Book Review

"Welcome to Your World"

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Winston Churchill famously said, "We shape our buildings, thereafter they shape us." If recent advances in neuroscience are correct, the built environment may be shaping us in ways we hardly perceive, at least not consciously. Our blindsight—to borrow a neurological term—may be changing, however, as advances in neuroscience are giving researchers—and those of us involved with the built environment—new insights into how the human brain interacts with its surroundings.

Why should facility management faculty concern themselves with advances in neuroscience? The reasons are manifold, including accreditation standards.

The IFMA Foundation, the education branch of the International Facility Management Association (IFMA), provides a cohesive set of accreditation standards that includes 15 student competencies. Competency 6.1 states, "Using factors around health, safety, welfare, comfort, safety and security within the organization, the student can practice applications of human resource management." This is expanded further into four student learning outcomes, two of which appear below:

> Students know:
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> a) Research methods for assessing human factors, including the environmental, psychological, physiological and ergonometric factors, and for monitoring and evaluating performance.
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> Student work demonstrates understanding of:
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> b) Ways to develop and implement practices that support the performance and goals of the entire facility organization.

How does one assess human factors? How does one "support the performance and goals of the entire facility organization," assuming that happy building occupants are part of that mission? Neuroscience provides an intriguing possibility, offering a level of precision and insight unavailable from surveys or other traditional research methods.

Addressing the explosion of research in neuroscience is *Welcome to Your World: How the Built Environment Shapes Our Lives* by Sarah Williams Goldhagen. Ambitious and accessible, *Welcome to Your World* provides FM faculty members interested in the impact of neuroscience a valuable, if at times flawed, introduction to the field.

Welcome to Your World is certainly an ambitious work. In the very first words of the introduction, Goldhagen asserts that

> This book comes with a bold promise. I, a stranger, welcome you to the world you live in every day. Yet I am confident that as you read what follows, what you know and how you think about your world will shift. It will become a different place than it was before. . ..
>
> How do I know? Because it happened to me.

Advances in neuroscience have led to a rethinking of the mind-body relationship. Once thought to be separate from the body, the mind is now understood to be a highly integrated organ of the body.

> [I]t became apparent that a newly developing paradigm, variously called "embodied" or "grounded" or "situated" cognition, was emerging from the confluence of work in many disciplines, some of them in the sciences. This paradigm holds that much of what and how people think is a function of our living in the kinds of bodies we do. It reveals that most—much more than we previously knew—of human thought is neither logical nor linear, but associative and nonconscious.

Because the "bulk of our cognitions are nonconscious," the occupants of any given building are judging it constantly without even being aware they are doing so. Goldhagen states that some researchers have estimated that "90 percent of our cognitions are nonconscious." That should give any facility manager pause.

Goldhagen builds her case chapter by chapter. In Chapter 1, "The Sorry Places We Live," she argues a point—first made in the "Introduction"—that much of the built environment is "not really designed in any but a rudimentary sense of the word." Discussing two suburban developments that fail to provide many basic amenities for their inhabitants, Goldhagen argues

> The problem was an overly conventional and narrowly bottom-line approach to decisions about the design of their buildings, infrastructure, and landscapes, resulting in stultifying environments that functioned far less optimally—or to put it negatively, far more harmfully—to the well-being of its inhabitants than they could have.

What leads to such poor-quality environments? Among many factors, Goldhagen notes that courses "in sociology, environmental and ecological psychology, human perception and cognition" are rarely required as part of a design education. In other words, Goldhagen asserts that those of us in charge of the built environment do not understand how humans actually perceive the built environment.

Chapter 2, "Blindsight: Experiencing the Built Environment," posits that much of our perception of the world is nonconscious. Using the example of three walks in a park—a brisk walk to a meeting, a stroll with a friend, and a meandering amble by oneself—Goldhagen observes that our perception of the park will vary based on how preoccupied we are.

Together, Chapter 3, "The Bodily Basis of Cognition" and Chapter 4, "Bodies Situated in Natural Worlds," make the mind-body connection and then the body-world connection—that is, the proposition that we can only understand the mind as part of the body and the body as part of the world.

Chapter 5, "People Embedded in Social Worlds," builds upon the second half of Churchill's quote—i.e. "thereafter they [buildings] affect us." Using a scenario involving the possibility of traveling to Paris' Latin Quarter, Jerusalem's Old City, or downtown Seoul, Goldhagen makes that case that a person's moods and thoughts would be altered by his or her environment, with each of the distinct environments in the scenario leading to very different results.

In Chapter 6, "Designing for Humans," Goldhagen offers five broad design strategies:

1. Ordering Patterns: Embodied Math, Embodied Physics
2. Complementing Patterns with Complexity
3. Designing Change into the Built Environment
4. Character: The Puzzle of Well-Chosen Metaphors
5. Formulas and Freedom: The Wide Range of Experiential Aesthetics

Taken together, these strategies should lead to comprehensive but complex environments that, according to Goldhagen, "will inspire and ennoble many days and lives."

In Chapter 7, "From Blindsight to Insight," Goldhagen summarizes the previous chapters, ultimately arguing, "Shouldn't a better built environment be the legacy we leave to the world?"

While intriguing, *Welcome to Your World* is not fully convincing. Some of Goldhagen's examples do not ring true. For example, Goldhagen describes an angular Daniel Libeskind building, saying a visitor will receive a nonconscious directive to "move away from that [slanted] wall." Having visited a similar Libeskind building, I encountered no such feeling, being more interested in how close I could get to the wall before my forehead touched it.

More problematic is the implication that neuroscience can provide a magic design formula. The critical issue is one of taste, the idiosyncratic preferences we all harbor. The closest Goldhagen comes to addressing taste is the following:

> To be sure, not everything about how people experience the built environment cuts across cultural and historical particularities, and individual differences, gender- and age-based differences, and cultural differences exist. (Two quick examples: elderly people perceive the slope of a ramp as steeper than younger ones do, and women seem to gravitate more toward "refuge" spaces than men do.)

A half-paragraph is far too little to devote to such a critical question.

Welcome to Your World is nicely illustrated with color photographs throughout, which is ironic, given that Goldhagen concludes the book with a note on the limits of photography to convey full sensory richness of architecture, a point with which I fully agree. Additionally, I found Goldhagen's discussions of works that I have seen (including the Seattle Central Library, the High Line park in New York, the Aqua Tower in Chicago, and Gund Hall, the home of the Harvard University Graduate School of Design) to be among the more effective passages in the book. For students, who are likely not as well travelled as Goldhagen, the lack of familiarity with some of the works she discusses may be an impediment to their fully understanding her points.

Perhaps the importance of neuroscience in architecture—a new idea—can be best explained by a very old idea. Writing near the inception of the Roman Empire, the Roman architect Vitruvius wrote that a work of architecture should demonstrate *firmitas*, *utilitas*, and *venustas*, which was translated by Henry Wooton in the 17th century into *firmness*, *commodity*, and *delight*.

In the Vitruvian triad, *firmness* (the ability of a building to remain standing) and *commodity* (the building's usefulness) are pretty clear, lending themselves to rational measurement. *Delight* is more difficult to prove, and tends to be idiosyncratic, often influenced by the gender, age, and cultural differences that Goldhagen glosses over. Ultimately, even if neuroscience cannot "prove" that a space is delightful, it might help facility managers and others avoid the creation of spaces that are miserable, particularly at the nonconscious level.

Overall, *Welcome to Your World* provides an accessible, engaging, and generally beneficial introduction to the intersection of neuroscience and the built environment, and I recommend it for FM faculty members who are looking to introduce this cutting-edge aspect of human factors in their facility management coursework.