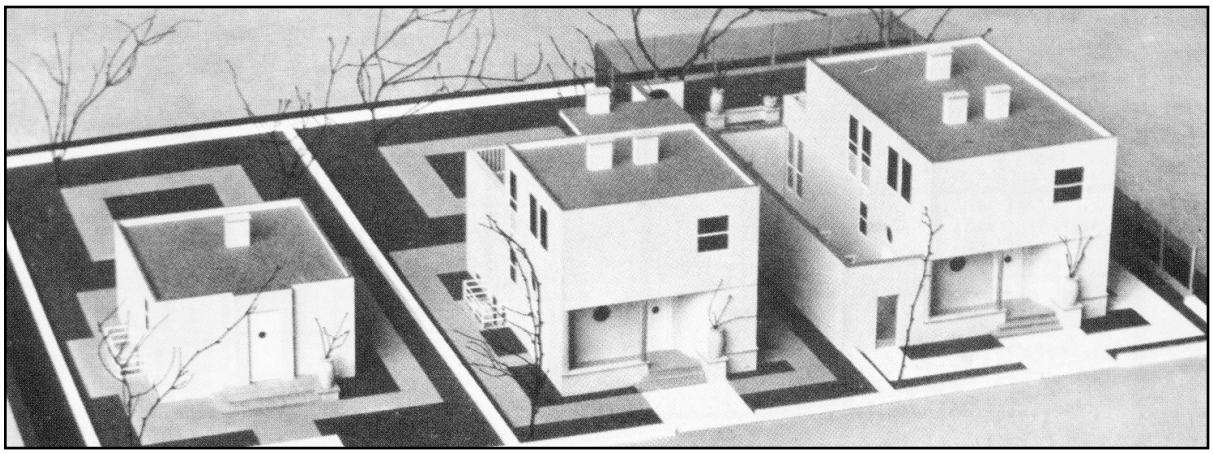


Figure 3.18 Modular construction of housing. Model showing the additive nature of the modular siedlung buildings. Migge's idea was that housing, like food, should be designed for a self-help society. The ability to adjust one's housing for evolving needs is an example of that principle in his design. Source: *Leberecht Migge 1881-1935: Gartenkultur des 20 jahrhunderts* (1981).

"new way of living" to be applied to the self-reliant ideal through new technology and empirical research. His belief was that only when Everyman could provide for his family without being chained to the capitalist industrial system would a violent communist revolution be avoided.

The social ideals underpinning Migge's design of small gardens were those of self-sufficiency and the human participation in the biologic cycle, much like the current permaculture and biodynamic farming movements. At the height of Migge's writing and planning, the design community was at a crossroads between an Arts and Crafts sensibility and embracing industrialized ideology. Migge's contributions toward a modern environmental ethic were underpinned by a belief that a system of self-sufficient gardens was the best future of Germany—and of Europe. He made a political argument of applying the basic principle of the biologic cycle (waste-as-resource) to the industrial city as a

means of urban sanitation reform and also as a solution to the chronic malnutrition problem that plagued the nation after the first world war.

Critical Analysis

This study of the work of Leberecht Migge reveals that he sought a solution to the poor living conditions of early 20th century Germans through a specifically integrative landscape architectural approach. He relied heavily on the idea of a self-help society, incorporating elements of self-sufficiency at all levels of his design philosophy and invoking an early version of sustainability by referencing and mimicking natural biological processes in urban designed gardens and settlements. Migge paid particular attention to the production and consumption of food in German society, realizing that those food systems were at the center of both contested cultural ideals and the practical aspects of providing adequate nutrition for a rapidly urbanizing nation. He addressed both throughout his career, most notably through the design and advocacy of siedlungen, where individual gardens collectively created a network of food production and resource/nutrient recycling. Beyond the independent communities, Migge wrote and lectured about the creation of a "nation of gardens" that would effectively couple Germany's agricultural heritage and remaining natural resources with modern science and production techniques to address the political turmoil of the time in manner that negated both full capitalization and the embrace of a communist revolution. In short, Leberecht Migge integrated an understanding of contemporary political and economic discourse, knowledge of environmental processes, and awareness of the cultural perception of landscape, agriculture, and heritage into the process and practice of landscape architecture.

The author found that today's politicized food complex presents many of the same issues as early 20th century Germany, and that this study of Migge's process and work provides multiple insights into how the profession of landscape architecture could incorporate a greater attention to our own food complex into contemporary practice. Inge Hölbusch concludes her essay on Leberecht Migge with the statement, "Until now, the 'guild' of landscape designers has through ignorance neglected the problems posed by Migge and also his contribution to the development of a garden architecture that corresponded to the conditions of city life" (1980).

Indeed, what does the profession of landscape architecture have to offer the complex and layered reality of contemporary society? More specific to this thesis, is there a manner in which the food complex can be used as an entrée for the profession to enter this broader, more meaningful modus operandi? The research presented within this thesis points to a definite *Yes*. The need for a profession-wide re-evaluation of how we produce and consume food as a society is clear, and the interdisciplinary potential of landscape architectural process is ripe for rediscovery.

What was the problem proposed by Migge, and what were his contributions toward its solution?

From the survey and analysis of his work and the socio-political and environmental conditions of early 20th century Germany presented in this chapter, the problem posed by Leberecht Migge is similar to that of this thesis: how the landscape can incorporate the reality of a highly politicized food production and consumption complex into professional discipline and practice. Throughout his career, Migge collaborated with Modernist

architects and planners, engaged in political discourse with contemporary politicians and intellectuals, and understood the economics of not only small scale home and community production, but also the effect of macro-economic policy on all facets of society. Additionally, he maintained a school at his home in Worpswede to disseminate information and to continually test and improve his design proposals.

This diversity of professional activity reflects a multi-faceted approach to landscape architectural process and practice—one major contribution gleaned from the study of Migge's work to the profession. The research led the author to view this dimensionality as central to Migge's success in conceptualizing an integrative practice, and categorizes these facets as belonging to that of design, mediation, and advocacy. Ideally, every landscape architect would embody all three roles, employing the knowledge acquired through practice and study to address environmental and social issues holistically. This chapter's study of the work of Leberecht Migge provides an example of how participation in all three realms of practice can be combined to effectively address the food complex through landscape architectural design.

Landscape architect as designer

Leberecht Migge was formally trained in a gardening program an hour north of Berlin, and followed that education with employment as a designer in the Gartenbau firm of Jacob Ochs (Haney, 2007; Collins, 1982). He understood classical design, where he demonstrated special skill in relating residences to their landscape and in the creation of outdoor living areas that extended the functionality of the house to the landscape. When he switched his focus away from residential design and toward public parks, and later to

settlements and self-sufficient gardens, Migge remained well-grounded in his attention to the practice of design. Throughout his career, Migge produced proposals for built works and collaborated with other architects, planners, and allied professionals.

Design is perhaps the most obvious aspect of landscape architecture. The vast majority of a landscape architect's formal training is in the art and science of landscape design. Engineering, spatial relationships, color theory, horticultural and construction knowledge, and an understanding of form are all skills required to become a competent landscape designer. The licensing exam—required by a vast majority of states and the passage of which is necessary to be granted registration as a landscape architect—is fully geared toward evaluating professional competence as an environmental designer. It is the role that the general public most readily associates with the profession of landscape architecture, whether it be for residential gardens, corporate office complexes, public parks or any other facet of the built environment.

One major contribution that Leberecht Migge made to the profession of landscape architecture as a designer was the integration of multidisciplinary understanding into design practice. He understood the biological principles of the environment, but his design work also responded to social and cultural dimensions and political realities. In this way, Migge's work as a designer was strengthened by his engagement with the two other facets of landscape architectural practice: mediation and advocacy.

Landscape architect as mediator

The author proposes that in addition to design, landscape architecture is a translational discipline, capable of speaking the language of civil engineers and

developers as well as that of ecologists and environmentalists. The role of mediator is not pursued actively as a component of education in most accredited landscape architecture programs, although the Environmental Ethics program at the University of Georgia offers courses within the College of Environment and Design that specifically address communication strategies between law, ecology, development, and design. And although there has been a shift towards increasingly multidisciplinary approaches among landscape architects, the role of mediator is often secondary, overlooked, and an afterthought.

The work of Leberecht Migge embodied the potential for landscape architects to act as mediators. One prime example of his work as a mediator is his skill at design concept communication. The graphic presented in Figure 3.3 ("The Tree of Waste") exemplifies this ability to communicate multi-faceted concepts to a non-design audience. Biological cycles (modern and largely unfamiliar information at the time) were shown as linked to the political idea of self-sufficiency through the comparison of the "Old City" to the "New City"—a theme that early 20th century Germans were quite familiar with.

Beyond graphic communication, Migge participated in mediation as a landscape architect through the continual engagement with allied professionals outside of the landscape realm. Although this was partly due to his long-standing frustration with his own profession—he formally left the German Association of Garden Architects in 1928—his collaboration with a wide array of professionals, decision-makers, and intellectuals began during his tenure with Jacob Ochs when he became involved in the public park movement. Through his professional relationship with Adolf Loos, Migge obtained invitations to speak to politicians and leaders in Vienna, and later, throughout Germany. Additionally, the Seidlerschule near Worpswede that Migge founded in 1920 was an outlet

for Migge to disseminate information and to demonstrate the connections between the human habitation and natural biologic cycles. Through these efforts, Migge demonstrated a way to mediate between different disciplines, as well as between the natural and the constructed.

Landscape architects acting as mediators also have a long and rich history within the profession within the United States. Olmsted's work at George Vanderbilt's Biltmore Estate is an example of the translation of landscape design to a forester and the economic potential of landscape restoration to a railroad Baron, among other accomplishments. Olmsted's work at Biltmore resulted in the founding of the first American school of forestry and an enduring landscape as well as the scientific restoration of thousands of acres of denuded mountain land. This integrative approach not only produced a wonderfully integrative work of art, but broadened the scope of the profession.

The great potential for contemporary landscape architects to serve as mediators is largely due to the necessity for professionals to be well versed in the needs of their clients and the limitations of the their environment. However, mediation also represents a greater professional outlet that remains untapped. As with the professionalization and subsequent specialization that occurred during the 20th century within many disciplines, landscape architects have become less aware of social phenomenon, political theory, and economic issues that are not directly related to the project at hand. While this myopia may have helped advance individual practice in the short term, the lack of general knowledge and ability to converse intelligibly on a variety of subjects has hampered the landscape architect's potential as a mediator. Specifically as it relates to professional involvement in the food complex, missed opportunities abound. For example, landscape architects

working on urban projects who are unaware of the existence of "food deserts" (areas where there exist economic and/or physical barriers in the acquisition of healthy food), are not able to adequately mediate between existing urban populations and new development. It is precisely this ability for landscape architects to conceptualize and analyze social and environmental issues from multiple perspectives and to communicate that work that makes the profession more than a skilled design trade.

Landscape architect as advocate

More than any other role, Leberecht Migge is mostly widely known as being an advocate and instigator. The landscape type that Migge worked to promote was foreign to his peers and originally received little enthusiasm from the broader guild of planners and architects. However, through his polemical writing—especially *The Green Manifesto* (1919)—Migge advocated for a new way of perceiving social issues, political discourse, and management of the built environment. This advocacy is similar in nature to the work of mediating between disciplines and translating knowledge to the general public. However, the author asserts that advocacy involves a higher degree of innovation and instigating progressive change.

As a profession, landscape architects have a privileged vantage point. Environmental knowledge gained not from the study of wilderness and biological phenomenon, but from observing first hand the effects of the civilization on environmental systems allows for insight that most in our society are not privy to. The social understanding that comes from observing human interactions in public as well as private settings is augmented by being a trained designer taught to "read" the landscape.

Landscape architects have the potential to understand what makes places thrive, as well as what degrades them. Along with these insights, however, comes the responsibility of informing the public and decision makers—*even when they are the client*—of situations that demand greater attention and remedy.

Leberecht Migge felt that the profession had insight to offer the world that went far beyond the aristocratic estate landscapes that occupied much of the time of his contemporary landscape architect practitioners. Even in the broader realm of architecture, planning, and environmental design, Migge felt that even the most progressive societies were not living up to their Modernist rhetoric of creating buildings and places for the "new way of living." Indeed, as was stated earlier, Migge wrote a poignant critique of the Deutche Werkbund's Stuttgart Exhibition of 1927, proclaiming that the exhibition treated gardens as "superfluous" while he believed in the potential of the garden to directly address the functionality of buildings, communities, and society at large.

Migge's advocacy often took the form of writing and lecturing. However, it was his instigation of projects and developments that exemplified his design ideology that is especially worthy of note. Instead of angling for big clients that agreed with his philosophy, Migge created his own working demonstration through his Siedlerschule at Worpswede, teaching, researching, and publishing his findings in an ongoing effort to advocate for the integration of self-sufficient food gardens into the modern landscape. Additionally, Migge corresponded and collaborated with progressive architects and planners in obtaining funding to build siedlung housing settlements using his organizing principles. In these ways, he illustrates the capability and the importance of a landscape

architect acting as a facilitator and as an originator, not merely a passive tradesman reacting to outside forces.

Frederick Law Olmsted, provides an explicit example of a U.S. American landscape architect acting in the role of advocate, most notably in the design of Central Park. In 1853 he was asked by a group of real estate speculators and developers to design a park in the European tradition. Because of his interdisciplinary background and reformist tendencies, however, Olmsted made the stakeholders aware of the greater need—and opportunity—for the park as a public health amenity, an embodiment of democratic ideals, and as grounds for environmental restoration. Olmsted held a long tenure with the New York City parks department and his tireless advocacy for what he knew to be necessary for the long term success of not only the park, but also of urban life and the democratic ideal.

The role of advocate is one that is certainly lacking in the profession today, and admittedly requires a good deal of unpaid work on the part of landscape architects. However, with increased advocacy comes the opportunity for landscape architects to explain to the pubic the integrative approach of the landscape architectural process. One reason for resistance to the role of advocate is the argument that practicing landscape architects will lose work if they wander too far from the prescribed role and popular notion of landscape design. However, as the examples of Migge and Olmsted establish, the profession will gain far more work than it will lose. This thesis argues for increased activity of landscape architects as advocates—specifically within the food complex—with the belief that not only is the practice uniquely qualified to address such issues, but that it presents an underutilized opportunity for constructive work among practitioners.

General themes identified throughout the work of Leberecht Migge

Throughout the research and study of the work of Leberecht Migge, several themes arose that are worthy of elevating in order to contemplate their relevancy to today's profession. Migge's contributions toward a practice that embraces complexity and integrates multiple disciplines are numerous, and collectively create a framework for understanding one way in which the landscape architectural profession can incorporate a politicized food complex into practice.

1 - Participation in the biologic cycle

Migge's thorough understanding and continued experimentation and research into the capabilities of intensive production led him to a deep understanding and commitment to the natural nutrient cycle of biological and chemical processes. Several of his contemporaries were engaged in the research and promotion of this relatively new knowledge. Raoul Francé, mentioned previously, and the Austrian philosopher, Rudolf Steiner, the originator of anthroposophy and biodynamic agriculture, both advocated for methods that utilize natural cycles and processes as a foundation for production. Migge's contribution was the design of residential gardens, communities, and regions that incorporated the biological cycles as a matter of course. The incorporation of composting and grey-water facilities into home and garden design was a huge step in extending the Modernist architect's view of the home as a "machine for living" into the productive garden. Additionally, Migge recognized that cities and towns—new to the organization of centralized planning and infrastructure—could also embrace the biological cycle through community and city-wide efforts of waste-as-resource projects. He saw the biological

cycles not through the eyes of a scientist, but as a landscape architect, recognizing that people were an integral part of that system. As such, Migge did not design biological systems; he designed human systems that acknowledged and utilized the biological systems present.

John Lyle, the late 20th century landscape architect, wrote extensively on the inclusion of humankind in the design of landscape systems. Lyle specifically wrote about the structure of the agricultural landscape and its dependency on ecosystem diversity for long-term sustainability and environmental restoration (1999). Lyle continued his advocacy for increased attention to the natural processes of the environment through establishment of a "regenerative" approach to landscape design and management which includes, among other ideas, the concept of "waste-as-resource" (Lyle, 1994).

2 - Additive construction

Much like the philosophy of Heiddeger,[15] Migge understood the idea of dwelling to include the act of building. In the design of residential units in siedlungen and other settlements, he created forms that could be expanded as necessary, accounting for the growth of families and differences of means. However, the theoretical basis for this design decision is what makes his contribution unique; as with the principle of self-determination, Migge felt that a self-help society was integral to bridging the cultural and class divisions within Germany and for elevating the new working class to a higher standard of living. Through a personal relationship with their land, no matter how small, Migge believed that all people could achieve spiritual and physical well-being. The ability

[15] See Building, Dwelling, Thinking (1951) by Martin Heidegger.

to build one's dwelling through additive construction, at least in part, stems from that conviction.

3 - The utilization of appropriate technology

As illustrated throughout this chapter, Migge embraced modern science and methods of discovery. Although he felt that the rampant industrialization and capitalization within the German society was deleterious to overall development, he nevertheless embraced technologies and knowledge that could be of benefit to the common man. His utilization of biologic principles and the new field of soil science and nutrition represent this readiness to incorporate change within his design ideas. Likewise, his use of new materials and building technology also attests to this facet of his work.

In today's practice, landscape architects have an even wider range of materials and technologies to achieve their design goals. The author suggests that the contribution that Migge made in this regard was not simply the utilization of new products and knowledge, but the manner in which he did so. He engaged in ongoing research to test the knowledge available, and even then, ventured to understand the local and regional implications of new concepts and technologies.

4 - The incorporation of traditional methods where appropriate

Even as Migge embraced newer technology, he incorporated a wide range of techniques and practices from ancient traditions. He often cited Chinese methods of intensive agricultural production; the use of walls and trellises to increase both yield per square foot and to extend the growing season is one example Migge gleaned from his

study of intensive Chinese production systems. More contemporary designers have also utilized ancient methods in the design and construction of the built environment and of landscape elements (Figure 3.19). Migge's contribution in this regard is his ability to integrate the new and the old, and to "reject" the nostalgic reference to the old, while adhering to valuable insights that they can provide.

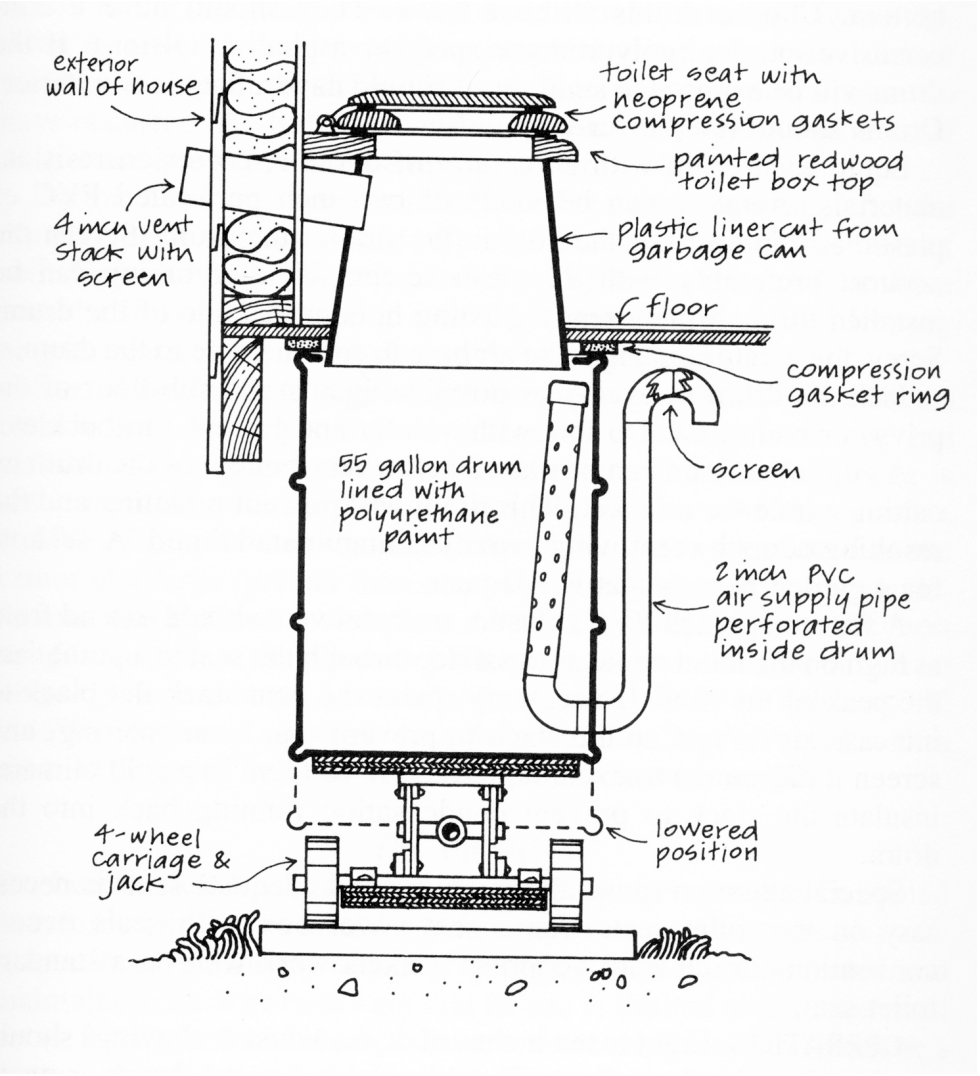


Figure 3.19 Van der Ryn's diagram of a dry composting toilet. This is a more contemporary example of the combination of ancient methods with newer technology. Migge's own diagram of a composting toilet (Figure 3.4) demonstrated this same integration. Source: Van der Ryn (1978).

5 - Functional space that achieved aesthetic goals

Like his Modernist contemporaries, Migge tended toward functionalism in his design practice. However, he was possibly more successful in creating aesthetically accepted gardens than his architect counterparts were in their buildings. Migge had a deep understanding of the science of horticulture, and a background in traditional garden design; during his employment at the firm of Jacob Ochs he was noted for his ability to connect house and garden and appropriately scale outdoor spaces. Although he claimed to reject "naturalism" as contrived and debased and declared that it was not his intent to beautify, the elegance of his designs stemmed from their functionality as productive spaces. Migge contributed an example of a design practice that achieved aesthetic functionalism through the integration of housing, food production, and community design.

6 - Awareness of nostalgic reference

In rejecting the conservative rhetoric of the National Socialists, Migge followed suit with the other Modernists in their renunciation of historicism. Many Modernists, like Adolf Loos, wrote manifestoes declaring the danger of nostalgic reference in design. Migge's contribution to this particular dialectic went beyond the moral argument that many other Modernists had made. He used old forms where they contributed to efficiency and production, and rejected those that only served superfluous or aesthetic purposes. In this way, he did not *reject* historic styles. Instead, Migge *ignored* the nostalgic reference of forms and devices and utilized only what was necessary for creating optimally productive landscapes, thereby producing thoroughly modern, yet usable spaces and places.

7 - Self-determination

Migge was committed to the ideal of a self-help society in which all citizens would have the means to provide for themselves as much as reasonably possible. While many Germans were concerned with national self-sufficiency out of the fear of foreign dependency, Migge's writing and design offers another perspective. He felt that the best way to ensure the well-being and sustenance of the population was to allow them to provide, at least in part, for themselves. This principle is evident throughout his built work, in his residential gardens and community design.

Leberecht Migge made many more contributions—large and small—to the general understanding of the contemporary practice of landscape architecture. His incorporation of design, mediation, and advocacy into his work is seen throughout his career: long-term research and publication on scientific principles of agriculture, his written manifestoes and lectures delivered to politicians, intellectuals, other gardeners, and workers who lived in the settlements, and his collaboration with architects and planners all attest to his integrative approach. The following chapter further addresses the integration of challenges within the food complex, with a greater focus on specifically contemporary and American issues.

Criticism of Migge's work

This chapter has highlighted the innovative and relevant aspects of the work of Leberecht Migge to such a degree that one may wonder why it was not more widely adopted in Germany, or why it has not been more central to discussions among contemporary landscape architects interested in "sustainable" community design and the

incorporation of agricultural systems into planning. One major criticism of Migge's work during the time he was practicing was that he over-estimated the willingness for Germans to participate in their home landscapes. He worked out the economics of nutrient recycling so thoroughly that without constant human input, the gardens would not survive. His own garden suffered when he was away, but the fact that he had a wife and 14 children in large part made up the difference. Additionally, the composting of human waste at a time when indoor plumbing and city or community-wide wet sewerage systems were becoming available to the middle class held little appeal. To the detriment of immediate success, Migge remained an idealist throughout most of his career. Although many of his concepts were not brought to fruition during his own lifetime, his vision provided the groundwork for numerous designers that came later. Unfortunately, thorough thesis research revealed no landscape architects who cited knowledge of his work.

One possible reason for his relative obscurity is the chaos of war that coincided with his death from cancer in 1935. One researcher draws a connection between Leberecht Migge and the National Socialist Party, although no definitive evidence of his membership has been uncovered (Haney, 2007). This thesis research concluded that although there is record of Migge speaking tolerantly of the tenets of National Socialism on occasion, it is not conclusive that he supported the Nazi regime or their methods, and it is clear to the author that speculation about the nuances of his relationship to the Nazi party may indeed remain speculation. Nevertheless, he did not emigrate from Germany at the start of the war, and died of cancer a short time later. World War II and its conclusion brought about extensive change in the social and political structures of all Western nations; no doubt the work of a German engaged in the design and planning of siedlungen

—however unrelated to the atrocious settlements in Poland—was unpopular and not widely examined in scholarly or professional landscape architectural circles. Additionally, the technological changes brought about by the second world war were felt throughout society and may have rendered Migge's ideas irrelevant. In the agricultural sector, modern developments of chemical pesticides and herbicides and ever-cheaper sources of synthetic fertilizers and fuel began to artificially "subsidize" industrial agriculture—a system of which we are now beginning to see the folly. Other impacts of the post-World War II restructuring include the beginning of the ubiquity of the automobile and the re-design of communities based not on physical proximity, but on networks or roads and highways. In short, Migge's ideas for the re-incorporation of food production to a place closer to its consumption was rendered (artificially) obsolete by the technological improvements of the mid-20th century and we are only now becoming aware of exactly how unsustainable those "improvements" are. This research suggests that there is reason for the continued examination of the role of the landscape architect in today's politicized food complex. The work of Leberecht Migge with specific attention to his process provides one example of how professionals can incorporate these realities into practice.

IV. Creating a Conceptual Framework

> *"Confusion and clutter are failures of design, not attributes of information. And so the point is to find design strategies that reveal detail and complexity—rather than to fault the data for an excess of complication. Or worse, fault the viewer for a lack of understanding. Among the most powerful devices for reducing noise and enriching the content of displays is the technique of layering and separation, visually stratifying various aspects of the data."*
>
> - E.R. Tufte, *Envisioning Information* (1990) p. 53

The previous chapters established the relevancy and need for increased attention on the part of the landscape architectural community toward the politicized production and consumption of food and detailed an example of their integration within the profession through a study of the work of Leberecht Migge. The goal of this chapter is to provide a practical tool for applying the knowledge gleaned from the previous research and analysis to contemporary landscape architectural process. Here, the primary focus is on understanding the relationships between the challenges presented by the food complex and what those correlations mean for the landscape architect engaged in design, mediation, and advocacy. The process of landscape architecture is uniquely integrative, and therefore an understanding of multidisciplinary relationships provides a conceptual foundation for interpreting the food complex as a social phenomenon worthy of attention

from the professional community. Further research and practice will hopefully contribute additional information and perspective, but the basic relationship remains the same. This thesis proposes a conceptual framework for articulating that relationship, and demonstrates how it may be applied to practice.

While there are inherent limitations in attempting to overly categorize a phenomenon as intricate as the food complex, the usefulness of any organizational system lies in its ability to provide a framework from which to move forward in the design process. Leberecht Migge utilized a framework that encapsulated Modernist principles and social consciousness to create a design practice that incorporated political and economic realities into the design of places sensitive to the physical and cultural food needs of a population. Migge's work and process were influenced by the political climate in which he practiced as well as the other contemporaneous Modernist architects. The most notable aspects Migge utilized from the Modern Project were those of empirical design (research-based and replicable) and a detachment from nostalgic reference. Along with this Modernist framework, Migge's prolific research and publication left a historical record of the "layering and separation" of the aspects he considered in designing public parks, siedlung, and other communities that addressed issues of the production and consumption of food.

Contemporary landscape architects face similar challenges made even more complex by additional understanding of environmental systems and the social dynamism of space and place in a pluralistic society. Therefore, following Migge's example, this chapter presents the themes found at the intersection of the food complex, landscape architectural practice, and political and social discourse and categorizes those aspects as

belonging to five sectors: political, economic, social/cultural, public health, and environmental considerations. The author acknowledges that there is a good deal of overlap and interconnection between the categories presented. Nonetheless, the usefulness of this framework lies in its ability to describe a relationship. This also allows for transference to specific cultures and places with unique situations.

Through this process of layering and separation, an attempt is made to *design* a practical tool for conceptualizing the complexity of food production and consumption that can be used to *design* landscapes that respond to the realities of a particular site. A conceptual framework for understanding the relationship between the categories is proposed that shows the relationship between the problems posed. That framework is translated into a graphic model that can be used to assess the health of the food complex within a society and to identify weaknesses and areas that can be addressed through environmental design. Explicit attention to the profession of landscape architecture is given throughout the chapter with the intention that the framework presented will live up to Tufte's goal of a visually simple explanation of complex processes for the design practitioner.

Re-interpreting the role of the landscape architect

The purpose of this thesis is to offer a new interpretation of the meaning and role of landscape architects within political and social discourse as it relates to the food complex. This interpretation of the profession situates the practice of landscape architecture as an inherently multidisciplinary profession capable of integrating different types of knowledge into designed solutions for the built environment. The contemporary landscape architect's

need to understand place, ecology, economic development, public policy and process—as well as the art and science of environmental design—places the practice in a uniquely useful position to make significant contributions to restoring a healthy food complex in society. This requires the landscape architect to act in a variety of capacities.

The conceptual framework presented here defines the role of landscape architect by describing three distinct aspects of contemporary practice that were identified after researching the work of Leberecht Migge in Chapter Three. The first and most obvious is that of the *designer*—using techniques of visual and spatial ordering to achieve aesthetic and functional use of space. A successful designer takes into account all aspects of a situation—internal and extraneous, physical as well as social, political and economic, and across time; evaluating a design not only under present circumstances but also on the effects of the built work upon future generations.

Perhaps less obvious is the role of the landscape architect as a *mediator*. This involves translational tasks such as interpreting ecological concerns for a business-minded audience, understanding the cultural aspects of place, and demonstrating the social relevance for environmental preservation. At its very basic, the role of mediator means a liaison between the built environment and the "natural" world, and the constant negotiation between the two through communication with the public.

The third role of the landscape architect is that of *advocate*. While the first two roles —designer and mediator—are generally accepted in the practice as the functions of a landscape architect, the author asserts that it is also the occupation of a landscape architect to be an advocate, and that this role logically follows from the first two. Because of the interdisciplinary knowledge required to design and mediate successfully, landscape

architects are in a privileged position to understand and witness the cause and effect of contemporary phenomenon such as social inequity and environmental degradation. With that privileged vantage point comes the responsibility to inform the public and those in political power of conflicting policies and damaging practices—now and for future generations. Just as Olmsted instigated the public park movement in mid-19th century America largely on the basis of improved public health, and as Leberecht Migge lobbied for reform of food production in early 20th century Germany, the profession of landscape architecture maintains its relevance to society only to the degree that it instigates change through increased public awareness of, and response to, contemporary issues.

Engagement with the production and consumption of food provides an outlet for landscape architects to excel in all three of these roles. First, as *designers* of neighborhoods, cities, regions, and individual spaces within them, that respond to and further a society's ability to nourish the physical body and cultural identity of its citizens through food without compromising the integrity of the environment. Second, as *mediators* between the natural and the constructed, and between the specialized professions that each play a role in the formation and maintenance of a healthy food complex, political society, and a restored environment. And lastly, as *advocates*, who recognize and name the phenomena they see that stand in the way of society's positive evolution and develop solutions that instigate the changes needed. It is up to the contemporary landscape architect to act within all three capacities and become an advocate for change that will ensure the balance of human sustenance, cultural continuity, and environmental restoration into the 21st century.

Building and maintaining a restorative food complex

Although it may seem that many facets of the creation of an ideal food complex lie outside of the prescribed domain of landscape architecture, when the profession is defined as one of design, mediation, and advocacy, it becomes entirely pertinent for contemporary landscape architects to become familiar with these interdisciplinary issues. A landscape that contributes to an ideal food production and consumption complex is a landscape that is more environmentally restorative, supportive of a pluralistic society and self-governance, and better utilizes natural and municipal resources than landscapes that ignore issues of the food complex. Therefore, the author asserts that an ideal food complex can be defined as one which:

> provides adequate nutrition at an affordable cost through foodways that encourage cultural identity formation and preservation, builds social capital through the maintenance of social fabric, creates community intra-dependency, and is environmentally restorative.

Additionally, each component of that statement can be the cause *or* the effect: Cultural identity formation and preservation through the maintenance of foodways builds social fabric and can be environmentally restorative; community intra-dependence can help provide adequate nutrition and strengthen social fabric; and environmental restoration can help to protect culturally diverse foodways. Landscape architecture has a role to play within each aspect.

Identifying the design challenges of the contemporary food complex

These considerations are comprised of challenges that contribute to, or are brought about by, an unsatisfactory food complex. They are both the symptoms and the causes of a poor food complex. Increased attention to these challenges will change the food complex into a more sustainable, restorative system, and further professional goals outlined by the American Society of Landscape Architects, Landscape Architectural Foundation, and throughout professional literature such as *Landscape Journal*, *Place*, and *Landscape Architecture Magazine*.

Challenges to creating and maintaining an ideal food complex were identified through the research presented earlier in this thesis and are categorized according to five aspects of society and the built environment: political, economic, social/cultural, public health, and environmental aspects. This categorization represents one way of organizing the information in a logical manner in an effort to gain further understanding of the relationships between different aspects of the complex, although other methods of categorization are certainly possible. Furthermore, many of the challenges presented fall under multiple categories, and are the cause or effect of items in other categories. However, the method used was chosen for clarity in describing the relationship between different aspects of the food complex.

This work is by no means an exhaustive compilation, but offers one way to identify major issues and organize them into a conceptual framework. Further research and exploration will yield additional considerations and linkages that will expand that framework.

Political challenges of the contemporary food complex

- Lack of political participation. A linear, commodity-based system of food production and consumption does not allow for full participation and expression on the part of the individual within a society. Self-determination is devalued, while the hierarchical consumption of commodities is encouraged.
- Decreased political autonomy. A high level of dependence on foreign sources of food decreases the opportunity for political autonomy. Additionally, regional, local, and specific cultural groups can experience a lack of overall political power when their nutritional self-sufficiency is diminished.
- Exploitation of workers. In a food complex predicated on the constant supply of undervalued food products, workers in factories and fields experience a decline in working conditions and in worker's rights. In the United States, this has taken the form of exposure to toxic levels of chemical inputs, violations of child labor laws, and underpaid and overworked laborers, especially among immigrant populations.
- Consolidated power relations. A food complex that relies heavily on the vertical integration of producers and processors and a political system that grants unequal power to large corporations and industry lobby groups consolidates power within a small sector of society, reducing the equality inherent in a democratic society.

Economic challenges of the contemporary food complex

- Food Deserts. The economic barrier to fresh and nutritious food occurs disproportionately among the urban poor. Artificial manipulation of land value, municipal ordinances that dictate site features that are not compatible to an urban

setting such as redundant parking allotments and a capital-intensive market that is geared toward conspicuous consumption and not toward supplying the basic food for a population all contribute to the creation of food deserts.

- Non-local economies. The loss of local dollars due to the increase in purchasing of non-local food continues to contribute to the weakening of local economies. On a large scale, this takes the form of trade deficits with foreign nations. Locally, the implications are felt through a decrease in tax revenue for municipalities and an overall decline in dollars present in the community economy.
- Urban sprawl onto agricultural land. The economic decline brought about by deficient food complex places undo pressure to develop adjacent farmland. The "cheaper" sub-urban land draws mobile citizens and businesses out of downtown areas, contributing to the decrease in markets that provide fresh food to urban areas, increasing food desertification. Also, the increase in municipal expense stemming from the necessary infrastructure development and maintenance of the new suburban areas further stresses local economies. Where suburban land was previously used as productive farmland, there is a long term economic loss due to the permanent placement of the land into a non-arable status.
- The commodification of food. Nature isn't a bank. Food is not easily assimilated into a capitalist market because it does not respond to supply and demand the way that non-necessary goods do; if food costs nothing, individuals will still only consume so much (even including wasteful use), and if its costs are exorbitant, individuals must still obtain a basic amount. It is a good that resists full commodification by the nature of its role in sustaining human life. The continued commodification of food through

marketing and subsidized processing ignores this simple reality and creates an artificial economic system that jeopardizes the ability of the system to withstand both internal and external failures.

- Over-reliance on emergency food aid. Americans are increasingly relying on emergency food aid to fulfill their long-term food needs. This overuse is a drain on services that could otherwise be rendered by aid agencies, and it subsidizes the inefficient food economy that is partially responsibility for such a large demand. The wide-scale use of emergency food aid is both a symptom of a broken food system and a contributor: the subsidization of highly processed and non-local food products perpetuate the problem because the vast majority of food aid given takes the form of non-perishable goods, high in refined starch, preservatives, and refined sugar. The purchasing of these products to give as food aid strengthens its producers at the expense of local producers of whole foods. There is a recognized need to incorporate local producers and fresher produce in the food aid network, as well as models that work toward re-incorporating food aid recipients into a restored, mainstream food complex.
- Underutilized urban space. The economic impact of wasted urban space is well documented; decline in property values, increased infrastructure burden on municipalities, higher rates of illicit behavior and the subsequent need for policing are just a few of the consequences. Wasted urban space is due, at least in part, to the undervaluation of sub-urban agricultural land. Developers find it to be cheaper to build on farmland than to renovate or rehabilitate derelict urban property. This accounting does not consider the permanent loss of agricultural opportunity on the

urban fringe. Additionally, it is often possible to use vacant urban lots as small production areas that, although generally not profitable under current property valuation systems, provide multiple benefits including stormwater abatement, increase in adjacent property values, and the building of social capital within communities.

- Food waste. In the contemporary food complex, a significant amount of edible food and organic food waste go to the landfill instead of remaining within the biological cycle to re-nourish the soil. An economy that allows for such waste of a valuable resource is certainly problematic. The costs associated with disposing of food waste in landfills are increasing as space becomes a premium, while the cost of petroleum-based fertilizers that are used on farms to replace the nitrogen lost because foodscraps are placed in landfills is also increasing. Additionally, much fresh food is thrown away instead of being redirected toward useful outlets such as food banks and discount grocery stores.

Social/Cultural challenges of the contemporary food complex

- Decline in cultural identity continuity. Ethnic foodways present a significant outlet for cultural expression that can easily be transferred through generations and across national borders. Without access to the components of a traditional diet and the recognition of the role food plays in cultural identity, traditions cease and the subsequent effects of standardization and placelessness ensue.
- Decline in ethnic differentiation. The desire to mass produce food products resulted in the need to standardize the Western diet. Although it is true that there are more food products available on today's supermarket shelves than there were prior to the second

world war, most represent generic versions of otherwise differentiated cuisines. Additionally, the less expensive food that most Americans rely on has become more standardized while the ethnic cuisines are considered to be too expensive or time consuming to prepare. Perhaps the biggest effect of the decline in ethnic differentiation is the effect on developing world populations where Americanized, standardized food products are often the cheapest calories available, trumping cuisines that evolved alongside the indigenous populations and within specific climatic conditions. Fast food and prepared or processed foods are becoming more popular to the detriment of a food complex that supports and encourages ethnic differentiation.

- Lack of "delight" in the food complex. Subtlety and differentiation in a food culture contributes to the "delight" described in Chapter Two. Without the intangible aspects of simple enjoyment, the act of consumption—as with so much of production and acquisition—becomes mechanized and sterile. Since the act of eating provides one of the most frequent interactions that many people in Western society have with nature, culture, and heritage, the erosion of delight from the food complex presents a real challenge.
- Loss of genetic resources of heirloom plants and domesticated animals. Another result of the standardization of food products is the loss of regionally and culturally specific varieties of plant and animal species. In addition to the environmental consequences of a small pool of genetic information among plant and animal species, there are also cultural and social consequences. The inability to grow a specific plant in a region where it was formerly available, and plant and animal species that cannot survive without chemical fungicides or antibiotic treatments are just two of those

consequences. Also, the loss of heirloom plants contributes to the erosion of differentiation and the discontinuation of cultural knowledge of a species' cultivation, use, and the folklore that accompanied each variety.

- Loss of opportunities for the creation of environmental stewardship ethics. The food complex presents many opportunities along the production-acquisition-consumption continuum to actively engage and be challenged by ethical dilemmas. Consumers are constantly faced with choices that affect worker health and well-being, degree of environmental destruction/restoration, and other social, political, and environmental ramification of food choice. Revealing the complexity of influences perpetuated by each food choice adds to the general understanding of our environmental dialogue and creates opportunities for the cultivation of a personal environmental ethic.

Public health challenges of the contemporary food complex

- Increased incidence of obesity and other diet-related diseases. A food complex in which empty, processed calories are cheaper and more readily available than fresh produce and whole foods contributes to Western society's rapid increase in diet-related illnesses. Cancer, diabetes, stroke, and heart disease are four of the main causes of death in America today, and all are directly implicated with poor diets. The epidemic is most pronounced among lower income or otherwise marginalized communities that lack adequate access to fresh and nutritious food.
- Sedentary lifestyles. Although there are many social reasons that Western society has become increasingly sedentary, the lack of participation in the production of food is a small, but notable, reason for the decline. The physical and emotional health benefits

of gardening are widely known through anecdotal evidence as well as social science research. A food complex that relies primarily on convenience and prepared foods misses the opportunity for increased physical engagement by members of society.

- Increased prevalence of heavily processed foods on the market. The contemporary food complex relies heavily on processed foods that can be transported and stored for long periods of time. Stabilizers, preservatives, and processing techniques—although largely unproven to be directly detrimental to human health in themselves—rob food of nutrients, fiber, and naturally occurring enzymes that are beneficial. The cumulative effects of a diet consisting mainly of processed foods are now being researched. Other common ingredients of heavily processed foods such as high fructose corn syrup and transfats are indeed harmful to the human body and their ubiquitous presence in the American diet is alarming.
- Increased prevalence of altered food products. Genetically modified, irradiated, medicated and otherwise altered food products—especially meat and milk—decrease the nutritional quality and safety of food. As with the stabilizers and preservatives mentioned above, many of these techniques do not pose a significant threat when examined in isolation, but the cumulative effect is a largely sterile food supply that is highly susceptible to contamination and that poses risks to human health through the compounded collection of heavy metals and pharmaceuticals in the food chain.
- Decreased nutritional content due to food miles traveled. In addition to the over-processing of food products, longer miles traveled from farm to table by food causes a marked decrease in the nutritional quality of produce. Much produce sold in grocery stores today is harvested significantly prior to ripening and later artificially ripened with

ethylene gas. The longer produce sits on the shelf, the lower nutritional quality. The aggregate effect is an overall lowered nutrient intake by individuals.

- Decline in food safety. A food complex that relies heavily on the standardized, mass production of factory food is much more susceptible to outbreaks of food-borne pathogens, both accidental (stemming from inadvertent contamination) and intentional. De-centralized production and local processing, although more difficult to regulate, limits possibilities for mass contamination of the nation's food supply.

Environmental challenges of the contemporary food complex

- Decline in soil health. Extractive methods of food production have robbed soils of micronutrients and natural biological processes. Instead of food production systems that re-integrate food waste and animal/human manure, most farmed soils are treated artificial with inputs of synthetically derived nitrogen, potassium, and phosphorous. Increased salination of soils results, and the overall decline in soil life corresponds with the lowered nutritional quality of food in today's markets.
- Pollution from agricultural waste. High levels of pollution and environmental degradation stemming from agricultural production waste are another facet of a failed food complex. Nutrient runoff that contaminates entire watershed systems comes from fertilizer application as well as animal waste, especially on Confined Animal Feeding Operations (CAFOs). Although water contamination is perhaps the most notable example of large-scale pollution stemming from food production, there are other sources of environmental degradation as well, including increased sediment load from

unchecked erosion and methane and nitrous oxide emissions from the enteric fermentation and manure of livestock.

- Decline in ecosystem diversity. The large-scale monocultural production methods that degrade huge tracts of land with non-native species not only remove land from the indigenous ecosystem, but compound the negative effects with the planting of a single crop of a non-native species. Systems that rely on large tracts of single species must rely on significant inputs of herbicides, pesticides, and fungicides. The ripple effects on soil life, insects, flora and fauna that previously relied on a more varied ecosystem are felt throughout the region. Also, inter-specific contamination may be an issue where modified varieties are allowed to interbreed with wild, parent varieties. For example, mono-cultured corn operations in Central America and rice production in Asia that utilize certain modified genomes have jeopardized the long-term integrity of the wild varieties of these important food crops, further limiting the availability of those genetic resources for future generations.
- Decline in diversity within food species. One outcome of the commodification of food production and processing is the standardization of food crops. There are far fewer varieties of the top ten food crops in the world today than there were even 50 years ago. This presents a clear and present environmental danger because of the ease by which nature can eradicate an entire strain of a single crop[16]. With the changes in

[16] The pending fate of the Cavendish banana is a prime example of this threat. Nearly all bananas grown commercially today are identical clones; Panama disease, a fungal blight spreading through most banana-producing regions, will have the impact of eradicating the Cavendish, as it did with the Gros Michel decades ago, sending the industry, and a primary source of fresh fruit for millions, into decline (Koeppel, 2008).

climatic conditions that are being felt throughout the world, it is very dangerous to rely on so few varieties of each food species.

- High energy consumption. A food system that is heavy on the production, processing and shipping of food products expends far more energy than it provides. Through direct and indirect subsidization of fuel, the current food system has been able to avoid the majority of economic costs associated with this inefficient use of fossil fuels. However, the environmental impact is nevertheless felt though the extraction and burning of these fossil fuels. The precarious state of current oil reserves reflects a state in which all possible avenues of energy conservation must be explored.
- Reliance on synthetic energy inputs and ideology of extraction. Food production and processing methods that utilize artificial energy inputs (petroleum-based fertilizer and pesticide) and rely on the ideology of extraction result in a net depletion of resources. The contemporary food complex ignores possible sources of on-farm nutrients (re-integrating animal and plant production, composting, nutrient cycling, etc.) and instead treats those nutrients as waste, contributing to environmental pollution. It is not possible to continue to rely solely on synthetic inputs while maintaining the integrity of agricultural lands to provide for future generations.
- Contribution of carbon dioxide to the atmosphere. There are many sources of this greenhouse gas emanating from food production and processing: methane emission from flatus and manure and the burning of fossil fuel are some of the most widely recognized. Fallow agricultural land left uncovered and soil erosion are two additional agricultural sources of greenhouse gases that are often overlooked, but that contribute

significant amounts of carbon oxide to the atmosphere from the carbon previously sequestered in the soil (Lal, 2003).

A proposed framework for increased understanding of the food complex

These challenges presented by the contemporary food complex are interrelated in a multitude of ways. Figure 4.1 presents a web diagram that illustrates the complexity of these relationships. Lines link issues that present correlated challenges and highlight areas in which causal relationships contribute to the contemporary food complex. For example, an increase in the prevalence of processed foods leads to a decline in the continuity of cultural identity which, because of the discontinued use of certain plants and animals, contributes to a decline in domesticated species diversity. There are many ways in which the relationships between different aspects of the food complex are related, not all of which are represented here. Nevertheless, although the web diagram makes a clear statement of the complexity of contemporary food issues, it does little to satisfy the stated goal "visual layering and separation" of the data.

Figure 4.2 more explicitly describes the relationships inherent in the food complex through a relationship matrix, where the aspects listed in the left-hand column affect the aspects in the top row by the situations described in their corresponding boxes. This is not an exhaustive chart, but demonstrates a way of conceptualizing the major issues as interrelated parts of the food complex. For example, the *economic* aspects of the food complex influence the "*social/cultural*" aspects in that, "*The economic pressure to commodify food results in standardized production and processing, endangering the*

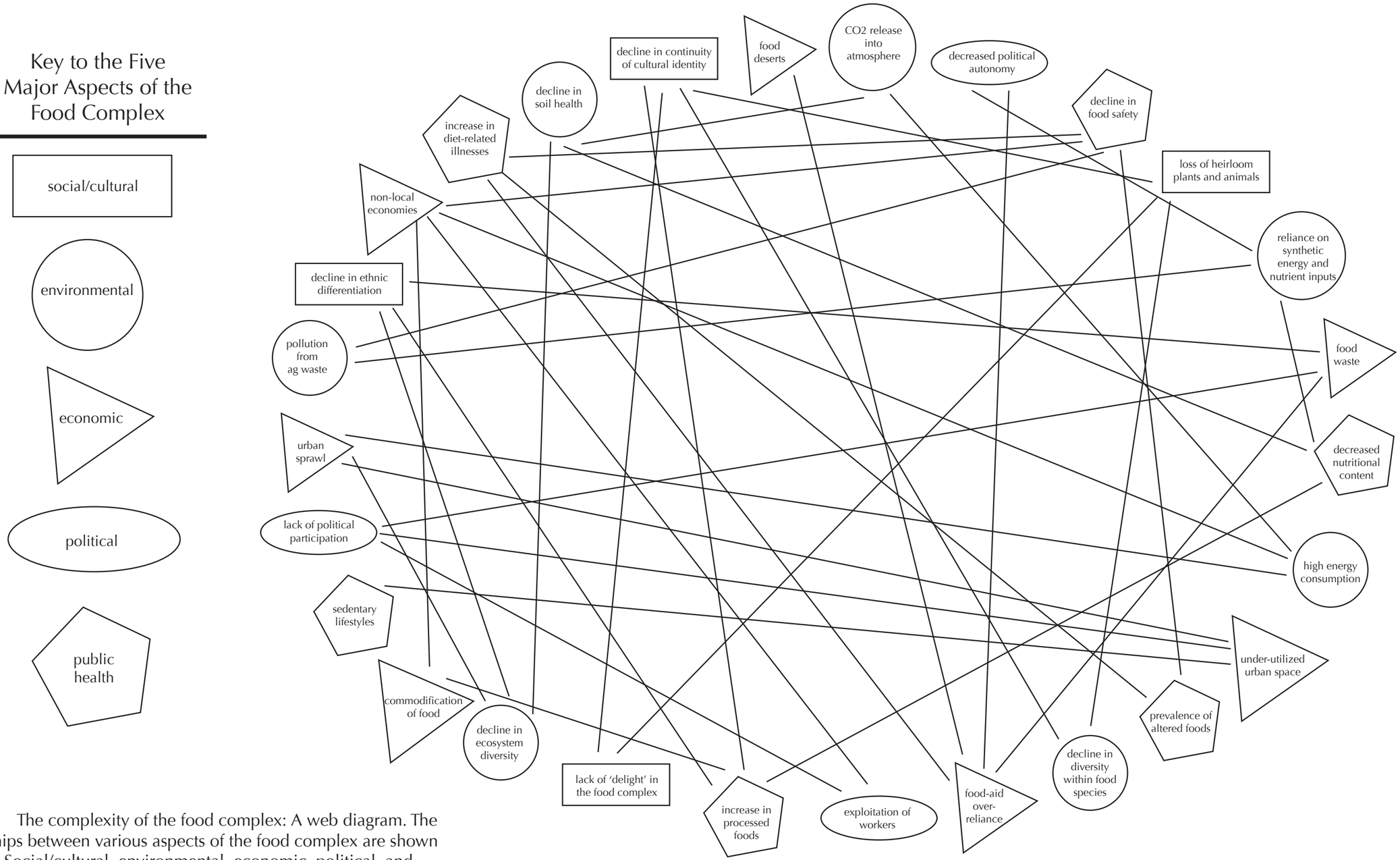


Figure 4.1 The complexity of the food complex: A web diagram. The relationships between various aspects of the food complex are shown as a web. Social/cultural, environmental, economic, political, and economic factors all influence each other through the production and consumption of food at multiple levels.

	(political)	(economic)	(social/ cultural)	(public health)	(environmental)
political		The political allocation of municipal resources through zoning, tax incentives, and infrastructure improvements can contribute to the existence of food deserts in marginalized communities, creating difficulty in the ability for those citizens to acquire adequate and healthy nutrition.	Political hegemony in the food system contributes to decreased opportunities for the practice of culturally and ethnically differentiated foodways when only one culture is represented in food availability.	Political regulation and distribution of power lead to centralized production and processing of food products that result in higher incidences of food contamination that affects a greater number of people.	Policies that allow for and encourage sprawl lead to the destruction of viable farmland and the abandonment of urban wasteland, resulting in greater environmental strain through increased stormwater runoff and other long-term consequences.
economic	Economic disparity to the degree that some residents are not able to obtain adequate nutrition diminishes the political participation and autonomy of marginalized communities within the food complex and can extend to overall political marginalization.		The economic pressure to commodify food results in standardized production and processing, endangering the continuation of regionally and ethnically specific plants, animals, and consumption practices.	An economically inefficient system of food distribution results in over-reliance on food aid within a society, the majority of which is of sub-standard nutritional quality, not intended for long term consumption.	Subsidized corporate agriculture that is reliant on an artificial economy of low-cost chemical inputs allows for the waste of valuable nutrients through over-application, runoff, and sludge-dumping, and necessitates the mining of fossil fuels to produce synthetic replacements.
social/ cultural	The decline in cultural differentiation through regionally and culturally specific foodways is a contributing factor to a less pluralistic and tolerant society, which subsequently erodes the foundations of democracy.	The shift from reliance on regional foodways and systems of production to food products produced and transported remotely results in a loss of local dollars and is detrimental to local and regional economies.		Loss of the ability to consume traditional foods replaced by the reliance on cheap calories of generic food results in increased rates of obesity, stroke, diabetes, and other diet-related illnesses.	Without the practice of traditional foodways among a wide variety of ethnic and cultural groups, the *in situ* conservation of genetic resources ceases, jeopardizing overall environmental biodiversity.
public health	Lowered health of populations who have limited access to nutritious foods leads to unequal opportunity -- especially regarding educational achievement -- and leads to dangerous levels of political marginalization.	Decline in the health of the general public as a result of diet-related illnesses contributes to an undue burden on individuals and economies in the form of high health care costs.	The predominant contemporary Western diet in which people are accustomed (addicted) to cheap calories, bland processed food, and an appalling lack of variety robs the eater of culinary delight as well as opportunities to preserve cultural traditions through foodways.		The decline in the nutritional value of food per calorie consumed results in a significant increase in the quantity of food consumed. This over-consumption places an ever- greater strain on the environment.
environmental	The high energy requirements of contemporary food production, processing, and transport contribute to the need for societies to acquire more energy, mostly in the form of petroleum. This higher need results in political maneuvering inconsistent with democratic ideals and spurs 'resource wars.'	Environmental degradation due to the production and consumption practices of the contemporary food complex places an economic strain on current and future generations through the unnecessary waste of already scarce resources such as water, arable land, and nutrients.	The decline in wild parent and heirloom varieties of plants and animals erodes the cultural differentiation and 'delight' of the food production and consumption complex.	Pollution from agricultural waste directly contributes to declining public health through contaminated drinking water and toxic accumulation throughout the food chain, eliminating a number of previously consumable options for a healthy diet (ex: avoidance of some fish species due to mercury contamination).	

Figure 4.2 The relationships within the food complex: A matrix. A relationship matrix details the intersection of political, economic, social/cultural, public health, and environmental aspects of the food complex to one another.

continuation of regionally and ethnically specific plants, animals, and consumption practices."

Through the deductive exercise of organizing the information presented in the thesis into this matrix, a framework for understanding the manner in which landscape architecture can engage a politicized food complex began to emerge. While there are certainly more descriptions possible that illustrate the ways in which each aspect affects the others through the food complex, the function of the matrix is to establish a pattern of connection and relatedness—one in which the practitioner can apply to specific situations in order to incorporate food issues into practice specific to their community or project.

The information organized in the relationship matrix was further organized in a data dial, or vovelle (Figure 4.3). This method of communication makes the framework clearer and easier to utilize through a user-manipulated graphic. Other methods of communication that were considered include a digital wiki, a key system (such as those used in botanical texts), and a pattern book, similar to Christopher Alexander's *A Pattern Language* (1977). The advantage of creating a digital wiki is that the information is easily amended, and an infinite number of inter-connections are possible. The one negative aspect is that a computer is needed to access a wiki, and the digital format lacks a necessary tangible quality. A botanical key, although allowing for a rich amount of detail, is too linear and too highly structured for the application at hand. Similarly, a "pattern language" format would be mostly textual, with some visual illustrations—both diagrammatic and photographic. The main weakness of the "pattern language" format is the focus on *solving* design problems, instead of developing an understanding of their relationships to one another. The author decided that the data dial was the most

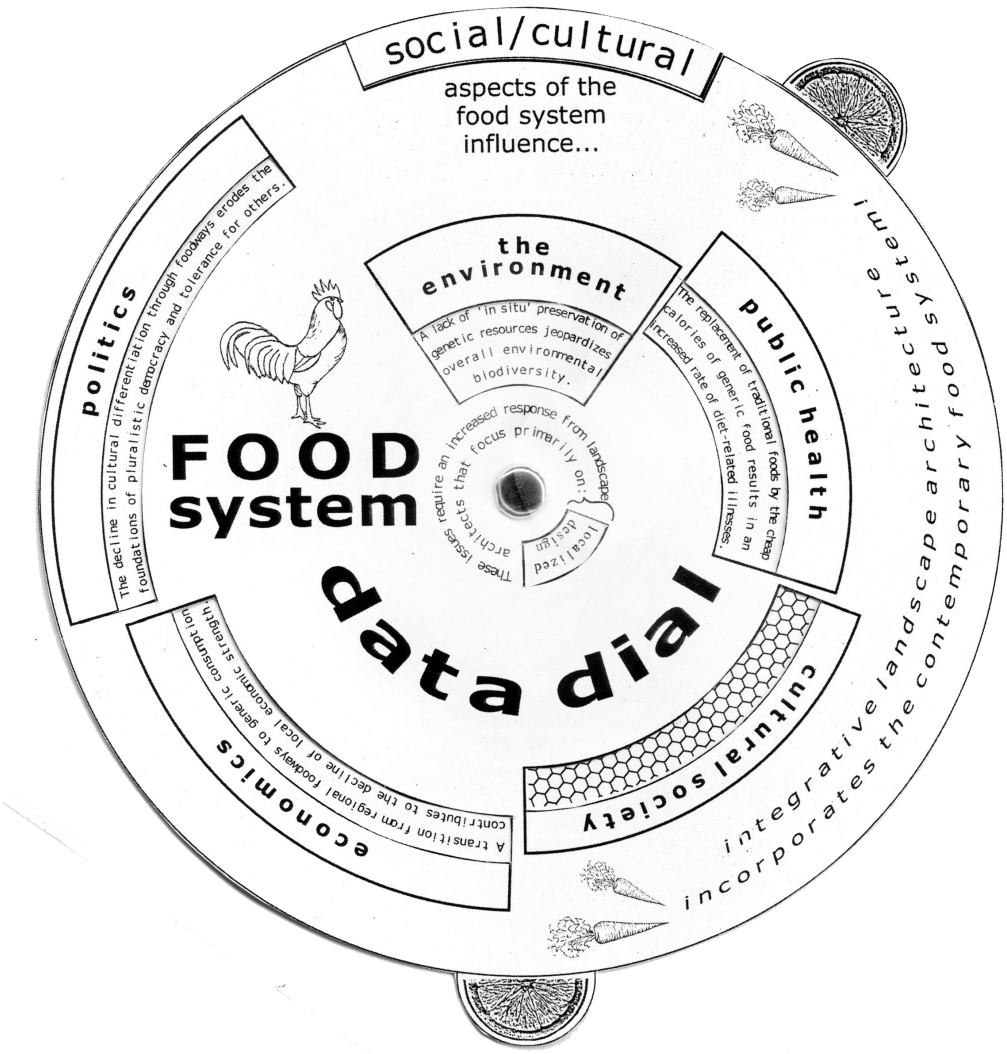


Figure 4.3 The Food System Data Dial. The *Food System Data Dial* presents a framework for understanding the relationship between different aspects of the food complex as they relate to the built environment. The research of this thesis led to a focus on the interconnections between these aspects as a more relevant factor in design than a focus on individual issues. This data dial aims to explain and interpret that information in an interactive, portable, and clear manner.

appropriate format due to the low technical requirements for its use and the ability to physical manipulate the chart, which engages multiple senses and therefore may have a more integrative impact for the user. The main limitation of using a data dial is the limited number of correlations that can be made, and the static nature of the information

presented. However, the primary purpose of this section is to reveal the basic relationships present between disparate aspects of the food complex so as to build a conceptual framework, not to document all possible connections.

The data dial (vovelle) provides an effective mode of presenting a framework on several levels. At its basic, the circle is a form that has no beginning or ending; information presented within the vovelle is therefore non-linear and non-hierarchical. Jessica Helfand, in her book *Reinventing the Wheel,* describes this property as one in which the form is "able to rationalize large amounts of complex information with remarkable practicality, precision, and purpose (2002)." In researching the food complex as it relates to the built environment, the author determined that a rational way of presenting the interrelationships between disparate disciplines was of prime importance in an effort to explain—and utilize—that information.

The earliest known example of a vovelle was created for similar relational reasons: Raymond Lulli, a Majorcan missionary, utilized this format to rationally explain religious phenomena geometrically, relationally, and ideologically (Helfand, 2002). However, toward the end of the 14th century, Lulli's work was condemned by Pope Gregory XI for "using reason to explain the mysteries of faith" (Helfand, 2002). The author does not intend for her own use of this "rational" method in explaining the interdisciplinary relationships between the food complex and landscape architecture to threaten the "mystery" of design. On the contrary, the author's use of the vovelle carries with it an inherent recognition that the framework created is an artificial construct, only useful to the degree that it can explicate phenomena to achieve a greater level of integrative design. Its purpose is to generate clarity of a new aspect of practice, and it should be treated as any other "tool,"

especially as was referenced by Le Corbusier in Chapter Three: "...Tools are the result of successive improvement...We throw the out-of-date tool on the scrap heap" (Le Corbusier, 1931). As soon as this vovelle has outlived its usefulness, it too should be thrown out or altered, and room made for the new understandings and conceptualizations.

The *Food System Data Dial* describes the relationships between political, economic, social/cultural, public health, and environmental concerns of today's food complex. A data dial for the reader to utilize is presented in Figure 4.4. Photocopy the pages onto cardstock, cut out the circles and shaded windows, and affix at the center point with a brad. The following chapter demonstrates the incorporation of this conceptual framework into an integrative landscape architectural practice that addresses the contemporary food complex.

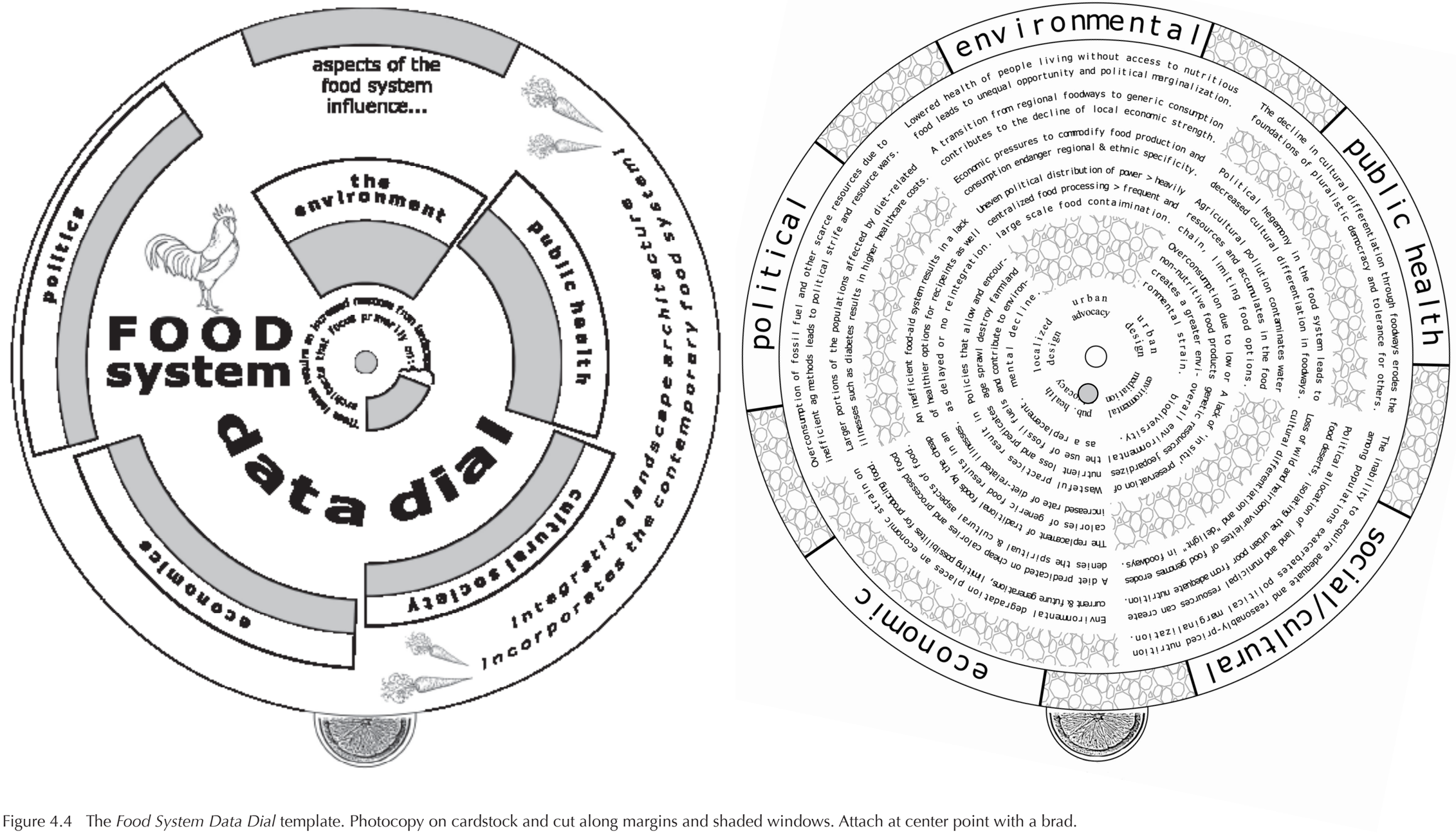


Figure 4.4 The *Food System Data Dial* template. Photocopy on cardstock and cut along margins and shaded windows. Attach at center point with a brad.

V. Applying the framework to process and practice

Increased attention to the framework proposed in the previous section and illustrated graphically by the data dial reveals opportunities to improve not only the food production and consumption complex, but to increase the overall health, complexity, and restorative potential of the built environment. The integrative nature of the landscape architectural process allows for multiple opportunities for engagement through design, mediation, and advocacy, and beyond singular design to include management and planning. This chapter demonstrates how the framework proposed in the previous chapter can be applied to practice to generate opportunities for landscape architectural professionals to addresses the challenges of the contemporary food complex.

Because landscape architecture is a practice that is specific to a time, place, and culture, specific *solutions* to the challenges are not proposed; to do so would negate the creative potential of landscape architects in responding to unique situations and dilemmas. Instead, this chapter demonstrates the potential benefit of conceptualizing the relational complexity of a politicized food complex in generating relevant design proposals. In keeping with the author's assertion that the profession of landscape architecture involves design, mediation, and advocacy, the applications proposed utilize each of these outlets.

Opportunities presented by increased engagement with the food complex

Landscape architectural work that is relevant and integrative harnesses opportunities to engage the contemporary food complex, contributing to the overall health and vitality of society and the environment. Table 5.1 proposes opportunities for this engagement that, taken as a composite, illustrate a productive and restorative food system. The ideas and goals stated in the table were gleaned from the thesis research discussed in the previous chapters as well as the author's own experience. As with the challenges presented in Chapter Four, this is by no means an exhaustive list, but provides a framework that can be augmented by further research and development.

Table 5.1 Opportunites present in a healthy and restorative food complex. This table verbally illustrates the goal of integrative design that accounts for the production and consumption of food.

Aspect	Political	Economic	Social/Cultural	Public Health	Environmental
Opportunities for the creation of a healthy and restorative food complex	• Farmer and consumer cooperatives in which collective decision making is utilized as a system of self-governance and regulation. • Empowerment through the ability to acquire and/or grow one's own food. • Increased political autonomy, locally, regionally and nationally. • Employee or farmer owned production operations. • Local responsibility for worker's health and well being.	• Purchasing opportunities in low-income urban neighborhoods • Increased reliance on local region for food production. • Farmland preservation that helps to protect urban areas from sprawl and subsequent strain on local budgets. • New models for the economic valuation of food products that demonstrate viable alternatives to the commodification of capitalism. • Emergency food banks that support local and healthy options for food acquisition. • Food-aid services that help in assimilating consumers into sustainable options for long term household food security. • Urban space that is utilized for the production of food, as well as the building of community social capital. • Excess edible food that is diverted from the landfill to food-aid agencies or other low or no cost points of purchase. • Food waste and scraps that are composted and reapplied to the soil instead of going to the landfill. • Food systems that rely on the biologic cycling of nutrients and thereby eliminate the economic waste of valuable nutrients.	• Foodways that are preserved through active use and community visibility • Access to local supplies of ethically-specific food products and cooking methods • Low-cost options of local and regional cuisine. • In-situ preservation of heirloom varieties of plants and domesticated animals through active cultivation and seed saving. • Preservation of cultural knowledge of the cultivation and utilization of regionally and ethnically specific foods through their active use. • Increased 'delight' in the production and consumption of food through incorporation into community life.	• Lowered health care costs and higher quality of life stemming from an improved diet of fresher, less processed whole foods. • Opportunities to garden at one's residence or at a nearby community garden. • Less reliance on highly processed 'empty' calories and increased affordability and availability of fresh, local produce. • The increased consumption of food that is unaltered, i.e. not irradiated, genetically modified, or medicated. • A food system that is mostly comprised of locally grown and processed foods that would therefore have a higher nutritional content. • Decentralized production, processing, and mass production that would increase the overall safety of the nation's food supply.	• Increased attention to soil restoration that leads to an increase in the nutritional quality of food products. • Re-introduction of animal-plant farming systems that allow for the biologic integration of nutrient cycles. • Increased ecosystem diversity through integrative approaches to farming, such as permaculture, as opposed to reliance on monocultured crops. • The encouragement of intra-specific diversity through in situ genetic conservation and localized production and processing. • Lowered energy consumption through lowered farm-to-table travel miles. • Increased reliance on the biologic cycle to provide for soil nutrients, lessening the need for petroleum based fertilizers. • Cover-cropping to increase nitrogen levels in soils during seasons when land is fallow • The reduction of erosion through cover-cropping, no-till, and other appropriate technologies that will decrease the sediment and nutrient loads on waterways. • Erosion control and methods that will also help to sequester carbon in soils and vegetation, decreasing this large source of greenhouse gas emissions.

Utilizing the framework as an analytical, design, and management tool

As was demonstrated by the career of Leberecht Migge, landscape architecture as a professional practice can take many forms. Previously, the author classified the work of the landscape architect as belonging to three categories—design, mediation, and advocacy—and acknowledges that there is overlap between these aspects in the reality of everyday practice. Additionally, contemporary practice involves management and planning, two aspects of landscape architecture that have not received the attention and focus they deserve as strategies to improve the integration of built works into society. In this section, the author demonstrates the application of the conceptual framework proposed in Chapter Four (utilizing the *Food Complex Data Dial*) to a food production and consumption issue of contemporary importance in the manner of landscape architectural process and practice. First, the proposed framework is utilized as a research tool to facilitate investigation, and second, as a design tool to generate proposals for projects at varying scales. The framework is then critically evaluated according to its ability to answer the original question posed by this thesis: How can the process of landscape architecture incorporate the contemporary reality of a highly politicized food production and consumption complex?

The author understands the client-driven nature of the majority of landscape architectural work; it would be a rare day indeed that a designer was tasked with "doing something about the [...diabetes pandemic, obesity, food insecurity...] problem" with no attachment to a specific site, across multiple disciplines, and along all levels of community life. Therefore, the process that the author proposes examines an issue first from this global perspective for the sake of increased general understanding, and then from the perspective

of applied design through which food system issues are specifically addressed in the landscape.

With regard to this first perspective, landscape architectural practice can be greatly enhanced by periodic examination of holistic systems, unconstrained by a client's program and the limitations of a specific site. It is useful to occasionally and methodically critique one's own work from multiple perspectives, just as it is advantageous to question the work of the profession-at-large. This is largely an intellectual exercise, and can be supported and enhanced with diagrams, sketches, and other methods that the designer feels would encourage exploration. The data dial facilitates this process in that it provides a general framework for investigating a user-defined issue. It is important to note that while this exercise is not intended to lead to a designed solution, the goal is to prevent designers from "designing out" opportunities for societal improvement. It is not the place of landscape architects to fix the food complex in its entirety, but it *is* our responsibility to recognize when our proposals inhibit opportunities for other professions, community organizers, and citizen advocates to carry out their work. The proposed framework works toward building a more self-aware practice when used as an investigative tool.

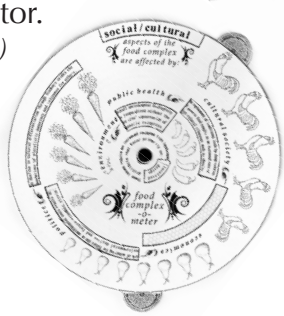
To illustrate the utility of the framework as an *investigative* tool for landscape architects, imagine one contemporary issue regarding the production and consumption of food. For example, the widespread underconsumption of vegetables by most Americans has been reported as a major factor in the increased incidence of diabetes, cancers, and obesity. The graphic presented in Figure 5.1 illustrates the author's suggested application of the framework through the use of the data dial in discerning the relationship between

1 State the Question

What are the factors -- specific to the built environment -- that contribute to the under-consumption of vegetables?

Turn the Dial **2**

...to rest on one factor.
(hint: start anywhere)



Turn the Dial and Repeat !

Look and Think! **3**

The windows reveal how the selected aspect relates to other factors in the food complex.

The social/cultural aspects of the food complex are related to public health aspects in that: The replacement of traditional foods by cheap calories of generic food results in increased rates of diet-related illness.

5

Brainstorm

opportunities that exemplify designed and/or managed solutions to each query. Are their opportunities to apply these solutions?

Edible plant communities and ecosystems that relate to the resident populations, opportunities to prepare and consume (celebrate!) ethnically-specific cuisine in the landscape.

Does the landscape encourage better dietary habits by making visible the connection between vegetable consumption and a sense of place and community?

4 Reformulate

...each statement into a query specific to your stated question, as it relates to the project/ neighborhood/ region you are examining.

Figure 5.1 Guide for using the *Food System Data Dial* as an investigative tool.

various factors inherent in the food system that contribute to the current state of vegetable underconsumption in America.

Using this example, the question could be stated as follows: What are the factors—specific to the built environment—that either fail to promote, or inhibit, the consumption of vegetables among U.S. Americans? With the stated question in mind, the investigator turns the wheel of the *Food Complex Data Dial* to rest on one major factor along the outside edge, such as "Social/Cultural." The windows of the data dial reveal that social and cultural aspects of the food complex affect other factors in that there exist missed opportunities for the promotion of pluralistic democracy through dietary differentiation (political), a decline in local community life due to food dollars going for non-local food products (economic), an increase in diet-related illnesses that is concurrent with a shift away from culturally-based food practices to diets predicated on cheap, processed food (public health), and a loss of environmental biodiversity because farmers and gardeners no longer grow the variety of produce that they used to (environmental). These general statements have specific implications for the issue of vegetable underconsumption in the built environment that best lend themselves to a set of queries (Table 5.2) that in turn spur ideation of landscape-specific solutions. The *Food Complex Data Dial* can then be rotated to focus on another aspect (political, environmental, economic, public health) and the investigation is repeated, first with the general statements of the relationship between aspects, then by developing queries that are specific to the topic being explored.

Table 5.2 Queries generated through utilizing the dial. Application of *The Food Complex Data Dial* to an investigation of the social and cultural aspects of the underconsumption of vegetables relevant to the practice of landscape architecture results in a set of queries that provide a measure for involvement on the part of the designer. The examples provided in the table further highlight possible ways in which the queries could be answered.

Aspects of the food complex influenced by social/cultural factors	Query	Examples
Political	Does the landscape provide opportunities for the individual production of vegetables for home consumption in order to encourage cultural expression through through growing and consuming specific vegetables of choice?	Residential gardens, space for community or collective gardening, community support facilities such as composting centers and greenhouses.
Economic	Does the landscape encourage community intra-dependency through local farm to table initiatives that build community social as well as fiscal capital?	Local-producer farmers markets, community supported agriculture projects, space for neighborhood markets and other alternative forms of supply.
Public health	Does the landscape encourage better dietary habits by making visible the connections between vegetable consumption and a sense of place and community?	Edible plant communities and ecosystems that relate to the resident populations, opportunities to prepare and consume food in the landscape that are ethnically relevant.
Environmental	Does the landscape encourage and allow for the *in situ* conservation of a diversity of vegetables that includes the preservation of the knowledge of cultivation, value, and usage?	The promotion of and planning for individual and collective gardening initiatives, community developments that allow for individual decision-making and landscape expression.

Using this same example (the underconsumption of vegetables), the data dial can be used as a *design tool* to ensure that all avenues have been exploited to incorporate opportunities for increased vegetable consumption within a specific design project. For this example, the author proposes the following project description for consideration:

> The design of a small public park in an urban area of moderate density with a population comprised of recent Central American immigrants and an established Chinese-American community in a semi-arid climate.

Continuing from the investigation above, the designer turns the wheel to Social/Cultural aspects of the food complex. The design and management plans can incorporate opportunities for cultural expression and differentiation by designating a portion of the park for individual gardening plots (addresses political aspects), providing a designated place for the sale of produce to other community members (economic aspects), and celebrating and legitimizing ethnic food traditions by incorporating perennial food plants specific to Central American and Chinese cultures in the landscape such as fruiting gingko, lotus growing in a small pond, chamomile, and prickly pear cactus (public health aspects). In addition to the creation of community gardening areas, designing for a diversity of microclimates and allowing for resident involvement in the maintenance and management of the park encourages the preservation of many varieties of plant species (environmental aspects).

Turning the wheel of the data dial to another focus (political, economic, etc.) will yield further insight into the design of the urban park that address the underconsumption of vegetables, creating an integrative project that addresses the food complex through a uniquely landscape architectural practice.

All of the ideas generated could not possibly be incorporated within a singular design plan. Instead, management becomes part of the design proposal. The landscape

architect has a prime opportunity for engaging the client in the long-term potential of the park through designing a management plan concurrent to the installation scheme. The landscape architect can incorporate the previous ideas into a master plan for a park, but her work and concept will be more sustainably integrated through the creation of a sound management plan. Designers who resign themselves to only drawing plans for the installation of built works miss out on significant opportunities for professional practice that increased attention to landscape management affords, especially in the integration of the food complex. Olmsted designed management into his plan for New York's Central Park, and that guidance is being utilized generations later, resulting in a park that responds to contemporary needs through a culturally and environmentally relevant landscape. In the example of the urban public park described above, an ideal management plan would create "feedback loops" that would inform the designer/manager of the efficacy of the original design, suggest ideas for improvement, and allow for the flexibility needed in an actively used public space. In this way, an understanding of the complexity of relationships between various aspects of the food system become indispensable to the landscape architect.

With this general understanding of how the relational framework proposed in the previous chapter applies to the process and practice of landscape architecture, another study is utilized to test the applicability of the proposed framework in answering the question of how landscape architectural design process can incorporate the contemporary reality of a highly politicized food production and consumption complex.

Case study: Exploring the utility of the framework proposed

For this study, the author chose to explore the production and consumption of protein (meat, eggs, dairy, nuts, legumes) in America. Although U.S. Americans are among the heaviest consumers of protein in the world (especially animal protein), the methods of its production have significant environmental, political, and economic costs, and the over-consumption of low-grade protein sources has come with the decline of public health. Furthermore, the predominant source of protein in America—processed meat products from factory-farmed livestock—undercuts the social and cultural possibilities for diversified foodways.

Part One: Investigating challenges and opportunities

The author utilizes the *Food Complex Data Dial* in establishing a basic framework of knowledge regarding the question: *How can landscape architecture address the production and consumption of protein among U.S. Americans through a specifically landscape solution?* The data dial is not intended to provide specific answers to this question, but simply provides the framework that leads the designer toward avenues for situation-specific research. Figures 5.2 through 5.6 illustrate this phase of the process.

Political aspects of food consumption and production are affected by the following factors:

Economic

Protein availability is limited where food deserts exist; lower-income and less mobile people typically have limited access to fresh sources of protein and instead rely on heavily processed and shelf-stable products that are generally high in sodium, saturated fats, and preservatives.

suburbia

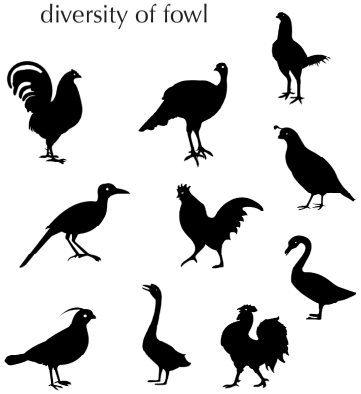
inner-city

Cultural Society

Due to political hegemony, there is a very limited variety of protein sources available to the average consumer. For example, the author notes that it is nearly impossible to find for sale in a grocery store any egg other than that of chicken. There are no guinea fowl, duck, pheasant, turkey, emu, nor peafowl eggs for sale, nor are there eggs of chickens of lesser known varieties. Furthermore, it is illegal in many municipal areas the United States for a resident to maintain small livestock for home consumption.

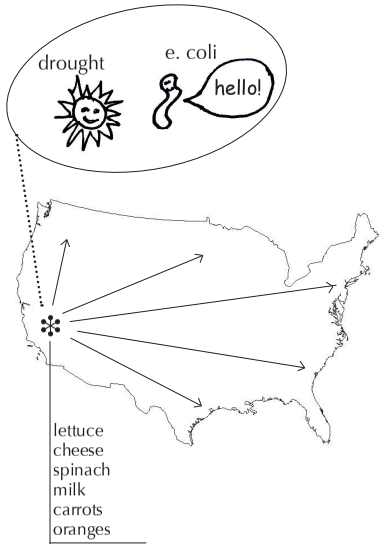
eggs available

under-utilized
diversity of fowl



Public Health

Many food pathogen outbreaks center on protein products such as eggs and meat. Most recently, there was a nation-wide recall of many products that contained peanut-butter due to the contamination of a single plant in Georgia. The centralized production of protein is most apparent because of the political hurdles that exist for small-scale, localized, or home production of fowl, and small livestock for meat and milk.



The Environment

Policies that allow and encourage sprawl have a particularly devastating impact on fresh and healthful protein production and consumption because of the difficulties that small and specialty farmers, especially those that practice integrative farming techniques, experience in maintaining economically-soluble operations near urban centers. The environmental decline that results from the lack of small and speciality farmers near urban centers is exacerbated by the resulting necessity of large CAFOs to supply the population's protein supply.

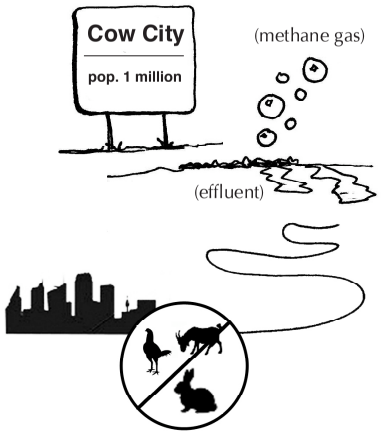
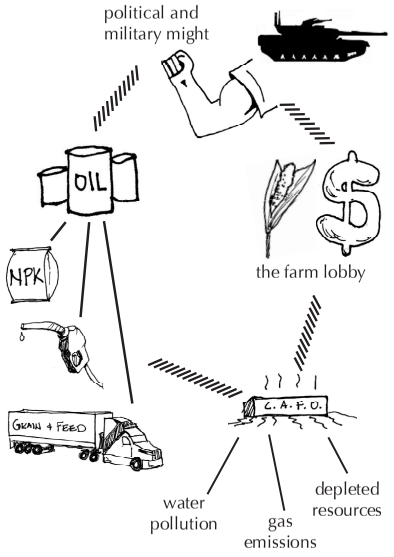


Figure 5.2 Political aspects of food consumption and production

Environmental aspects of food consumption and production are affected by the following factors:

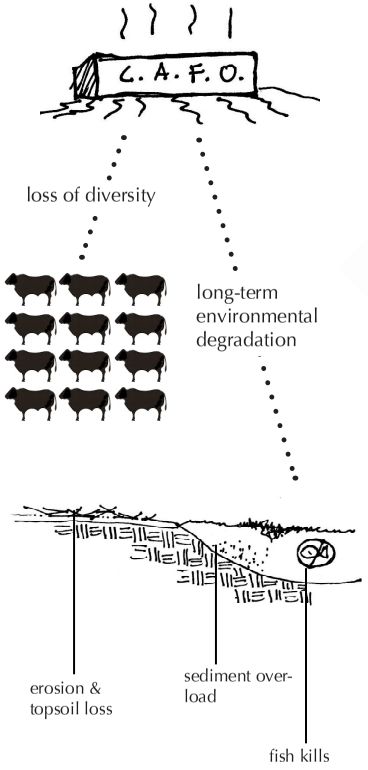
Politics

The production of the majority of America's protein (meat products, mostly beef and pork) occurs on large-scale CAFOs and consumes vast quantities of fossil fuel at all stages of production: petroleum-based fertilizers required for the growth of the feed and its mechanical harvest and processing, transportation of the feed and of livestock at different stages of growth, mechanized slaughter, refrigeration, processing, and transport all consume a great deal of fossil fuel compared to localized production (ex: residential chicken ownership) and/or the consumption of protein sources lower on the food chain (ex: legumes and nuts). The enormous reliance on fossil fuel has obvious environmental impacts, but also strains political systems because of dependency on a rapidly declining availability of fossil fuel.



Economics

The devastating environmental effects of the majority of protein production operations in the U.S. (namely CAFOs) place a huge economic burden on future generations through the systems failure to account for environmental decline due to pollution, contamination, and the loss of biodiversity.



Cultural Society

Because of the over-reliance on a relatively few sources of protein within the American diet, the loss of environmental biodiversity among heirloom and ethnically-specific food products as well as ecosystem biodiversity in general presents a significant threat to the ability of future generations in maintaining cultural foodways.

Public Health

Agricultural pollution stemming from CAFOs (a main source of protein production in the U.S.) has been shown to contaminate drinking water. Likewise, water contamination from a wide variety of agricultural practices contaminates waterways (primarily through nutrient and sediment pollution), limiting the availability of both fresh and salt water protein sources such as oysters and fish.

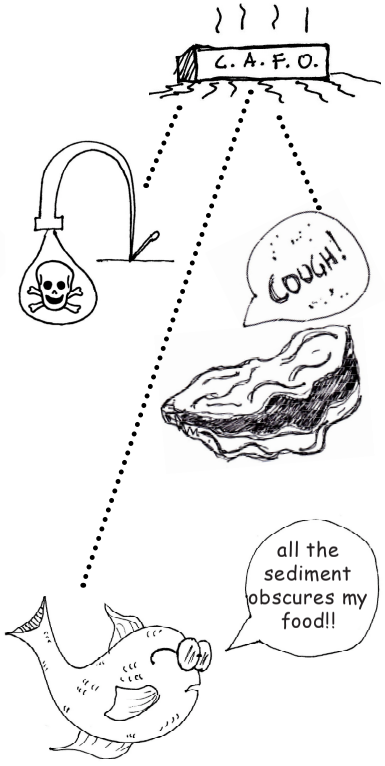


Figure 5.3 Environmental aspects of food consumption and production

Public health aspects of food consumption and production are affected by the following factors:

Politics

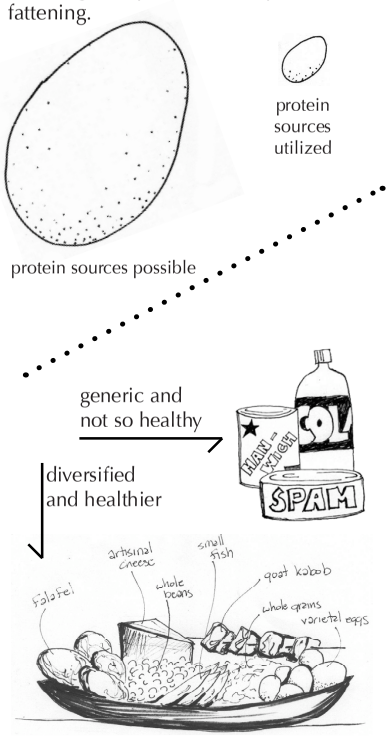
Capital-driven production systems give an undue advantage to large-scale production of a limited number of protein products. Industries with large government lobbying capacities such as the beef and pork industries, as well as vertically and horizontally integrated corporations like Conagra are able to out-produce smaller, local, or region-specific options for protein, such as tree nuts, small livestock, and fisheries. Even when not intentional, the writing of "one size fits all" legistlation inherently benefits large agriculture.

Economics

Because many Americans have a real or perceived lack of choice in more healthful options for meeting their protein needs, incidences of heart disease, stroke, cancer, diabetes, and other diet-related diseases are at an all-time high. Subsequently, nationwide health care costs have increased, creating an economic crisis for the population both directly and indirectly, especially among lower income groups and lesser-educated populations.

Cultural Society

The current lack of protein diversity in the American food system is directly related to the inability for cultural and ethnic groups to practice traditional foodways. As an example, the author notes the difficulty in locating cutshort and greasy beans, and quail eggs. Yes, we can exist on canned string beans and chicken eggs, but so much of cultural life is recorded only in differentiated food traditions. With the loss of these foodways, people become further divorced from the act of eating and more often than not adopt the unhealthy practice of eating cheap food that is processed and fattening.



The Environment

Agricultural pollution stemming from CAFOs (a main source of protein production in the U.S.) In addition to the health impacts, over-consumption of protein by Americans leads to an increased environmental strain. This effect is compounded by the fact that most Americans rely on protein sources that are high on the food chain (cattle, pigs) instead of those that are lower, and therefore less energy-consuming (beans, nuts, small fowl and eggs). Likewise, water contamination from a wide variety of agricultural practices contaminates waterways (primarily through nutrient and sediment pollution), limiting the availability of both fresh and salt water protein sources such as oysters and fish.

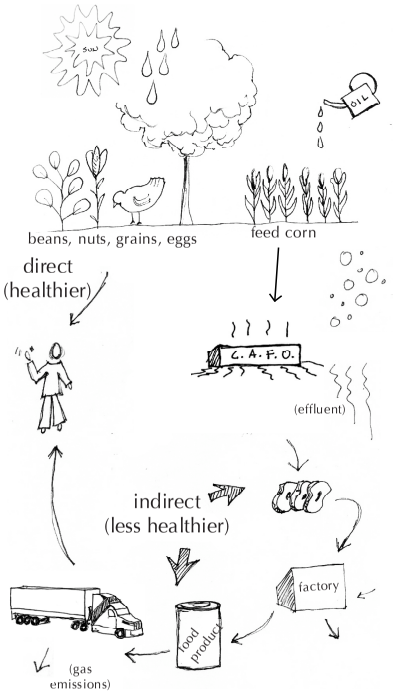
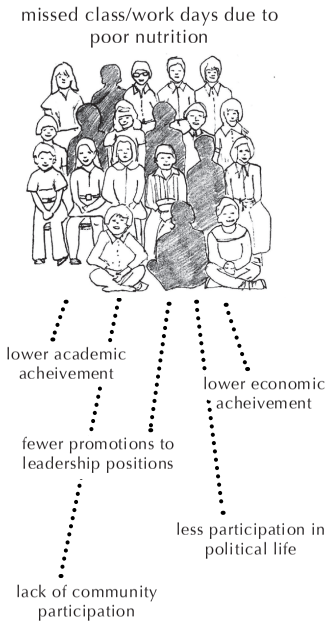


Figure 5.4 Public health aspects of food consumption and production

Economic aspects of food consumption and production are affected by the following factors:

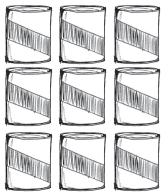
Politics

Populations that are unable to affordably acquire adequate nutrition are less likely to engage in local politics and participatory democracy. A lack of protein is reflected in lower academic performance and a higher number of days missed from school and work, limiting opportunities for engagement and leadership. Furthermore, due to the existence of food deserts, many people are required to spend an inordinate amount of time riding buses or walking long distances to buy food. This inequality of time required to obtain basic food is reflected in unequal community participation and political marginalization.



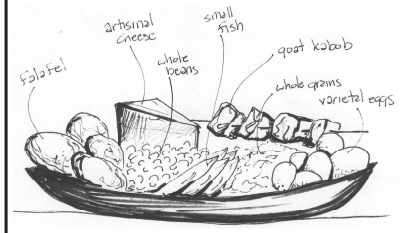
Social/Cultural

Because it is generally more economic to produce standardized products than it is to provide regional or ethinically-specific cuisine, the current food complex furthers the erosion of cultural differentiation. The economic system may aid in providing low-cost food products to some, but it often limits opportunities for ethnic expression and the *in-situ* preservation of traditional knowledge.



standardized food products are (artifically) cheaper than...

... ethnically differentiated food that preserve traditional knowledge.



Public Health

The current economic system, skewed by subsidies and other schemes, exacerbates food deficiencies among lower-income residents and mostly fails to provide healthy options for food aid. Furthermore, the current food aid system indirectly supports large food corporations because most food-aid is given in the form of highly processed food, as opposed to fresh, local, and differentiated food.

the "cheapest" and most readily available food on the market...

result in an unequal toll on the health of lower-income people, often resulting in diabetes, obesity, and increased risk of heart disease and cancer.

food aid that is mostly comprised on cheap calories and processed food...

The Environment

Economic subsidies for fossil fuel mining and refining (both direct and indirect) contributes to a system in which it is less monetarily practical to grow food while maintaining soil health and localized sources of soil nutrients. Instead, the economic pressure to constantly increase the size of production operations and to artificially control the fertility through soilless growing media and synthetic fertilizers results environmental degradation: nutrient pollution of waterways, destroyed soil ecosystems, fossil fuel extraction, etc.

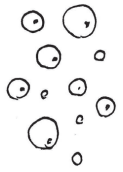
unrealistic expectations for mass quantities of cheap food...

...drives environmental degradation...

soil depletion

fossil fuel extraction

water pollution



greenhouse gasses

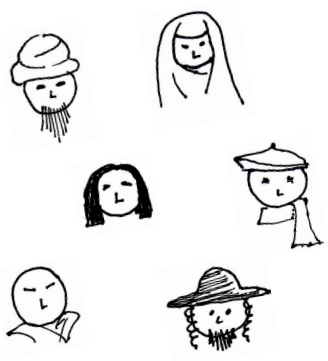
Figure 5.5 Economic aspects of food consumption and production

Social/cultural aspects of food consumption and production are affected by the following factors:

Politics

The decline in cultural differentiation of foodways -- when all people, regardless of cultural affinity, consume the same limited varieties of food -- leads to a lowered tolerance for the cultural pluralism necessary in a democracy. The quiet, public consumption of culturally significant food reinforces the values of tolerance, pluralism, and open-mindedness in a nonthreatening manner, setting the tone for cultural and political inclusion when more contested issues arise.

cultural hegemony...



Economics

Increased consumption of generic food products at the expense of regional and local foodways diminishes the strength of localized economies. However, utilizing non-local products that hail from region-specific places (for example, Manchego cheese and Parma ham) can help in preserving the economies of the communities from which they originate. Furthermore, cultivating an overall appreciation for geographically-specific foods can led to the recognition of food specialities present in one's own community.

Public Health

The disappearance of traditional foodways and their subsequent replacement by the cheap calories of generic foods results in an overall decline in public health. Traditional methods of preparation and consumption and the utilization of specific whole foods carry with them cultural significance that limits their overuse. Far from being merely "comfort foods," traditional foodways that depend on the availability of specific foods are typically more reliant on whole foods and come with culturally-appropriate standards of consumption.

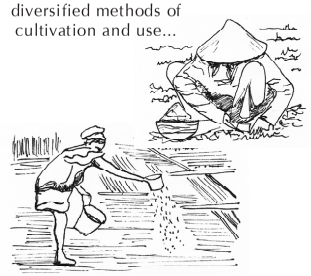
communal eating traditions

inter-generational sharing of cultural knowledge

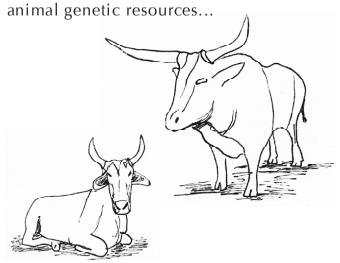
The Environment

When culturally-significant foodways are preserved through continued practice, overall environmental biodiversity is protected because the specific plants and animals that are germane to a specific culture and the regional climate are utilized in daily practice. This "in-situ" preservation of genetic resources and traditional knowledge is preserved where a critical mass of a given population are reasonably able to acquire the foods needed to maintain culturally significant foodways.

diversified methods of cultivation and use...



...and diversified plant and animal genetic resources...



...help protect, preserve, and restore the natural environment for present and future generations.

Figure 5.6 Social/cultural aspects of food consumption and production

Part Two: Translating integrated food system complexity to the built environment

Through the preceding examination of how the complexity of the contemporary food system is reflected in the built environment, patterns begin to emerge that reveal opportunities to address the production and consumption of protein in America through the design and re-ordering of the landscape. What remains is the application of the framework not just to conceptual exercises, but to the everyday practice of landscape architecture. Several avenues exist in which this application can be demonstrated. Designing a residential-scale landscape plan that integrates fowl egg production, tree nuts, and leguminous vegetables would be one way to demonstrate the implementation of a portion of the framework proposed. However, many books and articles have been published that do just that, and at greater detail. To do so here would be redundant and do little to capture the integrated complexity that this thesis works to establish.

Taking this idea a step further, the author could show how a series of residential and small-scale production operations make up a localized food complex that contributes to a diverse, reasonably-priced, and healthy supply of protein, similar to the "nation of gardens" diagrams of Leberecht Migge. This would show some individuals raising guinea hens, others with a flush of ducks, and still others with a few pigmy goats and several rows of edamame. Some would be families producing for home needs, while others would be small-scale and regional commercial producers. However, the impossibility of showing every possible combination and the risk of over-simplification rules out this method as one in which the author could demonstrate the successful incorporation of the proposed framework to everyday practice, and fails to incorporate the diversity of scale in contemporary landscape architectural practice. Furthermore, although small-scale and

home production are two sectors in need of increased attention within the food complex, it would not behoove society to completely turn away from the beneficial aspects of factory production and the importation of certain foods, as this particular illustration may suggest. We are a global society, and the modern developments in food production and consumption (freezing, transporting, processing, greenhouse and factory production) still have a role in supplying food to society. Likewise, bioengineered products can be beneficial, so long as they do not harm the existence of biodiversity among wild and parent varieties in their development and use. Therefore, the presentation of a plan that suggests an idealized community subsisting solely on local and home production yet still attaining diversified consumption would be disingenuous and dangerous in that it omits a significant amount of the complexity this thesis works to establish.

Instead, the author wishes to demonstrate the application of the framework to design practice through the explanation of two scenarios that illustrate the cumulative benefits of integrative practice through expanding levels of scale and complexity. In this way, the opportunity for increased complexity and layering of use and meaning in the landscape is exemplified in a legible way that also encapsulates the varying scales at which landscape architects work. The *Food System Data Dial* is utilized as a reference tool in the design of these simulated landscapes; it is a mechanism to ensure that all avenues for food complex integration into the landscape have been exhausted.

The first example begins with the choice to include a pecan tree in a public urban landscape. The single tree provides an opportunity for individuals to engage their environment through "eating the landscape"—metaphorically, as well as literally. Drafting a management plan that allows for the flexibility and growth of the landscape, so that the

pecan tree remains to be understood as a place for shade *and* a source of nourishment takes that idea a step further, and also utilizes the landscape architect's skill as a mediator translating between the environment and the public. Integrated elements of the landscape, such as the incorporation of sculpture and site amenities that make the idea of *consuming* the pecans more explicit work toward advocating for a new relationship between the public and their par—one of reciprocity—with the goal of that relationship extending beyond the particular pecan tree to an overall awareness that *the environment* sustains us. The biological cycles present in ecosystems that include the pecan tree as the dominant tree species include the recycling of leaf litter and pecan hulls into the humic matter of soils, the sequestration of carbon in the tree itself, increased biodiversity in the soil, groundcover, and tree canopy, and—where appropriate management is available—the incorporation of composted human waste to the soil.

Beyond viewing the planting of a pecan as a singular solution, a landscape architect has the opportunity to design and manage for *ecosystems* that encourage the restoration of environmental services. For instance, managing for native legumes as groundcover underneath the pecans will reduce erosion as well as provide for the nitrogen needs of the pecan tree. Conceptualizing the public space as an *ecosystem*—no matter how "constructed"—will foster the incorporation of a diversity of other native and food species. One method to foster this incorporation is to review and recreate the *native* ecosystem of the pecan in the park. However, a more realistic method is to create a network of plants that are compatible with one another (no matter their origin) and the existing soils that will create a synergy through the attraction of beneficial insects and improve soil life, flora, and fauna. In this way, the public park is conceptualized as a

system that incorporates and utilizes biological processes, but also acknowledges that the landscape exists in a constructed environment. Additionally, the incorporation of a variety of tree nuts encourages a biological diversity as well as cultural diversity in the landscape.

Connecting the idea of the environment (the park) to the idea of human nourishment can be further reinforced by designing spaces for the sale and consumption of food. For instance, stalls for small neighborhood farmer's markets and distribution of weekly Community Supported Agriculture (CSA) allotments provide landscape-level legibility of local food purchasing, while providing space for *free* food will allow for the expression of non-commodified food acquisition. The latter could take the form of simple structures for groups such as *Food Not Bombs* to distribute their free fare, for cooking demonstrations by local chefs and grocers, or for the legitimization of wild food foraging through interpretative information and landscape management that encourages the sustainability of native and "weed" plants and their ecosystems. This active incorporation of gathering space also provides for opportunities for community strengthening specifically around food issues. The nurturing of community is both a cause and an effect of a healthier food complex. Likewise, it is important to explore cultural diversity in food consumption practices: the size of groups, manner in serving and preparing food, and the activities that accompany eating are widely divergent within a pluralistic society, and the design of the public space can reflect this level of understanding.

At a scale beyond the individual park, a *network* of these "food landscapes" begins to create an opportunity for a *food corridor* that stretches from the inner city to suburban development and beyond to rural landscapes that (hopefully) include commercial producers of food products. This corridor would reinforce the existence of urban

agriculture, as well as the city's inherent dependency on regional environmental restoration and the existence of local producers that can, at least in part, provide for its food needs. In this way, there is a regional-scale legibility of the production and consumption of food, as well as greater opportunity for the sale and localized acquisition of fresh, whole sources of protein and other food products.

Opportunities for advocacy exist at all stages of this scenario. In contemporary U.S. American society, there is a diversity of avenues for communication with the public; writing, weblogs, video and audio compilation, and other electronic and easily accessible media allow for such simple methods for landscape architects to interpret their work and ideas that this step should be a given. Just as Olmsted promoted New York's Central and Prospect Parks by distributing circulars to clergy and doctors and posting notices in tenement houses, it is imperative that today's landscape architects use contemporary methods of communication to facilitate use and participation in food-oriented landscapes. Public parks were the cutting-edge landscape type of the late 19th century; this thesis suggests that integrative landscapes that incorporate the complexity of food production and consumption are the contemporary iteration in need of the same level and rigor in advocating for their public adoption.

A second scenario illustrates another take on the successful incorporation of the food complex into a design practice in which the food complex is addressed, specifically in regard to protein consumption. This scenario focuses on solutions for non-public landscapes.

Creating opportunities for connections to nature through environmental and agricultural literacy can be accomplished through designing ways for off-farm residents to

successfully maintain appropriate urban domesticated animals. For instance, a chicken or guinea hen, easily kept by a family with limited space and means, can provide a connection to both food production and to nature. The design of residential landscapes that integrate small-fowl into the lives of working families contribute to their supply of fresh and nutritious sources of protein as well as acting to increase their connection to nature and the larger environment. Lobbying for city-wide ordinances that permit the management of fowl in urban areas is one outlet for advocacy on the part of landscape architects, and the design of planned communities and urban infill developments that allow for individual or small collective-managed broods represents one way to incorporate this mode of protein production into a progressive practice.

The environmental benefits of fowl inclusion into urban and suburban landscapes are numerous: a flock of fowl eats weeds and many kitchen scraps in an urban garden and their waste nourishes the earth, enhancing the growth of plants and the water-retention capacity of the soil. Healthier soil, enriched by poultry manure, sustains more plant life and better soil structure, the cumulative effects of which include a decrease in runoff that causes erosion and sedimentation in waterways, an increase in green surfaces that mitigate the heat-island effect of urban areas, and greater CO2 accumulation, reducing levels of ozone. A network of small producers of chickens, guineas, ducks, and quail create a diversity of food products while providing the *in situ* conservation of diversified genetic resources for future generations. The increased diversity in food products available will support the food traditions of multiple cultural groups that exist in a pluralistic society.

Economically, a network of large and small producers horizontally and vertically integrated in community and business life will decrease dependency on energy-intensive

factory farms and the necessity of long-distance transport. For self-producers, a brood of five hens will generally lay enough eggs to supply a family of four, while more will provide for family needs as well as a surplus to sell, trade, or give away, providing nutrition to fowl-less residents and extra income for the family.

Opportunities abound for landscape architects to manifest these changes. Advocating for landscape integration of the food complex into the comprehensive plans of cities and towns and actively participating in that process is one way to make a significant impact. However, even on individual projects—a business park, for example—possibilities include designing walkable access to restaurants and on-site production gardens that provide a portion of the food for employee consumption. The author knows of one small office that maintains an area for employee gardens. Tending vegetables is a favorite break-time activity for many of the office staff, and even those who do not participate in gardening often bring their lunch and eat within the garden gates instead of driving to the nearby fast-food restaurant. However, many clients will not think to ask for such landscape amenities; it is up to the landscape architect to advocate for this change and communicate the benefits. If landscape architects deeply understand the need for food system integration into the landscape, they can better explain the benefits—economic, social, environmental—of adopting a different attitude toward the landscape and its potential to provide a multiplicity of benefits.

Evaluation

The foregoing descriptions demonstrate two examples of how the practice of landscape architecture can incorporate a highly politicized food system. It is important to

note that while many of the suggestions in these two scenarios could be carried out through community organizations, government policy initiatives, and individuals, landscape architects have a unique contribution to make as members of the design community. Much has been made in recent years of the *moral* reasons—such as environmental responsibility—for society to adopt alternative food production and consumption habits. Eating local, naturally produced food lower on the food chain and curtailing support of factory farms and CAFOs are all wonderful goals for society to strive toward. Additionally, health experts have made a solid case for adopting these practices to achieve better personal health in an effort to mitigate the dietary disease epidemic in the United States and other developed nations. However, relying on the moral and health arguments alone without appropriately designed landscapes makes the transition to a different way of eating incredibly difficult, if not impossible. As environmental designers, it behooves the profession of landscape architecture to ask to what degree our residences, neighborhoods, cities, and regions support, encourage, and empower citizens to take appropriate steps in creating a more healthful and restorative food system. As indicated throughout the thesis, there are many instances where the built environment presents more of a challenge to a healthy food complex than it offers opportunities for positive change. Food deserts, the lack of food production and consumption within managed urban landscapes, and overall inattention to food as a means to unify a landscape, acknowledge diversity within the population, address social inequity and political disenfranchisement, and engender more meaningful stewardship of the world's resources are all ways in which the profession and practice of landscape architecture is uniquely suited to address the contemporary food complex.

The complexity inherent in the food system stems from negotiating the balance between the various aspects of human civilization. For example, awareness of the environmental impact of farming must be weighed against the pressing need to feed a world population of over six billion people. Relying solely on locally grown and produced food, although it may be more beneficial to the immediate regional economy, inhibits the cultural expression of many citizens in a pluralistic society. And although there are many benefits to maintaining a traditional diet—healthier food, the *in situ* preservation of genetic resources, the maintenance of cultural identity—many indigenous populations nevertheless desire to eat "Western" food because it has become a symbol of status and sophistication in some regions. In these instances, self-determination and the right to choose one's own diet must be honored, even when the consequences may produce a decline in public health and erosion of food and cultural diversity.

The importance of acknowledging this complexity cannot be underestimated. As much as the author would like to suggest a "set of solutions" to current food issues as writers in other disciplines have done (eating locally; consuming a vegan diet; building farmer's markets and cooperatives; eating seasonally), the research led her to conclude that the complexity itself is central to the manner in which landscape architecture can incorporate the contemporary food complex. Other disciplines have utilized theories of resiliency and panarchy to explicate and analyze processes and systems that exist at multiple spatial and temporal scales, some specifically in regard to food systems.[17] The thesis concludes that the question of how landscape architecture can best incorporate the politicized food complex is addressed in large part through similar attention to complexity

[17] See Peeples, Barton, & Schmich (2006); Anderies, Walker, & Kinzig (2006); Redman & Kinzig (2003); and Gunderson & Holling (2002).

theory and systems thinking. Therefore the *Food System Data Dial*—the graphic representation of the framework proposed—does not prescribe solutions, but instead asks questions that help the designer maintain an awareness of the negotiated complexity of the food complex as it is expressed in the built environment. For example, too much emphasis on local-only production of food may marginalize populations whose diet consists in part of food products that cannot be grown in the regional climate. There are ways to simultaneously address food as an environmental resource and food as a cultural practice; the profession of landscape architecture is well-suited to address this multivalency of the contemporary food system.

These examples of the application of the framework to landscape architectural design lead the author to propose the following answers to the thesis question, *How can the profession of landscape architecture incorporate the contemporary reality of a highly politicized food production and consumption complex?*

- By embracing the landscape architect's ability to incorporate knowledge and perspectives from various disciplines into integrative and holistic design and management solutions.
- Through a renewed focus on "design by management" strategies that allow for landscape change and facilitate stewardship over time.
- By maintaining the complexity of the built environment and the societies that inhabit them, as opposed to offering "prescriptive" solutions that remove layers of meaning and use.

- By assessing the feasibility of design and management proposals in their effects on economic, political, social, cultural, and environmental aspects of society—creating multivalent landscapes.

The framework proposed earlier—specifically in its manifestation as the *Food Complex Data Dial*—represents this incorporation of complexity in the design process through its use as a tool to create multiple layers of use and meaning in the landscape. Through this celebration of the complexity of interdisciplinary phenomena, the profession of landscape architecture is better equipped to ensure that all avenues for the development of a restorative and healthful food complex have been explored.

A new model emerges

The diagrammatic model proposed in Chapter Two illustrated the relationship between the food complex, political and social discourse, and the profession of landscape architecture as a three part Venn diagram, where their intersection represents the research focus of this thesis, and the subsequent case for their inter-relevancy (Figure 2.1). The previous chapter utilized a web diagram, a matrix, and a data dial to describe the relationships between different aspects of the food production and consumption complex, building a new framework for conceptualizing that system as an integrated political, economic, cultural, and environmental phenomenon. The contemporary food complex can now be described as the intersection of those aspects, more generally categorized as the political economy, society and culture, and the environment (Figure 5.7). The political economy includes all aspects of resources distribution and mechanisms for societal

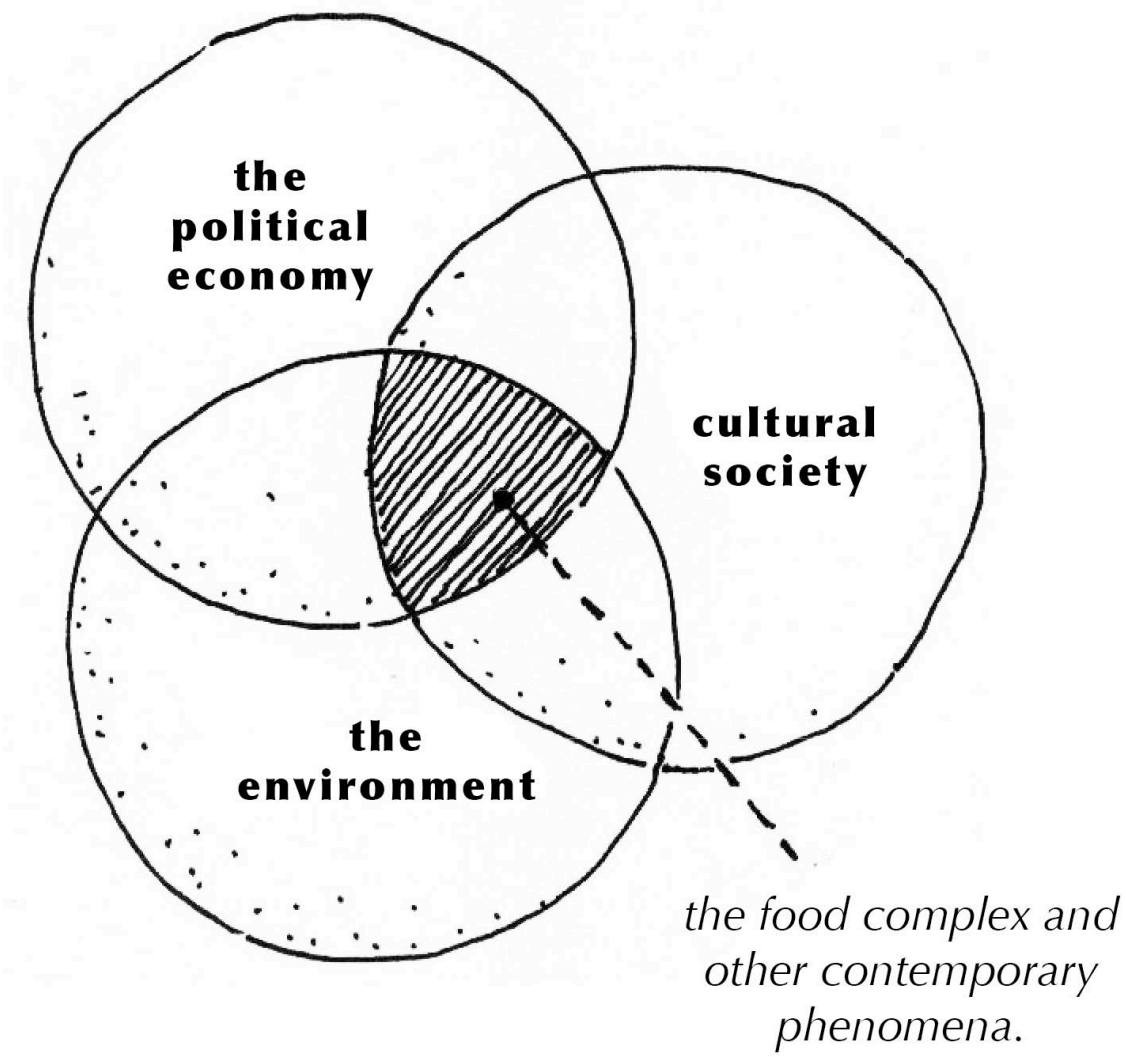


Figure 5.7 Situating the food complex as a contemporary phenomenon. The food production and consumption complex as described in this thesis responds to aspects of the political economy, cultural society, and the environment.

control. The social-cultural category includes ethnic differentiation and the traditions that are passed from person to person through mythology and moral values, as well as the physical and psychological health of individuals. The environmental aspects include the natural systems and resources that exist apart from political boundaries and cultural constructs. The intersection of these three generalized systems represents the intersection

of humanity, the built environment, and the natural world. The food complex exists within this space, as do other contemporary phenomena.

However, this diagram only shows the theoretical relationships that form the food complex. In reality, when perceiving the production and consumption of food, the three spheres of the political economy, society and culture, and the environment do not often intersect. Although there are many ways to explicate their relationship—art, poetry, mathematics, and mythology, for example—the author asserts that the profession of landscape architecture has the potential to act as a significant coagulator between these spheres, not only describing the phenomenon, but as an active agent of change through the design and management of the built environment. The process of design provides the capability to understand the different aspects involved in the food complex, conceptualize their relationship to one another, translate the phenomenon for a diverse audience, and propose design solutions for the continued improvement of all aspects involved. This possibility is illustrated diagrammatically in Figure 5.8. The built environment can reinforce, reveal, interpret, and create collaboration between different aspects of the food complex. Although landscape architects are by no means the only professionals equipped for this task, the work of Migge, Olmsted, and other landscape architects cited within this thesis certainly highlight the exciting possibilities for the creative application of landscape architectural process to contemporary phenomena such as the production and consumption of food.

The complexity of this new model exists in three dimensions: within each aspect (the political economy, cultural society, and the environment), at all scales of interaction between each aspect and the discipline of landscape architecture, and across time. This

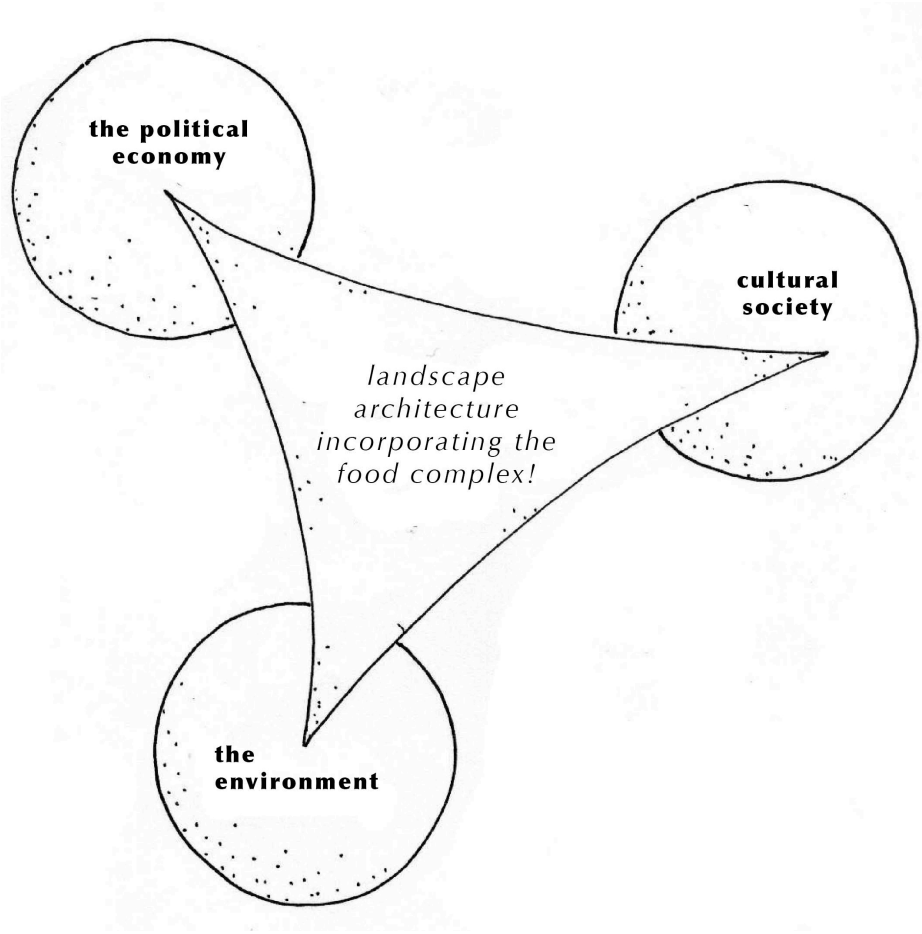


Figure 5.8 The relational food complex. A new model of the food complex emerged as a result of the research that places the discipline and practice of landscape architecture as the coagulator of the political economy, cultural society, and the environment through design, mediation and advocacy.

concept is illustrated by the graphic presented in Figure 5.9. The political economy, cultural society, and the environment exist as three facets of a whole; each constitute a main aspect of the food complex in contemporary society. Landscape architecture is represented by a circular ribbon, symbolizing the potential of the profession to be an integrative practice, capable of expressing the intersection of the other three aspects within the built environment and actively working to facilitate the manifestation of a restorative food complex. Changing conditions—environmental, socio-cultural, and politico-

economic—place the food system in a state of constant flux, just as landscape management and evaluation both embody landscape architectural practices that acknowledge the effect of time on the landscape. Design, mediation, and advocacy join the importance of evaluation and management as central practices of landscape architects. The circular ribbon has no beginning or ending, but instead acknowledges the reality of the constant evolution of the natural and constructed environments, of social and cultural norms, and of political and economic systems. Landscape architecture, as a profession that necessarily responds to and is informed by these variables, also exists within the ribbon of time.

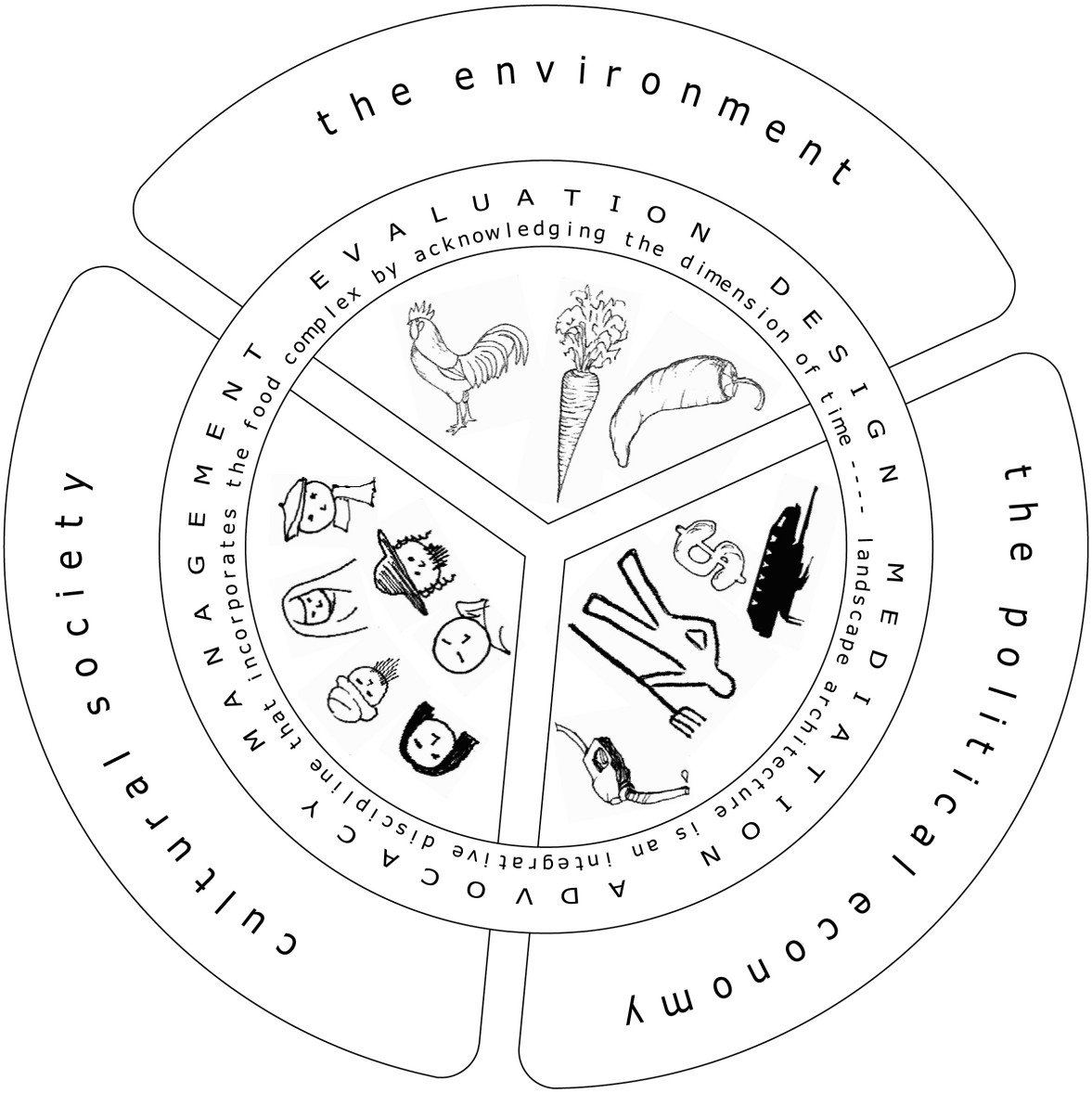


Figure 5.9 Landscape architecture incorporating the food complex. The political economy, cultural society, and the environment comprise the three major facets of the food complex, and landscape architecture, as an integrative profession that also acknowledges the dimension of time, is represented by a ribbon that joins all three aspects.

VI. Conclusion

The global food production and consumption system is in crisis and the opportunities for landscape architects to engage this issue through the integration of a more interdisciplinary practice are numerous. The lack of participation on behalf of landscape architect with this contemporary issue represents an untapped outlet for professional engagement. Furthermore, the work of landscape architecture at times serves to *inhibit* the existence of appropriate food systems and limits opportunities for healthier and more restorative food choices through design that ignores the reality of this complex phenomenon. The incorporation of food issues into all scales and aspects of practice is a subject that demands greater attention; continued negligence comes at a steep cost for current and future generations when designers fail to realize the environmental, cultural, political, and economic effects of their proposals. However, just as design decisions made out of ignorance can be devastating to the food complex, a greater attention to food issues can facilitate meeting social, economic, political, and environmental goals that go far beyond the basic production and consumption of food.

Chapter Two presented the case for increased professional attention through research into the multivalency of the food complex and provided the necessary background for the thesis investigation. Research was organized by conceptualizing the food complex as an entity that intersects with political/social discourse and the environment, where their overlap presents the opportunity for the most integrative

landscape architectural practice. Additionally five contemporary "pressures" were named that contribute to the coagulation of those three entities: declining public health, political and economic pressure, environmental degradation, the erosion of cultural identity, and human-nature dissonance.

An historical case study was presented in Chapter Three that examined the work of an early 20th century landscape architect—Leberecht Migge—who advanced the discipline through proposing a new conceptualization of the place of food in the built environment. Migge viewed the production and consumption of food as an explicitly political activity, and advanced the idea of a network of gardens that contributed to a "self-help society," capable of embracing modern scientific understanding of environmental processes, democratic societies, and modern poetic landscapes through the inherent engagement of humans to their immediate landscape.

Chapter Four synthesized the knowledge and understanding gained from the previous two chapters to develop a conceptual framework for comprehending one possible way for landscape architecture to incorporate a politicized food complex. The framework was presented first as a web diagram and then as a matrix before its final iteration as a vovelle, or data dial. The *Food System Data Dial* presents the author's graphic interpretation of the framework that presents the complexity inherent in the contemporary food system as revealed by the research in Chapters Two and Three.

The framework was tested in Chapter Five through a conceptual application to process and practice in which the data dial was used both for investigation and for design. The process of inductive research (Chapters Two and Three) led to the creation of a new framework, from which deductive analysis of that framework led to a generalized concept

that answered the central question of the thesis: The contemporary food complex can best be addressed by landscape architecture through utilizing the integrative potential of the profession to conceptualize complex systems as part of a larger whole, creating landscapes layered in both meaning and use, and managed over time.

Identification of major themes

Throughout the research and writing of this thesis, the author identified several major themes that are worthy of special attention.

Embracing Complexity

Maintaining complexity is of the utmost importance. Often, frameworks and models work toward making a system more comprehensible at the expense of the complexity that defines that system. The contemporary food complex falls into this category. The study of Leberecht Migge's implication of Modernist principles into the food complex of early 20th century Germany was particularly relevant because of this same dialectic between complexity and over-simplification. At first reading, it seemed as though Migge's adherence to the rational ideals of Modernism and his desire to create systems and designs that were replicable over the entire nation were at odds with the essence of his work; solving social and economic problems through the design of gardens is a decidedly complex issue. But upon further examination, it was clear that he utilized Modernism as a *process tool* to explicate and research the phenomena of the current food system, which led to *greater* complexity within his design proposals. In other words, Migge conceived of general principles that encapsulated the complexity inherent in his society, and then

applied those principles to designed solutions and ideas of management, resulting in projects, proposals, and written works that responded to the complexity of reality through elegantly embracing the multivalent landscape.

In today's landscape architectural practice, the possibility remains for the same integration of complexity into built works. Understanding the relationships between different aspects of society and the environment and how they affect the food system can aid in the development of design solutions and management practices that are simple yet effective, and elegant while embracing the chaotic complexity of contemporary society.

Nostalgic reference remains detrimental to progress

Nostalgic reference is rarely useful, and is often a cheap and ineffective substitute for authentic tradition and genuine culture. Just as the Modernists sought to embrace a "new way of living," today's environmental designers should follow suit with our own attempt at embracing the new century. However, contemporary understanding and conceptualization of ideas such as place, pluralism, and cultural differentiation need not be lost in this effort; only a more finely-tuned understanding of the differences between nostalgia and cultural tradition is needed. One possible explanation of the difference between the two is that nostalgia is a static representation of times past (real or imagined), while traditions and cultures are in a constant state of evolution and negotiation. Many times, the use of nostalgic reference is detrimental the preservation of actual culture and tradition.

One example of the inappropriate use of nostalgia in the landscape that draws particular ire from the author is the almost ubiquitous inclusion of "simpler times"

references in the design of farmer's markets: bluegrass music, straw bales as decoration, and kitschy "barn-yard" games. It seems that bluegrass music and these other elements have become part of the "branding" of local agriculture, as if local producers of food work the plow by day and sing baleful tunes in the holler at night. Perhaps they do - the author has not conducted research to say one way or another. However, it would behoove designers and managers of farmer's markets to re-examine the *current* meaning of local food production and consumption and to not rely so heavily on the branding that has more to do with Disney programming and less to do with the actuality of the contemporaneous food complex. This thesis research led the author to conclude that, while this brand may have served as an organizing tool for generating support among the white middle and upper classes for support of local agriculture, it has done nothing to build participation among those that fall outside of this demographic.

What is nostalgic for some may indeed be exclusionary to others. However, instead of eschewing all historical reference, through an increased awareness of the complexity of the current food system, relevant and contemporary cultural meaning can be incorporated into the design of farmer's markets and other landscapes that reflect a multiplicity of cultures and recognition of the contemporary methods of food production and consumption. The author understands the importance of cultural signifiers in denoting the use of a given landscape. However, she also understands the capability of landscape architects in intelligently incorporating newer, more culturally diverse, and *more honest* means of honoring prevailing cultural myths while accepting the present condition and the inevitability of cultural change.

The need for constant education and awareness

Understanding the aspects involved in the landscape system isn't nearly as important as understanding that we don't know anything at all. This is one reason why management is so important, as well as building one's own conceptual framework for the additional inclusion of new information, understanding, and challenges, as well as a catalog of methods and practices that have been useful. The research and writing of this thesis could have gone on at the same pace for decades longer if the author tried to include—or at least reference—all relevant information, studies, knowledge and perspectives. Instead, a *general* understanding of the issues involved resulted in the creation of a framework that can be utilized going forward, and is amenable to changes and the inevitable evolution in theory.

Management as a primary function of the landscape architect becomes particularly relevant when perceived as a method of continued evaluation, information gathering, and integration of new knowledge into the designed landscape. In dealing with such a complex system as the landscape, which changes over time and is affected by externalities as much as it influences places and events outside of its own boundaries, it is fallacious to claim that a work of landscape architecture is ever finished, complete, or solves any sort of program or problem. Increased attention to the food complex on the part of landscape architects highlights the need for continued evaluation, management, and on-going assimilation of new awareness.

A reassessment of project origination

In researching and exploring the concept of food complex incorporation into landscape architectural process and practice, the author concluded that there are essentially two ways of perceiving the manner in which landscape architects carry out their work. The first is *according to their potential*. In other words, the landscape architect has a set of knowledge and a manner of conceptualizing the world, as well as the technology and the artistic means by which to create a more ideal society through manipulation of the built environment. This potential to reconnect techne and poesis—the constructed and the natural, the particular and the universal—is deeply felt by many landscape architects who possess a personal understanding of the discipline's capacity. James Corner, in response to a request by the editors of *Landscape Journal* for questions central to our discipline, captures this first way of perceiving of the work of landscape architecture with the following question:

> What is the capacity of landscape architecture to imagine and actualize a genuine reciprocity between nature and culture, to articulate a higher level of dwelling in which the domain of human activity and the processes of nature might coexist in a richly interactive continuum? How might landscape architecture restore to modern culture a renewed sense of connectedness and meaning to its lived relations with the earth and its communities? (Litton et al., 1992)

This question embodies the poetic potential of landscape architecture to act as a *leader* in the contemporary global society, *actively* applying our knowledge and process to the world. This first perception of landscape architecture is of a discipline that is an organizing and driving force in society.

The second—and decidedly less romantic—manner of perceiving landscape architecture is as a *client-driven service industry*. While the potential to create wonderful, inspiring, poetic, functional, and coherent landscapes may be present, the ability to connect with a paying client who shares the insight and values needed to pursue meaningful projects is rarely an actuality. Many of the poetic and academic ideas of landscape architects require participation among widely varying agencies and individuals, necessitate the conceptualization of land across political boundaries and property lines, and more often than not, entail the renunciation of short-term profits for benefits that may not be visible for generations. The current capitalist framework in which land is perceived primarily as a commodified object does not generate many clients who are willing to accept this manner of working outside of the current capitalist framework. Some projects do lend a modicum of flexibility in which the landscape architect can incorporate programatic elements that are more progressive and speak to the greater complexity of society. However, most practicing landscape architects that the author has spoken to in regard to this matter reflect the general sentiment that the designer cannot deviate too far from the client's program: If you don't do what the clients say you won't get another contract, and if you don't get another contract, you will be out of business. Therefore, the logic goes, do the job you were hired to do or someone else will.

This defeatist attitude, while understood by the author, is not as definitive as it may appear. Through the exploration of the work of Leberecht Migge and a survey of the multiple ways in which the food complex intersects with the built environment, the author believes that there is another way to perceive practice that relies more on the potentiality of the discipline and takes less of a reactionary stance towards the marketplace and client-driven work. This "third way" of working requires an abandonment of the paradigm of client-driven practice and replaces it with landscape architect-originated work. In this scenario, the landscape architect acts more as the developer and project manager, collaborating with allied professionals, community coalitions, and politicians to identify stakeholders and interested parties. Their energy is geared more towards ongoing management, using design as a tool to accomplish larger consensus-generated goals. Evaluation is an integrated part of practice, and the leadership of the landscape architect embraces their ability to act as a translational discipline, creating a circular process of continued involvement (Figure 6.1).

This manner of working lends itself well to a greater incorporation of the food complex into contemporary practice. The work of Leberecht Migge, in particular, demonstrates a project-origination approach to landscape architectural practice, and the interdisciplinary focus lends itself to a greater ability to identify an array of stakeholders and interested parties.

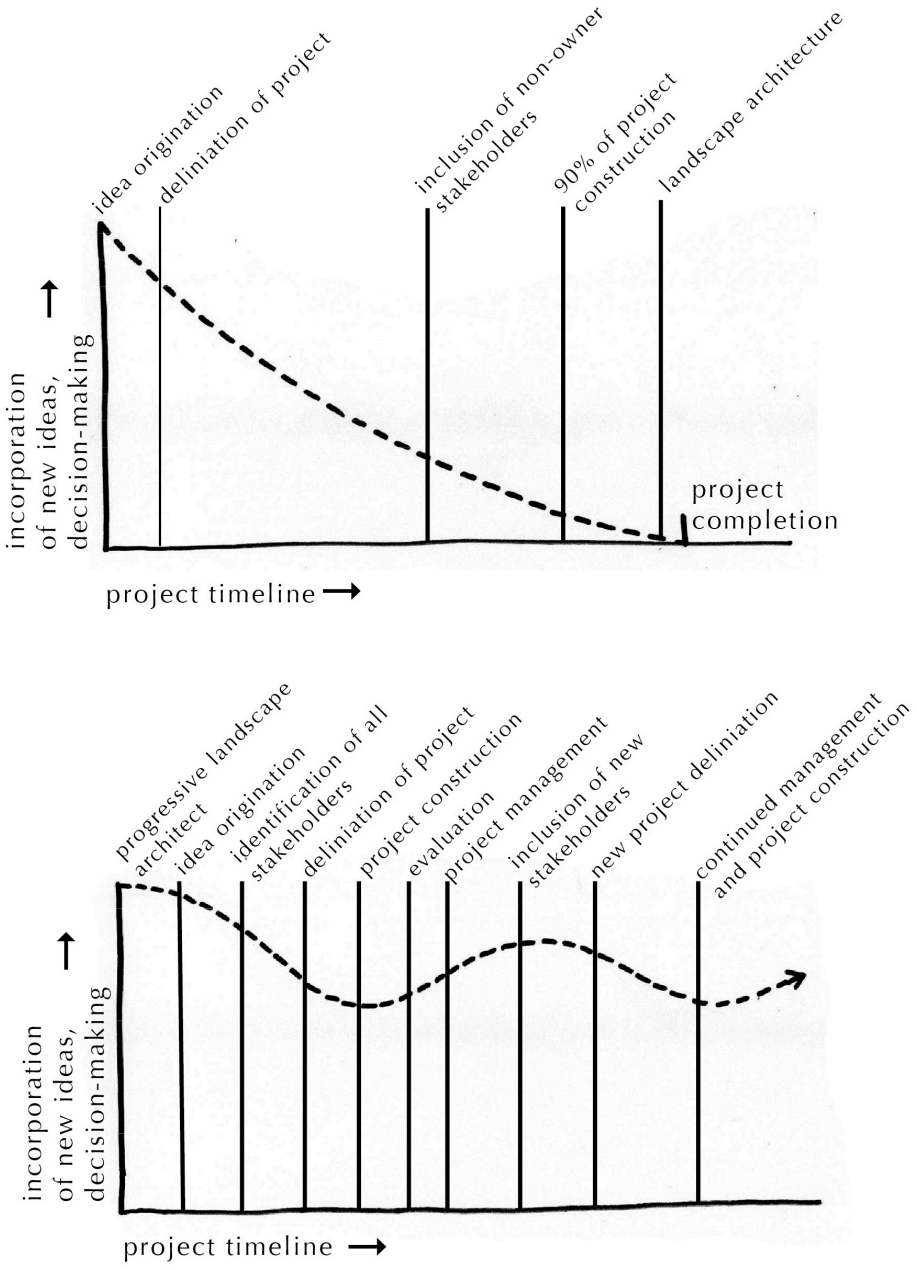


Figure 6.1 Two paradigms for practice. The "client-driven" paradigm (top) of practice situates the landscape architect in a position not conducive to the incorporation of holistic thinking or perspectives from the landscape architect. A new paradigm of working (bottom) situates the landscape architect as an instigator and originator of ideas and projects, collaborating with a diversity of stakeholders early in the process of design, and includes evaluation and management as the inherent cycle of the landscape.

Opportunities for further research

The research and writing of this thesis spurred numerous questions in the mind of the author that could be addressed by further research and investigation:

- Where are the current opportunities to address the food complex through landscape architecture?
- How can landscape architectural education become more integrated with other disciplines while still maintaining the necessary rigor of a professional degree?
- How can professional practice more explicitly involve other disciplines in the design process, especially those that engage in social science research?
- Are there unifying aesthetic values present in a landscape that incorporates the food system?
- How can the *Food Complex Data Dial* be reorganized as a tool that expresses possible actions corresponding to the problems/issues posited?

The prominence of issues pertaining to food security in the academic and popular discourse and the increase in research surrounding the environmental impacts of contemporary food production and consumption practices indicate that public interest in the food complex is on the rise. Landscape architects—as designers, mediators, and advocates—are in a position to act as leaders in the large-scale re-assessment of our built environment in its ability to provide for the physical, spiritual, and cultural food needs of the population while restoring necessary environmental systems and services. The central question is now whether landscape architecture can live up to its potential to incorporate the social and the physical into landscapes that provide for present populations while restoring the environmental or the political systems for future generations.

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