For over a quarter-century, the PhD Program in Architecture has been the cornerstone of the University of Wisconsin-Milwaukee’s reputation for leadership in architectural research and research-based design education. This legacy is founded in large measure upon the program’s pioneering efforts in the area of environment-behavior studies, or EBS.

As an approach to scholarship, EBS examines the relationships between people and place with the intention of improving the quality of physical settings in order to enhance people’s lives. Historically rooted in the social sciences, but now broadly incorporating other academic traditions, the strength of EBS lies in its focus on specific populations and place types, and by shedding light on environmental design implications for human needs and activities. EBS includes the study of both natural and built settings, and covers a broad range of scales and issues: from what makes environments physically accessible and cognitively congenial for individuals, to the connections between organizational and architectural change, to the macro-scale of social and cultural aspects of urban form and human settlement.

This book celebrates the nature, history, and ongoing contributions of UW-Milwaukee’s PhD Program in Architecture. This includes the scholarly community that its associated faculty and over 50 graduates have developed and maintained over the years through lively exchanges across disciplines and international borders. It also celebrates the
values they share—namely an understanding of architecture and urban settings as the locus of human endeavor and the conviction that research and design application can enhance the quality of people’s lives. Finally, it reinforces the relevance of environment-behavior studies as an approach to scholarship and application at a time when the complexity of societal issues (aging, environmental justice, sustainable development, globalization, and so on) demand not only bridging between research and practice but also blurring of worn out conceptual boundaries that hinder fuller understanding.

What is the Milwaukee School in EBS?

The Milwaukee School in environment-behavior studies represents the collective interests, ideas and accomplishments of the alumni, faculty, and current students who have been formally associated with the PhD Program in Architecture, as well as others who have been influenced by it. Because of its position within the School of Architecture and Urban Planning, the Milwaukee School couples questions about how people experience and act upon their environments with inquiry about the context, processes, and consequences of environmental change.

The moniker “Milwaukee School” may sound like a stretch; however, no claim is being made here to equate it with, say, the Chicago School of sociology. But, after nearly 30 years and over 50 graduates, it is only fitting to call it something. It is accurate to say that the Milwaukee School represents a small but diverse band of designers, social scientists, educators, social historians, reflective practitioners, social activists, environmentalists, public administrators, and hybrids thereof. Though they identify with a broad range of disciplines and professional orientations, the Milwaukee School’s alumni and faculty share in a common knowledge base that continues to influence their research, teaching, and practice. Virtually all self-identify themselves with EBS and define their work as contributing to it.

Situated within a professional school of architecture, the Milwaukee School in EBS is both curiosity-driven and action-oriented. It is these twin imperatives—to both understand the world and to influence it through design, planning, and policy—that shape the Milwaukee way of thinking. By setting its sights on both understanding and action, it embraces intellectual inclusiveness, multi-disciplinary collaboration, use-inspired research, and social and environmental improvement as foundational
imperatives. The challenge that the Milwaukee School has thus positioned for itself is no less than to leverage understanding of the material, social and experiential worlds in order to create more humane, socially just, culturally responsive, environmentally sustainable, and beautifully crafted settings.

This introduction describes the distinctive characteristics of the PhD program; and how the Milwaukee approach permeates not only the discipline and practice of architecture but of other disciplines and professional initiatives as well. Following this introduction is a collection of original, never before published chapters from twelve of the graduates. These chapters portray the distinctive nature, scope, diversity and multi-disciplinary orientation of the Milwaukee School. Following these chapters is a genealogy of the Milwaukee School, coupled with short intellectual biographies from many of the alumni.

The Graduates

Between the commencement of the program in 1982 and 2009, the year of its 51st graduate, the Program attracted students from around world, including from the nations of Bangladesh, Brazil, Bulgaria, Canada, China, Egypt, Indonesia, Iran, Israel, Japan, Kuwait, India, Nepal, South Korea, South Africa, Sri Lanka, Taiwan, Turkey, and the United States. Its graduates have a strong track record of employment, landing top positions in academia as well as industry and government. The vast majority of UWM School graduates have been appointed to university positions in North America, the Middle East, East Asia, and Europe, while others contribute to EBS through their practice and consulting work. From their various positions and locales around the world, alumni from the program continue to develop and strengthen new avenues of research as well as disseminate critical knowledge to broad academic and professional constituencies.

The impact of the alumni of the Milwaukee School is readily seen in the breadth and depth of their teaching, practice, and publications. In addition to highlighting the human side of design, Milwaukee School graduates also bring the physical environment to the forefront of other disciplines for which the physical environment is all too often taken for granted, such as gerontology, nursing, occupational and physical therapy, women’s studies, education, organizational studies, as well as psychology, sociology, and cultural studies.
Most of the Milwaukee School graduates who have moved on to their own academic positions teach in fields related to environmental design, and the majority of these are in architectural education, with the others teaching in landscape architecture, or interior design. Most of those not teaching directly in departments of design are involved in fields such as gerontology and occupational therapy, or environmental psychology and socio-cultural studies. Regardless of discipline, virtually all emphasize the importance of understanding people in places. Quite a few teach their own EBS courses, either to design students or for more general student audiences. These courses include varied topics that are informed by an environment-behavior perspective: housing, environmental controls, research methods, and specialized seminars. Graduates teach at all levels: undergraduate, Master’s and PhD. Of particular note are the many design studios that are taught from an EBS perspective. A few examples include: Al-Jassar’s studio at Kuwait University which addresses historic preservation from a social and cultural perspective, McCoy’s studio at Washington State University on rural communities, Bose’s landscape architecture studio on community design at Penn State, Gabr’s studios at Cairo University that focus on architecture and human behavior, and Fernando’s evidence-based interior design studio at UW-Stevens Point.

While the majority of graduates have joined the ranks of the academy, other graduates are making their mark in practice or government. These include: Calkins, principal at IDEAS, which specializes in research and consulting for environments and aging; O’Neill, who directs research on the workplace for Knoll; Bunker-Hellmich, who conducts health care research at the architecture firm Ellerbe Becket (an AECOM company); Murray, who works at the Wisconsin Department of Licensing and Registration; Geboy, an independent consultant on health care and aging; and Kiyota, whose nonprofit Ibasho provides consulting on global aging.

The intellectual yield of the graduates, in the form of publications, is also impressive. Beyond the many journal articles, book chapters, and edited volumes are several notable books including: Calkins’s *Creating Successful Dementia Care Settings*; Chaudury’s *Remembering Home: Rediscovering the Self in Dementia*; Childress’s *The House of Ennui: The 20th Century Spends a Month with the 21st* and *Landscapes of Betrayal, Landscapes of Joy*; Dearborn and Stallmeyer’s *Inconvenient Heritage: Erasure and Global Tourism in Luang Prabang*; Fortin, Després & Vachon, (2002) *La banlieue revisitée* and Fortin, Després & Vachon (2011) *La banlieue s’étale*; Diaz-Moore, Geboy and Weisman’s *Designing a Better Day: Guidelines for Adult and Dementia Day Services Centers*; Downing’s *Remembrance and the Design of Place*; Elsheshtawy’s
Dubai: Behind an Urban Spectacle; Nair, Fielding and Lackney’s *The Language of School Design*; O’Neill’s *Measuring Workplace Performance and Ergonomic Design for Organizational Effectiveness*; and Ramasubramian’s *Geographic Information Science and Public Participation*.

The Program

From its inception, UWM’s PhD Program in Architecture has held a unique sensibility about what constitutes scholarship in architecture and how a doctoral program within a school of architecture and urban planning ought to operate. Most student cohorts enjoy the experience of learning among like-minded individuals who share a common knowledge base rather than adopting an individualized course of study. Students explore connections between the physical environment and the mind, the body, organizations, communities, and cultures. They utilize the broadest possible spectrum of methodologies (sometimes purposefully oscillating among two or more), from positivism and pragmatism to phenomenology and feminist critical theory.

Thinking as a collectivity of individual researchers, the program allows no singular theoretical dogma to dominate, although clearly some faculty hold to specific and singular research orientations and epistemologies. Being a follower is neither an option nor advocated. EBS has been seen as an evolving area of study, and students are expected to define for themselves what it means to conduct scholarship within it.

The first two years of the program are structured to expose students to a wide range of research epistemologies and methodologies. The theories, epistemologies, and methodologies constitute the “devices” in the toolbox of research inquiry. This toolbox has evolved and multiplied as disciplines and fields in social inquiry, social sciences, design research, and critical inquiry likewise broadened their spectrum of viable approaches in the 1990s and 2000s. In general terms, modes of inquiry included empirical and archival approaches such as ethnography, interviews and surveys, quasi-experiments, case studies, morphological analysis, observational approaches such as behavioral mapping or participant observation, historical analysis, and others. But it has become increasingly rare to witness a study that uses a singular technique. Historical analysis is coupled with interviews and environmental quality analysis; morphological analysis is augmented with surveys and interviews; behavioral mapping supplements interviews and visual analysis; and quasi-experimental designs combine with action research.
Importantly, the exposure to this potent combination of shared knowledge base, eclectic toolbox of inquiry, and integrative research design is situated within an institution dedicated to training design and planning professionals. The “so what?” question posed to a student’s (or faculty’s) research targets the eventual social or environmental application of the results. The problem-solving nature of architecture historically lends itself to application. What is distinctive about the Milwaukee School is the extent that a broad scope of research application—public policy, standards for professional practice, organizational intervention, design guidelines for a building type, or an actual design informed by research—are open to inquiry.

The compelling research that has emerged from the Milwaukee School clearly reflects the emphasis on integration, shared knowledge, and eventual application. Examination of the topics addressed by our students over the history of the program reveals a distinct evolution from a foundational phase that established and elaborated key concepts in EBS, to more integrative, embedded, and applied approaches within the discipline architecture. The graduates during the first ten years were more likely to focus on specific environment-behavior concepts such as legibility and wayfinding (O’Neill, 1989), environmental control (Paciuk, 1989), and environmental meaning (Downing, 1989). Over time, dissertations became more integrative in their orientation, encompassing and combining perspectives and research approaches to address a wide range of substantive areas within the discipline and practice of architecture. These include: thermal comfort in historic Cairene palaces (Elzyadi, 2001); urban cognition and historic preservation in a world heritage city (Silva, 2004); immigrant choice in housing and real estate strategies (Dearborn, 2004); and organizational and architectural change in an adult day service center (Geboy, 2005). This trend continues with our most recent graduates who pursue equally integrative avenues of research: design of nursing work and nurse stations (Keddy, 2006); culture and aging in relation to thermal comfort (Shin, 2007); and concomitant changes in architecture and institutional culture in long-term care settings (Chapin, 2008). As graduates continue to mature in their positions and pursuits, we anticipate more of this flourishing, resulting in research and ideas that contribute to the Milwaukee School.
Bridging and Blurring

Over the course of compiling and editing this monograph, the editors held numerous conversations about what its title should be. The “building bridges, blurring boundaries” theme arose early, and it held its position throughout the process. Here is why. We see the Milwaukee School as exemplifying two key values: to understand the world and to influence it for the better.

Understanding the world, with an emphasis on people and place, especially while situated within The School of Architecture and Urban Planning, requires blurring the boundaries among the academic traditions associated with the physical sciences, social sciences, and arts and humanities. Within the discipline of architecture, the Vitruvian triad—commodity, firmness, and delight—has had a long shelf life. User needs are typically relegated under commodity as a functional concern—issues that are best dealt with from a social science perspective. But, the Milwaukee School does not channel Vitruvius. Indeed, the approach is characterized by an integrative and holistic approach that challenges the tired conceptual firewalls that balkanize much architectural research. If there is a triad associated with the Milwaukee School, it is one that seamlessly integrates the three different domains that constitute human environments: the material, the socio-cultural, and the experiential.

Influencing the world, on the other hand, requires building bridges within the design disciplines and professions as well as establishing discourse with other fields. The Milwaukee School seeks to directly influence the design of places through better understanding of everyday human experience, program, policy and environmental performance. Thus, we see the research about the human experience of place generated through the Milwaukee School directly utilized in the design of specific settings for older people, schools, housing, healthcare, the workplace, and so on. Other research helps to broadly shape the design of places by addressing such issues as environmental sustainability, cultural heritage preservation, differences in age, gender, and ethnic identity, as well as design education and design theory.

The dual pursuits of understanding and influencing the relationship between people and place are reflected in the twelve chapters by Milwaukee School alumni assembled for this monograph.
The first contribution, by Keith Diaz Moore, helps to frame the chapters for the rest of the monograph. Diaz Moore describes one set of theoretical underpinnings that underlie the Milwaukee School and reflects on the resulting patterns of inquiry and action that blur the boundaries between research and application and bridge the gulf between the discipline and practice of architecture. These patterns include the adoption of an epistemology based on pragmatism, embracing the consensual realm of understanding (based on program, place, and patterns), broadening the scope of inquiry beyond the individual as unit of analysis to one that includes organization and culture, and acting upon the world as a means to understand it.

The search for a proper paradigm for understanding environment-behavior relationships is also the subject of the next three contributions. Herb Childress questions whether over-reliance on analytical thinking inadvertently diminishes our capacity for care. By example, he cites the architectural practice of South Mountain Company on Martha’s Vineyard as well as his own research with teens. He argues for an epistemology based on relational knowledge, one that understands places and the people through dialogue and co-narration, and above all, values the bonds that form between researcher and researched, designer and client, and place and inhabitant.

In the next chapter, Susana Alves argues for a more situated understanding of the connections between people and outdoor space. A situated approach to understanding human-environment relationships highlights people’s strategies and actions in the conduct of the “small doings” of their everyday lives. The “Inclusive Design for Getting Outdoors” research project, of which Alves has been a part, illustrates the strategies that older people use in appropriating the affordances provided in well-designed outdoor settings.

Karen Keddy argues for a feminist perspective for her exploration of the bodily experience of nursing work and the temporal, spatial, and relational aspects of hospital settings. This approach, along with her innovative experiential collage method, focuses attention on nursing actions, as opposed to a more conventional focus on nurses’ “needs.” The findings reveal activities that would otherwise remain hidden from the researcher’s view, and lends support to the idea of providing spaces for nurses to attend to their own recovery. This chapter also provides a segue for the next two chapters which consider the role of stress in other work settings.
Gowri Betrabet’s study of teachers considers the notoriously high stress and high turnover rates among schoolteachers. She employs a dramaturgical perspective to speculate about how the school setting might better serve their psycho-social needs. Based on interviews and analysis of school floor plans, she finds that teachers’ stress-inducing experiences occur in “frontstage” classrooms, hallways and instructional areas. She finds ample evidence to warrant further investigation about the value of incorporating “backstage” spaces and corresponding organizational and social support as a means for teachers to restore balance.

Stress in the workplace is also the subject of Michael O’Neill’s chapter, which reflects on the many studies he has conducted on ways environmental control can be exercised at the level of the individual knowledge worker, the work group, and the organization. O’Neill sees environmental control as an absolute necessity—the silver bullet, as it were—for those with high stress, high strain jobs. Moreover, his review of his own body of research over the last 15 years demonstrates how workplaces designed to enhance choice and control not only reduce stress, but also increase efficiency and boost worker productivity.

The next four chapters shift the focus from workplace to broader considerations about the role environments play in the defining society and culture. Kris Day addresses the topic of public art and its potential for promoting social and racial equity. While focusing on the Civil Rights Memorial in Montgomery, Alabama designed by the artist Maya Lin, Day analyzes how public art can, through messaging, symbolism, and aesthetics, challenge existing power relations, educate, and promote meaningful discourse.

Jung-Hye Shin examines the current interest in South Korea among designers, builders and developers about the significance of authentically Korean architecture. She examines discourse about the hanok, or traditional courtyard house, as well as preservation of the Bukchon neighborhood in Seoul, where traditional houses from the Japanese colonial period (1910-1945) co-exist amidst the high-rises. This debate, which touches on cultural tradition, national identity, well-being, and ecology, is also noteworthy for the way it plays out against the backdrop of rapid economic expansion and globalization.

The discussion of linkages between development and cultural change and transformation continues with Lynne Dearborn’s research in rural Hmong villages in Thailand. Applying Amos Rapoport’s notions of cultural core and systems of activities and settings,
she suggests that while large-scale development serves the policy ends of the Thai government, it also marginalizes minority groups. She calls for a careful examination of the discourse surrounding the wholesale importation of western development models, and for new development models that are supportive of core cultural characteristics and local control.

The connection between local inhabitants and the preservation of world heritage cities is the subject of Kapila Silva’s chapter. Drawing on the work of Kevin Lynch, he advances the concept of “imageable heritage,” as an antidote to the more traditional monument-centric approaches that ignore the symbolic dimensions that connect built heritage to their local communities. His research directly examines both the theoretical base of the preservation field and holds important implications for the policies of the United Nations Education, Scientific, and Cultural Organization (UNESCO) and the preservation professionals associated with it.

The remaining two chapters bring the chapters back full circle to the role of EBS research in shaping both academic research and professional practice. In the penultimate example, Barbara Cooper recounts the collaborative process that she and her colleagues undertook to bring EBS literature into the field of occupational therapy, culminating in the Person-Environment-Occupation model (PEO), which has become widely accepted and advanced within the academy and in bringing an environmental perspective into treatment protocols. Working with like-minded researchers, we see how ideas from different fields are collected, analyzed, synthesized into a new framework, and finally tested and critiqued by others.

In the concluding chapter, Carole Després reflects on how her multidisciplinary experiences at UWM led to the establishment of the Interdisciplinary Research Group on Suburbs at Université Laval in Québec City, Canada. The group’s sustained focus has yielded a richer understanding of the suburbs as phenomenon and the critical challenges that they present: aging suburbs, urban sprawl, and the necessity of sustainable development. The group evolved from producing multidisciplinary and interdisciplinary research, architectural and urban design schemes, and contractual applied research, to a now transdisciplinary program of research and action. The result is improved collaboration among scientists, professionals and policy decision-makers, as well as better training of urban planners, architects and social scientists to work together and become agents of change. As former head of graduate programs in architectural sciences and urban design at Laval, she contributed to the restructuring
of the professional programs in architecture and urban design, making the case that both are “undisciplined” disciplines predisposed to interdisciplinary collaboration.

These chapters, though just a snapshot in time of the research agendas of a dozen alumni, attest to the commitment, vigor, and persistence with which Milwaukee School alumni seek to understand the environment-behavior relationships and to create—whether through basic research, policy, or design—more humane, productive, and culturally responsive places.

Members of the Milwaukee School rightfully take pride in their advocacy of social and environmental change. But we would be remiss if we failed to allow a last word on the subject from our distinguished colleague, teacher, and friend, Professor Amos Rapoport. After review of a set of abstracts compiled for this monograph, he wrote:

*Most contributions emphasize changing the world in different ways. But to change the world in predictable ways (and design is prediction to be tested) one must first understand the world. That demands that EBS not be seen as an ad hoc aid to environmental design, but as a new scientific discipline, which develops explanatory theory, becomes cumulative and can turn environmental design into a science based profession.*

Only time will tell how EBS will evolve as an explanatory, interpretive, emancipatory, or action science, or combination thereof. But, the legacy of the Milwaukee School, as exemplified by the more than 50 dissertations to date, the research agendas and accomplishments its faculty and graduates, and the chapters assembled for this monograph attests that there are many boundaries blurred and bridges to be built, as well as much intellectual terrain still waiting to be explored.