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Environmental Design Research and the Design of Urban Open Space: A Study of Current Practice in Landscape Architecture

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ENVIRONMENTAL DESIGN RESEARCH
AND THE DESIGN OF URBAN OPEN SPACE:
A STUDY OF CURRENT PRACTICE IN LANDSCAPE ARCHITECTURE

A Thesis Presented

by

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ABSTRACT

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A large and growing body of research exists on how the design of the
environment can positively or negatively affect people's health and well-being, as well as
influence their behavior. Researchers in this field, known as "environmental design
research," have long acknowledged the challenge of translating their findings into
formats that are accepted and used by practitioners. A great deal of this research is
focused on open space (parks, plazas, streets) in urban areas. This study explores how
this research and the practice-oriented translations of it are used by landscape architects
who have been recognized in the profession for their designs of urban open space.
Through interviews with practitioners, an understanding emerges of the impact of
environmental design research on contemporary practice, leading to recommendations
that could enhance it in the future.

Key findings of the study indicate that translations of the research, specifically in
the form of design guidelines, while intended to inform practice, are not widely used by
designers. Rather, to understand how design impacts human behavior, practitioners rely

primarily on what they refer to as intuition, largely informed by their own direct observations of people in public space. The quality of their personal observations, therefore, is critical to their depth of understanding of human behavior and the environment. Many of the study participants regard the findings of environmental design research as a reinforcement of their intuition.

The study concludes with recommendations that could improve the skills of design students and practitioners to conduct, interpret, and apply their own direct observations in their designs, using methods and findings from the field of environmental design research to inform and enrich this process.

Keywords: urban open space, environmental design research, environment-behavior research, human behavior, human health and well-being, design guidelines, landscape architecture practice, design education and pedagogy, research methods, direct observation, post-occupancy evaluation

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Complexities in contemporary urban open space design

Good design of open space in cities worldwide is critical. Estimates place the

percentage of people living in urban areas at nearly 50% today, with a projected increase

to 70% by 2050 (Population Reference Bureau 2012). To provide for this growing

number of urban residents, design professionals must strive to meet the sometimes

competing demands related to the three pillars of sustainability: environment, economy,

and social equity (United Nations General Assembly 2005). In this effort, supporting the

health and well-being of urban residents, an element of social equity, is a critical

component of sustainable urban design.

Landscape architects face a complex challenge in the design of urban open space.

In every project, they must balance a broad range of factors in their designs, including

ecological, cultural, economic, aesthetic, and human behavioral considerations. The

variety of constraints inherent in each project demand flexibility, as well as in-depth

knowledge, on the part of designers, who increasingly collaborate with ecologists,

architects, urban planners, and sociologists to develop and implement sustainable

projects. Urban open space design presents some of the most difficult challenges, due to

highly degraded sites, culturally diverse constituents, and tight budgets, among other

factors.

Systems for managing and measuring these factors have been developed by

several organizations, including the Landscape Performance Series by the Landscape

Architecture Foundation (LAF) and the Sustainable Sites Initiative™ (SITES,) a collaboration between the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center at the University of Texas at Austin, and the United States Botanic Garden. The Landscape Performance Series is an online resource that compiles information and innovations in sustainable landscape design as evidenced in specific projects. As indicated on the LAF website, the factors reviewed in the many case studies provided include site, soils, water, habitat, carbon, energy, air quality, materials and waste, economic factors, and social considerations. The Sustainable Sites Initiative™ *Guidelines and Performance Benchmarks* (2009) provide explicit metrics in the same basic categories. Of note is that in both evaluation systems, enhancing human health and well-being is recognized as a requirement for sustainable design. To be considered sustainable, a project must provide direct human benefits for the people who use it. The study of these benefits and their relation to the design of the built environment is the subject of environmental design research, and some of the most widely-known research has been conducted in urban environments.

Purpose for research and contribution to the field

The purpose of this study is to better understand how environmental design research (EDR) is used in current landscape architecture practice, specifically in the design of urban open space, and to make recommendations for how it could be more effectively integrated. One of the longstanding debates by researchers in the field of EDR is how best to present, or translate, their findings to practitioners – landscape architects, architects, and urban designers – so that they can be readily applied in

practice. This challenge will be discussed at length in the next chapter; it is mentioned here because of its role in this inquiry.

The original intent of the study was to explore how practicing designers use design guidelines based on human behavior (one method of translating the findings of EDR into practice) as an indication of their knowledge and use of the field of environmental design research as a whole. It was determined early in the study, however, that behavior-based design guidelines are not regularly used by designers. The study, therefore, has evolved to consider practitioners' perceptions and use of environmental design research in more broad terms. In other words, the focus has shifted away from the designers' use of *translations* of the findings of EDR, and toward their application of the *principles* for good social spaces that are based on those findings. The best outcome of the study, therefore, would be to foster more insightful, nuanced, and sensitive applications of those principles in the design of urban open space, resulting in more city streets, plazas, and parks that meet the social needs of the people who use them.

The study is predicated on the author's belief that human behavioral considerations are a critical component of the success of a designed space. This people-centered approach to design is pragmatically summarized by Clare Cooper Marcus in a *Landscape Architecture Magazine* article that considered just one of the issues addressed in environmental design research – the design and location of seating in outdoor spaces. In her conclusion Marcus states "this isn't rocket science. It is empathy for the eventual user – and just plain common sense" (Marcus 2001, 127). The genesis for this study is the author's assessment that ten years later, the design of contemporary urban open space does not always reflect the empathy invoked by Marcus.

Interviews were conducted with leading designers of urban space (see Chapter 3 for a discussion of the methodology used for selecting participants) to explore current perceptions of the field of environmental design research. The study does not include post-occupancy evaluations (POE) of urban spaces designed by study participants, and the goal of the study is not to assess specific projects. There is, however, a strong and multi-faceted link between environmental design research and the systematic evaluation of the built environment, and it will be explored in other ways throughout this paper.

A variety of potential contributions to the field are anticipated. The increasing urbanization of our world demands that the design of cities include suitable open space to make urban environments more liveable, vibrant, and healthy. In the broadest sense, the expectation is that this study will contribute to that discussion.

As mentioned, while not specific to urban environments, the 2009 *Guidelines and Performance Benchmarks* of the Sustainable Sites Initiative™ (SITES), include a project's support of human health and well-being. However, in a press release issued in January 2012 by the American Society of Landscape Architects (ASLA) to announce the first SITES-certified landscapes, human health and well-being was not included in the description of the SITES program. This omission could be interpreted as a reflection of a lower priority assigned to social issues, relative to other considerations (hydrology, soils, vegetation, materials, site selection), by the profession. Still, the inclusion of human health and well-being in the SITES benchmarks represents an important milestone. As the SITES program grows, this study could contribute to helping designers better understand this benchmark and offer practical suggestions for incorporating human health and well-being in their designs.

A more comprehensive understanding of the designers' perceptions of environmental design research on urban public space could also contribute to ongoing strategies and efforts to make this research more accessible and compelling for designers. As mentioned, however, the study findings regarding current translations of EDR indicate the need for a significant shift in thinking about the application of research in practice if it is to have the greatest impact on design. Translating the research may not be the most effective approach to share it with practitioners.

Finally, the study has implications for undergraduate and graduate landscape architecture degree programs, relative to the inclusion of environmental design research in the curriculum. This question has been previously raised; a review of the requirements for the study of environmental design research in accredited architecture and landscape architecture programs is included in Chapter 2. This study supports the recommendations of other studies that accreditation standards should be revised to include environmental design research. The larger question of how this can be done most effectively for students, in light of key findings of the study, is explored.

Project goals

The goals for the project are to:

- Gain a better understanding of the ways in which and extent to which environmental design research is used in current landscape architecture practice;

- Gain a better understanding of current perceptions of behavior-based design guidelines, including perceptions of the benefits and limitations of their use; and

- Based on this understanding, provide recommendations that would result in greater knowledge and application of the findings, or *principles* of good social design, established by environmental design research.

These goals reflect the change in focus of the study from understanding how translations of EDR are used in practice, to understanding how designers have learned and internalized the guiding principles for good social space that the field of environmental design research has generated.

Research questions and hypotheses

The research questions are linked to project goals:

- In what ways and to what extent does environmental design research influence the design of urban open space?

- Are there perceptions about environmental design research or behavior-based design guidelines that positively or negatively impact their integration in current practice?

- In what ways and to what extent can designers and students enhance their level of understanding of the guiding principles for successful social space based on environmental design research?

The original hypothesis of the study was that there would be a wide variation among practicing designers regarding their use of design guidelines. As mentioned, however, early results indicated that behavior-based design guidelines are not used in practice by any of the participants; there was in fact no variation at all. A second hypothesis was that contemporary designers might perceive design guidelines (many of which were published decades ago by early researchers in the field) as outdated and therefore irrelevant in current practice. Study findings indicate that this is not the reason

design guidelines are not used in practice; alternate reasons offered by participants are discussed in Chapter 4. Based on the findings, recommendations are made for how to enhance practitioners' and students' understanding of the field of environmental design research, now and in the future.

Scope of research and organization of study

The scope of the study is limited to an analysis of interviews with twelve practicing designers. The interviews were in-depth, allowing the discussion to evolve based on early results, and resulting in a rich exploration of the topic. This evolution could not have occurred with a different methodology, such as a survey or questionnaire. The findings and conclusions presented here should be considered a starting point for further investigation of specific issues through continued conversation with study participants, as well as through different methods to reach more designers. Despite the limited sample size, the findings do yield recommendations that can be implemented immediately, even as further study is pursued.

The organization of the study is as follows: the literature review presented in Chapter 2 covers a brief history of environmental design research, focusing on efforts by those in the field to translate their findings for use by design practitioners. One of the most comprehensive collections of behavior-based design guidelines for urban open space is discussed. The chapter concludes with a survey of current resources for EDR. The methodology of the study is described in Chapter 3, including the selection of participants, the interview process, and an overview of the methods used in the analysis. In Chapter 4, the study findings are reported as themes that emerged from the analysis of the interviews. The themes represent a catalogue of the underlying messages of the data,

as interpreted by the author. Direct quotes from participants illuminating these themes are integrated throughout the chapter, which concludes with a synthesis and discussion of the themes. Recommendations based on the findings are presented in Chapter 5. The recommendations are divided into those that apply to design education and those that apply to professional practice, although there is significant – and intentional – overlap between the two. Suggestions for further research are included in this chapter. Finally, overall conclusions of the study are presented in Chapter 6.

CHAPTER 2

ENVIRONMENTAL DESIGN RESEARCH AND PROFESSIONAL PRACTICE:

HISTORICAL CONTEXT AND CURRENT TRENDS

<u>Definitions</u>

Environmental design research

A universally agreed-upon definition of environmental design research (EDR) is difficult, if not impossible, to find. According to the Environmental Design Research Association (EDRA) website, the field is concerned with the "social aspects of the environment" and involves "improving understanding of the interrelationships between people, their built and natural surroundings, and helping to create environments responsive to human needs" (Environmental Design Research Association 2012). Other more concise definitions include the "study of how spaces and places affect people, and vice versa" (Anthony 2004, 84) and "the interrelationship between environments, society, culture, and human behavior" (Demsky and Mack 2008, 271). Richard Wener, a recognized expert and professor of environmental psychology at New York University, describes EDR as the "interface between the design fields and the social and behavioral sciences that addresses human aspects of, needs in, and responses to the built and natural environment," and he continues "there is some disagreement about areas of emphasis and even descriptive names for this field, and it may be useful to consider what makes the body of work in EDR different, special, and/or unique" (Wener 2008, 283). He states that there are many fields that argue for "good design" and for designers to be "responsive to human needs," but that EDR is different because it "involves the use of

social and behavioral science findings to consider who the clients and users are, and to systematically discover their needs, habits, behaviors, concerns, and uses of space. It uses these data and theories to support, inform, and transform design decisions" (Wener 2008, 283). The methods of this social research and the extent of the application of its findings in professional practice are explored in this study.

Environment behavior studies and other names

There are additional names for the field, which could contribute to some level of uncertainty among practitioners about what it comprises, as will be presented in the analysis of the data in Chapter 4. Among other names, "environment behavior studies" (EBS) is considered more widely used in current discourse in the field (Demsky and Mack 2008, 273). A similar name "environment-behavior research" has also been argued to be more descriptive of the primary focus of the field (Demsky and Mack 2008, 273). Additional names, "generally depending on the point of view of the constituent speaking at that moment" include "architectural psychology…environmental psychology…design research…and environment behavior design research" (Demsky and Mack 2008, 273). For purposes of this study, "environmental design research" will be used to describe the field.

Behavior-based design guidelines

It is generally accepted within the field of EDR that for environmental design research to positively impact the built environment, the findings of the research must be shared with or translated for designers in a format that is understandable, practical, and meaningful (Marcus and Francis 1998, Chapin and Marcus 1993, Reizenstein 1975, Kantrowitz 1985, Schmidt 1985 and others). As noted, the creation of design guidelines

based on environmental design research findings is one such effort to present EDR to designers for integration in practice. Design guidelines based on environmental design research will be referred to as "behavior-based design guidelines" in this study. Nearly twenty years ago, two authors of such design guidelines, Clare Cooper Marcus and David Chapin (1993) noted the increasing variety of architectural and landscape environments for which guidelines have been published, including housing, hospitals and healing environments, children's museums, battered women's shelters, and many more (100). This study is focused on design guidelines for urban open space, and a full discussion of one collection of these guidelines, *People Places: Design Guidelines for Urban Open Space* (Marcus and Francis 1998), is included later in this chapter. Further research is suggested regarding the translation and application of environmental design research on specific environments for specific users (children, the elderly, etc.)

Aesthetic design guidelines

Aesthetic design guidelines are different from the behavior-based design guidelines explored in this study. Many American cities have adopted design guidelines to "communicate the concept of community character and compatibility" (Habe 1989, 195). These guidelines often outline standards for building facades, setbacks, street furnishings, and other features that impact the aesthetic character of the urban environment. The ability for cities to extend aesthetic control was established in 1954, before the growth of emergent field of environmental design research, when the Supreme Court ruled that the government could "determine that the community should be beautiful as well as healthy" (Delafons 2000, 164). In the introduction to her book *Design Review: Challenging Urban Aesthetic Control*, Brenda Scheer points out that more than 85% of

cities and towns have some type of [design] review (Scheer 1994). This review process varies greatly among cities, and an increasing number have amended their guidelines to create environments that are more friendly to the pedestrian, a goal that also drives many behavior-based design guidelines. David Gosling (1990) notes this dual purpose of guidelines that "seek to provide unity and visual coherence…(and) above all…a safe and attractive environment for the pedestrian" (v). Despite this shared goal, much of the content of these aesthetic guidelines has a different focus from that found in behavior-based guidelines. Attention is drawn to these municipal guidelines because of their ubiquitous nature, and to distinguish them from the design guidelines based specifically on environmental design research.

Brief history of environmental design research

There is no comprehensive history of the field of environmental design research that "illuminates the people, dates, studies, and landmark organizational events in their historical and intellectual context and connects them to social forces, events, and trends in design and the social and behavioral sciences" (Wener 2008, 283). Still, Wener cites numerous examples of this "new approach or paradigm" about the intersection of the built environment and behavioral science dating from the late 1950s and early 1960s (Wener 2008, 284).

Clare Cooper Marcus, a prolific author and influential environmental design researcher, notes that some of the most widely-known and widely-read authors from this period, including Jane Jacobs and Kevin Lynch, provided inspiration for early researchers in the field (Marcus 2009, 19). Jacobs published *The Death and Life of Great American Cities* in 1961, an indictment of urban planning that ignored the economic benefits of

urban environments that met the social needs of individuals and communities. At the same time, Kevin Lynch's *The Image of the City* (1960) provided an early model for methods used in environmental design research. Lynch's observations and interviews with individuals about their perceptions of their physical environment led to the concept he calls "imageability," and his vocabulary of paths, edges, nodes, landmarks, and districts is still regularly used in design and planning curriculum today.

The first conference of the Environmental Design Research Association (EDRA) in 1969 marks an early milestone that gave a name to this new field. As recalled by Marcus, the field began with the coalescence of designers and social scientists who "were intent on exploring how design and form influence people's use of – and satisfaction with – the physical environment" (Marcus 2009, 19). Another early researcher and practitioner, C.M. Deasy, offered a practical rationale for the burgeoning field; in *Design for Human Affairs*, he states "the problems of our towns and cities are enormously complicated human problems" (Deasy 1974, 166).

William H. Whyte: Pioneer

One of the most important and perhaps widely-recognized early environmental design researchers was William "Holly" Whyte, who published *The Social Life of Small Urban Spaces* in 1980 after a decade of research he called "The Street Life Project." Along with the book, Whyte produced a film by the same name, now considered a classic in the field. Virtually every participant in this study mentioned seeing Whyte's film, which used time-lapse photography to record people's behavior in urban public space. Notably, many participants also stated that they were familiar with the book but had not read it.

In the introduction to the book, Whyte describes his objective in characteristically straightforward prose, "This book is about city spaces, why some work for people, and some do not, and what the practical lessons may be" (Whyte 1980, 10). His research, begun in 1970, was based on direct observation, a method that "had long been used for the study of people in far-off lands…[but] not to any great extent in the U.S. city" (Whyte 1980, 10). He describes his research methods in detail in the film and the book. Whyte and his team observed nineteen plazas and parks in New York City, as well as a number of plazas in other cities, and made conclusions about design features that seemed to be consistent in well-used spaces. The book includes text and photographs (see sample page spread below) documenting Whyte's observations of people in public space. The film contains video footage of the same, narrated by Whyte.

Figure 1: *The Social Life of Small Urban Spaces* **(Whyte 1980, 20-21), sample page spread**

Whyte's observations led to numerous findings, one of the most important of which is that "what attracts people most, it would appear, is other people" (Whyte 1980, 19). His goal, then, was to discover what initially attracts people to a plaza. Whyte concludes that the relationship of a plaza to the street is "far and away the most critical design factor" (Whyte 1980, 54). The book is not presented as a collection of design guidelines, but much of the information in it could be considered as such; it contains scores of specific suggestions for how to design a well-used plaza based on the findings. Whyte's research informed significant amendments to New York City zoning regulations in 1975 that required developers to make public spaces amenable to users. The amendments included specific guidelines for seating, trees, retail frontage, lighting, circulation, access, accessibility for disabled people, food, maintenance, orientation, and elevation (Whyte 1980, 112). This study suggests that many of Whyte's findings related to these design factors have been absorbed by practitioners and become part of a common knowledge base for urban open space design. See Appendix A for a summary of Whyte's findings.

Many of Whyte's findings have been replicated in studies conducted by other researchers, including Clare Cooper Marcus and Carolyn Francis, who cite Whyte in their 1998 book, *People Places: Design Guidelines for Urban Open Space*. In one area – circulation patterns – Whyte's findings were different. He found that people tend to stop in the middle of primary circulation paths to talk with one another; Marcus and Francis found that people stop to talk on the edges of spaces (Marcus and Francis 1998, 38). They do not dwell on the discrepancies, however, and in many cases refer to Whyte's findings in their guidelines, "features that were most liked in the plazas closely reflected

Whyte's prescriptions: food, water features or fountains, outdoor sitting, landscaping, and sunny environments figured prominently" (Marcus and Francis 1998, 30).

The systematic study of human behavior as practiced by Whyte and others is one of the fundamental research methods used in social research. Other methods include the observation of physical traces in an environment, interviews with users, and questionnaires or surveys. Whyte and his team conducted some informal interviews in their research, but "mostly, we watched people to see what they did" (Whyte 1980, 16). This study indicates that Whyte's methods are well-respected by practitioners and that they practice direct observation regularly, although they do not use the same rigorous methods employed by Whyte. Indeed, social researchers agree it is not necessary to be an expert to observe behavior; watching people is a basic information-gathering method, as well as a favorite pastime of many. But researchers also agree that training in basic observation and evaluation techniques allows for more accurate, sensitive, and critical analysis of the implications of what one is seeing (Zeisel 2006, 191; Marcus and Francis 1998, 356, Babbie 1995, 6).

Translation

As mentioned, one of the central themes of the literature is the assertion by researchers that "if environmental design research is to be useful, it must be translated in some way into the language of the design process" (Chapin and Marcus 1993, 99). The most effective methods for the translation of EDR have long been studied, and as noted, the proliferation of behavior-based design guidelines for a variety of built environments indicate the important role of design guidelines in this effort. Numerous early studies contributed to the conclusion that design guidelines could be an effective method for

sharing environmental design research with practitioners. In a large and comprehensive

survey of architects in 1975, Janet Reizenstein, professor of architecture at the Harvard

Graduate School of Design, asked how they perceived environmental design research,

through what channels they were exposed to it, and to what extent they used it in their

practice. Reizenstein's study concluded that "a large discrepancy exists between

cognizance of the field [environmental design research] and acknowledgement of its

importance on the one hand, and application of its findings and theories to design on the

other" (Reizenstein 1975, 32). The conclusions of the current study are different,

possibly due to the four decades that have passed from the original attention garnered by

this new field of research, and what appears to be the assimilation of many of its findings

into an accepted knowledge base about the social aspects of urban open space design.

Other early studies shared Reizenstein's conclusion relative to the "application

gap" (Schmidt 1985, 335). In a paper from the 1985 EDRA conference proceedings,

Schmidt stated that

> unfortunately, relatively little of the information from the field of environment-
> behavior research comes into consideration in the design of the built environment.
> Previous studies have indicated that architects are receptive to EBR information.
> However the most preferred mechanism for information transfer has not been
> identified." (Schmidt 1985, 335)

Min Kantrowitz, an author, researcher, and faculty member at the University of Mexico

school of Architecture and Planning, wrote that "environment and behavior research can

only 'make a difference' if it is utilized and accepted…[and] there has been relatively

little progress in integrating E&B research into 'standard' design practice" (Kantrowitz

1985, 30). A different, and earlier perspective was that a new discipline altogether was

needed to bridge the gap between researchers and design professionals: "a middleman

who is acquainted with the design field as well as the social sciences to translate relevant behavioral data into terms meaningful to designers" (Sommer 1969, 166). C.M. Deasy countered this suggestion, "I have no real argument with that prospect… I still hold hope that the planning [and design] professions will undertake this collaboration themselves" (Deasy 1974, 142). More recently, and perhaps more applicable to this study, Richard Wener (208) posits that "this gap may have been the result of overly ambitious and somewhat idealistic notions of what and how much behavioral research could accomplish in the design fields" (286). If those notions include a desire for design guidelines for urban open space to be regularly incorporated into the design process, Wener's assertion is correct.

In sum, the challenge of making environmental design research available and meaningful for practitioners has long been recognized and explored by experts in the field. This study suggests, however, that even the most successful translations of environmental design research may not have the kind of impact on practice that researchers would hope for and expect.

Design guidelines

In 1993, David Chapin and Clare Cooper Marcus, environmental design researchers and authors of numerous volumes of behavior-based design guidelines, co-wrote an article on design guidelines and how they might impact practice. At the time, Chapin was working on his Ph.D. in environmental psychology at the City University of New York; he also had a Masters degree in architecture from the University of California Berkeley and had studied with Christopher Alexander. Marcus was on the faculty at Berkeley. All subsequent quotations in this section refer to this 1993 article.

Chapin and Marcus refer to studies by Reizenstein and Schmidt referenced earlier in this paper that proposed that design guidelines were an effective way of translating research for practitioners (100). They state their concurring opinion that

> of the various possible ways that EDR might inform the design process, guidelines seem the richest and most detailed, least coercive, most dependent on logic and inspiration, and most tailored to the design process" (100).

Their rationale was, in part, that "one of the great strengths of a guideline approach (but not much considered) is that it leads readers and writers both towards a comprehensible way of thinking about environments" (110-111). They also describe some of their concerns, based on their experience as authors of design guidelines. Marcus had included guidelines at the end of a 1976 case study of a housing project, but she "suspected most designers would not even pick up (the study)" (101), and thus would never see the guidelines. Another concern was that she had not illustrated the guidelines, and she knew that designers are often "attracted to images more than words" (101). Marcus attempted to address these concerns in her 1986 book, *Housing as if People Mattered: Site-Design Guidelines for Medium-Density Family Housing*, which was formatted specifically to "appeal to design professionals" (101). She showed the manuscript to numerous designers and incorporated their feedback on the format, illustrations, and language used in the book (102). Marcus continued to pay careful attention to the format of subsequent books of design guidelines, including *People Places: Design Guidelines for Urban Open Space,* first published as a monograph in 1976 and most recently updated in 1998.

Regarding the application of design guidelines in practice, Marcus explains that she refers to guidelines on specific environments when she has been hired as a consultant

(104). She also states that design faculty have told her that students sometimes find guidelines useful but that more often, students are not encouraged to use this research, and that "when influential academic mentors discourage the use of research, it may take some time, if ever, for a practicing professional to reconsider and to see research as a useful component in decision-making" (105).

Marcus identifies the need for guidelines to be continually updated in order to remain relevant, "new issues arise, new concerns become important…no set of guidelines, however well conceived at the time, will necessarily be as relevant one or two decades into the future" (105). At the conclusion of the article, four questions are raised for further research regarding design guidelines (114):

i. What are the pros and cons of guidelines as translators of EDR?

ii. How do guidelines affect processes of design?

iii. How do guidelines affect the environments produced?

iv. How are design professionals affected by guidelines?

The authors also state that research is needed on "who uses guidelines; how they use them; what kinds of settings have resulted from adopting guidelines; are they more acceptable, comfortable, etc. for their uses than other, 'non-guided' environments?" (114). Again, the above questions are similar to those explored in this study, but as noted in the introduction, the findings suggest that study participants do not regularly use design guidelines, thus raising the question of how to share the findings of EDR with contemporary practitioners, if not through this method of translation.

Finally, Chapin and Marcus express their belief that the act of writing design guidelines is an act of encoding values, inherently subjective and dependent on the values

of the authors. This subjectivity results in guidelines that do more than merely transmit

research results and thus demand an "honest statement" from the authors about their

perspective (118). Still, they believe that "guidelines are perhaps the most coherent

means to make designers, clients and potential users aware of the idea of asking rational

questions about environments" (118). The suggestion that guidelines can serve as a

framework for inquiry is of primary importance in this study and will be examined in the

recommendations of this paper. Chapin and Marcus conclude with a call for more

research on how guidelines are used in practice, research that might "point towards

especially clear directions for the entire field of environmental design research" (119).

Again, these are the questions that this study explores.

People Places: Design Guidelines for Urban Open Space

People Places: Design Guidelines for Urban Open Space (Marcus and Francis

1998) is an extensive volume of design guidelines based on the findings of research

conducted by professionals, as well as by Marcus's graduate students in landscape

architecture at the University of California at Berkeley. The book summarizes many

sources of environmental design research and offers practical design guidelines for its

application. It is a book with an explicit goal to translate research findings into the

language of design. In the preface of *People Places*, Marcus and Francis quote C. M.

Deasy, 'the purpose of planning or design is not to create a physical artifact, but a setting

for human behavior' and they continue:

> We realize that to use human behavior or social activities to inform
> and shape the designed environment is not the approach of some
> designers or the approach of most studio teachers. But we feel
> strongly that this must be the approach. An approach based almost
> exclusively on visual form leads either to the reproduction of
> previously used "solutions" or to the proliferation of artistic

21

statements that pertain more to current design fashion than to the
needs of the public. We believe that aesthetic goals must be balanced
and merged with ecological needs, contextual issues, and user
preferences. (Marcus and Francis 1998, viii)

They outline their assumptions in the introduction, assumptions which are shared

by the author of this study:

People Places assumes that public life is thriving in the contemporary
industrialized city; that an important measure of the success of public open space
is its use; that the use and popularity of a space depend greatly on its location and
the details of its design; and last, that we must communicate what is currently
known about the linkages between design, location, and use. (Marcus and Francis
1998, 8)

One of the concerns expressed by Marcus and Francis is the cultural bias toward

white male users found in most of the research they reviewed, and they call for more

research related to ethnic, cultural, and gender differences in user preferences. Since the

publication of *People Places*, numerous researchers (Andersson 2011, Gehl 2010, 2006,

2001, Low 2005, 2002, Rofe 2007, and others) have addressed issues of culture,

ethnicity, and gender regarding social needs and preferences in the built environment.

This study also recognizes this bias in the environmental design research discussed with

participants and recommends further study of practitioners' knowledge and use of more

current research on how diverse populations interact differently with public space.

This bias notwithstanding, the research translated as design guidelines in *People*

Places is the most comprehensive collection of research on urban environments that has

been amassed to date. The book begins with a typology of urban open space, offering

guidelines and case studies for each of six types: urban plazas, neighborhood parks,

campus outdoor spaces, outdoor spaces for the elderly, child care outdoor spaces, and

hospital outdoor spaces. Much of contemporary environmental design research focus on

specific environments for specific populations such as the elderly and children. In

conversations with the author at the 2012 EDRA conference, however, Sue Weidemann,

Ph.D. and Richard Wener, Ph.D. indicated that the section on urban plazas in *People*

Places (as well as William Whyte's findings) is still generally considered relevant

research on urban open space. This section of the book is based on a body of research

published by professional researchers including Marcus, William Whyte, Kevin Lynch,

Camillo Sitte, and Jan Gehl, as well as case studies conducted by Marcus's graduate

students. Design guidelines are presented for twenty elements of urban plazas: location,

size, visual complexity, uses and activities, potential service area, microclimate,

boundaries and transitions, subspaces, circulation, seating, planting, level changes, public

art, fountains, paving, food, programming, vending, information and signs, maintenance

and amenities. See Appendix B for a summary of the guidelines. Case studies that

highlight successful and unsuccessful elements of urban spaces are presented after the

guidelines.

  The format of *People Places* is similar to Marcus's earlier books of design

guidelines, although illustrations in early editions have been replaced with photographs,

based on feedback from designers about the inherent bias in illustrations. The following

sample page spread shows how images and diagrams are incorporated in the book,

although text is still the dominant element in the layout, as shown in figure 2 below. The

images are printed in black and white, with the exception of a section of color

photographs in the center of the book. The presentation of these design guidelines and

other sources for environmental design research, and the responses it generates among

practitioners, is examined critically in this study.

Figure 2: *People Places: Design Guidelines for Urban Open Space* (Marcus and Francis 1998, 42-43), sample page spread

Additional methods to communicate research to practitioners

Design guidelines are not the only method for sharing the findings of environmental design research with those in the design professions. As the field of EDR has matured, longstanding efforts have evolved, new avenues have developed, and books on the subject continue to be published regularly. Still, within the past decade, leaders in the field have voiced opinions that the research is not making the impact on the design fields that it could or should:

> Ever since its inception, this multi-disciplinary area of study has provided an abundance of relevant research for architectural students, educators, and practitioners. I have previously argued that this field has great potential for enriching both architectural education and practice. Nonetheless, today that potential is unrealized." (Anthony 2004, 84)

At the EDRA conference in 2009, Marcus noted that despite all of these efforts, there is still a "staggering lack of knowledge of these resources in the design professionals" and that "…the primary mode for translating research has been through the conventional approach of the haphazard application of salient research findings that support the practitioner's prevalent design philosophy," a mode which she states is outdated and ineffective and which must be changed (Marcus 2009, 21).

Following is a brief description of some of the current avenues for disseminating environmental design research. An evaluation of these methods is beyond the scope of this study, but interviewees had the opportunity to discuss their perceptions of the methods during the interviews.

Project for Public Spaces

Project for Public Spaces (PPS) was founded in 1975 and is based on the work of William ("Holly") Whyte. As indicated on the PPS website, the organization is

> a nonprofit planning, design and educational organization dedicated to helping people create and sustain public spaces that build stronger communities. Our pioneering 'placemaking' approach helps citizens transform their public spaces into vital places that highlight local assets, spur rejuvenation and serve common needs. (Project for Public Spaces 2012)

The organization offers many resources for its clients (public entities, private developers, citizen's groups, non-profit organizations, planning and design firms) including workshops, planning, and training. Their approach to 'placemaking' is outlined in Appendix C. In addition to the many resources available on its website, PPS posts a database of 650 public spaces – streets, markets, neighborhoods, buildings, parks and squares – with descriptions, images, and analysis by PPS staff and/or community members. The PPS 'Hall of Shame' is part of this database and includes more than 60

public spaces designated as unresponsive to the social needs of the public. The criteria

for evaluation is not specified on the website, and the Hall of Shame has spurred

controversy and contributed to the perception among some designers that PPS is "anti-

design," as noted by several study participants.

Research Design Connections

Research Design Connections (RDC) is an electronic newsletter available by paid

subscription, described on its website as a source that "distills the essence of high-quality

recent (environmental design) research and translates it from 'science-ease' into everyday

language" (Augustin 2012). The editor of RDC is Sally Augustin, Ph.D., a practicing

environmental psychologist, and the editorial board is made up of 14 leaders in the field

of environmental design research, including researchers, designers, and academics. In

addition to the newsletter, RDC offers consulting services for the design profession to

"apply environmental psychology…to develop powerful design options" (Augustin

2012).

Professional associations

The Environmental Design Research Association (EDRA) is the largest

professional organization of its kind. Per the EDRA website, the organization is an

> international, interdisciplinary organization founded in 1968 by design
> professionals, social scientists, students, educators, and facility managers….(Its)
> purpose is the advancement and dissemination of environmental design research,
> thereby improving understanding of the interrelationships between people, their
> built and natural surroundings, and helping to create environments responsive to
> human needs. (Environmental Design Research Association 2012)

EDRA's ongoing activities are of primary importance in the field. They include online

resources that offer current and archived published material for members, networking

groups for specialized areas in the field, numerous events and programs including the

annual conference, and a variety of awards including the Great Places Award, conferred annually on projects that exemplify the link between research and practice.

The International Association for People-Environment Studies (IAPS) is a similar organization, formed in 1981, with similar outreach activities: online and print resources, network groups, and regular conferences and symposia. There are at least two other international organizations with which IAPS and EDRA maintain relationships: Man-Environment Research Association (MERA) in Japan, and People and Physical Environment Research Association (PAPER) in Australia.

Professional journals

A number of peer-reviewed journals publish environmental design research, among other kinds of research in the design and planning fields. The research in these journals, however, is not widely read by practitioners. Key journals include:

- *Architectural Research Quarterly*

- *Environment and Behavior*

- *Journal of Architectural and Planning Research*

- *Journal of Environmental Psychology*

- *Journal of Landscape Architecture*

- *Journal of Planning Literature*

- *Landscape Journal*

- *Places*

Trade publications

Landscape Architecture Magazine, the publication of the American Society of Landscape Architects, collaborates with Research Design Connections to provide

quarterly columns in the magazine that highlight current environmental design research. The magazine also covers winners of the ASLA annual research awards, some of which are related to environmental design research.

Books

A collection of books selected by the Environmental Design Research Association is housed in the Architecture Research Center (ARC) at the James White Library at Andrews University, many of which can be circulated. The ARC has also recently established a store for EDRA books on Amazon.com. New books are published regularly that add to the body of literature about how to design with people in mind. Three recent titles focused on urban space are summarized below.

- *Cities for People* (2010) by Jan Gehl. Gehl is an internationally recognized architect, researcher, and long-time proponent of design at the human scale. In the preface to his newest book, Gehl notes that encouraging trends in city planning have resulted from knowledge gained through decades of environmental design research.

> On the whole city planning over the past 50 years has been problematic…Now, after many years, a great deal of knowledge has been amassed on the connection between physical form and human behavior. We have extensive information about what can and should be done…Cities and residents have become very active in crying out for people-oriented city planning…It is now generally accepted that city life and regard for people in city space must have a key role in the planning of cities and built-up areas…Caring for people in the city is an important key for achieving more lively, safe, sustainable and healthy cities, all goals of crucial importance in the 21st century. *It is my hope that this book can make a modest contribution to this important new orientation.* (Gehl 2010, x-xi)

The book contains practical suggestions and hundreds of photographs from cities worldwide (Paris, Oslo, Beijing, Melbourne, New York, Amman, Sendaii [Japan], Curitiba [Brazil], etc.) illustrating various elements of a people-oriented urban

environment: people sitting on steps and benches, cobblestones as dividers, street furniture, public art, programming, marketplaces, microclimates, etc. The sample page layout below demonstrates the dominant role of the color photographs in the format of *Cities for People*.

Figure 3: *Cities for People* (Gehl 2010, 144-145), sample page spread

In addition to photographs, there are numerous diagrams using a consistent design language to illustrate the themes of the book. One example (see figure 4 below) depicts a 'toolbox of quality criteria' organized within three categories: protection, comfort, and delight.

Protection	PROTECTION AGAINST TRAFFIC AND ACCIDENTS — FEELING SAFE · Protection for pedestrians · Eliminating fear of traffic	PROTECTION AGAINST CRIME AND VIOLENCE — FEELING SECURE · Lively public realm · Eyes on the street · Overlapping functions day and night · Good lighting	PROTECTION AGAINST UNPLEASANT SENSORY EXPERIENCES · Wind · Rain/snow · Cold/heat · Pollution · Dust, noise, glare
Comfort	OPPORTUNITIES TO WALK · Room for walking · No obstacles · Good surfaces · Accessibility for everyone · Interesting façades	OPPORTUNITIES TO STAND/STAY · Edge effect/ attractive zones for standing/staying · Supports for standing	OPPORTUNITIES TO SIT · Zones for sitting · Utilizing advantages: view, sun, people · Good places to sit · Benches for resting
	OPPORTUNITIES TO SEE · Reasonable viewing distances · Unhindered sightlines · Interesting views · Lighting (when dark)	OPPORTUNITIES TO TALK AND LISTEN · Low noise levels · Street furniture that provides "talkscapes"	OPPORTUNITES FOR PLAY AND EXERCISE · Invitations for creativity, physical activity, exercise and play · By day and night · In summer and winter
Delight	SCALE · Buildings and spaces designed to human scale	OPPORTUNITIES TO ENJOY THE POSITIVE ASPECTS OF CLIMATE · Sun/shade · Heat/coolness · Breeze	POSITIVE SENSORY EXPERIENCES · Good design and detailing · Good materials · Fine views · Trees, plants, water

Source: Gehl, Gemzoe, Kirknaes, Sondergaard, "New City Life," The Danish Architectural Press, 2006. Further developed by Gehl Architects-Urban Quality Consultants, 2009.

Figure 4: Protection, Comfort, and Delight: 12 quality criteria for the city at eye level (Gehl 2010, 239)

The presentation of Gehl's research is important to note. While there is still a significant amount of explanatory text, the book is graphically-oriented. Much of the same content has been explored in Whyte's book and film, *Social Life of Small Urban*

Spaces (1980) and Marcus's and Francis's book of design guidelines, *People Places:*

Design Guidelines for Urban Open Space (1998), as well as in previous books by Gehl,

including *Life Between Buildings* (first published in 1971 and currently in its 6th English

language edition), and *New City Spaces* (coauthored with Lars Gemzøe in 2000.) The

study participants' responses to differences in format among these volumes is explored in

Chapter 4.

– *Environmental Design Research: the body, the city, the buildings in between* (Cranz

   and Pavlides 2011). This recently-published reader for architecture students is a

   compilation of 42 articles originally published from 1969 – 2010. The authors' goal

   is to provide numerous social perspectives and encourage students to consider these

   issues. The book has the following objectives: i) provide an interdisciplinary

   introduction to the field of human-environment studies, ii) include multi-cultural

   perspectives, iii) engage students in using and conducting environment behavior

   research, iv) think critically about values embedded in design and their consequences

   for people (Cranz and Pavlides 2011, back cover).

– *Urban Open Space: Designing for User Needs. Case Study in Land and Community*

   Design (Francis 2003). This volume, published by the Landscape Architecture

   Foundation, presents a synthesis of environment behavior research and a full case

   study on Bryant Park illustrating successful people-oriented design. In the

   introduction, the author states:

>   While considerable research has been done on needs and conflicts in open space,
>   no single document integrates all of this knowledge and makes it available to
>   professionals, students, and researchers. The purpose of this issue-based study is
>   to review and synthesize this knowledge into an accessible and useful document.
>   (Francis 2003, xi)

The book is a comprehensive, albeit relatively short, volume containing definitions, lists of resources, a methodology for case studies, and the full Bryant Park case study. It offers a different system for considering the needs of people in public space, using the following six categories: comfort, relaxation, passive engagement, active engagement, discovery, and fun (Francis 2003, 20). Again, while different from the organization systems used by Marcus, Whyte, or Gehl, much of the content overlaps and addresses similar design issues relative to human behavior. Whether it has succeeded in its goal to make the knowledge accessible and useful to students, designers, and researchers is difficult to determine.

Post-occupancy evaluation

Post-occupancy evaluation (POE), the "systematic evaluation of a designed space from the user's point of view" (Marcus and Francis 1998, 348) is the natural corollary of environmental design research. As noted by Harold Proshansky, an early researcher in the field, "the design professions can only begin to consider the implicit assumptions they make about people as reflected in the spaces and places they create or design for them if it is realized that an inherent part of their task is to evaluate their design efforts" (Proshansky 1974, 79).

In *People Places*, Marcus and Francis devote the last chapter to specific instructions on how to conduct a POE, a process for evaluation that "underlies virtually all of the research drawn upon in this book" (Marcus and Francis 1998, ix). The authors describe and illustrate two different levels of post-occupancy evaluation:

- Informed journalistic critique – The basic process for evaluation, appropriate for beginning design students, using activity and participant observation.

- Post-occupancy evaluation – The more rigorous method for evaluating spaces that is appropriate for advanced students, practitioners, and researchers.

The following discussion of the specific elements involved in each of these levels is based on this chapter in *People Places* (Marcus and Francis 1998, 345-356).

In an informed journalistic critique, the research method employed is direct observation – the fundamental research method required to begin to understand the relationship between people and their environment. The goal for students is "to encourage keen observation and thoughtful consideration of what is observed" (346). This is the same primary goal that will be addressed in the recommendations of this paper, in light of the study findings regarding practitioners' reliance on intuition and their own direct observations of people in public space. Table 1 on the following page contains a summary of the description of an informed journalistic critique.

The more advanced research methods of a full post-occupancy evaluation are carefully explained in the next section of the chapter in *People Places*. The methods include activity and participant observation, as well as advanced methods that require more training: messages from administration, behavior traces, activity mapping, interviews, data summary, use analysis, problem definition and redesign proposals/suggestions (349-354). Illustrations of sample site plans, data tables, bubble diagrams, photographs, and redesign proposals are included with the descriptions of the research methods. This is a rigorous evaluation process, but the authors state that it is still appropriate for design students and practitioners to learn how to conduct this type of evaluation (356). Two books are cited for more information on the data-gathering methods described: John Zeisel's *Inquiry by Design* (1981, since revised in 2006) and

Robert Bechtel, Robert Marans, and William Michelson (eds.), *Methods in*

Environmental and Behavioral Research (1987).

Table 1: Informed journalistic critique, an exercise for students
(Marcus and Francis 1998, 346-347)

Evaluative method	▪ Activity observation ▪ Participant observation
Procedure	▪ Visit study site at least twice for one hour (minimum) ▪ Visit during expected peak-use times ▪ Observe carefully: who is doing what, where, and with whom? ▪ Take field notes on observations ▪ Become 'participant observers' on one visit, engaging in a primary activity of the space. Do not assume others will share your reactions
Recommended changes	▪ Prepare a short list of suggested changes that could lead to more successful 'people places' ▪ Suggest changes that are structurally possible, but not limited by anticipated costs

Evaluative Report	▪ Write a descriptive essay that describes the evaluation and contains the following:
	
	  – location and name of the place
	  – sketch of site plan
	  – description of place and surroundings
	  – description of activity and participant observations
	  – overall assessment of how the place works for people (the major critical component of the essay)
	  – description and sketch of recommended changes
	  – illustrations and photographs integrated within the text

The chapter in *People Places* is a blueprint for how to make careful, sensitive, accurate, and informed observations that can and should directly impact design decisions. The authors describe four settings in which they believe POEs could be useful (345):

1. Educational setting where students can learn a method of research and gain a "much deeper understanding of how people and places interact"

2. Professional setting where the task is to redesign a space

3. Professional setting where the task is to design a new space

4. Staff development in a professional setting during down-time between projects

They also posit three reasons why more POEs are not conducted in professional practice (345):

1. Financial and time constraints

2. Some designers and clients could find the process, "which may reveal mistakes or oversights," threatening

3. Lack of familiarity with social research methods

One final reason suggested for the lack of regular evaluation of public space is that the professional magazines of the design community (including *Landscape Architecture Magazine*)

> do not encourage critical articles, believing their readers only want to see neutral, descriptive, highly illustrated accounts of new projects. This is unfortunate and places design at odds with other creative endeavors (movies, plays, fiction, art) where both journalistic and specialized magazine critiques are routine. (Marcus and Francis 1998, 356)

There is, however, at least one example of a comprehensive post-occupancy evaluation published in *Landscape Architecture Magazine (LAM)* that sparked a discussion among practitioners and researchers. Teardrop Park, located in Manhattan's

Battery Park City and designed by Michael Van Valkenburgh Associates, has won numerous design awards but was also placed in the 'Hall of Shame,' the collection of landscapes that are unresponsive to the needs of the public, according to the Project for Public Spaces. After the project was placed in the Hall of Shame, Robin Moore, a recognized expert in children's play environments, professor of landscape architecture and director of the *National Learning Initiative*, College of Design, North Carolina State University, and principal at MIG design firm, performed a post-occupancy evaluation that was published in *LAM*. Moore and his team conducted more than nine person-hours of evaluative research including user observations, behavior mapping, and informal interviews. They collected over 1,380 data points on an average number of 115 users per round of mapping (Moore 2007, 136-137) and their results suggest that the park is well-used and well-loved. Moore states that based on the POE, Teardrop Park "deserves to be praised as a successful public space rather than placed in a category of shame" and requests that PPS make a greater effort to "gather evidence that supports their arguments" (Moore 2007, 135) in the future. These divergent opinions point to difficulties that arise when different criteria are used to evaluate the social success of the designed landscape.

This case is particularly interesting because Moore (as a researcher and practitioner) and Project for Public Spaces are both widely-known for their commitment to the design of public space that supports human development and interaction. Yet even among these presumably sympathetic parties, there is disagreement.

 Bill Thompson, former editor of *Landscape Architecture Magazine*, remarked that PPS has "ruffled the feathers of many landscape architects" (Thompson 2007, 11) in its critiques of urban landscapes. In the above example, the "ruffled feathers" were those

of a designer who is also an expert in environmental design research. Thompson's message is clear, however – that POEs are an invaluable tool to understand how landscapes function for those who use them. He argues that critiques by PPS (and others) are valuable in the field because of the conversations they can generate, yet he asks "what would it take for landscape architects to initiate POEs just because they want to know whether people love the places they create?" (Thompson 2007, 11).

In response to Thompson's question, a number of professionals and students wrote letters to the editor of the magazine. One recurring suggestion was to incorporate POEs in the ASLA awards process by requiring designers to include a POE of their project with their submission. Other suggestions included: teach students how to conduct POEs of recently designed landscapes, thereby reducing costs for the professional; encourage public and private clients to require POEs in their requests for proposals; and regularly publish POEs in *Landscape Architecture Magazine* (Drum 2008, 19). These suggestions are extremely relevant to this study. As will be discussed in Chapter 4, the findings of the study could be considered a rationale based on professional practice for the critical importance for students and practitioners to understand basic methods for evaluating public space based on direct observation. The informed journalistic critique outlined in *People Places* should be a baseline by which urban open space is routinely evaluated by design students and practicing designers.

University design curricula

In a recent EDRA address, Marcus reflected on her attempts in the early to mid-1970s to incorporate environmental design research into the curriculum at the University of California Berkeley, where she was a faculty member in the Landscape Architecture

Department. She suggested a course on environment and behavior to her department head, who stated, "maybe one day we can afford such a luxury;" Marcus recalled her reply, "I trust one day it will be seen as a necessity, not a luxury" (Marcus 2009, 19). An examination of the current curricula in architecture and landscape architecture university programs shows that this day has not arrived.

Kathryn Anthony, a practicing architect and former chair of the Design Program Faculty at the School of Architecture, University of Illinois at Urbana-Champaign, examined the role of environmental design research in national standards for architectural education in a 2004 study. Anthony states "most American architectural students graduate with virtually no exposure to this field," and she continues "the absence of environment-behavior [research] in required architectural curricula lies in the accreditation process that determines standards to which all American architectural schools must adhere" (Anthony 2004, 84). At the time, the National Architectural Accrediting Board (NAAB) evaluated schools of architecture on the basis of 37 criteria for which students must meet one of three levels: awareness, understanding, and ability, with awareness being the lowest and ability being the highest level. She explains that the criterion related to human behavior is described as 'awareness of the theories and methods of inquiry that seek to clarify the relationships between human behavior and the physical environment' (Anthony 2004, 84). Anthony contends that faculty can therefore give "lip service" to the field, and that students, lacking any accountability to "real clients or users" can be led to believe that they are "irrelevant at best, and at worst, obstructions who interfere with the creation of good design" (84). In 2009 the NAAB changed the accreditation standards to include only two levels of accomplishment: understanding and

ability, with ability being the higher level of required competency. A level of "understanding" is now required for "the role of applied research in determining function, form, and systems and their impact on human conditions and behavior" (NAAB 2009). It is unclear how the level of student achievement is measured.

In the field of landscape architecture, the Landscape Architectural Accreditation Board (LAAB) identifies eleven specific areas in the 'professional curriculum' for undergraduate and graduate education programs. Specific or measurable levels of student achievement are not described, other than that "student work and other accomplishments demonstrate that the curriculum is providing students with the appropriate content to enter the profession" (LAAB 2010). The eleven identified areas of study are as follows:

1. History, theory and criticism
2. Natural and cultural systems including principles of sustainability
3. Public policy and regulation
4. Design, planning and management at various scales and applications including but not limited to pedestrian and vehicular circulation, grading drainage and storm water management
5. Site design and implementation: materials, methods, technologies, and application
6. Construction documentation and administration
7. Written, verbal and visual communication
8. Professional practice
9. Professional values and ethics
10. Plants and ecosystems
11. Computer applications and other advanced technology

The study, application, or even basic level of awareness of environmental design research is not included in the required curriculum. This study recommends a survey of accredited landscape architecture programs to determine whether elective courses in environmental design research are offered to students. Still, as stated by Anthony (2004),

the fact that the subject is not required for accreditation has significant implications in the field, as most students entering the profession have not been exposed to such research.

Anthony offers a number of suggestions for how to incorporate environmental design research into design curricula: require students to complete community service design projects; encourage them to attend and present at EDRA, IAPS and other conferences; and expose students to the leading professional journals in the field (Anthony 2004, 86). She also provides a list of "classic authors whose texts every architecture student should know" (Anthony 2004, 87). There are twelve texts on the list; she has condensed the body of research into a collection that she believes would be manageable for students. Of the twelve books on Anthony's list, eight were published in the 1960s, 70s, and 80s. (Note: Two important books focused on landscape are not included in this list: *With People in Mind* (Kaplan, Kaplan, and Ryan 1998) and *Humanscape: Environments for People* (Kaplan and Kaplan 1982).) The complete list of texts is included as Appendix D.

The findings of this study lead to recommendations for an alternate approach to exposing design students to environmental design research, predicated on what the data show about its use in professional practice.

Landscape Architectural Graphic Standards

This volume, edited by Leonard J. Hopper, FASLA, is found in all professional landscape architecture offices and includes legal requirements for virtually every element of public (and private) space design. It is over 1,000 pages and divided into four parts:

1. Practice of Landscape Architecture (approximately 60 pages)

    –   general, construction documentation, environmental and legal concerns, project administration

2. Standards and Guidelines (approximately 230 pages)

    –   human factors, environmental factors, cultural factors, security considerations, site planning, circulation, accessibility

3. Process, Implementation, and Application (approximately 600 pages)

    –   construction, water supply, storm water, site amenities, hazard control, parks and recreation, restoration and remediation

4. Materials (approximately 150 pages)

The human factors presented in the second section include important elements of environmental design research, broken down into two sections: i) human dimensions and ii) human nature and spatial relationships (Hopper 2007, 67, 76-78). While the discussions are very brief, it is encouraging to note that this information is included in the text at all. No mention is made, however, of the environmental design research that yielded the findings presented in the volume.

Sustainable Site Initiative™

As noted in the introduction, the Sustainable Sites Initiative™ (SITES) is a relatively new effort, modeled after the Leadership in Energy and Environmental Design Green Building Rating System (LEED certification) of the U.S. Green Building Council, to "establish and encourage sustainable practices in landscape design, construction, operations, and maintenance" (Sustainable Sites Initiative 2009, 2). The initiative includes a series of performance benchmarks for which designers, developers, planners,

and others can earn credits for projects they submit for certification. Human health and well-being is one of the categories included in the benchmarks, a sign of the growing acknowledgement of the importance of the 'human side' of sustainability by the profession.

The SITES *Guidelines and Performance Benchmarks* (2009) are modeled on the more established LEED certification program. Of the 250 potential points that can be earned by a project, 32 points (13% of the total) are within the human health and well-being category. Two specific areas within that section are directly related to environmental design research: Credit 6.7: Provide views of vegetation and quiet outdoor spaces for mental restoration, and Credit 6.8: Provide outdoor spaces for social interaction. Specific elements within these credits include: providing a variety of seating within defined spaces, minimizing noise, creating favorable microclimates, providing access to vegetation, providing opportunities for recreation, and providing amenities such as food concessions, picnic/dining areas, and outdoor auditoriums (Sustainable Sites Initiative 2009, 161-167), all of which have been carefully studied by environmental design researchers. Two books: Marcus's *People Places* and Whyte's *Social Life of Small Urban Spaces*, are cited as resources in the guidelines for those who want to better understand the benchmarks and earn the associated credits.

Summary

There are many different monikers for the study of the inextricable link between people and their environment. This study will show that despite some uncertainty among practicing landscape architects about what is meant by the specific term "environmental design research," the field has, in fact, had a positive, albeit indirect, impact on the

designers who participated in this study. Many of these designers entered the field of

landscape architecture when some of the earliest research on urban open space was being

conducted, and their perspective and experience with EDR suggest that the field still has

the potential to greatly enhance professional practice. The realization of this potential is

dependent on how researchers and practitioners interact, how (and what) information is

shared between the professions, and how future designers understand and participate in

environmental design research.

Within the field of EDR, researchers have long grappled with how to translate the

findings of their research on urban open space (and other environments) for use by

practitioners. These findings could be considered guiding principles for how to design

public space that will meet the needs of those who use it, and conversations with the

study participants suggest that they are keenly aware of many of these principles. Some

environmental design researchers have developed and published translations of their

findings in the form of design guidelines; others have published what could be considered

raw data generated by their research in the form of photographs or video footage of

people in public space. The responses of the study participants to these different

approaches for communicating environmental design research will be discussed in the

following chapters.

CHAPTER 3

STUDY METHODOLOGY

<u>Selection of participants</u>

Landscape architects who are regarded as leaders in the field were invited to
participate in the study because their designs for urban open space are the ones that are
publicized, recognized, talked about, written about, and possibly emulated by students
and professionals. Their design philosophies and practices have had a major impact on
the profession, and therefore, on the built environment. The primary trade publication for
the profession, *Landscape Architecture Magazine (LAM),* plays a major role in
determining which designers and which projects are considered exemplary within the
profession. The magazine publishes illustrated features on design projects, as well as
extensive coverage of the projects that win the annual ASLA design awards. For this
study, the last three years (2009 – 2011) of *LAM* were reviewed to identify design firms
that were featured and/or won ASLA awards for their design of an urban open space.
Twenty designers were identified through this process as potential study participants.

Prior to recruiting participants for the study, the project was approved by the
University of Massachusetts Institutional Review Board under an expedited review
process. Once approval was granted, a package was sent to the founding principal at the
firm, or in several cases to the principal who was identified as the lead on the qualifying
project. The package included i) cover letter, ii) project summary and consent form, and
iii) interview process and proposed questions. These documents are included as
Appendices E, F, and G.

Approximately two weeks after these packages were sent, each firm was contacted by phone to inquire whether the designers were willing to participate in the study. Twelve designers agreed to be interviewed for the study. Seven of the designers were the founders or co-founders of their firms, and the other five were experienced principals or partners.

Interview process

The interview process was based on Holstein and Gubrium's 'active interview,' an approach that is "appropriate in those instances when the researcher is interested in the subjective interpretations, or the process of interpretation more generally, even for ostensibly well-defined information" (Holstein and Gubrium 1995, 73). They describe the active interview as flexible, and directly and immediately informed by careful listening to the respondents, as a "conversation, but not without a guiding purpose or plan" (Holstein and Gubrium 1995, 76).

Based on this methodology, the interview questions were revised throughout the month-long process of conducting the interviews. During each conversation, the study participants' responses to the opening questions shaped the remainder of the interview. The questions below were the guiding framework for the interviews:

1. Are you familiar with the field of research on social behavior in public space (often called environmental design research) and if so, do you recall how and when were you first introduced to it?

2. Are you familiar with design guidelines that are based on this research?

3. In what ways does your understanding of this research (and design guidelines, if applicable) impact you when you are designing urban open space?

4. At what point in the design process is this research (and design guidelines, if applicable) part of the discussion in your office?

5. In your firm, do designers have access to the research, and if so, do they refer to it in their design process?

6. Are there methods for sharing or disseminating this research that you believe would be useful in current practice?

7. Do your clients seem to be aware that there is a body of research on social behavior in public space?

8. How are the social aspects of design part of your process when preparing entries for design competitions?

9. Do you consider post occupancy evaluation to be an effective tool for evaluating a space? Is it something that is done in a formal or informal way at your firm?

10. Do you have additional comments about this topic that you would like to make?

Prior to conducting the interviews, consent forms were collected from each participant. Each participant gave permission for the interview to be audio-taped. Four of the interviews were conducted in person, one was on Skype, and seven were phone conversations. The length of the interviews ranged from 30 minutes to 45 minutes. Ten were fully transcribed and two were partially transcribed.

Analysis process

The third edition of *Basics of Qualitative Research* by Juliet Corbin and Anselm Strauss provided the theoretical basis and process for the analysis of the interviews. The overarching goal was to discover and present new ways of thinking about the questions and topic at hand (Corbin and Strauss 2008, 302). The study was not designed to develop theory, but rather to build a rich description of the issue: how environmental design research is used and perceived by leading landscape architects. The analysis process included multiple readings of each transcription, coding and writing memos, generating concepts and categories, and diagramming.

Coding is the term for "extracting concepts from raw data and developing them in terms of their properties and dimensions," and memos are "written records that contain the products of analysis" (Corbin and Strauss 2008, 159). The first memos were written after the initial interview because "being immersed in data analysis during collection provides a sense of direction, promotes greater sensitivity to data, and enables the researcher to redirect and revise interview questions or observations as he or she proceeds" (Corbin and Strauss 2008, 58). Following is an example of one of these early memos.

> Participant: *I think we must all have a chemical reaction to being in a place where there's a lot of people. Being out among people is just chemically good, it feels good. And being in places that are breathtaking, and with people, and they're relatively clean, is intrinsically good. It makes people want to stay.*
>
> Here the participant talks about social behavior in beautiful clean spaces as being physiologically good for us. This seems advanced. It is also what is incorporated in the Sustainable Sites guidelines – human health and well-being. I wonder how many designers even think about this in such specific terms. We all know it's nice to be outside. But there is actual scientific evidence to back this up. Maybe it really would help to have a compendium, a database, an encyclopedia of these findings. Does RDC do this? Is it searchable?

All interviews were fully coded and memos were written as part of the process of uncovering common themes. Through an iterative process, concepts and categories were generated to develop a deep understanding of the data. Concepts are "words that stand for ideas contained in data…they are interpretations, the products of analysis," and categories are "higher-level concepts under which analysts group lower-level concepts according to shared properties. Categories are sometimes referred to as themes [as they will be in this study.] They represent relative phenomena and enable the analyst to reduce and combine data" (Corbin and Strauss 2008, 159). Diagrams were also used throughout the analysis process as a visual tool to conceptualize relationships between

concepts. Diagrams help researchers to "organize data, keep a record of concepts and the relationships between them, integrate ideas, and explain findings to colleagues and others in very systematic and organized ways….Diagrams reduce data to their essence" (Corbin and Strauss 2008, 125). The findings of the analysis are presented in the following chapter.

CHAPTER 4

FINDINGS

Introduction

Shift in research question

There was a fundamental shift in the research questions as a result of the earliest stage of analysis of the interviews, as mentioned in the introduction of this paper. The original goals and research questions for the study were largely focused on how design guidelines based on environmental design research were used and perceived in contemporary practice. The assumption was that a practitioner's use of behavior-based design guidelines would be an indication of the extent to which he or she valued and applied environmental design research in professional practice.

The earliest interviews revealed, and subsequent interviews confirmed, however, that study participants do not use design guidelines based on environmental design research in their design process for urban open space. Most participants were not aware that these kinds of guidelines exist. Many were also unfamiliar with the term "environmental design research," or expressed some degree of uncertainty about what it meant and what it encompassed. They were, however, knowledgeable about many of the principles of good social design that EDR has generated and tested over the last five decades, for example the important role of seating, sun and shade, choice, sight lines, and certain amenities in public space. This perceived distinction between *research* and what could be considered generally-accepted *principles* that have evolved from it is central to the analysis, as well as to the recommendations of this study. Based on this important

and overarching finding, the most relevant research question is not how environmental

design research or behavior-based design guidelines can be better integrated with

practice, but rather how a deeper understanding and awareness of the guiding principles

for successful social space could be fostered among students and professionals.

Context

The participants in this study represent a small sample of high-profile

practitioners of landscape architecture. They were recruited due to their leading role in

the profession, as evidenced by the publicity and recognition their projects have received

by the professional association (ASLA) and its publication, *Landscape Architecture*

*Magazin*e. It is acknowledged that this sample does not necessarily reflect the views or

the knowledge of all landscape architecture practitioners relative to environmental design

research. This group of participants was chosen because their projects are the ones that,

due to their visibility, are discussed in practice and in university settings. Their high-

profile status may or may not impact their views of environmental design research in

particular, or their design philosophies in general.

It is possible that one of the reasons the participants agreed to be a part of this

study is that they have a particular interest in the social aspects of design and may

therefore place a higher priority on it than do other practicing landscape architects. In the

interview process, many (but not all) noted that their personal interest in the social

aspects of public space contributed to a greater level of exposure and emphasis on the

topic in their design education and early professional experience.

Themes

The themes identified in the data are presented below. Representative quotes are included in this discussion, as the participants' thoughtful and insightful articulation of the subject is the best way to convey the overall tenor of the interviews and the themes that emerged.

Expressions of uncertainty and value

The first question of the interview was aimed at understanding the participants' basic level of familiarity with the field of environmental design research. Many participants expressed an uncertainty about what the field entailed and stated that they were largely unaware of current research activities. Comments included:

- I'm probably not as familiar with the field as I should be.

- I'll tell you what my interpretation of it is, and you can tell me if I'm right.

- I know about EDRA…EDRA right? Actually one of our projects won one of their awards one year and they used to put out *Places Magazine* but I haven't seen that anymore. So I do not know the details of their research, but I do know that they have been doing such a thing.

As the interviews progressed, however, it became clear that all of the participants, including the ones who made the above statements, were very familiar with the work of some of the key figures in the field, particularly William Whyte and Jan Gehl. One participant mentioned five other researchers: Georg Simmel, E.T. Hall, B.F. Skinner, Robin Moore, and Kevin Lynch; several more researchers were mentioned by other participants.

More importantly, all of the participants referenced many of the principles for successful social space that have been borne out by this research. In other words, they are very familiar with the findings of the social research conducted in the early years of

the field of EDR, but it seems they do not directly associate this knowledge with a

familiarity of the field. For example, every participant mentioned William Whyte's work

and his methodology for direct observation. One participant noted the importance of

being aware of critiques of Whyte's work. Whyte's findings appear to have become part

of a generally accepted knowledge base about social behavior in public space, rather than

being directly associated with the field known as environmental design research. This

could simply indicate that practitioners are unfamiliar with the phrase "environmental

design research" used by academic researchers as an umbrella term for research on

human behavior and the environment.

Whether or not they considered themselves knowledgeable about the field of

EDR, most of the participants made express statements of value regarding the importance

of designing public space that works for people. They did not explicitly relate these

statements to environmental design research. Examples include:

- I'm a true believer that if something doesn't work because it has been designed to look or be a certain way and yet that way doesn't include the human comforts, then I think that's a flawed design.

- It's always first and foremost in our design approach to things, in terms of looking at public spaces.

- You can make a really beautiful place that stands on its own with nobody in it – compositionally, experientially, spatially, look at it from the air, look at it from the ground and on all those levels you think that's a really beautiful, gorgeous place. But it has to be just as compelling and useful and powerful when it's full of people.

- The beauty is that it goes beyond aesthetics, it goes beyond what color is it, what are the plants, what's the paving? It's so far beyond that, it's all about the critical components, you know… is there seating, is there retail that faces the street, do you activate the street, are there good edges, all of that stuff which is so much more compelling than 'wow, that's a really nice tree or that's a pretty paving pattern.'

- I have always felt it's important that you are cognizant or consider the place of people in your design, and I don't think any design is successful unless people use it well.

Personal connection

Many of the participants expressed an early personal interest in the social aspects of design as a design student or young professional. This interest was often sparked and encouraged by a professor or colleague. For most, the subject was not required in their education, but rather something that they gravitated toward:

- It became part of the dialogue in studio as it was tangentially related to other issues. Depending on your level of interest, that dialogue was more or less.

- My exposure was purely through those great professors that are inspired, and it sort of sticks in your brain.

- I remember a little light bulb going off when I started reading about Karl Linn in school, and making these connections between what we do and sociology and psychology, because what we do is for people and that is what it's all about.

- I'm intimately fascinated with how people use urban space…some of that is self-initiative to seek it out. Also, we had a partner here who ate, drank, and slept public space, and through him and his enthusiasm I got exposed to real-life examples in real-life projects where I got an opportunity to use these tools and this way of thinking.

The corollary to this finding is that if a design student or young professional is not inherently interested in the field or does not come into contact with someone who is, their exposure to it will be minimal since it is not required in accredited landscape architecture education. Some of the participants stated that they have not had a particular interest in the research, but during the interviews they, along with the other participants, demonstrated a deep knowledge of the findings of the research:

- I will be upfront and honest and say that I never focused explicitly and directly on that research nor the specific application or results of that research.

- I've never, and I don't think my partners have, engaged in any specific study or aligned ourselves with any professional initiative. We've worked following our own interests and observations and individual reading, wherever our inclination has taken us separately.

One of the above participants mentioned that a recent project completed by his firm won the relatively new Urban Land Institute Amanda Burden Urban Open Space Award and remarked that "it was a huge honor to even make the short list." The award was founded in 2010 by Amanda Burden, commissioner of the New York City Department of City Planning, to "celebrate and promote vibrant urban open spaces that enrich and revitalize communities" (Urban Land Institute, 2012). This apparent contradiction between a stated lack of interest in the field of environmental design research and a demonstrated application of its findings in practice speaks again to a disconnect between the participants' perception of the research as a field of study, and the principles of good social design that the research has generated.

Observation as research: a spectrum

One of the most significant findings of the study is that nearly every participant stated their belief that in order for a designer to fully understand how people behave in public space, the designer must regularly and critically observe people in public space. Participants stated that they engage in this practice frequently, often sketching or taking photographs to record what is observed.

- The kind of photography I've trained myself to do after all these years is to really try to record people, how they use the space, and be aware of what the sun's doing, what the temperature's like, is it noon when everybody's out for lunch, is it the sleepy afternoon hours before the dinner crowd comes back, is it a weekend? I try to be conscious of all those things.

- We don't know what the research is, but we're making our own assessments about spaces we've been in, and we just always have our cameras with us.

The designers expressed an understanding that the act of direct observation is the most basic method of social research. They recognized and acknowledged that their observation techniques would not fulfill requirements for academic social research, but in

their view this does not diminish the importance of the process or the knowledge that can

be gained from it:

- There are different levels, call it scientific observation, to rules of thumb, to just personal experience from observing spaces and thinking about spaces.

- We recorded it all. We probably didn't follow Holly Whyte's methodology to the tee, but we took a lot of photographs…and we were very strategic about how we did it.

The participants suggest that it is not enough to study and understand the observations

made by others (environmental design researchers like William Whyte, Jan Gehl, and

others) without also spending time personally observing people in public space:

- I'm a student of these great authors and observers of public space use, and I really appreciate the work they put into it, and so I think I kind of bury that intuitively. But I can't place enough importance on site observation and taking the time to go out and watch the way a space is being used.

- It really involves getting out there and spending time really fully understanding urban neighborhoods, block by block, and that's the kind of research I do. It just doesn't get documented. I don't know if just better awareness of Holly Whyte's book would do much.

- It is a designer's obligation to take all manner of observations in the world, their own and others, and to congeal them into something, and I don't mean that it's magical at all, and it's not really even a black box. It's knowledge and I think designers size the situation up and they apply knowledge.

Intuition

Participants cited intuition as the primary source on which they base design

decisions about the social aspects of public space. All but one participant used the term

"intuition" or "intuitive" when describing their design process. Some acknowledged that

the research has "seeped in" and become a part of their thinking, but none expressed an

explicit causal relationship between the research and their intuition. Rather, the

relationship was described as one in which environmental design research reinforces their

intuition. For these designers, research is considered a less important factor than their

own intuition in terms of its impact on design decisions:

- For me (the social aspects of design) have always been an intuitive thing rather than an overly rationalized research thing. What that means is that when people have done research on it, I have probably caught aspects of that and logged it into my brain, but without overtly referring to it as I design.

- There is sort of an innate sense of what will work for people and what won't, but it's not based on a tight grasp of the research or an ongoing pursuit of that information. It's more in the background, informing decisions in a somewhat looser way.

- (This particular site) needed a strong spatial identity, and my immediate instinct was that it would be a grove of trees: 'I'll meet you in the shade of the trees.' It wasn't through any kind of in-depth consideration of what would socially be right or what the ingredients of a good social space are. Really more intuitive than that.

- Now after freshly reading the Jan Gehl book it makes me think there were a lot of things (in a recent project) that we intuitively thought about.

- Part of the design process is intuitive, a lot of it is, just the power of observation and how you as a human being go and move around the world. I have always been in tune with that, so to a certain extent it hasn't mattered to me what some study says.

This perceived dichotomy between intuition and research has been noted in the

literature and is not unexpected. In her 1975 study, Reizenstein cited correspondence

with a colleague in the Department of Architecture at the University of Michigan and

suggested that "a major source of difficulty in collaboration between research and design

is that both types of professionals feel that 'intuitive judgment and scientific research are

mutually exclusive rather than mutually enhancing or even mutually dependent'"

(Reizenstein 1975, 32). The diagram on the next page simplifies this difference in

perspective among researchers and practitioners about the role of intuition, research

findings, and the translation of those findings, relative to design practice.
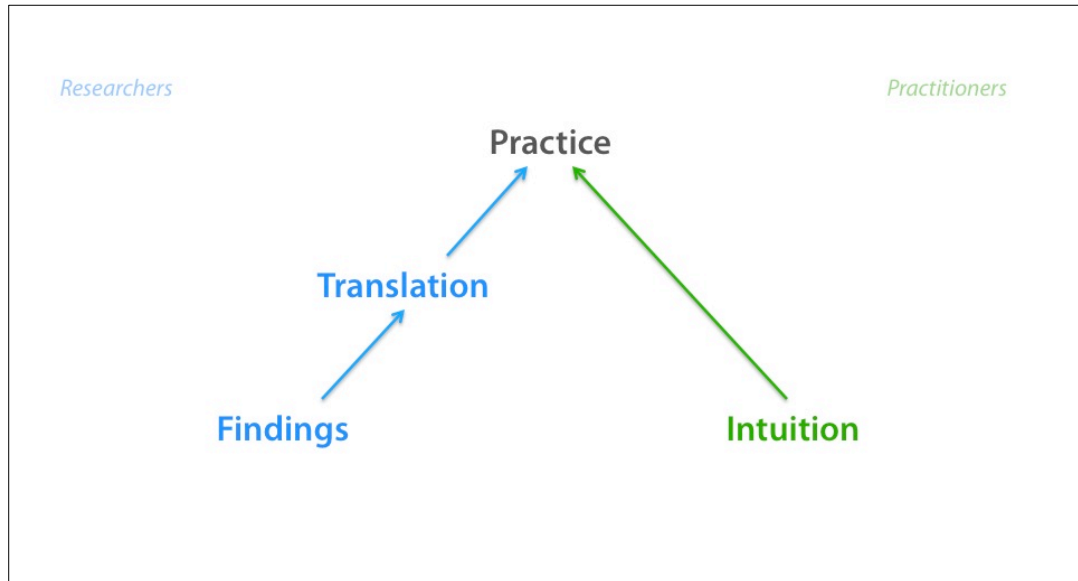
Figure 5: Intuition and research findings in practice: two perspectives

This finding, along with the previous finding that the participants consider personal observations (albeit outside strict research methodologies) to be of primary importance to an understanding of how people behave in public space, is examined further in the discussion of the findings at the end of this chapter and in the recommendations of this paper.

Design process and design guidelines

When asked to consider how the social aspects of design and/or research on human behavior were a part of their design process, participants described the process as "loose" and "unstructured."

- We don't consciously use the resources you are asking about, though I am sure the principles certainly enter into how we design. I would say that it informs a lot of our design decisions kind of informally.

- The social issues are just…a preoccupation. We don't have a formula or set way that we do it, but it's just something as kind of a background to how we approach our sites.

- There will be times when we will remind one another of the need for making the place useful for people. There is always some influence at every level and a lot of discourse, a lot of discussion. It generally happens through conversation, through experience, gentle reminders and nudging, again at all levels.

- We talk about the social piece a lot in the beginning. But it doesn't ever really go away. Even if outwardly to a client it seems like we're not talking about it as much, certainly internally, it's just a part of the dialogue. In the same way that aesthetics and beauty and sensory issues or all of those things remain part of the dialogue.

- We have no explicit kind of framework or methodology for that. I would say we talk about the social in very general terms.

One explanation that designers do not refer to environmental design research in a structured way is that existing translations of research findings are not viewed as useful. As described in the literature review, in the longstanding debate about how to translate research findings for use in practice, design guidelines have been viewed by some as perhaps the most effective method of translation (Sommer 1969; Reizenstein 1975; Schmidt 1985; Chapin and Marcus 1993; Marcus and Francis 1998; and Marcus 1999). The participants of this study, however, have not embraced them; none of them use behavior-based design guidelines in their practice. The study suggests a perception among practitioners that design guidelines are specific rules about specific elements of design, and the participants believe that these rules are not applicable to every project. Many design guidelines are, in fact, reminders of basic elements to consider when designing public space – make the most of sunlight, provide enough comfortable seating, use vegetation to create variety – and suggestions for how this might be accomplished. Presented as guidelines, however, practitioners do not view these suggestions as helpful, nor do they refer to them when designing:

- We never use them.

- It's not about taking observations out of E.T. Hall about the right distance, it's really just finding out what works. That's more like the working journeyman like me, it's kind of what we do.

- It's okay that researchers are out there documenting behavior. It's not so okay in my view that researchers are turning that into strictures for how to design. It's great to know Holly Whyte's observations…It's not at all right to portray them as a set of rules.

- We don't use any sort of specific guidelines because every project and client is different, and the conditions are different.

- Design guidelines may be more useful in an academic setting, in exposing students to the field, creating a foundation that would be used when they enter the profession.

- We sort of reinvent the wheel, not all of the time, but we'll make our own…Out of precedent, we pull together our own design guidelines that are specific to the project and to the site.

The perception of design guidelines, and by extension research findings in general, as a "set of rules" is unfortunate. It diminishes what could be a symbiotic relationship between what researchers have found through systematic, documented observations of people in public space, and what designers regularly find through their own less formal observation process. Rather than reinforcing, enriching, challenging, and informing one another's methods and findings, researchers and designers are placed at odds. One indication of this conflict is the perception among several participants of the "anti-design" position of Project for Public Spaces. This conflict, interestingly, was not viewed as entirely negative by at least one participant:

- I like to know that there are some extreme opinions out there because from them comes a discourse that shakes things up and makes people question things, and is an important part of growth and evolution. But what's missing is mutual respect and listening to one another.

Research in practice

Several participants noted that a 'checklist' generated by environmental design research can sometimes be useful at the conclusion of the design process, though they did not state whether design modifications ever result from this type of review. This finding reinforces the idea that the principles of good social space that have come from EDR and are now considered common knowledge or intuition by designers, while research is perceived primarily as a checklist that is not helpful during the design process:

- Designers use intuition first, do the design, and then there's always that 'oh my god' moment when it's going before the client, and you know you're going to be asked questions. And that's where you go and you find as many checklists as you can get.

- I never go down an evaluation criteria list when I design a project before, during or after. I say it's intuitive and what's nice is to be able to go back to a project and look at a list and say, yes we have done that.

Other participants noted that environmental design research – not the translation of it – can 'lend weight' to design decisions, as well as distinguish bids and entries for projects and competitions. Sometimes participants use consultants who are experts in the field to access environmental design research:

- There is power in being able to tie why you do certain things with a space back to a very real, almost science-based rationale – it's documented. It's lent a lot of weight to our design narrative. With certain project types it has been very helpful to have underpinnings in behavioral science.

- In a competition you are always trying to distinguish yourself so you bring people in that have other interests like sociologists or ecologists because it helps make for a good mix. Not as many people are bringing in sociologists but we have recently.

- We're actually doing a project with Gehl's office and they're sitting in the other room right now. There's an alignment between their thinking and our own.

William Whyte and Jan Gehl: observers

The two researchers most often cited by the participants were William Whyte and

Jan Gehl. The depth of their studies and their rigorous research methods are respected,

and their work has clearly influenced these designers. One participant noted critiques of

Whyte's work relative to cultural and gender biases, but still stated that designers can

find value in understanding his findings "as knowledge, not rules."

- I think Whyte's a real touchstone, that was the first time someone really bore down in that kind of granular level of detail.

- Holly White actually did real research. He was using research methods and looking at the city and drawing conclusions that were sometimes unexpected because he was following the research. That's very pioneering research.

- Jan Gehl's office has dedicated their professional existence to documenting the nuances of viewing distances between people and the critical mass you need in public spaces to make them viable…with imagery as well as diagrammatically. They have managed to capture all of these wonderful metrics and anecdotes that you can then apply to what you're doing. They have literally dedicated an entire career to it.

- There's a sort of sanctioning condition. If it seems useful to more than a few people, it will become understood as being useful. If it really bears on the issue and it gets read and it gets published and it gets reprinted…like Holly Whyte's work…it gets traction.

The study suggests a knowledge of and respect for the methods and findings of

these two researchers that places them outside the realm of uncertainty or negative

perceptions about other environmental design research. This is likely due to the manner

in which Whyte and Gehl chose to present their work; their findings are not translated,

but rather conveyed through photographs and video footage of people in public space.

As noted, Gehl also uses diagrams to simplify and categorize his findings. Other

environmental design research, including the design guidelines presented in *People*

Places (Marcus and Francis 1998) or the synopses of research found in the e-newsletter

of Research Design Connections, as two examples, has been often presented with a much greater reliance on text.

Practical resources

Study participants were asked whether a resource on environmental design research could be useful in current practice, and if so, in what format. They noted the importance of sharing research with practitioners, while also pointing out the challenge of the task:

- All the research in the world is not really that valuable unless you can figure out some creative way to get it into the hands of the people who need it.

- I have to be honest, most of us would feel unhelpful if we were up in the library reading.

- I'm not sure a little book on the shelf, even a remake of Whyte's book, is necessarily going to work its way into the mindset of people.

- It's got to be a compelling document and for each person that's a different thing.

Not surprisingly, none of the participants indicated that design guidelines would be used in practice, even if they were reformatted, updated, or otherwise modified. The solution most often suggested was a collection of case studies illustrating the application of the principles for successful social space. Still, the participants almost always qualified their response with a comment about its questionable use in practice.

- I think it would be a brief pamphlet-like summary of case studies, but like I say these books are being published all over the place.

- To be able to look up certain spaces, say Bryant Park, and understand them and have hard data: it's this big, it offers these conditions, these level changes, loose furniture here, steps…and an understanding of how it's used, what those numbers are…I could imagine it being used, but only if there was a way to navigate through it by spatial typologies.

- I'm not sure what the best mechanism would be for making that stuff available. It's not like there's a standard that captures all of this stuff. What about the outliers that break all the rules and still succeed as great spaces?

Current interest in the social aspects of design

Participants assessed the level of interest regarding the social aspects of design through two lenses: design education and professional practice. No general conclusions can be drawn from these comments; they are presented as a window into the divergent opinions about the emphasis, or lack thereof, on designing socially sustainable space. Interestingly, the comments do not relate specifically to environmental design research, again reinforcing the study finding that practitioners have incorporated the principles generated by EDR in their thinking, but do not overtly acknowledge the role of the resources as informing their understanding. The following comments indicate that the topic is currently a priority:

- I see new candidates on the job market right now in urban design and landscape architecture, and I'm thrilled at the level of exposure they are getting to some of that thinking now while they're in school.

- We've been fortunate that there's been a kind of shift in planning consciousness in San Francisco and New York that is really looking to revitalize the public realm, streets specifically.

- In the last 10 or 12 years of design competitions, there has been a pretty big focus on (the social issues). So if you look at an entry, there is an image of all the potential visitors to the park in a day, where they might have come from, what they might have been interested in doing…and so on…a kind of novel of characters through which you could read the design proposal.

- I like to keep track of what all of our colleagues and other people in the profession are doing. There are a lot of smart people out there, doing this kind of work and thinking about this.

The following comments reflect the opposite perspective:

- Frankly I think there are a lot of designers designing spaces that have almost no consideration for people.

63

- I just gave a lecture last night at a university and spent half the time talking about the subject. The students are so hungry for this, and they're not getting it. Hopefully my talk brought it to the top of their attention, and they will revisit what they are doing in their studio projects and incorporate some of those notions.

- In competitions, there's a lot of pressure to have things look good, as opposed to thinking through other things to a great degree. In other words, the thing has to be clear.

- I've never seen the 'cause du jour' of our profession…be designing real public spaces for social sustainability.

Post-occupancy evaluation

Finally, participants were asked if and how their firms engage in post-occupancy evaluations of their designed spaces. One participant from a larger firm explained that the firm was in the process of establishing standard evaluation procedures for the social viability of their completed projects, as well as for other factors. The majority of the participants expressed a belief in the importance of evaluation and described a routine, but informal, evaluation process. They do not regularly use a formal methodology for post-occupancy evaluation:

- You do the drawings, you build it, and then you walk away. And it's only then that the thing becomes relevant or takes on any life. And that's when it becomes interesting. So we're always looking for opportunities to remain engaged.

- It's not something you just stop. I do it all the time. I call it doing the forensics…why isn't this working and digging, digging, digging deep into it and dissecting things to really understand it. It's a constant recording and taking note of it and then obviously it can be applied to the next project. I wish I were more scientific. I'm not, it's sort of a seat of the pants kind of thing, but I'm a very intuitive designer.

- Informally we definitely do it…for example, (a specific project) is working pretty close to the way we thought it was going to work, and so that feels good. We're going to continue to watch it because its something we're proud of, and we want to find out if something does go a little bit south – why did it go wrong, and what can we learn from it?

- I do know that there was a period…70's into 80's where the whole 'post construction evaluation' was a big deal, because it was okay, did you design a great space? Are people using that space? If they are not using that space, is it a great space? So a lot of that went on and you couldn't help but be aware that those were issues one had to deal with as a designer.

The most often cited reason for not conducting formal POEs was cost:

- We would like to do it more formally, it just doesn't happen…because it's not part of contracts and unfortunately so much of the profession is driven by contracts and what a client allows you to do.

- We try to implement it in a formal way, but it's not an easy thing to build into contracts. It's easy to see it as a line item cost and cut it from a contract from a client's point of view.

- For international work…the sad part is, once you finish, you take a few photographs of the finished product, and you come home. No one's going to pay you to go that far, observe week to week, to see how people use it.

One participant also expressed a perceived difficulty of creating benchmarks for the

social success of a specific public space:

- As far as POEs for social behavior, how would you establish commonality or baselines? The number of users per square foot? Or, a certain percentage of usable park space has to be in sunlight? It's very hard because conditions vary from city to city. I think it would be a very interesting problem to attack – what are the indicators of a successful space? Very interesting to ground it in a science.

Discussion of themes

Interconnections

The analysis of the interviews reveals a number of distinct, yet intricately

connected components regarding the ways in which and extent to which environmental

design research has impacted the design process of the study participants. These

components form a web (see figure 6) that informs how designers think about people and

the environment, and they include a designer's intuition, interests, personal observations

of people in public space, the research methods of EDR, and the research findings of

EDR (also referred to in this paper as the principles of successful social space.) No one

component can be separated from another, as summarized by a participant:

- It is hard to untie influences from our own interests and agendas. They all become mixed at a certain point.
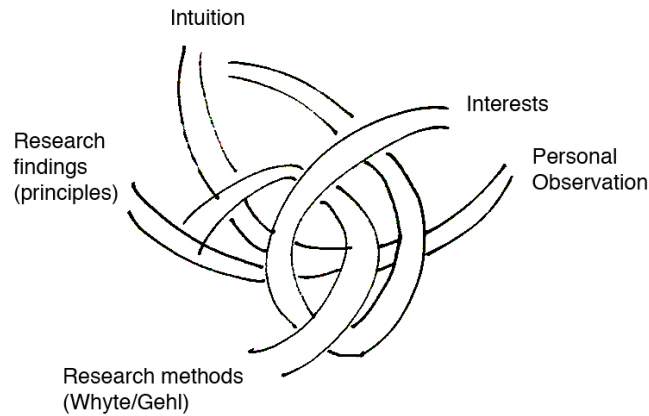
Figure 6. Web of influences relative to the social aspects of design

As revealed in the previous section, translations of environmental design research,

including design guidelines, play a significantly less important role in professional

practice and cannot be considered a part of this web. This finding calls for a rethinking

of the relationship of EDR with professional practice and with design education.

If the primary goal of environmental design researchers is to impact practice,

resulting in the design of more spaces that are responsive to users' needs, then

researchers must regularly evaluate how their findings are used by practitioners and

respond accordingly. For decades, researchers have focused on translating their findings

in an effort to communicate them with practitioners. Yet this study suggests that for

designers, the translations of research are not part of the complicated and interwoven

process of designing socially sustainable public open space. Many of the basic findings

of EDR, however, as well as the fundamental social science research method of direct

observation, have become deeply ingrained in practice. If translations are perceived as unnecessary, rather than trying to create better ones to insert into the web, a more productive focus for researchers would be to consider a holistic approach that could enrich the entire web of influences.

Direct observation: a link between research and practice

William Whyte and Jan Gehl, like many environmental design researchers, used studied observation as their primary research method. Other methods in EDR include observing physical traces, conducting focused interviews, administering questionnaires and surveys, and analyzing plans, archives, and other data regarding design intent and the history of usage. Still, as John Zeisel notes in the revised version of his classic text, *Inquiry by Design* (2006), "observing behavior is such a basic environment-behavior research method" that researchers and designers are continually refining the method in an attempt to improve the quality of the findings (Zeisel 2006, 214). The thrust of the activity has not changed, however:

> Observing behavior means systematically watching people use their environments: individuals, pairs of people, small groups, and large groups. What do they do? How do activities relate to one another spatially? And how do spatial relations affect participants? At the same time, observers of environmental behavior look at how a physical environment supports or interferes with behaviors taking place within it, especially the side effects the setting has on relationships between individuals or groups…You do not have to be an expert to observe behavior." (Zeisel 2006, 191)

Zeisel goes on to describe the methodology of observing behavior in detail; as noted previously, his book is cited as a resource by Marcus and Francis (1998) in their chapter on research methods for post-occupancy evaluation.

There are significant differences between these academic social science research methods for observation and the informal process of direct observation that designers regularly engage in. But there is also a clear relationship. Study participants commented on the value of this research method and noted that their own observations of people in space were not as 'scientific' as those of Whyte, Gehl, and other researchers. But they recognized that by performing their own direct observations, they are engaging in the same fundamental activity of social research, as illustrated in figures 7 and 8 below.
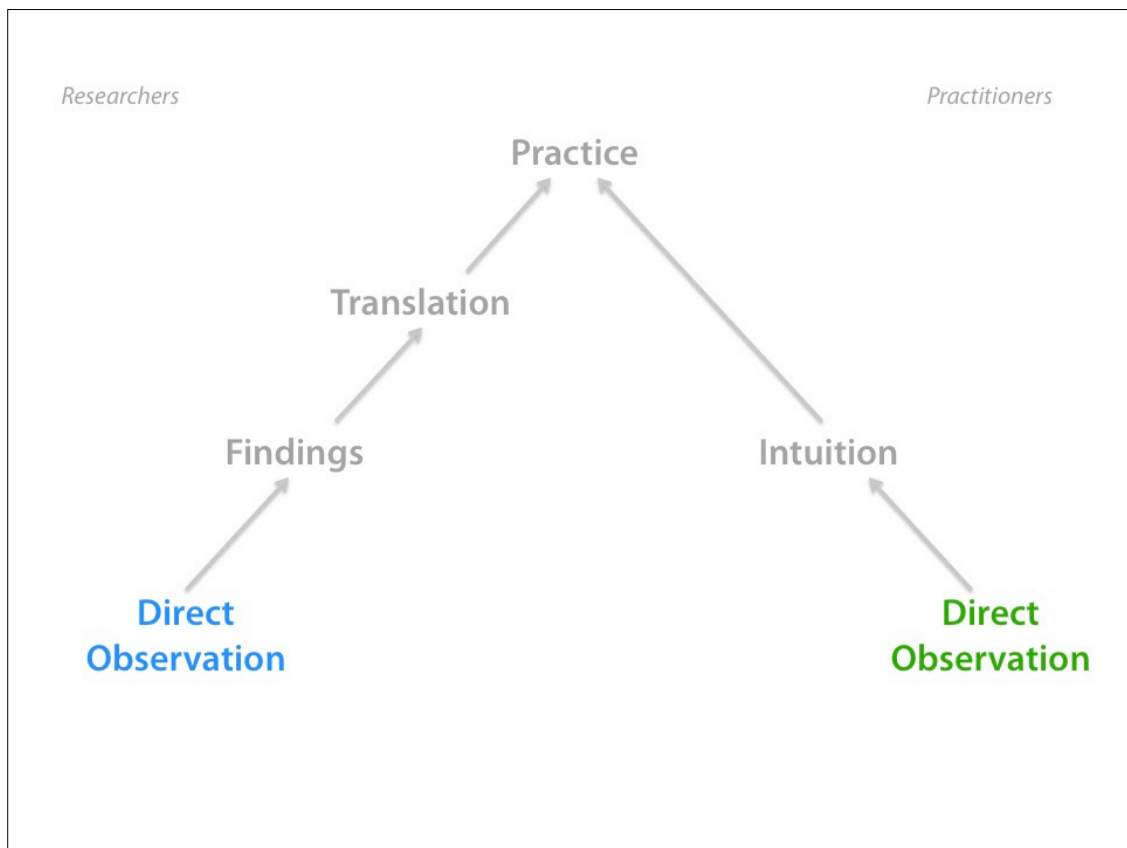
Figure 7: Direct observation as common research method

Practice

Translation

Findings ⟷ **Direct Observation** ⟷ Intuition

Direct Observation

Direct Observation
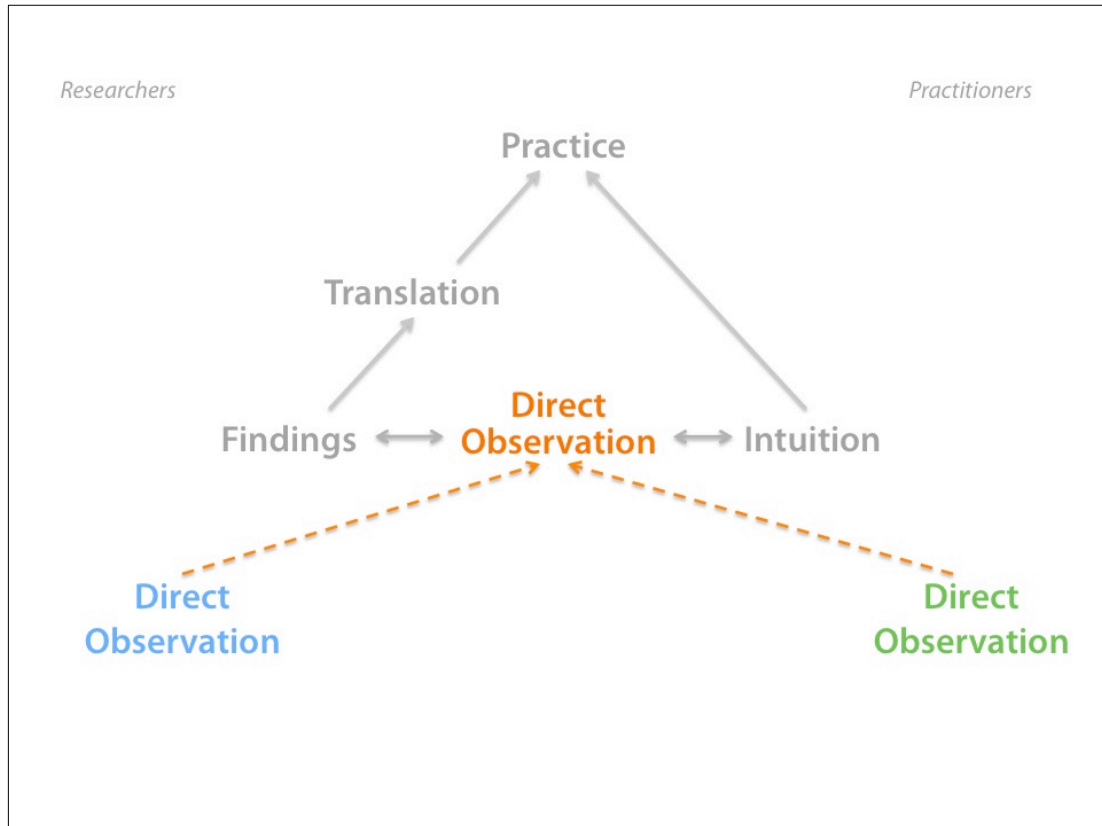
Figure 8: Direct observation as link between research and practice

Discovery and intuition

The process of observing behavior is one of discovery. Study participants indicated that they value this process and engage in it regularly. In doing so, designers use their own powers of observation to inform their intuition about what works for people in public space. Laurie Olin, a respected landscape architect whose designs over the last three decades have won numerous design awards, describes the role of this process in design, "A large part of designing is becoming a student of people. To design well you have to be interested in and learn about how people behave. Our designs are how we show what we've learned" (Hoffman 2011).

While not articulated by the study participants, the link between observation and intuition is critical. Intuition is the "immediate apprehension of an object by the mind without the intervention of any reasoning process" (*Oxford English Dictionary,* s.v. "intuition"). Yet intuition is informed and enhanced by accumulated experience, and by the observer's own interpretation, or translation, of what is observed. What study participants refer to as intuition encompasses an understanding of people that has been developed through years of carefully watching how they behave. The link between this process of direct observation and intuition may or may not be consciously recognized, but it was not explicitly acknowledged by the participants. Still, it is clear that the more a designer observes people, the more his or her intuition will be honed, leading to design decisions more likely to account for what has been learned. In this way, internalizing, and later applying, what is observed could be considered a designer's self-translation of their own observation research.

For study participants, observations conducted by others, rather than the translations of them, reinforce the designers' own process of discovery. William Whyte's and Jan Gehl's observations are valued and clearly have contributed to the designers' intuitive sense about what makes a space responsive to the needs of those who use it. As noted, Whyte's and Gehl's research is presented more visually than that of most environmental design researchers, as shown again in figures 9 and 10. The photographs and videos of people using public space are like windows through which the reader (or viewer) can watch how people behave. More than any other resource, Gehl's books and Whyte's film seem to mimic the process of observation for the reader and viewer.

Figure 9: Visual research: observing through Whyte's eyes (Whyte 1980, 40-41)
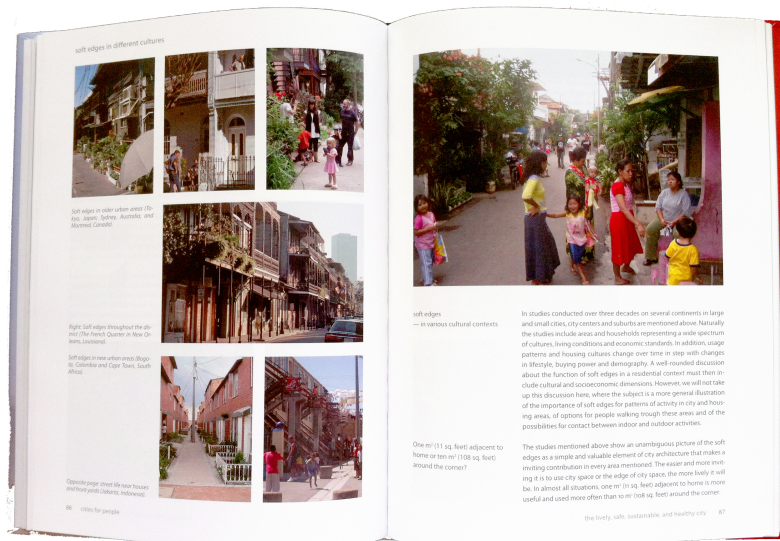
**Figure 10: Visual research: observing through Gehl's eyes (Gehl 2010, 86-87)**

The work of these two researchers has not been translated; it is like a primary
source. Studying it, designers augment their own observations by seeing how thousands
of people behave in hundreds of public spaces around the world. Whyte and Gehl offer
suggestions, interpretations, diagrams, even some guidelines and directives, but the

emphasis on images of real people in real places, and the research methods behind those images, is what makes their work convincing and weighty for study participants. In many ways, readers and viewers are left to draw their own conclusions – their own translations that can be applied to the design process – from what they see. For participants in this study, this visual format for communicating environmental design research, rather the translation of it by others into design guidelines, is the most compelling, as noted by one participant:

- Books from Gehl are kind of the best things that we have available to us. They have the benefit of having tested and tried and lived that stuff for a long time so it's very believable…it has weight to it. It seems to transcend culture and geography.

Empathy

Empathy is defined as "the power of projecting one's personality into, and so fully comprehending, the object of contemplation" (*Oxford English Dictionary,* s.v. "empathy"). Without empathy, designers cannot fully comprehend what makes a successful urban social space. As mentioned, Clare Cooper Marcus has noted that research on seating, as one example of an issue that has been studied in the field of EDR, isn't complicated but is rather "empathy for the eventual user – and just plain common sense" (Marcus 2001, 127). This sentiment was echoed by many participants, noting that they do not consult specific research findings, but rather user their own common sense and intuition when considering many of the social aspects of design.

But how does one acquire empathy? Like intuition, empathy is developed through the accumulation of personal experiences with the world, and through internalizing the meaning of those experiences. One's direct experience with public space, therefore, as a user and a careful observer, is the single most important activity that

will enhance one's comprehension of it. This comprehension is what leads to the ability to project oneself into a situation and understand what it is like for others – to have empathy for other users of public space.

The ongoing process of developing empathy is directly related to the growth of a student's or young professional's design process, as illustrated in figure 11.
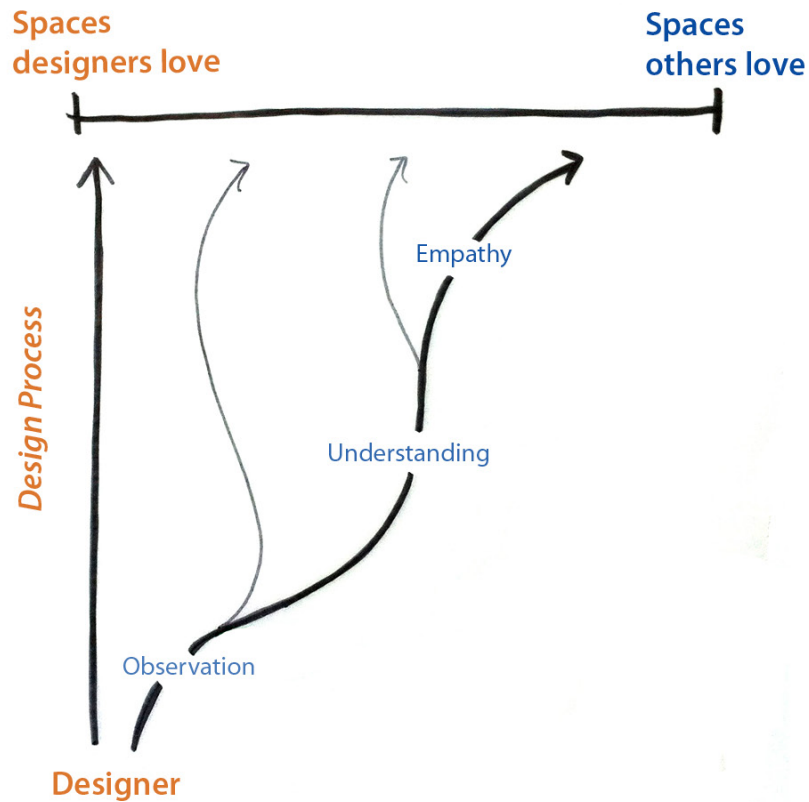
**Figure 11: Experience and growth in the design process**

The diagram depicts a young designer or student who endeavors to design a public space. As an inexperienced designer, she begins by making spaces that she loves and that meet her needs. At the other end of the spectrum are spaces that others love and that meet their needs. As the designer broadens her experience by consciously observing

how she and others behave in public space, she gains a greater understanding of how to design successful social spaces, and she develops a greater empathy for the people who will use them. In this potentially recursive process, her common sense and intuition become more attuned, more informed, and more sensitive as her observations become more astute. Through this evolution of her design process, she begins to create spaces that are more likely to meet the needs of the people she is designing for.

Summary

The most significant findings suggested from the study are the foundation for the recommendations and can be summarized as follows:

- Practitioners do not explicitly use environmental design research or translations of EDR findings in their design process.

- They rely on intuition, informed by their observations of people in public space.

- The activity of direct observation links research findings and intuition, albeit differences in the methods used by researchers and designers.

- Environmental design research findings have indirectly informed practitioners' intuition and can be considered basic principles of good social design.

If translations of environmental design research on urban open space are not widely used by designers, the questions become: how can the field as a whole make a positive impact on design practice? In what ways can the field deepen a designer's levels of understanding and empathy? How can the research method of direct observation link researchers and practitioners more closely, thus reinforcing the principles for socially sustainable public space, as illustrated on the following page?
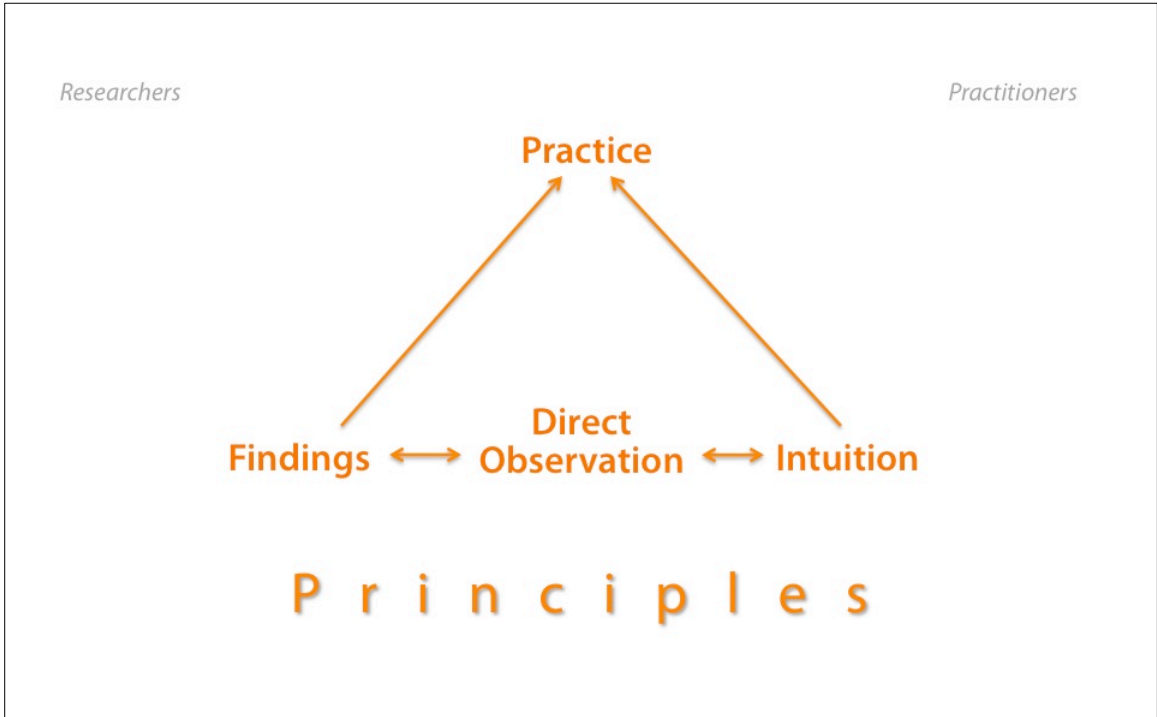
Figure 12: Collaborative model that supports the application of principles for successful social space

CHAPTER 5

RECOMMENDATIONS

<u>Design education</u>

Reframe research: methods first, findings next

For environmental design research to have the greatest possible impact on the design of future urban open space, future designers must internalize the methods and findings of the field. For this reason, the recommendations of the study begin with those related to proposed changes in design education. As discussed, the field of EDR is not required in accredited landscape architecture curriculum. Yet even if the curriculum were to be changed (as has been recommended in the past,) the study findings indicate the need to rethink how this can be done to engender students with a knowledge of the field that they will retain and apply once they become practicing designers.

A number of study participants were in school when significant research on human behavior and the environment was first being conducted. They experienced the early excitement around this new kind of research based on direct observation, and some studied under professors who were conducting it. Yet even those participants stated that their own intuition about the social aspects of design is more important than their knowledge of specific research findings. As discussed in the previous chapter, the participants consider the findings of EDR as a reinforcement of their intuition, rather than a basis for it.

The study suggests, however, that the methods employed by pioneers of environmental design research are widely respected by today's practitioners. As

designers, they have adapted the research method of direct observation to meet their

needs under the multiple constraints they face in professional practice. The participants

recognize that their methods are not as rigorous as those used in academic research, yet

the goal of their pursuits is the same: to better understand how people behave in public

space in order to make design decisions that will support that behavior. When design

students enter the profession, they will be expected to engage in this process of direct

observation. How much more could be gained from the process if they had been taught

how to do it in school? How much more accurate, comprehensive, and sensitive could

their observations be if they knew how to perform the 'informed journalistic critique'

described by Marcus and Francis (1998, 346-347) and summarized in table 1 of this

paper. As explained by Earl Babbie in *The Practice of Social Research*, the simple act of

being more aware that one is engaging in observation is a first step toward making those

observations more valid, "in contrast to casual human inquiry, scientific observation is a

conscious activity. Just making observation more deliberate reduces error" (Babbie

1995, 6). One study participant noted the same basic recommendation:

- I think probably the most powerful way to do this is to get students to actually start
  looking at their world differently, not reaching up on a shelf and looking for an
  answer from a book.

The question addressed in this recommendation is how these research methods should be

positioned for students within the field of EDR as a whole.

Based on conversations with leading designers, one conclusion is that a traditional

approach to teaching environmental design research, consisting of an exposure to the

literature and the subsequent application of the theory and findings to studio projects,

may not be the most effective method to encourage a long-term interest in, engagement

with, and inquiry of the complex relationship between human behavior and the environment.

Rather, the study suggest that a framework that reflects what students will encounter in professional practice could provide a better lens through which to teach the methods and findings of environmental design research. A more practical approach is proposed to introduce beginning students to the idea that our environment impacts our behavior. Stated simply, students should first be taught – and inspired – to go out in the world and carefully, critically, and systematically observe human behavior in public space, the same activity they will be expected to do as professionals. With insight gained from their own practice of this basic social research method, they will be better able to learn from what others have discovered when they did the same thing.

As reported by participants, the fundamental method of environmental design research – direct observation – is routinely performed in practice, albeit not in a scientific or systematic manner. Design students must be taught to conduct direct observation, be required to practice it, and be evaluated on how they incorporate their findings in studio projects. In this framework, students become novice researchers first; they are active participants in the field of environmental design research, rather than readers of theories and findings compiled by others.

Whyte, Marcus, Alexander, Moore, and others relied on their students to gather data through direct observation – students were an integral part of their research teams, as described in the acknowledgements of numerous texts, for example:

> The main work of the Street Life Project [the making of *The Social Life of Small Urban Spaces*] was done by a small band of young observers, and I want to thank them for their curiosity, their diligence, and their tendency to dispute my hypotheses." (Whyte 1981, 9)

These researchers taught research methods to the students and sent them to streets, parks, and plazas to watch and record how people behaved. Students also contributed to the analysis and interpretation of the data. They were directly engaged in the process at all levels and at all stages.

The basic methods for observing behavior used by those students should be taught to contemporary landscape architecture students. Some students may go on to pursue more advanced behavioral research and become proficient in conducting interviews, designing and administering surveys, and other social research methods. All students, however, must be taught a basic methodology for making systematic and informed observations and for analyzing their findings. They must learn and practice how to be critical observers of how the design of public space influences the behavior of the people who use it. In this way, the field of environmental design research becomes a framework for inquiry, helping students (and professionals) to formulate important questions about the social aspects of design, to understand what to look for when they are observing behavior, and to apply their findings when making design decisions. Rather than offering answers, EDR teaches students to ask the right questions. Richard Wener notes that

> research does not generate design per se, but it does support and reinforce the design process, and it assesses the success of design in meeting user needs and goals. The world view and needs of design professionals [and students] become integral to the design process. (Wener 2008, 284)

He goes on to summarize Zeisel's (1975) perspective on the role of research, "a good design process is itself a form of inquiry, made better by the use and rigorous application of social science techniques" (Wener 2008, 284).

An exposure to the larger body of environmental design research findings, including translations of it such as design guidelines, could then offer multiple benefits to these student-observers. In this framework, environmental design research could:

- Deepen their understanding of the research methods they have practiced, strengthening their ability to conduct thoughtful observation research;

- Deepen their analysis skills by learning about conclusions other researchers have drawn from their observations;

- Broaden their exposure to research conducted in specialized environments and/or with specific populations (how cultural, gender, and age differences impact behavior); and

- Broaden their exposure to behavioral studies conducted around the country and the world, introducing them to places they may never visit (as noted by one participant, "we can't all be everywhere").

This is the power of the body of work compiled by environmental design researchers, but it can be realized only after design students are equipped with the experience and knowledge to absorb it. The results will be seen in studio projects created by students as they design spaces that are even further along the spectrum toward meeting the needs of others, as illustrated in the diagram on the next page. It is a process that involves, but initially separates, environmental design research findings from its methods, allowing students to become active participants in the process of discovery.
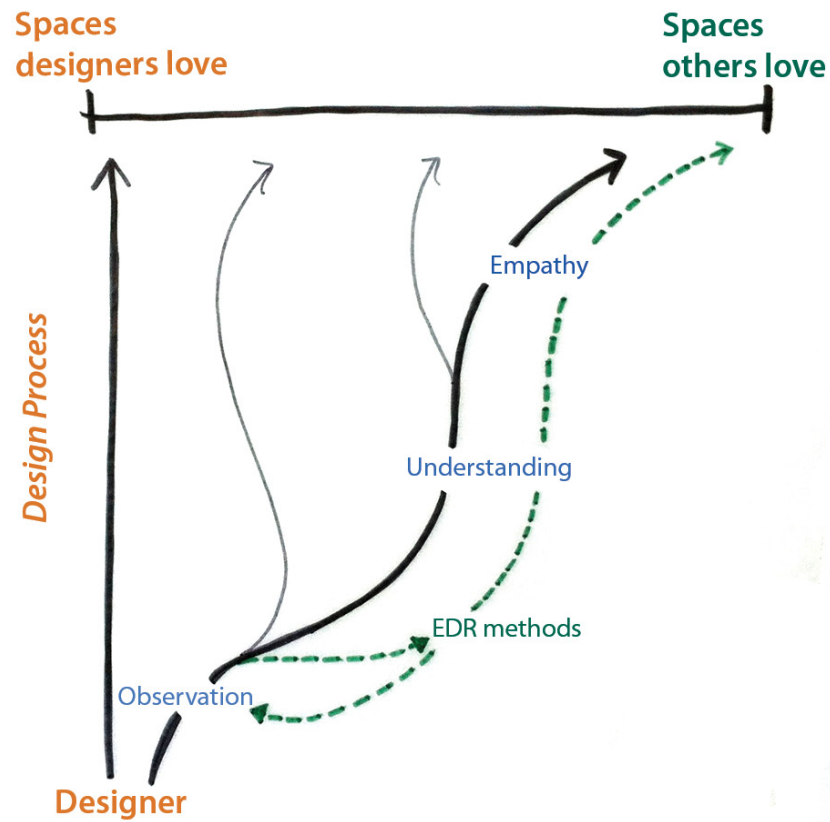
Figure 13: Environmental design research methods enhance the design process

In summary, this reframing of environmental design research for students means that:

- Students should understand that direct observation is the most basic method of social research.

- They should be taught how to conduct a basic observation and evaluation of a public space using the methodology for an informed journalistic critique, as described by Marcus and Francis (1998).

- Findings from the field of EDR should be introduced as a supplemental resource to broaden and deepen their observations.

LAAB accreditation standards

This framework for teaching environmental design research should be articulated

in landscape architecture accreditation standards. It differs from what has been suggested

by Kathryn Anthony in the previously referenced study on accreditation standards.

Anthony proposes the following language to amend the National Architectural

Accreditation Board requirements:

> Understanding of the theories and methods of inquiry that seek to clarify the
> relationship between human behavior and the physical environment and
> demonstrated ability to apply the findings of environment-behavior research to
> designed environments. (Anthony 2004, 85)

While she does include methods of inquiry in this proposed language, Anthony continues

with the following recommendation to implement the new requirement:

> Ideally this criterion could be met by requiring at least one survey course in
> environment and behavior in which students are introduced to the architectural
> literature, theory, issues, research methods, and key research findings, followed
> by an application of this knowledge in design studios. (Anthony 2004, 85)

Landscape architecture (and architecture) students manage demanding schedules

centered around a studio culture that can leave limited time for other coursework. Still,

additional courses are required to meet accreditation standards for landscape history and

theory, natural and cultural systems, plants and ecosystems, site engineering,

construction, digital representation, and other requirements. A survey course on

environmental design research consisting of significant reading, followed by the

application of the findings of EDR to studio projects does not address the

recommendation of this study that students should first have significant practical

experience with direct observation research methods before they are exposed to the

findings and translations of it. A survey course is not consistent with the findings of this

study that practitioners use EDR to back up intuitive design decisions. A more practical

and effective approach would be to provide experiences that will contribute to the early

development of a student's intuition.

To reflect this alternate approach, or reframing of the topic, the language for

revised accreditation standards could read:

> Students will learn accepted research methods for the observation, documentation, and evaluation of designed landscapes, relative to human behavior. They will demonstrate a proficiency in this process and be required to explain the application of their research findings in design projects.

This proposed language focuses on a student's ability to conduct and apply their

own valid social research as the first critical step toward integrating environmental design

research with design education. It is an experiential approach, one that was examined by

Margarita Hill, Professor and Head of the Landscape Architecture Department at

California Polytechnic State University, and others in a 2005 special issue of *Landscape

Journal* on cross-cultural learning in landscape architecture education. Hill notes that all

of the articles in the issue

> heed the call for experiential learning….Students, themselves, often demand educational experiences that allow them to understand how theories relate to the real world by applying them in practice. This is the basis of the studio education where students 'learn by doing' and where abstract concepts are applied in a problem solving experience related to their professional training and development. (Hill 2005, 121)

The specific subject matter explored by Hill (teaching cultural issues in design education)

is different, yet related to the subject of this study, but the suggested approach is the

same: students should be given the opportunity to examine theory through the lens of

personal experience, to "become directly involved in learning the complexities of their

society" (Hill 2005, 121).

New resource

To convey this new paradigm of research to students, a tool should be created for use in undergraduate and graduate design education. As indicated by several study participants, the influence of a faculty member or colleague who was enthusiastic about the field of environmental design research can instill an interest and enthusiasm for the study of human behavior. This should not be left to chance; all students should be exposed to the field in a way that generates interest and excitement about the subject.

One study participant noted the importance of the presentation of information to students:

- I've often said Whyte's book should be redone or that film should be remade by a young contemporary filmmaker to pass it on to students who…are used to getting a certain kind of media messages delivered in a certain package. Our profession refuses to recognize that we live in a world of 15-second sound bites and visual flashes, and it's okay to fight fire with fire sometimes. For important issues it's okay to 'stoop to that level' to get this message out.

The recommended format for the new resource is a 45-55 minute DVD to be used in beginning design education. The overarching goal of the tool is to generate excitement in students about designing great urban social spaces by showing contemporary examples and giving them tools to think critically about how to do it. Objectives include:

- Teach basic direct observation research methods and techniques

- Introduce key principles of successful social design

- Show case studies of contemporary urban open space

- Illustrate connection between research and practice

- Present field of environmental design research as resource

Specific components of the DVD include:

- Instruction for direct observation, documentation, and evaluation

- Excerpts of William Whyte footage

- Footage of students conducting direct observation

- Footage of practitioners conducting direct observation

- Footage of people in contemporary urban open space

- Interviews with designers

- Plans/renderings of contemporary urban open space

- Exemplary student design work

- Overview of awards: ULI Amanda Burden Award, Great Places Award

- Introduction to the Sustainable Sites Initiative and the human health and well-being credits

- Introduction to environmental design research as a resource (texts, organizations, online resources, professional journals, etc.)

Design faculty could use this resource in early design studios and immediately send students to the field to conduct observations of public spaces. Rather than an additional course for students, this process could be incorporated throughout the student's design education. Students would learn basic direct observation methods and be required to conduct research themselves, as they will be expected to do in professional practice. At the appropriate time, additional EDR resources could be introduced to improve their observation skills and broaden and deepen their understanding of the link between human behavior and the environment. The emphasis, however, should be on equipping all

students with a proficiency in the basic research methods for direct observation used in environmental design research.

<u>**Professional practice**</u>

ASLA awards criteria

Many have suggested that the criteria for ASLA's design awards should include post-occupancy evaluations that document the social aspects of submitted projects. The study reaffirms this suggestion and recommends that ASLA require firms to use design students to conduct and document the evaluations, thus providing students with valuable experience and practice in this critical activity, an exposure to the awards process, and opportunities to interact with practitioners and the professional organization.

Professional development

Professional designers, particularly those new to the field, should also be trained to apply the same research methods to their standard practice of observing public space. The resource created for students could serve as an introduction for young professionals, and procedures for conducting an informed journalistic critique could be established by individual firms. Marcus and Francis estimate a maximum of two half-days required to complete the field work, a reasonable amount of time to allot to the activity, given the study findings that practitioners already regularly engage in observing people in public space. This training could also improve designers' ability to understand and meet benchmarks for human health and well-being in the Sustainable Sites Initiative™.

Landscape Architect Registration Examination

The mission of the Council of Landscape Architectural Registration Boards (CLARB) is to "support licensure boards in protecting the health, safety and welfare of

the public through the establishment of standards of competency and the preparation, administration and scoring of the Landscape Architect Registration Examination" (Council of Landscape Architectural Registration Boards 2012). As supported by the large body of environmental design research on urban open space and acknowledged by the Sustainable Sites Initiative™, the health and welfare of the public can be supported by designers who understand and apply the principles for socially sustainable space. CLARB should require state licensure boards to include a basic knowledge of direct observation research methods in their licensure exams. The institutionalization of this subject through the licensure process, as well as through accreditation standards, is critical for the social aspects of design to become a long-term priority for the profession.

Promote new paradigm

Finally, to reinforce the connection between what students are learning about direct observation and what designers routinely do in professional practice, a high-profile spokesperson from the field could promote it through established channels: *Landscape Architecture Magazine*, the ASLA conference, firm websites, and social media. Many study participants made statements about the responsibility of designers to incorporate the principles of good social design in their projects, as well their respect for the research methods used by environmental design researchers. Some also described the role that good social design can play in helping firms to win projects and design competitions. Students should hear these messages directly from practitioners.

Further Research

Survey with larger sample size

The purpose of this study was to begin a dialogue with landscape architects about how environmental design research is currently perceived and used in professional practice, in order that practical recommendations might be made to enhance that relationship. In-depth interviews were chosen as the most appropriate methodology, thus limiting the sample size. The knowledge gained from this study should be considered a starting point for further exploration.

Surveys could be developed and administered to a larger sample of practitioners to test the findings, and to gain further insight. Additionally, more interviews could be conducted with designers who have not been recognized by ASLA in *Landscape Architecture Magazine*. Their assessment of the topic may or may not be different from that of the study participants, as previously noted, and their input would add greatly to what should be an ongoing inquiry.

Detailed curriculum review

 The field of environmental design research is not a part of required landscape architecture curriculum. In a 2003 study of a related topic, the ways and extent to which ethics and social responsibility are addressed in landscape architecture curriculum, the study authors note that "it should be recognized that accreditation standards do not provide a complete picture of a professional curriculum, as they are intended to represent minimal standards to be achieved" (Brown and Jennings 2003, 104). The study included a comprehensive analysis using key word searches of course descriptions and course titles in 73 accredited landscape architecture programs. Brown and Jennings concluded

that the omission of pro-social issues from accreditation standards "suggests that these concerns are addressed in an episodic or piecemeal fashion, dependent on the interests of individual faculty and students, as well as the nature of particular studio projects." A similar examination of how environmental design research may be offered in non-required courses is recommended. Input should also be gathered from students who enroll in these elective courses on human behavior, as well as from students who are exposed to the field in programs that address human behavior and the environment in more integrated ways throughout the curriculum.

Some university programs are known for their focus on environmental design research. Marcus and Francis point out that social research methods are taught and conducted in some university departments of landscape architecture, architecture, and psychology, where "theoretical and pragmatic work on POEs has been carried out by academics and their design students" (Marcus and Francis 1998, 345). They note the following universities and departments that have published POEs on a variety of environments (elderly housing, children's museums, campus spaces, etc.):

- University of Illinois Champaign-Urbana (Landscape Architecture)
- University of California Berkeley (Landscape Architecture)
- University of California Davis (Landscape Architecture)
- University of Wisconsin Milwaukee (Architecture)
- University of Illinois Chicago (Architecture)
- University of New Mexico (Architecture)
- University of Maryland (Architecture)
- New Jersey Institute of Technology (Architecture)
- North Carolina State University (Architecture)
- University of Arizona (Psychology)
- University of Utah (Psychology)
- City University of New York (Psychology)

This list is likely out of date, however, and a comprehensive review is recommended.

One outcome of this review would be insight on specific practices (student assignments,

evaluation of proficiency, etc.) for teaching environmental design research methods, which could be valuable in the development of the recommended new teaching tool.

Post-occupancy evaluations

Finally, the findings of this study indicate that contemporary practitioners have a great deal of knowledge about the principles of good social spaces that environmental design research has generated and that designers have internalized through personal experience. In the interviews, participants mentioned many of the elements of successful social design explored by Whyte, Gehl, Marcus, and many more researchers: sight lines, surveillance, borrowed light, maintenance, adjacencies, seating, food, vegetation, access, paving, focal points, sun and shade, water, circulation, edges, grade change and steps, programming, and others.

It is more difficult to ascertain how these designers have applied this knowledge in practice. Students (and the profession at large) could gain valuable experience and knowledge by evaluating the highly-visible urban spaces designed by the study participants, including those that have been recognized by ASLA in *Landscape Architecture Magazine*. Ideally these evaluations would be published in the magazine. This process would yield important insight regarding which principles for successful social space appear to be more commonly adopted, and which may be more difficult to apply in practice. Most importantly, it would continue the conversation.

CHAPTER 6

CONCLUSION

The ultimate purpose of environmental design research is to enhance a designer's ability to create socially sustainable spaces that support the needs of those who use them. Encouragingly, this study suggests that contemporary landscape architects are knowledgeable about the findings of this research and have absorbed many of them into what they call intuition, the tool relied on most to inform design decisions regarding the social aspects of a space. Given this key finding, the recommendations of this study address how the field of environmental design research might better inform and enhance a designer's sense of intuition.

Design education is central to this effort, but it is a difficult prospect. How can design students be taught a more keen sense of intuition? And how can this instruction be incorporated in an already dense, difficult curriculum? The challenge is analogous to that of teaching good bedside manner to doctors. Can an intangible like bedside manner be taught and learned, or does a doctor either 'have it' or not? In a recent study conducted at several major academic medical centers, the objective was to test whether a brief computerized intervention, as opposed to a longer course on the subject, would improve doctors' responses to patients who express negative emotions. All of the participating doctors heard a lecture on the subject, and half of them were also given an interactive CD-ROM that featured tailored feedback on their own pre-recorded conversations with real patients. The study found that the brief intervention improved the

participants' ability to respond more empathetically to their patients, when compared to the control group of doctors who only heard the lecture (Tulsky et al. 2001).

The analogy speaks to the most significant conclusions and recommendations of this study: i) it is possible to strengthen an intangible like intuition through instruction, ii) the instruction must be interactive and experiential, and iii) it need not be taught as a separate subject in an extended course. For design students, instruction should be focused on teaching basic methods for direct observation used in environmental design research. As close, critical, and sensitive observers, students will hone their intuition and develop greater empathy for people who will use the spaces they design as professionals. Ideally, this process should persist throughout their careers, as eloquently stated by a study participant:

> I think a designer's primary responsibility is to observe and listen and understand what's needed and what's of value and to effectively incorporate that into your larger design vision for a place. It shouldn't compromise it, it should actually make it richer and deeper if you do it right. But therein is the challenge.

APPENDICES

APPENDIX A

THE SOCIAL LIFE OF SMALL URBAN SPACES (WHYTE 1980)

SUMMARY OF APPLICABLE CHAPTERS

Introduction

"This book is about city spaces, why some work for people, and some do not, and what the practical lessons may be. It is a by-product of first-hand observation." (p. 10)

Whyte explains that since 1961, New York City has given incentive bonuses to developers who provided plaza spaces at the base of new buildings: for each square foot of plaza, builders could add 10 square feet of commercial floor space above the amount normally permitted by zoning. By 1972, 20 acres of urban open space had been created in New York City. In the following chapters, Whyte describes his findings and makes specific recommendations to enhance the social success of future plazas.

Chapters

1. **The Life of Plazas**
   "What attracts people most, it would appear, is other people." (p. 19)

   – Descriptions of busy plazas – who you see there (gender, age, etc.), what happens over the course of a day, spatial patterns of use (circulation, gathering, standing, sitting, etc.)
   – He does not make specific recommendations. In this chapter, one must infer how Whyte's findings could translate to good design decisions. For example, Whyte states that people like to sit in the mainstream, but others have found this not to be true.

2. **Sitting Space**
   "People tend to sit most where there are places to sit." (p. 28)

   – There are many photographs of people sitting on ledges. Whyte studied sun patterns, shape of space, use of plaza relative to amount of "sittable" space. He states that sitting should be comfortable (benches with backrests, well-contoured chairs) but that it is more important that sitting be *socially comfortable*. By this he means that the placement of seating should offer *choice*: sitting up front, in back, to the side, in the sun, in the shade, in groups, off alone. He also advises to maximize the "sittability of inherent features" like ledges, other flat surfaces and stairs.
   – Sitting heights: 17" is near optimum, but he concluded after observation that "people will sit almost anywhere between a height of one foot and three."
   – Another dimension is more important: the "human backside." People like enough room – 36" deep is recommended; then two people can sit back to back.

- Benches: they should be "generously sized," with backrests and armrests.
- Moveable chairs are best because they provide for the "possibility of choice," even if one does not exercise the option. Fixed individual seats are not good.
- Make the most of the opportunity to place seating on the edges of plazas.
- Whyte explains numerous methods for calculating the optimum amount of seating, including his recommendation to provide as many linear feet of sitting space for linear feet of plaza perimeter. He reached a compromise with the city for zoning amendments: one linear foot of sitting space for every 30 sq. ft of plaza space.

3. **Sun, Wind, Trees, Water**
- Sun: There is not a simple correlation. You can't just conclude that people want to sit in the sun – that alone doesn't measure the "quality of the experience." (p. 42)
- People want the choice to sit in the sun or not. Recommendation: protect access to the sun. Make the most of southern exposure. Borrow sun if necessary – "bounce the light" off buildings using glare (mirrored windows, travertine, etc.)
- "Warmth is just as important as sunlight." (p. 44)
- Wind: "What people seek are suntraps" and the "absence of winds and drafts are as critical for these as sun." (p. 44) Recommendation: do wind-tunnel tests.
- Trees: "Trees ought to be related much more closely to sitting spaces than they usually are…the best liked spaces afford a good look at the passing scene and the pleasure of being comfortably under a tree while doing so. This provides a satisfying enclosure; people feel cuddled, protected." (p. 46) Recommendation: developers should combine tree plantings and sitting spaces; plant trees in groves.
- Water: should be "accessible, touchable, splashable." (p. 49)

4. **Food**
"If you want to seed a place with activity, put out food….Food attracts people who attract more people." (p. 50, 51)

5. **The Street**
"Now we come to the key space for a plaza. It is not on the plaza. It is the street. The other amenities we have been discussing are indeed important: sitting space, sun, trees, water, food. But they can be added. The relationship to the street is integral, and it is far and away the critical design factor." (p. 54)

- The transition between the street and the plaza should be "such that it's hard to tell where one ends and the other begins." (p. 57) He describes Paley Park as an example, including the sidewalk and steps, "the sidewalk in front is an integral part of the park…the steps at Paley are so low and easy that one is almost pulled to them. They add a nice ambiguity to your movement. You can stand and watch, move up a foot, another, and, then, without having made a conscious decision, find yourself in the park." (p. 57)
- Regarding elevation change: "A slight elevation can be beckoning. Go a foot or so higher, however, and usage will fall off sharply. There is no set cut-off level –

it is as much psychological as physical – but it does seem bound up with how much of a choice the steps require….Sightlines are important. If people do not see a space, they will not use it….Unless there is a compelling reason, an open space shouldn't be sunk." (p. 58)

6. **The "Undesirables"**
   – Whyte considers the issue of "undesirables" (homeless, "winos") in public space, and states, "The best way to handle the problem of undesirables is to make a place attractive to everyone else. The record is overwhelmingly positive on this score." (p.63)
   – He also discusses the issue of privatization of public space.

7. **Effective Capacity**
   Whyte discusses whether a space can be overused. He notes that "when a space begins to fill up, people don't distribute themselves evenly over it; they go where the people are." (p. 68)

8. **Indoor Spaces**
   (Not applicable to this study)

9. **Concourses and Megastructures**
   (Not applicable to this study)

10. **Smaller Cities and Places**
    – Whyte explains that smaller cities, which often have downtowns that are much lower density, have a more difficult task in creating successful urban public spaces.

11. **Triangulation**
"There is one more factor that 'makes a place work.' I call it triangulation. By this I mean that process by which some external stimulus provides a linkage between people and prompts strangers to talk to each other as though they were not….The stimulus can be a physical object or a sight." (p. 94)

   – Examples include: street bands, mimes, sculpture, musicians, entertainers. "It is not the excellence of the act that is important. It is the fact that it is there that bonds people." (p. 96)

Conclusion
"I end, then, in praise of small spaces. The multiplier effect is tremendous. It is not just the number of people using them, but the larger number who pass by and enjoy them vicariously, or the even larger number who feel better about the city center for knowledge of them. For a city, such places are priceless, whatever the cost. They are built on a set of basics and they are right in front of our noses. If we will look." (p. 101)

APPENDIX B

PEOPLE PLACES: DESIGN GUIDELINES FOR URBAN OPEN SPACE

(MARCUS AND FRANCIS 1998)

SUMMARY OF DESIGN GUIDELINES FOR URBAN PLAZAS

Urban Plaza: "a mostly hard-surfaced, outdoor public space from which cars are excluded. Its main function is as a place for strolling, sitting, eating, and watching the world go by." (p. 14)

Typology of Downtown Plazas (p. 20-23)
1. Street Plaza (widened sidewalk, seating edge, corner sun pocket, arcade, bus stop)
2. Corporate Foyer
3. Urban Oasis (more heavily planted, has garden/park image, partially secluded from street)
4. Transit Foyer (subway, bus)
5. Street as Plaza (a street closed to traffic; pedestrian, mixed, or transit malls, continuous blocks along a shopping street; usually modified paving, street furniture)
6. Grand Public Place (most like old world piazza – city plaza or city square (not attached to bldg, bounded by streets))

Design Recommendations (Guidelines)

1. LOCATION (p. 23-24)
   - *General*: Is it necessary? Does it serve an unserved population? Are there enough potential users nearby? Does it tie into pedestrian system downtown?
   - *Specific*: Corner locations with streets at same grade are best. Mid-block can be good or problematic (depends on orientation, ratio, detailing of space). Widened sidewalk can work, but not always, due to pedestrian/sitting conflict.

2. SIZE (p. 25)
   - Difficult to make recommendations b/c every context is different.
   - Some guidelines – Lynch says 40' appears intimate; 80' is still pleasant. Gehl says 65-80' is max distance to see facial expressions; 230 – 330' is max to see events

3. VISUAL COMPLEXITY (p. 25)
   - People want variety in form, color, and texture: *trees, shrubs, fountains and sculptures, variously shaped artifacts, space articulations, nooks, corners, and changes in level.*
   - A complex view is valued (mountains, for ex. or passersby)

4. USES AND ACTIVITIES (pp. 25-31)
   - Users defined as people who pass through or linger in space – not those who glance in.
   - Functions of circulation and sitting should be relegated to distinct subareas with transition space
   - Plaza needs an "anchor" where people can attach themselves, not wide open space
   - More male than female users in downtown plazas. Men want front yard, women want back yard experience
   - Most prominent use: walk through (52%), stand and watch (11%)
   - People like entertainment, a fountain, watching people
   - People watch, listen, eat, and sit
   - People want more seats, more programs, and more greenery
   - Most common purpose is to eat lunch. Others – sit/relax, meet friends
   - Features most liked mirror Whyte's prescriptions: water features, seating, landscaping, and sunny environments
   - Well-used plazas less troubled by crime; presence of homeless rarely assoc. with crime

5. POTENTIAL SERVICE AREA (p. 32)
   - Average length of travel to plaza – 900' (two city blocks, four-minute walk)
   - Main reason for choosing particular plaza – close to work

6. MICROCLIMATE (p. 32)
   - Plaza should be located to get max sun in summer and winter. Consider borrowed sunlight reflected off buildings (glass, steel, granite)
   - When temp is above 55º, big increase in outdoor activity. Do sun/shade studies during noon hour in months when temp is above 55º and put seating in sun
   - Work with wind experts to mitigate negative effects of wind (most effective is design/modification of buildings)

7. BOUNDARIES and TRANSITIONS (p. 34)
   - Plaza must be perceived as distinct place, but be visible and functionally accessible
   - Should have two sides on public right of way if possible
   - Transition from sidewalk to plaza is one of most important aspects of plaza design.
   - At least 50% of total frontage of urban open space should be retail or service (Whyte)
   - Edges/boundaries of a plaza should be for seating and viewing. A straight edge accommodates fewer uses than an edge with many ins and outs.

8. SUBSPACES (p. 36)
   - Large plazas should be divided into clear, but subtle subspaces with changes of level, planting, construction, seating. Not too small – don't want to feel like you're invading privacy if someone is in the subspace
   - Help make plaza seem less empty when fewer people there

9. CIRCULATION (p. 37)
   - People take shortest & straightest route between the sidewalk and building. Shouldn't impede that path of movement.
   - Besides to/from building entrances, circulation must accommodate:
     1. Passing through as short-cut
     2. Access to a café, bank, or other retail use next to plaza
     3. Access to seating or viewing areas
   - Pedestrians disregard color patterns like different shades of brick/concrete, painted lines
   - They respect physical barriers and strong changes in texture
   - They avoid cobblestones, gravel, and ventilation gratings
   - Flow is through center of space or stairs, edges are for sitting, walking and talking. (Whyte found opposite)
   - Ramps shd be parallel with stairs
   - ADA requirements for ramps and stairs: slope (no more than 1:12), minimum width (4-5 feet), landings, handrails and direction changes, tread and riser, drainage, and indicator stripping for stairs.

10. SEATING (p. 38)
   - "We came to a spectacular conclusion: people sit most where there are places to sit. Other things matter too – food, fountains, tables, sunlight, shade, trees – but this most simplest of amenities, a place to sit, is far and away the most important element in plaza use." (Whyte, 1980, p. 30)
   - They sit on anything – benches, steps, planting edges
   - They like to sit near focal elements; along edges, and close to where others pass by
   - People seek a sunny spot. Locate seating in sun between 11:30am and 2:30pm
   - Large areas of open space or multiple rows of benches be intimidating and unwelcome when few people are there
   - Secondary seating in addition to benches – mounds of grass, steps with a view, seating walls, and retaining walls that allow seating – doesn't look lonely with few people
   - Secondary seating should be 50% of total; 16-30" high (PPS), mostly 16-18"
   - Variety is key: orientation, views, and style
   - Best places to sit are simplest
   - Benches: wood is best, 3' x 6' backless for multiple groups, or 3 x 3'; Whyte says 17" high
   - For groups of more than two, linear steps and ledges are not comfortable
   - Movable chairs are most popular – offer most options for location and orientation
   - People in groups like sitting at table; umbrellas are good
   - For singles: steps, ledges, straight benches permit natural spacing/no eye contact
   - For groups: wide, backless benches, benches w right angles, and curved benches
   - Materials: wood is best; concrete/metal/tile/stone okay for secondary seating. Nothing that looks like it could damage clothes
   - How much: 1' linear per 30'^{2} plaza area (PPS); 1' linear per 1' plaza perimeter (San Francisco zoning)

11. PLANTING (p. 44)
   - People want variety and complexity: trees, uncommon shrubs, and colorful annuals
   - Must have seating or lawns for people to enjoy greenery
   - Eventual height and mass should not cut off view of an activity or performance area
   - If plaza is sunken, trees should grow above sidewalk level
   - Consider color and fragrance
   - Protect plants; provide enough seating – people will trample
   - Sloped lawn (needs edge, backing – not fully open) lining main circulation and seating lets people sit more casually

12. LEVEL CHANGES (p. 46)
   - Modest but observable changes in level are preferred over absolutely flat
   - Also functional advantages – seating, circulation, upper level as stage, subareas
   - People like to stand on vantage point with prop (wall, railing) to look at people below
   - Must use ramps to provide access to all levels
   - Avoid dramatic changes of level between sidewalk and plaza
   - Where there are subtle changes, maintain visual connection between levels
   - If plaza is below grade, need eye-catching feature to draw people down

13. PUBLIC ART (p. 48)
   - Livable Cities criteria for public art:
      1. Create a sense of joy, delight, and wonder
      2. Stimulate play, creativity and imagination – create a form that can be manipulated, sat on, or walked under.
      3. Promote contact and communication; encourage people to stop, talk
      4. Provide comfort and amenity with steps, ledges, or railings near art
      5. Encourage interaction and cast people as actors rather than audience
   - Sitte: Only art in public places influences the masses daily and hourly; locate art on periphery near main circulation; don't block views

14. FOUNTAINS (p. 50)
   - Visual and aural attraction of moving water is universal
   - Noisy fountain close to seating can screen out surrounding traffic noise
   - Sound of water also stress-reducing – locate max amount of seating within earshot
   - A fountain must be in scale with its setting
   - Be careful of downtown winds and blowing spray
   - Costs for operation and maintenance should be considered

15. PAVING (p. 51)
   - People move from A to B in a direct line; major circulation routes must accommodate
   - Can channel movement with surfaces people avoid: large-sized gravel and cobbles

16. FOOD (p. 51)
   – "Food attracts people, who attract more people." (Whyte 1980, 51)
   – Food increases liveliness and activity in a plaza
   – Plazas where food can be bought should also have drinking fountains, restrooms, and trash cans. See ADA requirements.

17. PROGRAMMING (p. 52)
   – Designers can facilitate programming: persuade clients of importance of use; provide temp/permanent stage for events that can be used for sitting/lunch when no performance
   – Examples: summer lunch/evening performances; seasonal festivals; licensed street performers; farmer's markets

18. VENDING (p. 53)
   – Permit and encourage vending, esp in plazas with lunch crowds
   – Design details for location: sidewalk width, pedestrian flows, building entrances, visibility, accessibility, street furniture, bus stops, and nearby display windows
   – Farmers markets are great. Fabric structure or roof can add color and vitality, provide shade, contrast with scale, improve visibility of bldg entrances, help plaza not look empty during off-peak hours

19. INFORMATION and SIGNS (p. 54)
   – Names of buildings shd be visible and main entrances should be well lit
   – Need signs for public transit stops, taxi stands, nearby streets

20. MAINTENANCE and AMENITIES (p. 54)
   – People care for a public space if they see that management cares (plant maintenance, not watering during peak hours, litter)

APPENDIX C

WHAT MAKES A SUCCESSFUL PLACE?

PROJECT FOR PUBLIC SPACES (http://www.pps.org/articles/grplacefeat/)

Great public spaces are where celebrations are held, social and economic exchanges take place, friends run into each other, and cultures mix. They are the "front porches" of our public institutions – libraries, field houses, neighborhood schools – where we interact with each other and government. When the spaces work well, they serve as a stage for our public lives. What makes some places succeed while others fail?

In evaluating thousands of public spaces around the world, PPS has found that successful ones have four key qualities: they are **accessible**; people are engaged in **activities** there; the space is **comfortable** and has a good image; and finally, it is a **sociable** place: one where people meet each other and take people when they come to visit. PPS developed **The Place Diagram** as a tool to help people in judging any place, good or bad:

Imagine that the center circle on the diagram is a specific place that you know: a street corner, a playground, a plaza outside a building. You can evaluate that place according to four criteria in the red ring. In the ring outside these main criteria are a number of **intuitive or qualitative** aspects by which to judge a place; the next outer ring shows the **quantitative aspects** that can be measured by statistics or research.

Access & Linkages

You can judge the accessibility of a place by its connections to its surroundings, both visual and physical. A successful public space is easy to get to and get through; it is visible both from a distance and up close. The edges of a space are important as well: For instance, a row of shops along a street is more interesting and generally safer to walk by than a blank wall or empty lot. Accessible spaces have a high parking turnover and, ideally, are convenient to public transit.

Questions to consider on Access & Linkages:

• Can you see the space from a distance? Is its interior visible from the outside?
• Is there a good connection between the space and the adjacent buildings, or is it surrounded by blank walls? Do occupants of adjacent buildings use the space?
• Can people easily walk to the place? For example, do they have to dart between moving cars to get to the place?
• Do sidewalks lead to and from the adjacent areas?
• Does the space function for people with special needs?
• Do the roads and paths through the space take people where they actually want to go?
• Can people use a variety of transportation options – bus train, car, bicycle, etc. – to reach the place?
• Are transit stops conveniently located next to destinations such as libraries, post offices, park entrances, etc.?

Comfort & Image

Whether a space is comfortable and presents itself well – has a good image – is key to its success. Comfort includes perceptions about safety, cleanliness, and the availability of places to sit – the importance of giving people the choice to sit where they want is generally underestimated. Women in particular are good judges on comfort and image, because they tend to be more discriminating about the public spaces they use.

Questions to consider on Comfort & Image:

• Does the place make a good first impression?
• Are there more women than men?
• Are there enough places to sit? Are seats conveniently located? Do people have is a choice of places to sit, either in the sun or shade?
• Are spaces are clean and free of litter? Who is responsible for maintenance? What do they do? When?
• Does the area feel safe? Is there a security presence? If so, what do these people do? When are they on duty?
• Are people taking pictures? Are there many photo opportunities available?
• Do vehicles dominate pedestrian use of the space, or prevent them from easily getting to the space?

103

Uses & Activities

Activities are the basic building blocks of a place. Having something to do gives people a reason to come to a place – and return. When there is nothing to do, a space will be empty and that generally means that something is wrong.

Principles to keep in mind in evaluating the uses and activities of a place:

• The more activities that are going and that people have an opportunity to participate in, the better.
• There is a good balance between men and women (women are more particular about the spaces that they use).
• People of different ages are using the space (retired people and people with young children can use a space during the day when others are working).
• The space is used throughout the day.
• A space that is used by both singles and people in groups is better than one that is just used by people alone because it means that there are places for people to sit with friends, there is more socializing, and it is more fun.
• The ultimate success of a space is how well it is managed.

Questions to consider on Uses & Activities:

• Are people using the space or is it empty?
• Is it used by people of different ages?
• Are people in groups?
• How many different types of activities are occurring – people walking, eating, playing baseball, chess, relaxing, reading?
• Which parts of the space are used and which are not?
• Are there choices of things to do?
• Is there a management presence, or can you identify anyone is in charge of the space?

Sociability

This is a difficult quality for a place to achieve, but once attained it becomes an unmistakable feature. When people see friends, meet and greet their neighbors, and feel comfortable interacting with strangers, they tend to feel a stronger sense of place or attachment to their community – and to the place that fosters these types of social activities.

Questions to consider on Sociability:

• Is this a place where you would choose to meet your friends? Are others meeting friends here or running into them?
• Are people in groups? Are they talking with one another?
• Do people seem to know each other by face or by name?
• Do people bring their friends and relatives to see the place or do they point to one of its features with pride?
• Are people smiling? Do people make eye contact with each other?
• Do people use the place regularly and by choice?
• Does a mix of ages and ethnic groups that generally reflect the community at large?
• Do people tend to pick up litter when they see it?

APPENDIX D

12 CLASSIC AUTHORS AND TEXTS FOR ARCHITECTURE DESIGN

STUDENTS (ANTHONY 2004)

Bell, P., Greene, T., Fisher J. and Baum, A. *Environmental Psychology*, Fifth Edition. Belmont, CA: Wadsworth Group Thomson Learning, 2001

Carpman, J. R., M.A. Grant, and D.A. Simmons. *Design that Cares: Planning Health Facilities for Patients and Visitors*. Chicago, IL: American Hospital Publishing Inc., 1986

Cooper-Marcus, C. and C. Francis (eds.) *People Places: Design Guidelines for Urban Open Space*. NY: Van Nostrand Reinhold, 1990

Cooper-Marcus, C. and W. Sarkissian with S. Wilson and D. Perlgut. *Housing as if People Mattered: Site Design Guidelines for Medium-Density Family Housing*. Berkeley, CA: University of California Press, 1986

Hall, E.T. *The Hidden Dimension*. Garden City, NY. Anchor/Doubleday, 1966;

Nasar, J. *Design by Competition: Making Design Competitions Work*. NY: Cambridge University Press, 1999

Presier, W. F. E., J. C. Vischer, and E.T White (eds.) *Design Intervention: Toward a More Humane Architecture*. NY: Van Nostrand Reinhold, 1991

Sommer, R. *Design Awareness*. Corte Madera, CA: Rinehart Press, 1972

Sommer, R. *Personal Space: The Behavioral Basis of Design*. Englewood Cliffs, NJ: Prentice-Hall, Inc. 1969

Sommer, R. *Tight Spaces: Hard Architecture and How to Humanize It*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1974

Whyte, W. H. *The Social Life of Small Urban Spaces*. Washington, DC: The Conservation Foundation, 1980

Zeisel, J. *Inquiry by Design: Tools for Environment-Behavior Research*. NY: Oxford University Press, 1981

COVER LETTER

March 6, 2012

Designer Name
Landscape Architecture Firm
Street Address
City, State, Zip

Dear Mr. or Ms. _____:

I am writing to invite you to participate in a study I am conducting for my MLA thesis. I was excited to learn recently that my application was accepted to present the study at the Graduate Student Workshop of the Environmental Design Research Association (EDRA) conference in May 2012.

The goal of the study is to make informed, timely and practical recommendations that could enhance the application of environment-behavior research in the design of urban open space. To do this, I hope to interview leading landscape architects in order to paint a realistic and up-to-the-minute picture of how this research is perceived and used in contemporary practice.

The study will only matter if the participants matter. To identify the pool of designers to approach, I reviewed *Landscape Architecture Magazine* for urban projects that were featured in the magazine in the last three years or that won an ASLA award in that time period. These are the projects and designers who are being talked about in the field and in the classroom. You are being asked because your design for _____ Park was featured in *LAM* in _____ 2010. Your insight and opinions matter a great deal.

Enclosed is a Project Summary and Consent Form, as well as the proposed interview questions. I am asking for slightly more than a half hour of your time, which I sincerely respect.

Thank you, and I will be in touch next week.

Kind regards,

Jennifer Masters
MLA Candidate, 2012
University of Massachusetts Amherst

PROJECT SUMMARY AND CONSENT FORM

Project Summary and Consent Form

Purpose
The purpose of the study is to understand how design guidelines based on human behavior are used in contemporary urban open space design. Information gained through interviews with leading landscape architects will inform recommendations for how to enhance the application of environment-behavior research in current practice.

Background
For decades, researchers and designers have wrestled with how best to share and apply a body of research about the relationship between environment and behavior to the design of the urban environment. Researches and designers agree that to have a positive impact on our spaces, environment-behavior research must be "translated" to be meaningful and compelling to designers. One method of translation has been the development of design guidelines based on human behavior. This study will explore the perception and use of these guidelines, among other methods of translation, in contemporary landscape architecture practice.

Participants
Designers of high-profile urban projects that have been featured in *Landscape Architecture Magazine* within the last three years or won an ASLA design award in the same timeframe have been invited to participate. These are the landscape architects who, it could be argued, have the greatest influence on the field, and therefore on the built environment. Participation is completely voluntary.

Interviews
Short interviews (30-40 minutes) will take place in the designer's office or by video-conference. Proposed questions are attached; specific questions may be ignored or new topics may be added by participating designers.

Publication
Preliminary results of the study will be presented at the Graduate Student Workshop of the EDRA 43 Conference in Seattle, May 2012. Final analysis and recommendations will be published as an MLA thesis on the University of Massachusetts Scholarworks database.

Thank you
As the world becomes increasingly urbanized, an ongoing inquiry into the design process will help to create places that not only improve the ecological health of the site, but also improve the lives of those who visit it. This study is one such inquiry.

Process and Confidentiality
Notes will be taken during the interview, and with your permission it will be audio-recorded. All information gained in the interviews will be anonymous. There are no known risks to participating. A possible inconvenience is the time spent on the interview, but you will not be contacted after the interview.

Audiotapes and notes will be stored in a locked file cabinet and labeled with a number assigned to each participant. They will be disposed of within three years of completion of the study. All documents will be stored on my password-protected personal computer.

Questions
You may contact me with any questions via email: jennifer.h.masters@gmail.com or by phone: (413) 923-4343. You may also contact the UMass Human Research Protection Office at (413) 545-3428 or humansubjects@ora.umass.edu. You may take as long as you like before deciding if you wish to participate, and you may withdraw at any time.

Signature
By signing this form, I am agreeing to voluntarily participate in this study. I have had the opportunity to ask questions and have received satisfactory answers. I understand that I can withdraw at any time. A copy of this signed Consent Form has been given to me.

Please check "yes" or "no" for the following statement:
I give permission to audiotape the interview.   _____ Yes _____ No

_____   _____   _____
Participant Signature   Print Name   Date

_____

By signing below I indicate that the participant has read and, to the best of my knowledge, understands the details of this document and has been given a copy.

_____   _____   _____
Signature of Person   Print Name   Date
Obtaining Consent

INTERVIEW QUESTIONS

Interview Process and Questions

Process
The interview will last for 30-40 minutes and can take place in your office or by videoconference. The goal is to explore how environment-behavior research and design guidelines based on this research are used in landscape architecture practice *today*. The discussion will be based on the following questions and can be expanded to include additional topics that you consider important.

Questions

11. How familiar are you with the field of environment-behavior research and with design guidelines for urban open space that are based on it?

12. In what ways does your understanding of this research and behavior-based design guidelines influence you when you are designing urban open space? Are there specific elements of design that are most impacted?

13. In what ways and at what point in the design process are behavior-based design guidelines part of the discussion in your office?

14. Do you and other designers in your firm have access to these guidelines and/or to other sources of environment-behavior research?

15. How and when were you introduced to environment-behavior research and behavior-based design guidelines?

16. In what ways do you consider behavior-based guidelines relevant or not relevant to the design of contemporary urban open space?

17. Do you have additional comments about behavior-based design guidelines or other methods for sharing environment-behavior research with designers in the field?

Thank you.

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Anthony, Kathryn. 2004. The Role of Environment-Behavior Research in Architectural Education. *Scroope: Cambridge Architectural Journal* (16): 84-7.

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