

Building Healthy Places: A Stairway Renaissance

By Phil Gutis
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Long relegated to dark, windowless caverns behind locked fire doors, stairways are taking center stage in building design, providing some of the most glamorous examples of a new movement intended to encourage health through design. From the dramatic black-and-white LED-lit feature stairs at the University of Waterloo Engineering Building in Waterloo, Ontario, to the street-like three-story main stairwell at Cooper Union's new academic building in New York City, building visitors are increasingly greeted with inviting and dramatic stairs as they enter new and redesigned spaces.

In addition to adding beauty to new buildings, the new focus on stairs is winning plaudits from the public health community, which for years has eagerly sought out the building and design world as new partners in a quest to cut the growing epidemic of obesity and the resulting health problems it precedes, including high blood pressure, heart disease, and diabetes.

The movement, termed active design, received its latest boost from New York City Mayor Michael Bloomberg, who in July issued an executive order requiring all city agencies to use active design strategies such as encouraging stair use in new construction and major renovation projects. Bloomberg also announced the formation of a new Center for Active Design and proposed two bills to promote stairway access in all new buildings and major renovations in the city—one requiring owners to give occupants access to at least one clearly identified stairway in a building, and the other permitting the use of “hold-open” devices in the doors of one stairway per building for a maximum of three consecutive floors; the doors would shut automatically in case of fire. The initiative is the latest in Bloomberg's public health measures, which have included widespread bans on smoking, creation of new bike lanes, and the much-discussed (and recently judicially rejected) ban on supersized sodas.

Growing Support

Unlike the soda ban, Bloomberg's active design initiatives drew little criticism and have been widely applauded, particularly by members of the building design community, which for nearly 15 years have been discussing—and increasingly incorporating—active design into building plans. It is a movement that many liken to the Leadership in Energy and Environmental Design (LEED) certification program, which now claims 10 billion square feet (929 million sq m) of participating building space.

“New York City has been a leader when it comes to promoting healthier eating, and now we're leading when it comes to encouraging physical activity as well,” Bloomberg said in announcing the new initiatives. “Physical activity and healthy eating are the two most important factors in reducing obesity, and these steps are part of our ongoing commitment to fighting this epidemic.”

David Burney, commissioner of the New York City Department of Design and Construction, notes that for decades architects and planners “have been making it easier for people to be sedentary.” The active design movement, he says, “asks design professionals to be part of the solution and find new ways to encourage movement, both in buildings and on the streets.”

Combating Weight Gain

Bloomberg and his commissioners cited public health research, claiming that the new initiatives would have profound impacts. Just two minutes a day of stair climbing can help prevent the one-pound (0.45 kg) average annual weight gain that Americans experience each year, Burney says. The city also said that promoting the use of stairs would save the equivalent of 500,000 pounds (227,000 kg) of annual weight gain among adult New Yorkers.

Similar to LEED, active design is an increasingly large field, with innumerable examples of photos, renderings, design and construction, conferences, and guidelines focused on its implementation. According to the new Center for Active Design, which has received start-up funding from New York City and the federal Centers for Disease Control and Prevention, the field of active design includes four primary elements: building design, transportation, recreation, and improved access to nutritious foods. The guiding principle running through these four areas is “promoting health through design,” says the center, which opened its New York City office this summer with a full-time staff of four.

Active design encourages increased physical movement within buildings and supports a safe and vibrant outdoor environment for pedestrians, cyclists, and transit riders. In the area of recreation, it seeks to shape play and activity spaces for people of different ages, interests, and abilities. And regarding food, it hopes to encourage improved access to nutritious meals in communities that need them most.

Via Verde

One prominent example of active design is Via Verde, a 69,000-square-foot (6,400 sq m) residential complex in the Bronx, which is a 2013 finalist in the ULI Global Awards for Excellence program and a 2012 winner of a ULI Terwilliger Center Jack Kemp Workforce Housing Models of Excellence Award. The complex, built on a former brownfield, has been recognized as a model for sustainable and affordable housing that has helped transform the neighborhood.

Jonathan F.P. Rose, president of Jonathan Rose Companies, the project’s primary developer, says all the firm’s buildings focus on integrating health, environmental, and economic benefits. “We want buildings that encourage people to be more active,” he says. “People are happier when they are healthier, and obviously they have lower health care costs. Those are the co-benefits of creating individual and societal well-being.”

Codeveloped with Phipps Houses and designed by Dattner Architects and Grimshaw, Via Verde is built around a dynamic garden that Rose says serves as the organizing element for the 222-unit development. The connected green rooftops that link the project's low-rise townhouses, mid-rise duplex building, and 20-story tower are used to harvest rainwater and grow fruits and vegetables, and they provide open space. Other project elements are open-air courtyards, prominent stairs, bike storage spaces, and a health and wellness center operated by Montefiore Medical Center.

Joan Blumenfeld, the interior design leader of the New York City office of Perkins + Will, is also involved in active design. As president of the New York chapter of the American Institute of Architects, she started working with the Bloomberg administration in 2007 to rewrite interior design guidelines and began exploring components of active design, she says. But after an initial burst of excitement, interest in active design seemed to deflate among the building community, she says. "We were talking about it, but there wasn't a whole lot of interest among our clients," she notes. "In the past year, though, there has been an amazing surge of interest. It seems to very much be on people's minds."

One of Perkins + Will's biggest and most prominent examples of active design is the new headquarters for the police academy under construction in Queens, New York. Blumenfeld describes the eight-story building as a skyscraper on its side, with 700,000 square feet (65,000 sq m) of space. "The building is designed for stairs to be the primary means for people to be moving anywhere," she says.

When it opens, scheduled for January 2014, the building will have a network of glass-faced, daylight-filled pedestrian arteries and a dramatic cantilevered staircase of precast concrete, terrazzo, and laser-cut metal at the main entrance. Blumenfeld notes that New York City's new construction codes permit buildings to use fire-rated glass doors and smoke-activated automatic closing devices, which allows as many stairwells as possible to be visible and more inviting to building occupants.

The 144-page Active Design Guidelines, published by New York City in 2010, dedicates eight pages to the topic of stairs, ranging from building code requirements regarding fire safety to recommendations for the height of stair risers and width of treads: for instance, "research indicates that stairs with 7-inch risers [18 cm] and 11-inch [28 cm] treads may provide the most comfortable travel for the general population."

The guidelines note that most building codes look at stairs as part of an emergency access and exit system. But they also point out that buildings that better incorporate everyday stair use may actually improve occupant safety in emergencies by making the stairs more accessible, better lit, and wider. Furthermore, whereas code-mandated fire separations are traditionally met through the use of masonry or gypsum board with solid metal doors, the guidelines note that exit stairs can be made more visible and appealing by using fire-rated glass enclosures and, if necessary, through the use of additional sprinkler systems and smoke control systems.

Access for the Disabled

The renewed focus on stairs does raise questions about cost and access to buildings for people with disabilities. Regarding cost, Blumenfeld notes that creating internal stairs between floors can be complicated and expensive because of the need to cut holes between floors, install steel beams, and construct new staircases.

Combining the principles of active design with Americans with Disabilities Act accommodations can be tricky because designers should not make any person feel that he or she is different from the majority, she says. "We're not forcing people to use the stairs," she notes. "Instead, it is more about making the stairs more appealing."

Research cited by the New York City guidelines says wider staircases—at least 56 inches (142 cm)—prompt increased stair use. The guidelines also encourage a focus on enhancing the "sensory appeal" of the stairs by highlighting interesting views, incorporating music and (noncombustible) artwork, and bright and inviting colors.

Jay Szymanski, an associate at the Boston-based firm the Architectural Team, says effective active design does not force people to use stairs. “We want to give people viable options. We don’t want to take anything away; we want to give more choices.” As an example, Szymanski points to his recent work on the Homes at Old Colony, a redevelopment of one of the nation’s oldest public housing projects, built in 1939 in South Boston.

For this redevelopment, the Architectural Team turned dark, isolated stairwells into inviting areas with natural daylight that are open to lobbies and natural gathering points.

Active Design Elements

Phase I of the redevelopment also incorporates other elements of active design. The development has narrow streets with parking on both sides, which serve to slow traffic, and has new paths and connections to a nearby beach and park beyond the community’s border. “Old Colony has a checkered history of crime and drug use,” Szymanski says. “By using active design, we’re seeking to make residents feel safer to be outside and more connected to their community.”

The Robert Wood Johnson Foundation, the largest philanthropy dedicated to public health in the United States, is widely credited with starting in the late 1990s the work that would evolve to become the active design movement. James F. Sallis, a distinguished professor of family and preventive medicine at the University of California, San Diego, has been working with the foundation since it first addressed the connection between physical activity and the built environment. “I’d been interested in physical activity for a long time, and it became pretty obvious to me that some designs were good for people and some were not good,” he says. “But there was very little research making the connection between public health and physical activity.”

In a telephone conversation from Newark Airport en route to Kenya for active design meetings, Sallis talked about his work as the director of Active Living Research, a national program of the Robert Wood Johnson Foundation that for more than a decade has funded research on environmental and policy strategies to promote daily physical activity for children and families.

Beyond the Individual

A shift in thinking has taken place from a failed “individualist model” that sought to educate people about the benefits of exercise, and get them to put on running shoes and start moving, he says. “That’s all changed. Now there’s a scientific consensus that we can design places where people can be active or where they cannot be active,” he says. And in the United States and much of the developing world, planners continue to design communities and buildings that discourage physical activity, he notes. “As long as we keep designing communities in which people cannot easily walk for transportation, we’re going to lose this battle,” he says.

Dr. Karen Lee, senior adviser on the built environment and healthy housing for the New York City Department of Health and Mental Hygiene, agrees. “Health education is not effective if you don’t have the right environment,” she says. “Even though people know they should exercise more, they are embedded in an environment that makes it very difficult to sustain over time.”

In 2008, the New York City Department of Health began distributing bold signs promoting use of stairs in city buildings. More than 30,000 signs reading “Burn Calories, Not Electricity” have been distributed, Lee says, and the signs have been spotted in other cities, including London and Portland, Oregon.

The numbers in favor of stairs are compelling: a person burns almost seven times as many calories climbing stairs as he or she does riding in an elevator, the New York City Department of Health reports. And according to one study, men who climb at least 20 flights of stairs a week have a 20 percent lower risk of stroke or of dying from any cause.

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From Research to Construction

The key takeaway from the research is that changing the built environment has immediate and long-term public health benefits. Lee says. But translating the research into policies and building and community planning has been challenging. “The really important piece is that we know this has to be cross-sector,” she says. “The different sectors must work together.”

Promoting such cooperation is to be one of the roles played by the Center for Active Design. “Our job is to translate the health evidence into practical design concepts,” says Joanna Frank, executive director of the center. “The two professions have a common cause but not much understanding of each other. Our job is to translate, to highlight, and to promote work across professions.”

Codeveloped by Jonathan Rose Companies and Phipps Houses, Via Verde is on a 1.5-acre (0.6 ha) site in the South Bronx in New York with access to mass transit. The mixed-use project serves a range of income levels with 151 rental apartments and 71 co-ops. Connected green rooftops provide access to garden plots and open space while stairs are incorporated throughout the project. (David Sundberg)

The center is a logical outgrowth of the years of work New York City has invested in improving public health, Frank says. In 2011, Bloomberg convened an obesity task force and asked all city agencies to pull together their most effective programs and agree on which initiatives needed additional support. Active design emerged from that initiative, and the city determined that an independent, not-for-profit organization would best help city agencies—and officials from other cities across the United States and worldwide—implement active design.

The center is the official repository for the city's Active Design Guidelines, "a manual of strategies for creating healthier buildings, streets, and urban spaces." Since its publication in 2010, more than 15,000 copies of the guidelines have been distributed.

Creative Thinking

Claire Weisz, founding principal of WXY Architecture + Urban Design in New York City, is an advocate of active design principles. "We've excluded buildings from places of fitness," she says. Active design "requires creative thinking at every scale—from the park bench and water fountains to buildings and developments and entire neighborhoods.

"Our focus is working with both public and private clients on implementing active design ideas at various scales, not just the building," she says. "From outdoor furniture and structures to public spaces and large-scale urban design challenges, we're using techniques both new and old to encourage activity, exercise, and healthy living."

One project WXY is leading with DLandStudio, an architecture and landscape design firm in Brooklyn, New York, is a feasibility study and planning phase for the QueensWay, the conversion of a 3.5-mile (5.6 km) section of abandoned railway tracks and structures in Queens into parks and recreational paths. The goal is to create in Queens a version of the hugely successful High Line park in Manhattan and Chicago's Bloomingdale Trail (Urban Land, July/August 2013). In Manhattan, WXY is leading a community-based waterfront planning project on the East River between the Brooklyn Bridge and East 38th Street.

Schematic plans for the project, to be completed this fall, will include improved access to the waterfront and an interconnected network of waterfront sites.

Scaling Up

Though the active design movement has clearly taken root in the building community, the changes tend to be in isolated pockets, Sallis says, and "not at the scale that they need to be to give everyone access to places that will help change their activities. We need to go from retail to wholesale," he says. "Yes, complete-street ordinances have been passed, but at what percentage? Yes, zoning ordinances have been adopted, but, again, what percentage?" Sallis says the Active Living Research program will next tackle how to bring active design to scale. "In the next year, I want us to look at how to go from niche to norm," he says.

For more on Building Health Places, go to uli.org/health.

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