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DESIGN RESOURCES

DR-01 Architectural Wayfinding

Architectural Wayfinding

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Issue and Its Importance to Universal Design

Most designers give wayfinding low priority, seeing it as a hindrance to good design or a problem to be solved with signage (Carpman and Grant, 2002). Given the impact of wayfinding on human psychology, occupant satisfaction, health, long-term performance, and the financial bottom line, inattention to wayfinding reduces the inclusiveness of buildings for everyone. Understanding a few basic principles of architectural wayfinding design can help designers to enhance building performance and to provide more inclusive solutions.

Good architectural wayfinding design is important to universal design because it facilitates user access, increases satisfaction, and reduces stigma and isolation of users with disabilities. It reduces the confusion of visitors and mistakes by employees, saving time and money and preventing accidents. It also reduces stress, boosting health, and productivity (Evans and McCoy, 1998). “The ability to find one’s way into, through, and out of a building is clearly a prerequisite for the satisfaction of higher goals,” according to designer Jerry Weisman in 1981.

Weisman argued that “‘legibility of an environment’ – the extent to which it facilitates the process of way-finding” has significant behavioral consequences, citing its effects on the happiness of elderly residents in group housing settings as an example (Weisman, 1981: 189, 204).

Key Terms

Legibility of space: Ease of user in organizing visual information in a space into a coherent basis for action.

Boundary: The separation between interior and exterior space.

Clear articulation: Easily identified spaces, demarcated by shape, color, arrangement, or signage.

Coherent grouping: Spaces that are well organized according to function or as destination zones.

Legible circulation systems. User paths that are intuitively perceptible and lead the user to well defined decision points.

Integrated communication systems. Environmental graphics and signage that are well placed and underscore wayfinding messages in the built environment.

Existing Research/Evidence

Legible surroundings promote “emotional satisfaction, the framework for communication and conceptual organization, [and bring] new depths to everyday experience” (Lynch, 1960: 2-4). Legibility of the built environment is served by the following components (Arthur and Passini, 1992):

Architectural Wayfinding Components

Objective	Components	Elements
Clear articulation and coherent grouping of exterior and interior spaces	Shaping site and setting	Landscaping, berming Roadways, entrances/exits Pedestrian routes sidewalks, pathways
	Building form and architectural features	Building form Building volumes Physical separation or clustering of components Roof design Placement of openings Cladding (skin) - textures, materials, colors Decoration, ornamentation
	Articulating interior spaces	Programmatic organization Defining spatial units Defining destination zones Interior design
Creating legible circulation systems design	External and internal circulation systems	Design concepts (paths, markers, nodes/ intersections, edges/links) Approach from street Roadways Parking External paths and walkways Entrances and exits Connection to mass transportation
	Level change devices	Elevators Staircases Escalators
	Internal transportation	Mobility aids People movers Fixed rail systems
Integrating communication systems	Information wayfinding design	Environmental graphics Sign systems Orientation devices You are there maps Real-time information devices

Architectural wayfinding focuses on wayfinding in built forms and urban settings because wayfinding strategies in natural outdoor settings are different (Golledge, 1999). In outdoor built environments, properties of spatial layout are more important than program in determining patterns of movement, while inside buildings, movement “can be understood primarily in terms of specific purposefulness rather than spatial regularity” (Peponis and Wineman, 2002: 280). While some experts believe that interior and exterior wayfinding is comparable (Arthur and Passini), Hillier and Hanson believe “there is no homogeneous continuum of spatial principles from the very large to the very small” (Hillier and Hanson, 1988: 144). Outside spaces are experienced as a continuous field, while interiors are “a series of discrete events, expressly and explicitly disconnected” from the greater world outside (Hillier and Hanson, 1988: 144).

“One of the most common assumptions about space,” say Hillier and Hanson, “is that human spatial organization is the working out of common behavioral principles through a hierarchy of different levels,” that “similar social or psychological forces shape space, differing only in involving larger numbers of people and larger physical aggregates” (Hillier and Hanson, 1988: 143-144). It is not. Different types of buildings will have specific way finding issues. Special design challenges are confronted in transportation terminals, hospitals and medical facilities, museums and other cultural facilities, and recreational parks.

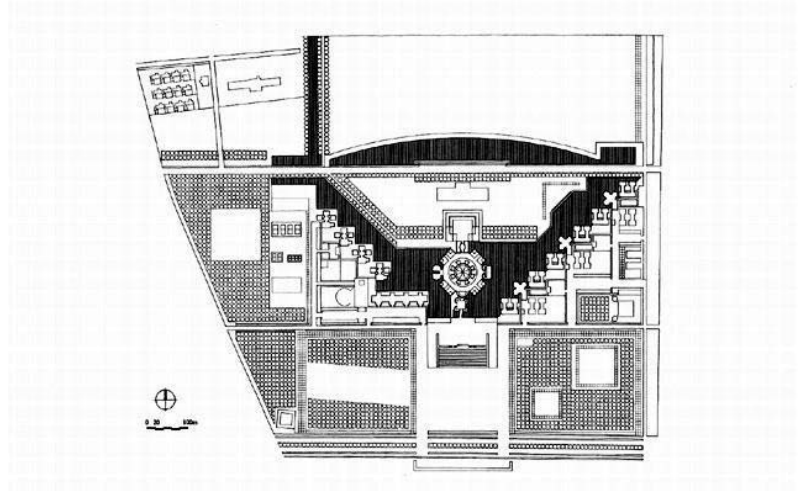
Spatial planning, articulation of built elements, and circulation system design are commonly the responsibility of architects, site designers, the engineering team, interior designers, and building owners and administrators. The design team should always include experts in environmental information and, especially in more complex settings, wayfinding design. Informed spatial planning defines buildings that work and the success or failure of future building users (Evans and McCoy, 1998).

Unfortunately, most architects and designers are not trained in or rewarded for wayfinding design. Design teams are often not properly informed of government codes and sign-related regulations and requirements, don’t understand how wayfinding ease can promote facility use and customer satisfaction, underestimate the need for wayfinding expertise and internal wayfinding leadership, and overlook the detailed, long-term vision that wayfinding requires (Carpman and Grant, 2002).

Exterior wayfinding obstacles are common, including poor identification of building entrances and lack of clear access from parking facilities or mass transportation. Common interior wayfinding obstacles include the failure to make spaces within a facility look unique, connecting corridors at acute or obtuse angles, and failure to provide sufficient lighting at intersections, entrances to major destinations, and landmarks (Carpman and Grant, 2002). There are many other features that lead to poor wayfinding performance, including ambiguous circulation patterns, repetitive architectural features, contradictory articulation of interior and exterior spaces, and numerous entrances undistinguished from one another (Arthur and Passini, 1992).

Environments that support successful wayfinding behavior can also be spatially interesting, sophisticated, and complex. In fact, “the challenge of wayfinding design is to create interesting settings that allow for gratifying spatial experiences and that are safe, accessible, and wayfinding-efficient, despite any complexity they may have,” (Arthur and Passini, 1992: 37, 43).

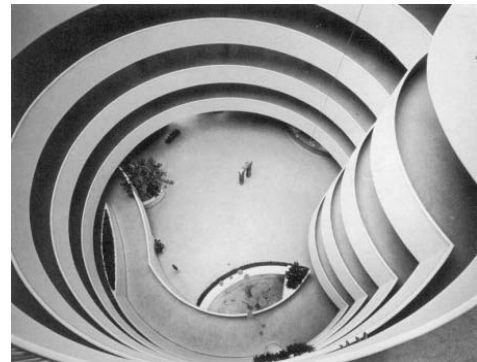
Best Practices/Practical Applications



Shaping Setting and Site
National Assembly Building
Dhaka, Bangladesh

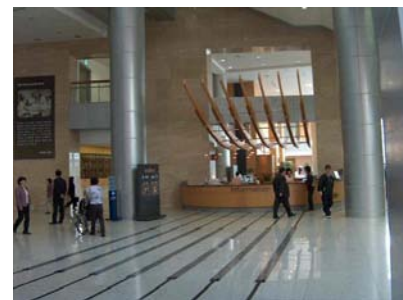


Building Form
The Neuroscience Building
La Jolla, California



Legible circulation systems
Guggenheim Museum
New York City

Integrated environmental graphics
Severance Hospital Seoul South Korea



Design Guidelines

Despite its demonstrated importance to building use and operational efficiency, there are no regulated standards on wayfinding and wayfinding design. However, U.S. Life Safety Codes and accessibility standards affect the design of certain wayfinding elements. Standards related to information wayfinding can also be found in these sources. Local building codes and zoning ordinances may include additional standards for such elements as pathways, circulation systems, exits and entrances not covered in national standard books. Some general guidelines include the following:

- Wayfinding is as much an architectural issue as a graphic issue. Architects and designers need to take responsibility for inclusive approaches to wayfinding and learn more about the psychological and health-related impacts of building design
- Whether addressed through architecture or information, the design of wayfinding systems should include: (1) identifying and marking spaces; (2) grouping spaces; (3) linking and organizing spaces; and (4) communicating this information to the user.
- Wayfinding design guidelines and best practices vary by building type, size, and layout; urban, suburban or rural location; frequency of use; and user requirements, preferences, and characteristics.
- Every building that has undergone substantial functional revisions or additions should have a user audit / post occupancy evaluation (POE) at least once every five years.
- Provide as many wayfinding cues in the environment or in the architecture as possible, rather than through signage. Landmarks that help visitor orientation and direction-giving can be fundamental for this purpose (VanderKlipp, 2006).
- Designers must remember that spatial learning and thinking are not the same as visual learning and thinking. In addition to spatial perception, cognitive mapping involves use of other sensory inputs, integration of inputs over time, movement, input from other knowledge and value systems, and frameworks for spatial learning gained early in life (Downs and Stea, 1973).
- Designers should also remember that small models of designed environments may produce unanticipated perceptual effects when built at full scale. Factors in the environment, such as smog, are not represented, and neither are the non-visual effects of the full-scale building. Wayfinding elements may be too small or considered insignificant in scale models. In context, at full scale, they may create unintended effects (Downs and Stea, 1973).

Extensive innovations in architectural wayfinding design and the results of scientific research by architectural and behavioral experts over the past 20 years have not been aggregated in a single, up-to-date publication. Such a publication could not only educate designers, but elevate the status of wayfinding and other aspects of behavioral impact of the built environment as a design topic.

Acknowledgements

This paper was developed in part with funding from the National Institute on Disability and Rehabilitation Research (NIDRR), U.S. Department of Education, through the Rehabilitation Engineering Research Center on Universal Design and the Built Environment (RERC-UD), a partnership between the Center for Inclusive Design and Environmental Access (IDeA) and the Ontario Rehabilitation Technology Consortium (ORTC).

References

Arthur, P. and Passini, R. (1992), *Wayfinding: People, Signs, and Architecture*, Ontario: McGraw-Hill Ryerson Ltd. Reissued as a collector's edition in 2002 by Focus Strategic Communications, Inc.

Downs, R. and Stea, D. (eds.). (1977). *Maps in Minds*, New York: Harper and Row.

Evans, G. and McCoy, M. (1998). When Buildings Don't Work: The Role of Architecture in Human Health, *Journal of Environmental Psychology*, v. 18: 85-94.

Golledge, R.G. (ed). (1999). *Wayfinding Behavior: Cognitive Mapping and Other Spatial Processes*, Baltimore, Maryland: The Johns Hopkins University Press.

Hillier, B. and Hanson, J. (1988). *The Social Logic of Space*, Cambridge: Cambridge University Press.

Lynch, K. (1960). *The Image of the City*, Cambridge, Massachusetts: MIT Press.

Peponis, J., and Wineman, J. (2002). Spatial Structure of Environment and Behavior, pp. 271-291 in Bechtel, R. and A. Churchman, eds., 2002, *Handbook of Environmental Psychology*, New York: John Wiley & Sons.

Weisman, J. (1981). Evaluating Architectural Legibility: Way-finding and the Built Environment, *Environment and Behavior*, v. 13(2): 189-20



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