



Fit-City:

Promoting Physical Activity through Design



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Fit City: Promoting Physical Activity through Design

POLICY RECOMMENDATIONS BY AIA NEW YORK CHAPTER

The American Institute of Architects New York Chapter in partnership with the New York City Department of Health and Mental Hygiene hosted a public conference to examine and debate the ways and means for increasing physical activity through design interventions. The conference brought together public health professionals, architects, landscape architects and urban planners to address both building, site and neighborhood-scale design opportunities for increasing physical activity, thereby helping to reduce chronic illness associated with obesity and inactivity such as diabetes and heart disease. Speakers included Commissioner Thomas R. Frieden, MD, MPH and Richard Jackson, MD, MPH.

Through case studies and analysis, conference participants explored recommendations for modifications to the built environment as a means to facilitate and encourage physical activity. The mission of the American Institute of Architects includes advancement of scientific knowledge in the creation of an improved physical environment, directly impacting the quality of life of those who use buildings and related open space.

As a follow-up to the broad policy discussions and specific case studies presented at the Fit City conference, the AIA New York Chapter has drafted the following recommendations for influencing public policy relative to the urban environment and its impact on physical activity and chronic disease prevention.

The twelve ideas summarized here are a condensation of the findings presented during two panel discussions addressing buildings (in particular stairwell use and access to facilitators of physical activity) and sites (parks and neighborhood design). These topics were reviewed in depth, during an invitation-only agency work session on public policy implications. This work session began to synthesize the panel presentations into specific public policy initiatives to be further assessed with elected officials and public agencies.

INTRODUCTION

The summary intends to help set the agenda for joint efforts to build enhanced connection between design and public health, and to form voluntary, policy and regulatory initiatives reflecting this connection.

1. WALKABILITY AND SAFETY

Raise consciousness among architects, landscape architects and planners about the importance of “walkability” and the power that planning and design have to create places that promote pedestrian circulation and movement. Safe public access to these conditions is a pre-requisite and can be influenced by design features such as lighting, and policy/resource issues such as policing.

2. THE BUILDING CODE, STAIRWELLS AND OTHER AMENITIES

Re-examine and revise building code to improve stairwell design, access and visibility. Encourage improved ventilation, safety and amenity of stairwells by including windows and widening path of movement. Encourage architects and interior designers to think three-dimensionally and vertically in cross-section - not just horizontally in plan - thereby improving ease of way-finding and the desire to move through space without resorting to elevators. Locate posters or other “prompts” about stairwell use at elevators and escalators. Include exercise and shower facilities in all buildings designed for work.

3. ZONING RESOLUTION, STAIRWELLS AND OTHER AMENITIES

Revise zoning resolution to encourage convenience stairs and offer allowable floor area bonuses for developers who propose wider stairwells and physical activity-facilitating spaces such as exercise rooms and shower facilities, measuring each proposal for its environmental benefits, qualitative and quantitative. Use non-prescriptive zoning allowances as in Zoning for Housing Quality that give bonus points for achieving a specific goal rather than prescribing the exact means to do so.

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4. DIVERSITY OF RECREATIONAL ACTIVITY

Create venues for different types of recreation and a diversity of experience. Creating a democratic choice on how people move through space will, in turn, keep them coming back. For example, Brooklyn Bridge Park as designed will allow a variety of different activities; green roofs on new or existing buildings permit all sorts of new recreational possibilities.

5. ACCESSIBILITY

Encourage exercise and physical activity for people with different and particular needs by following the tenets of Universal Design, thereby encouraging equality of movement. Ramps and site sloping, for example, generate more physical activity than escalators and people movers.

6. INFRASTRUCTURE GUIDELINES

Implement infrastructure guidelines – such as those of the NYC Department of Design and Construction – that support walkability and accessibility of physical activity-promoting spaces in the public domain by the quality of design and construction, including uses of space, material durability, amenity and maintenance.

7. HOUSING

Incorporate more conditions and spaces for physical activity into housing design, including safe stairwells, play areas and exercise facilities. Educate tenants and homeowners about enhanced opportunities for movement in their apartment building or house and their neighborhood. Locate posters or other prompts about stair use at elevators and escalators of multi-story residential buildings.

8. SCHOOL USE

Keep public school buildings and schoolyards open before and after classroom hours to encourage community use and recreation activities. Create integral relationships between schools and neighborhood parks to increase stewardship for open spaces as well as enhance opportunities for environmental education and awareness.

9. BICYCLES

Encourage bicycle use by promoting workday bicycle storage within office buildings, and by increasing number and safety of bike lanes.

10. PUBLIC TRANSIT

Promote use of public transit, and the avoidance of door-to-door private transit, by subsidy, toll and other strategies. Address the need for transit-based development. Factor health into the decision-making processes about transportation modes promoted on the street.

11. MIXED USE ZONING

Encourage walkable mixed-use neighborhoods where people are more likely to walk from one location to another. Zoning could ensure that places and conditions for physical activity exist within all residential neighborhoods.

12. PARTNERSHIP

Develop mechanisms for the AIA and DOHMH to partner with other governmental agencies and civic organizations to improve the built environment to increase physical activity in parks, playgrounds, schools, housing, workplaces and streets. Encourage bottom-up suggestions on how to incorporate physical activity into daily life, but also promote what is available.

REMARKS BY THOMAS R. FRIEDEN, MD, MPH**OPENING REMARKS BY THOMAS R. FRIEDEN, MD, MPH
COMMISSIONER, NYC DEPARTMENT OF
HEALTH & MENTAL HYGIENE**

Obesity is an epidemic. We don't often think of non-communicable diseases as epidemics, but they are. An epidemic, for those of you not in public health, means basically a big increase in disease among people. By any scope and any definition, obesity and with it diabetes, is epidemic. The proportion of Americans who are obese has doubled in the past 25 years, and the rate of diabetes has almost tripled in the last decade in New York City.

In public health, what we try to do is get to what I call the sweet spot of public policy. We could have built character by encouraging all people in this country to boil their water and put fluoride drops in it every morning. That might've built people's character, but we didn't do that. We made the default value clean and fluoridated water. That's the better way to get people to change behavior - by changing the default value. That is what we've done most effectively in public health, and that's what's had the greatest benefit - clean water, fluoridated water, smoke-free work places. It's one thing to tell someone to hold their breath while they're at work, it's another to take cigarette smoke out of the workplace.

The challenge with obesity and diabetes is several-fold. First, people still see obesity as a personal failing. The concept is, "Well, if people just had more self-control, or if they weren't so gluttonous or lazy, they wouldn't be overweight." The fact is, our genetic makeup hasn't changed in the past 3 decades. We haven't suddenly got a whole lot more gluttonous in the past 3 decades. What's changed is the structure of our society, in two different ways. The first is that unhealthy food has gotten cheaper. And the second is that society has gotten more convenient. People don't do their own dishes anymore, they don't mow their own lawns, they don't walk to school or work, they don't ride bikes much. If I had had one slide to show here, it would've

been a slide that Jim Marks shows of someone walking their dog by holding a leash out of the window of their SUV. They're probably drinking a super-sized soda inside the SUV. And that kind of epitomizes what's happened to physical activity in our society.

In New York City, more than 1 in 5 adults is obese. Nationally, it's about 1 in 3. And that continues to increase, and it starts early. Twenty-four percent of 2 year-olds participating in Head Start programs were obese and 29 percent of 4 year-olds. We're seeing a change in our society that has devastating implications. Obesity brings with it many health problems, for those of you not in the health field. It's not just diabetes; it also increases a wide range of cancers, a large number of metabolic and other diseases, and musculo-skeletal diseases. It is a very serious health problem.

And although we believe that it's the food side of the calorie equation that's had a bigger impact on obesity, the activity side has also been important. Our living environment contributes to more people spending more time sedentary, in front of the TV, in front of the computer, often eating. And the challenge is to change that environment so the default value becomes getting more physical activity and eating healthier food. In terms of the physical activity part of that equation, that means, for example, buildings that make it very hard to find the elevator. I'm glad you took that example in this building, well done, well planned. You want the stairs to become the default value - at least for a couple of flights. You can work out the math, if everyone took a couple flights up, a couple flights down a day, it's enough calories to begin tipping the balance back. You want the environment to be built such that public places are more pleasant to walk in, so that people will get off the subway or the bus stop early. That's not just how wide the sidewalk is, that's what there is in between the place they get off the bus or subway and where they're going. It's parks that are appealing and that are used. We have wonderful parks in New York City, but they are not used to the extent they could be.

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If you think about what's happened in the US - in 1978, there were 26 million people who met the definition of obesity. With the same definition of obesity in 2001, there were 66 million. An increase of 40 million in the number of people who are obese. If we think, again, about the "sweet spot" of public health, what would really make a difference? On the nutrition side, it would be the kinds of things that cut smoking in half in the US in the last couple of decades. Changes in price incentives and structure, making healthy foods cheaper and unhealthy foods more expensive. Whether that's through taxes or other structures, that's the single most effective intervention. National food policies to promote healthier nutrition, whether it's looking at our agricultural subsidies - we're still subsidizing unhealthy food. Looking at food stamps, which can be used to buy high calorie soda and unhealthy snack foods. Our WIC program, which doesn't really promote healthy nutrition among kids. The WIC program, which could do more to promote healthy nutrition among mothers and kids. Looking at food advertising to kids.

According to a review by the Kaiser Family Foundation - the average American kid sees about 20,000 food ads a year. Kids really can't tell the difference between a news show, Sesame Street, and an ad. They don't differentiate what's fact and what's fantasy, and this leads to what is actually called in the marketing industry "the whine factor." Getting kids to whine for those high sugar cereals or the food that's right there at the checkout counter.

REMARKS BY THOMAS R. FRIEDEN, MD, MPH

There's a lot we don't understand about both nutrition and obesity. The little bit we do understand we're not doing much about, but there's still a lot we don't understand. I think that contributes to a societal unwillingness to take vigorous action on this public health crisis.

What could we do to change the physical context? That's a lot of what you'll be discussing today. Some ideas that have been floated are engineering the built environment to promote physical activity through zoning changes and financial incentives to promote use of stairs, walking, bike paths, parks, mass transit, and vehicle-free areas. Also, thinking about kids' access to TV and videogames, and how to encourage physical activity programs in workplaces, schools, and in society generally - whether that's taking the stairs or walking. Although both food and physical activity are key parts of the obesity equation, and although it may be that food has had the greater role in increasing obesity, physical activity can have dramatic benefits, even without reducing weight.

Even if somebody regularly exercises and doesn't lose any weight, their risk of diabetes, and a whole host of health problems falls dramatically. So even if we can't reverse the obesity epidemic, if we can increase physical activity, we can significantly improve health in society.

► WALKABILITY AND SAFETY

Raise consciousness among architects, landscape architects and planners about the importance of “walkability” and the power that planning and design have to create places that promote pedestrian circulation and movement. Safe public access to these conditions is a pre-requisite and can be influenced by design features such as lighting, and policy/resource issues such as policing.

“You want the environment to be built such that public places are more pleasant to walk in, so that people will get off the subway or the bus stop early. That’s not just how wide the sidewalk is, that’s what there is in between the place they get off the bus or subway and where they’re going. It is parks that are appealing and that are used. We have wonderful parks in New York City, but they are not used to the extent they could be.” In his opening remarks, Department of Health and Mental Hygiene Commissioner Thomas Frieden, MD, MPH, addressed the responsibility that architects, designers and planners have in creating public spaces that provide and encourage pedestrian mobility. Additionally, an emphasis on walkability should be focused on the circulation routes and connections between locations such as parks and plazas.

The architect Linda Pollak, AIA, reiterated this point in her presentation that dealt with the intersections and boundaries between the urban and natural environments. “I think as much as anything I could say to promote physical activity in the city, it’s about connecting the social and the natural in design, and not thinking of city as one thing and nature as another....it’s about thinking of those together in design and connecting them for people in their environment.” To illustrate and support this statement, Ms. Pollak presented case studies including a live-work loft in lower Manhattan, a library in a public school in Brooklyn, an outdoor classroom in a park in Staten Island, and a project for the

edges of the park. “By looking at the park boundary more holistically, you realize it can become a place that connects park paths and city sidewalks... you can really think of an edge as having the potential to become playgrounds or gardens.”

Safe public access to these conditions is an essential factor in the promotion of walkability and physical activity in general. Later in the program Dr. Mindy Fullilove addressed this issue by presenting her work on marginalized and decaying neighborhoods with particular focus on the Harlem and South Bronx neighborhoods of the 1980’s and 90’s. “Some of the real danger has left, but these streets are quite haunted for people. What this does for activity is to introduce a kind of paralysis... The parks were also abandoned as part of the destruction of neighborhoods, the introduction of fear and terror, and people’s inability to move.”

One of the projects Dr. Fullilove presented titled CLIMB - City Life is Moving Bodies, brought together a team of public health experts and designers to address the problems afflicting the public park space located within these neighborhoods. “CLIMB in our view has many layers. We are interested in this reclamation of the abandoned physical space and creating connections between these spaces. In neighborhoods where people have stopped moving around or minimized moving around, getting people to go to the park just begins to increase action.”

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STAIRWELLS AND OTHER AMENITIES

Re-examine and revise building code to improve stairwell design, access and visibility. Encourage improved ventilation, safety and amenity of stairwells by including windows and widening path of movement. Encourage architects and interior designers to think three-dimensionally and vertically in cross-section - not just horizontally in plan - thereby improving ease of way-finding and the desire to move through space without resorting to elevators. Locate posters or other “prompts” about stairwell use at elevators and escalators. Include exercise and shower facilities in all buildings designed for work.

Fire stairs presently in most residential and commercial buildings adhere to building code standards but do not go beyond them. Stair widths are dictated by exit calculations for emergency use, not the concept of people in the buildings voluntarily or happily using stairs as a primary way of moving between floors or exiting when there isn't an actual emergency or a fire drill. To some degree this is generated by a perception that stairs are unsafe or that the “No Re-entry” signs on each floor preclude convenient use. When that perception changes, partly by design efforts and modifications, people will use stairs more frequently.

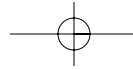
During the Fit City conference, architect Ronnette Riley, FAIA, described her experience designing the stair for the award-winning Apple Store on West Broadway in SoHo, the adaptive re-use of a former post office. She said: “What I really liked about working on this project was – not the 38 versions of the stair that we drew, but the fact that the client was very aware that the stair was going to make the store. He kept saying that we have to ‘make people use the stair - the design has to compel people to go to the second floor.’” Ms Riley continued: “The elevator at the Apple Store is located to the side of the entrance so that everyone can be accommodated, but those who don't need the elevator will use the stair. And they don't use it just to get from one place to another; the landing is just perfect to eye everything that's going on upstairs and everything that's going on downstairs. The stair in itself is an object of interest.”

► THE BUILDING CODE

Through subtle changes to the building code, and the positive attitude of building owners and managers, emergency exit stairs can take on some of the same attributes as superlative grand stairs. Such is the case at the Center for Architecture, the AIA New York Chapter's three-level storefront at 536 LaGuardia Place, where architect Andrew Berman, AIA, designed the fire stairs as the primary method of descending to the 150-seat Edgar A. Tafel Hall, used every day for lectures and seminars. By careful attention to materials, railings and lighting, as well as creating niches that become extensions of the gallery space, the architects have made the stair a symbol of the AIA mantra that design matters.

Adjacent to the stair just described is a “stair prompt” – a poster designed by the New York City Department of Health and Mental Hygiene, that encourages people to take the stairs “for better health.” The Department of Buildings and other public agencies and authorities concerned should encourage and work towards mandatory placement of these or similar stair prompts in all multi-story buildings. In conducted studies, locating such posters or signage adjacent to elevators and escalators leads to increased stair use, as do esthetic features. With good design and prompts, stair use can become an important source of increased physical activity and fitness in the new century.

In addition, physical activity is further promoted by availability of other physical activity-facilitating spaces such as exercise and shower facilities in all buildings.



► ILLUSTRATIONS



Apple Soho Stair, photo Dub Rogers / Dub Rogers Photography



Center for Architecture stair, photo Peter Aaron / ESTO

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► ZONING RESOLUTION

STAIRWELLS AND OTHER AMENITIES

Revise the NYC zoning resolution to encourage convenience stairs and offer allowable floor area bonuses for developers who propose wider stairwells and physical activity-facilitating spaces such as exercise rooms and shower facilities. Use non-prescriptive zoning allowance as in Zoning for Housing Quality that gives bonus points for achieving a specific goal rather than prescribing the exact means to do so.

The safety issues relating to stairwells were discussed at length in the aftermath of the World Trade Center evacuation and building collapse. Issues of stair width and the materials that contribute to fire ratings were in the newspapers daily. Less noted were discussions about the number and location of fire exits, and the manner in which required exits contributes to the allowable square footage, or “floor area” coming out of the Floor Area Ratio calculations determined by the NYC Zoning Resolution. Occupancy, both in terms of use and of the number of people on each floor, determines exit requirements, including stair widths. For exit stairs to be used for purposes other than emergencies, the location and the design amenity of stairways needs to be addressed. Additionally, location and design of stairwells that promote non-emergency use may indirectly help to address safety and evacuation issues in emergencies by increasing awareness of stair locations and familiarity with stairs through regular use.

One way of increasing stair use is to encourage those who build office towers and residential structures to make exit stairs more attractive and to build convenience stairs, making connecting to one or more floors easier and more economical. The relation of stair area to floor area calculations merits discussion and possible revision. If stairs did not count, or did not fully count, in the determination of total allowable floor area, it is safe to assume that they might be larger and more numerous. Candace Rutt, PhD, a health scientist at the

Centers for Disease Control and Prevention was one of the speakers at the Fit City conference. Among other topics she described the CDC stair study and detailed the physical changes to the CDC’s stairs at its Atlanta facilities, where carpeting, music and artwork in the stairwells accompany a major campaign of stair prompts. In addition to the prompts, she noted that it was important to make “these beautiful stairways where people want to walk up them – you encourage use simply by the way they are designed.”

Rob Lane, senior planner at the Regional Plan Association, served as a moderator for one of the two Fit City panels. In his own remarks he spoke of how the NYC Quality Housing initiative gives bonus points for satisfying a specific goal rather than exactly prescribing the measures to be used to achieve a particular result. Holly Leicht, planner and currently Assistant Commissioner at the NYC Department of Housing Preservation and Development, noted how “the biggest challenge is multi-family housing in higher buildings” and how we “get more physical activity into the design of housing.”

The same can be said about office buildings, where the design of the elevator and emergency stair core has been considered a science. Safety considerations change this, but so do environmental considerations that will increasingly dictate a changed floor plate with more workspace in closer proximity to windows, as in Western Europe. Convenience stairs connecting narrower (read greener) floor-plates may be more feasible if there were different FAR calculations to be made. Zoning resolution changes and design amenity go hand-in-hand in encouraging stair use and promoting physical activity through increased provision of physical activity-facilitating spaces such as exercise rooms and shower facilities.

► ILLUSTRATIONS



NYC Department of Health and Mental Hygiene Stairwell Initiative Poster

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► DIVERSITY OF RECREATIONAL ACTIVITY

Create venues for different types of recreation and a diversity of experience. Creating a democratic choice on how people move through space will, in turn, keep them coming back. For example, Brooklyn Bridge Park as designed will allow a variety of different activities; green roofs on new or existing buildings permit all sorts of new recreational possibilities.

In his remarks during the Fit City panel discussion on parks and playgrounds, landscape architect Matt Urbanski spoke of the three principles that inform his work, and that of his firm Michael Van Valkenburgh Associates, Inc., where he is a principal. He said: “First is diversity, second is flexibility, and the third - I tried to come up with a single word for it - so I called it ‘normalcy.’ What I mean by that is one of our great challenges I think in all of our public space design is finding ways to integrate recreation into the everyday, not as a special activity.”

The office has designed some of the most significant waterfront urban parks in the United States, including the recently-opened Allegheny Park in Pittsburgh. They are currently planning active recreational parkland along a three-mile stretch of the East River waterfront in Brooklyn. He described this latter effort as follows: “The idea of opening up the water to the general public, and breaking down the fear barrier, and creating circumstances whereby people feel comfortable on the waterfront in New York City. Of course, one of the problems is the actual accessibility to the water is quite difficult in a lot of places, and so in the Brooklyn Bridge Park design, we’ve taken some radical steps to diversify the types of recreation that the park allows, including a big category – a big, scary, hopefully not litigious category - called water recreation.”

Creating variety allows for choice, which Matt Urbanski described in these terms: “one of the most important qualities of a public space and a public landscape is there is a democracy of choice in terms of how you move through that space.” He continued by describing how these choices were not random, but rooted in site conditions: “The approach we take towards making public space is to start by assuming that our task is less about imposing ideas on a site and more about discovering the latent capacity of the site as it exists. Why? Because this is a very expensive site to change, and to make the most of your resources, you need to work with what is there. It sounds almost too common-sensical to even bring up as a concern in a group like this, but within the profession at large there seems to be a lot of interest often in bringing ideas to a site and then forcing a site to somehow support them.”

The major impediment to taking an integrated approach to landscape design and recreation, and the thing that makes these kinds of decisions risky, is that these kinds of spaces, at least on paper, may not satisfy certain assumptions that people have about what makes a public space useful. Urbanski described this categorically: “The exotic is very cool, and the common is less so. It goes for recreation too. Often times there is the assumption that a space needs to support a clearly-defined activity in order to make the claim that there is something worth doing there. We are trying to overcome this tyranny of single-use spaces and a lot of what this park is trying to accomplish is to bring activity, diversity of experience, and movement into everyone’s everyday life.”

► ILLUSTRATIONS



Brooklyn Bridge Park
Renderings Courtesy: Michael Van Valkenburgh Associates, Inc.
New York and Cambridge



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Encourage exercise and physical activity for people with different and particular needs by following the tenets of Universal Design, thereby encouraging equality of movement. Ramps and site sloping, for example, generate more physical activity than escalators and people movers.

Among the speakers at the Fit City symposium, architect Hillary Brown, AIA spoke most eloquently about the possibility of combining physical activity with both building and site design through ramps, defined as “the opportunities to negotiate levels in a dynamic and slightly seductive way. ...I think we enjoy the kinesthetic experience of moving in a building, past its walls or better still, climbing between level.” Comparing the experience of climbing on ramps vs. stairs, she spoke of the advantages of ramps, saying they: “reduce the psychological effort of moving vertically.” Ms. Brown gave as an example the ramp at a building by BKSK Architects under construction at the Queens Botanical Garden, a ramp that moves people up from the ground level to an upper-floor platform and green roof from which there is a view out over the gardens. The ramp also serves as an orientation mechanism, allowing people to continually understand where they are in relation to the structure and its surrounds.

The presentation by Ms. Brown also used as an example the reconstruction of the Reichstag Building in Berlin by Foster & Partners Architects. She described the rebuilding of the building’s destroyed dome as one in which “the imaginative premise was to give the public pride-of-place, elevating the visitor by means of a spiraling ramp to vista at the peak of the dome. This results in symbolically elevating the people over the heads of their governmental representatives who sit in the central parliamentary chamber below. The ramp

► ACCESSIBILITY

compels the visitor along, by means of an exciting procession, to a majestic view of the city at the building’s apex.” And you’re circulating around this extraordinary feature, which turns out to have two purposes. First of all, it provides daylight because it’s a mirrored surface; it brings in horizontal daylight and projects it down into the chamber. And secondly, it’s also ventilating the room. I think this last point while interesting, doesn’t go to the premise of vertical movement, but only describes the interesting environmental feature. I would leave it out.

Earlier in the program, Ronnette Riley, FAIA spoke of her perception of the negative impact of accessibility requirements, saying “I think sometimes we’ve over-designed the rules and regulations to actually impede people from spaces. Ramps can only be a certain dimension now. I think the ADA handicapped codes are just horrible for architects. They’re prescriptive not performance-based.” She continued: “If architects are given the leeway to create beautiful spaces, perhaps it doesn’t matter if there isn’t a handrail exactly 3’-6” on either side of you; a wide and expansive stairwell is a beautiful thing and people will use it.”

The challenges of Universal Design, as described in the afternoon session by Matt Sapolin, the Commissioner of the NYC Mayor’s Office for People with Disabilities, is to allow necessary requirements that assure equality of access for all people and to reflect the possibilities coming out of designs that encourage movement. Having elevators available, but not making them the preferred method of vertical movement insists upon architectural creativity in using ramps.

► INFRASTRUCTURE GUIDELINES

Implement infrastructure guidelines – such as those of the NYC Department of Design and Construction – that support walkability and accessibility of physical activity-promoting spaces in the public domain by the quality of design and construction, including uses of space, material durability, amenity and maintenance. Accessible and visible stairs and dedicated indoor / outdoor exercise spaces should be incorporated into design and construction routinely.

The High Performance Infrastructure Guidelines, published in October 2005 by DDC in collaboration with the Design Trust for Public Space, start by quoting Jane Jacobs: “Streets and their sidewalks – the main public places of a city – are its most vital organs.” The Guidelines then set out with the premise that “the public right-of-way organizes the massive flow of energy and matter that courses through the city on a daily basis. By undertaking coordinated, sustainable approaches to streetscape design, construction, operations, and maintenance – and by joining considerations of function and performance with concern for the human experience of the urban environment – cities can promote safety, reliability, cost effectiveness, public health, and quality of life.”

A section of the document entitled “Improve Streetscape for Pedestrians” addresses the goal of designing streetscapes that “are conducive to walking and that optimally balance the needs of pedestrians, bicyclists, mass-transit users, and automobiles.” Specific suggestions in the chapter include:

- Increase the size of traffic islands and neckdowns, to provide safer crossings
- Provide separated walking paths, to improve pedestrian safety and comfort
- Develop wayfinding or interpretive signage to provide information to pedestrians
- Utilize leading pedestrian intervals to give pedestrians a head start in crossing prior to allowing motorists to turn

During the Fit City symposium, Dr. Mindy Fullilove described the efforts of CLIMB – City Life is Moving Bodies – saying that “we make the road by walking.” Dr. Andrew Rundle also addressed the physical characteristics that make it easier for people to feel good about walking to the local pub or drycleaner. Dr. Rundle mentioned specifically “We’re looking at walkability, including pedestrian safety, street trees, sidewalk width and urban design.”

Picking up the theme of how physical intervention in the landscape encourages walking and active transportation and recreation, landscape architect Matt Urbanski, a principal at Michael Van Valkenburgh & Associates, spoke of the need for design “diversity, flexibility and normalcy.” In talking about the diversity of activities that waterfront sites can sustain, Matt spoke of “planning principles” that “start by trying to match the capacity of the site with the need.” The discussion of use addresses “diversity of experience in terms of different kinds of seasons, getting people out in other times that they might not think of.”

Making spaces that can be used in winter and at night, creating playing fields that don’t preclude, by single-sport striping, a variety of uses, - these are goals that can be demonstrated by case studies and codified and promulgated in guidelines.

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Keep public school buildings and schoolyards open before and after classroom hours to encourage community use and recreation activities. Create integral relationships between schools and neighborhood parks to increase stewardship for open spaces as well as enhance opportunities for environmental education and awareness.

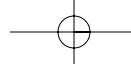
Evidence suggests that enhancing access to conditions that foster physical activity in turn increases the number of users who will benefit. Improved access as a function of site-specific programs can be implemented most readily at the local level. In her presentation, Dr. Candace Rutt addressed the need for more community programs, beginning with the extension of public school open hours to promote and sustain added recreational uses. "Schools - opening up the school grounds so the community can use it. Once again, the school is probably worried about liability. Is there something we can do to protect the schools legally so if someone trips and falls on the track so they won't get sued? You have neighborhood schools all over the place, and you see signs up. Unless it's an authorized activity, you can't be here." Various public libraries throughout New York City have extended hours, and community meeting rooms that are used after hours for sedentary activities such as Community Planning Board meetings. With the recreation space enclosed within the walls of city schools, opportunities exist during the evenings and weekends for more active "borrowed use" of neighborhood facilities by a population different and distinct from that of the daytime user groups.

► SCHOOL USE

Within the school physical education program, good design of space and selection and placement of equipment and apparatus, can significantly contribute to making it easier for physical education teachers, to, in Dr. Rutt's words "get the kids more active, where everyone's not standing in a line, waiting to throw a basketball, going to the back of the line, where they're basically just standing the entire PE class. You get them out, you get them active, all the kids are moving, which means it's not traditional PE, it's what they call Enhanced Physical Education. So you get the kids more active in the time that they're in their PE classes."

Schools, depending on their location, can also be a destination, with or without specially designed community programs and community space. In her presentation, Linda Pollak spoke of working with science teachers at PS57 in Staten Island to site the outdoor classroom in an adjacent park, and the idea that the classroom can be more than a resource, during the day, for schoolchildren; "...idea that the outdoor classroom is a platform for environmental experience and environmental education at different scales, that it provides a destination within a park for people who hadn't been in that piece of land for 50 years, but who walked in that day because they saw something in there; people who had memories about the place they could share."

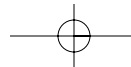
Because of liability, security, maintenance and vandalism concerns, schools are among the least used public buildings in terms of hours of use. The social structure that would suggest the logic of enhanced public use by groups of different ages could be augmented by siting and building design considerations whereby gym spaces are most easily accessed after hours from the most public side of the building.



▸ ILLUSTRATIONS



Eib's Pond Outdoor Classroom, Staten Island, New York
Credit Courtesy: Marpillero Pollack Architects



Fit City: Promoting Physical Activity through Design

Incorporate more conditions and spaces for physical activity into housing design, including safe stairwells, play areas and exercise facilities. Educate tenants and homeowners about enhanced opportunities for movement in their apartment building or house and their neighborhood. Locate posters or other prompts about stair use at elevators and escalators of multi-story residential buildings.

Housing was an issue that garnered much attention throughout the Fit City conference. Assistant Commissioner Lynn Silver, MD, MPH of the NYC Department of Health & Mental Hygiene, introduced the first panel and described neighborhood differences in obesity rates during the Q&A: “In Riverdale, we have 7 percent obesity; in the South Bronx, 27 percent. It is our poorest communities in New York City that are most heavily affected by this epidemic. In thinking through this problem of promoting physical activity, we must identify strategies and incentives we can put in place to change our physical environment. This needs to happen not only in the buildings for the wealthy, but throughout our housing stock, and our commercial buildings. These changes need to permeate this vast and incredibly diverse city, and the communities that most need it.”

One of the panelists, environmental architect Hillary Brown, AIA, LEED followed by discussing the application of high performance principles – or “green design” – to housing: “As a general rule, all of the performance-oriented improvements to buildings around air quality, around physical activity, around energy use, and so on, need to move across the building sector to include all building types. While the green building movement early on focused on institutional and commercial buildings, there's since been a proliferation of

► HOUSING

guidelines and handbooks, together with the necessary financial incentives, to address greening affordable housing. These tools very much emphasize all of the principles that we've talked about - connecting to the outdoors, the quality of play spaces, the physical landscaping for safety, for encouraging movement, etc. It's high time that we take a much more specific look at the unique needs of housing.”

Architect Linda Pollak, AIA also discussed the design principles of housing units that relate to the city and landscape context: “understanding the unit, not only in terms of the different things that can be in the unit, but the relationship of the unit to the aggregation, to the site, to the city, so that all of these places can be understood in design terms at different scales and in terms of their quality as spaces. Safety is always a huge issue in housing. And one of the things that is coming out in all the talks is to understand circulation spaces not as a support for program spaces, but to understand them, whether they're inside or outside, whether they are in the apartments or in the corridors or lobbies, to understand them as being spaces that should have design attention paid to them, so that they should be full of light and air and be pleasurable places to be in.”

Dr. Silver summarized one of the key problems, saying: “One of the challenges we face is identifying what can we do in our existing housing in poor communities that doesn't involve such extensive renovations that it inevitably leads to gentrification - what can benefit the people who are living there today to have better quality housing and to meet the challenges that the speakers were addressing.”

► BICYCLES**Images of large numbers of bicycle riders and bike racks in cities from Amsterdam to Beijing to Copenhagen make the meager success of our bicycle lanes in New York seem paltry.**

There are many cities around the globe, where the primary method of getting up and back between home and work is the bicycle. Images of large numbers of bicycle riders and bike racks in cities from Amsterdam to Beijing to Copenhagen make the meager success of our bicycle lanes in New York seem paltry. Some of the speakers, however, addressed the larger issues of not just the trajectory, but the security issues at one or another trip end. Architect Ronnette Riley, FAIA noted that: “Last year, when I was part of the AIA’s Committee on Design, we went and had a ten-day conference in the Netherlands. And I was absolutely struck by a four-story bicycle-parking garage that we saw. In fact, one of my old employees took me to his fraternity, which was sort of interesting to me, and in the front of the frat were 300 bicycles. And I was sort of thinking, wow, it’s a different way of equating activity here and there.”

Ms. Riley described the bicycle culture that supports such intense activity – as compared with driving or taking the bus: “I think bicycling is a very interesting thing. When I lived in California, I always had a bicycle at the end of my hand. I rode a bicycle everywhere. You don’t dare in New York, although they tried the bike paths. But there’s a way that we could design better situations for biking. We do have a lot of biking. As a driver, I always view it as

sort of a game. I almost hit someone once, and he’s yelling at me and I’m yelling at him, and I realized it was my client. So I don’t think one should do that.” But I’m signing a new lease in the Empire State Building, and one of the new terms is I cannot have a bike in the building. What a shame. You can’t bring a bike into the building, why not? Through the truck dock, up the freight elevator - why isn’t there bike storage or parking so you can do that?”

Hillary Brown, AIA, LEED, replied: “One of the major connections between green buildings and healthy buildings is providing bicycle friendly facilities. This photograph shows an inventive German parking garage for bicycles (something we could really use in our building) that accommodates a lot of bikes in a very compact manner.” And Candace Rutt noted that it truly was a worldwide phenomenon that can be aided by concrete interventions: “Things that have been done around the world look like they have the ability to increase physical activity. Congestion pricing in London – they put a big circle around London and were like ‘If you want to enter the city, it’s going to cost you \$16.’ You know what? Biking went up, walking went up and single-occupant cars went down like 30 percent. It was a huge impact.”

Keynote speaker, Richard Jackson, MD, MPH presented further compelling information: “I’m just going to focus on what I think is the biggest environmental health threat facing the United States and the planet for a couple minutes, because we cannot ignore this issue. If I get in the best Prius I can buy and drive one mile, I put 450 grams of carbon into the atmosphere. If I bicycle one mile,

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Promote use of public transit, and the avoidance of door-to-door private transit, by subsidy, toll and other strategies. Address the need for transit-based development. Factor health into the decision-making processes about transportation modes promoted on the street.

New York City benefits from having one of the best public transit systems in the United States, and the highest density of housing construction. Andrew Rundle, DrPh., summarized some of the advantages of this confluence of transit and transit-based development: “Having access to public transit frees you up from having to have a private automobile and then driving everywhere. If you think about the subways in New York City, my estimate is you have to at least climb four flights of stairs per subway ride, generally two down, two up. So at the very least you're doing four flights of stairs instead of stepping into your car.”

Rundle's statistical research was based on census tract analysis and neighborhoods that were measured by walkability and access to public transit. He spoke about “body mass index.” High BMI is an indicator of obesity and a risk factor for chronic diseases such as diabetes and heart disease. He said: “You look at buses and subways – as the density of bus and subway stops increases, you see that the BMI is lower in the neighborhoods with more access to public transit. And again, if you look at the extremes and compare the extremes, that translates to about a third of a BMI unit. And we looked at the population

► PUBLIC TRANSIT

density, and as neighborhoods get denser, you see significantly lower body mass in these neighborhoods. And it translates into about .86 BMI units across the range of data in New York City. So here are the results when you throw all the variables together, and you see population density controlling for subways, subways controlling for land-use mix, and you see that there are independent effects of land-use mix, subways, and population density, suggesting that you can have these different components together and get more of a bang for your buck.”

Candace Rutt, PhD contributed to the discussion, talking about recent innovations in transit-based development and congestion pricing. She started by saying: “Now finally I'm going to talk about the last thing that was looked at by the Task Force, and this is transportation policy - what policies are enforced, and in transportation policy specifically - how much money do you dedicate to transit versus automobiles, do you put bike racks on the buses, what are you mandating?”

The concluding statement, by Andrew Rundle, DrPH, summarized some of the difficulties: “I'm not actually under the impression that I'm going down to City Hall and say, ‘Drop in some more subways for me please.’ But I would like to see in the cost/benefit analysis in deciding to extend a subway line; I would like to see health factored into that analysis. I'd like to see the argument pushed so that health becomes a tangible metric that goes in to decision-making processes.”

▀ MIXED USE ZONING

Encourage walkable mixed-use neighborhoods where people are more likely to walk from one location to another. Zoning could ensure that places and conditions for physical activity exist within all residential neighborhoods.

There is a long-standing tradition in New York City and other cities where zoning has been used to separate and segregate uses, of saying that health and safety are improved by isolating manufacturing, commercial and residential districts from each other. This has had the long term impact of reducing the ability of some New Yorkers to walk to work. As patterns of use change, and the nature of revenue producing activity becomes less noxious and less polluting, there is increasing attention to the benefits of intermingling activities that previously had been kept apart.

Some of the separation has roots in issues raised by advocates of environmental and social justice. Among the panelists, Linda Pollock, AIA spoke, first, of a classroom structure built by Americorps and located in Eib's Pond Park on Staten Island. Showing slides of an area of New York City relatively unfamiliar to many in the Fit City conference audience she spoke of Eib's Pond Park as a place "completely surrounded by bad planning – you can't walk from here to here, or from here to here. Here's the Staten Island Railway, built in the 1860's, you can't walk across it anywhere; the Staten Island Expressway, built in the 1960's is also very difficult to walk across." She was told that adjacent public housing should be screened, and kept separate. Her reply was that "the housing is part of the environment, you can't screen it, and you have to come up with ways of thinking about it together."

In the subsequent panel, Dr. Mindy Fullilove, of Columbia University's Mailman School of Public Health, spoke of the importance of connecting neighborhoods, and specifically of connecting open space and parks that straddled several neighborhoods in Upper Manhattan and the Bronx. Dr. Fullilove noted that "in neighborhoods where people have stopped moving around or minimized moving around, getting people to go to the park just begins to increase action; as you get people moving around, the opportunity to increase economic activity of all kinds goes up – and so there are all sorts of, for example, small stores and bakeries that will prosper as outdoor activity increases." The use patterns of neighborhoods and the usability and safety of public open space in particular neighborhoods was a focus of Dr. Fullilove's remarks, including: "Obviously, these are issues of environmental justice because the neighborhoods that are marginalized in our city are neighborhoods that are poor and inhabited by people of color, and they've taken a brutal beating over 50 years of civic neglect. But.....there are ways to rebuild the cultural, political and social capital in these neighborhoods."

One way described by both Pollock and Fullilove was to encourage through planning and design the interconnection of neighborhoods by connected pedestrian and bicycle ways, linked parks, linkage of economic activity, and the breaking down of socio-economic territorial segregation. The connection of Highbridge Park, Jackie Robinson Park, St. Nicholas Park and Morningside Park is one example of a way to achieve a longer trajectory of movement. Zoning changes are another.

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Develop mechanisms for the AIA and DOHMH to partner with other governmental agencies and civic organizations to improve the built environment to increase physical activity in parks, playgrounds, schools, housing, workplaces and streets. Encourage bottom-up suggestions on how to incorporate physical activity into daily life, but also promote what is available.

There are numerous municipal agencies and public authorities that could make use of the discussion of case studies and guidelines to enhance public health through the design and construction of capital projects. Building types such as housing, schools, workplaces and public spaces necessarily address issues of stair design. Park, playground and recreational facility design and placement done throughout the five boroughs can address diversity of recreation, as well as ease of access. But the larger contexts of the regulatory environment, including existing codes and zoning requirements, need to be looked at in the context of what is possible, and what can be readily achieved.

The Mayor's Design and Construction Excellence Initiative addresses the manner in which the City of New York is actively becoming part of what has been called by architectural historian Thomas Mellins "a global engagement of stylistically and technologically progressive architecture." The involvement of New York City in creating sustainable "high performance" buildings and livable communities through careful attention to urban design and landscape architecture is, arguably, unparalleled in recent local history. A similar consciousness needs to address the linkage of the public and private environments that we create and inhabit to public health issues, particularly the obesity epidemic and resulting chronic diseases such as diabetes and cardiovascular disease.

▸ PARTNERSHIP

A preliminary list of public agencies that should be partners in this effort include:

- New York City Department of Buildings
- New York City Department of City Planning
- New York City Department of Citywide Administrative Services
- New York City Department of Design and Construction
- New York City Department of Education
- New York City Department of Housing Preservation and Development
- New York City Department of Parks and Recreation
- New York City Department of Transportation
- New York City Economic Development Corporation
- New York City Housing Authority
- New York City Office of Management and Budget
- New York City School Construction Authority

Non-governmental organizations including, but not limited to, the Regional Plan Association, Projects for Public Spaces, Transportation Alternatives and the Real Estate Board of New York should also be included in partnership efforts.

▸ CLOSING REMARKS BY RICHARD JACKSON, MD, MPH***CLOSING REMARKS BY RICHARD JACKSON, MD, MPH***

The bad news and good news is that obesity is not the most important reason why you as designers and architects and planners greatly influence the health of the people in this country, and the health of the people around the world.

The challenges I will lay out feel insurmountable, but when I was a medical student 35 years ago I first learned of an “insurmountable” public health problem, related to buildings, and it is informative. That summer I served as a medical student on the pediatric wards at Mount Sinai Hospital uptown. On one of my visits to the ward, I saw about twenty five little kids running around, hyperactive as could be. I said to the attending pediatrician “Why are they here? They look fine.” And he replied “they’re being treated for lead poisoning.” These children were having chemicals put in their blood to pull lead out of their bodies - their blood-leads were about 60. He took me to a semi-private room and there was a two-year-old in there, blind and in coma, who died several days later of lead poisoning. She probably had a blood lead of 150 mcg/dl or more. Every year in the US, we were losing about ten children to lead poisoning in our major cities. Lead was everywhere: in our food, water, air, paint, gasoline and even toys. The problem felt insurmountable.

My blood lead back then was about 22, “normal” for an American in 1970. The lowest identified blood level on the face of the earth was a blood lead of 3, and we thought it was impossible to have a lower level. Yet today, the average blood lead in the United States - because we got rid of lead in our paint, lead in our food, lead in our water, and lead in our gasoline - is now less than 2 mcg/dl. A miraculous, unbelievable improvement in the population. By attacking all the sources of lead, huge benefits were conferred on every person in our country, especially our cities.

As the blood lead goes down, IQ goes up. What would be the value of all those improved IQ's of our children, because our kids are now about 5-6 points smarter than we were in my generation; their brains are not damaged by lead. IQ is a very good predictor for how long one stays in school, and a single IQ point is worth roughly \$15,000 in lifetime income. So every child in American has been given 6 or 7 additional IQ points because of the removal of lead. And each year's cohort of children is given a gift of a quarter of a trillion dollars in lifetime income because of the removal of lead. This is a social benefit, a health benefit, but also an enormous economic benefit to our society.

I tell this story because some of what I will discuss can feel insurmountable, but I think it is surmountable in the way that the lead problem was. By focusing on children and the prevention of harm to them, we can confer benefits that may take a generation to be capture, but which will benefit them for their own and many other lifetimes. We might achieve some benefit for older folks, but the big changes are going to be for our kids, which is why I will focus on them in this talk. In an earlier talk, you saw the changing US obesity maps. I think we are a tipping point. There is a real shift in consciousness, first about food and obesity, but also about the effects of the built environment on human well being. The obesity epidemic is affecting profits, for example, many businesses purchase much heavier furniture. I predict that 15 years from now every hospital room will be built with an overhead hoist, because hospitals are losing very expensive employees like nurses to lifting injuries. —in fact, it is a major reason for nurses leaving the profession, and the major cost for keeping hospitals going right now is the recruitment and retention of nurses.

We have other environmental impacts from every American having gained, on average, ten pounds. Those additional ten pounds calculate to \$1 billion worth of jet fuel every year, just to fly our excess-adiposity around the American landscape. The response of the medical system is to “deconstruct” the problem to more effectively analyze it and then to supply medical

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reductionist answers: "Oh, we'll fix this with surgery." It's non-trivial surgery, \$20,000 - \$50,000 apiece, and it does have complications. We estimate in California that if we offered this surgery to everyone - and by the way, now the insurance will pay for it - if we offered it to everyone who had a body mass index over 35, we could have 1.7 million people standing in line. Imagine the cost: \$52 billion, just for stomach stapling in the State of California.

These are staggering costs, and the insurance companies are worried, and your employer is worried about, "Can I spend the money?" If you have two or three employees that need this surgery the insurance costs soar. The number of bariatric surgeries in the US is rapidly increasing - and you don't need an epidemiologist to tell you - anything that goes up threefold in three years is an epidemic.

As we become more obese, our risk of becoming diabetic goes up. Actually if you have a body mass index over 35, you have 100 times the risk of becoming diabetic as a thin and lean person. If one becomes diabetic, that person will cost \$10,000 more per year than a person who is not diabetic. It's a serious, expensive and very prevalent disease.

If we continue the track that we are on, 1/3 of our kids will be diabetic in our lifetime with an average reduction of lifespan of 15 years. We are looking at the first generation in American history to live less long than their parents if they continue the track that we are on.

The medical industrial complex with its ability to spend money is not going to fix this. When I was a young doctor, only seven percent of all the dollars in America went to medical care. It's now 15-16 percent of all the dollars in America. With the aging of the population, and the staggering costs associated with increasing rates of diabetes and obesity, the health costs will become increasingly insupportable.

► CLOSING REMARKS BY RICHARD JACKSON, MD, MPH

Obesity is not the only important reason to fix the built environment. Fitness is too. There is a study of 100,000 nurses beginning in 1975. The health of those nurses has been followed for the last generation and it was shown that the nurses who stayed thin and fit had the lowest death rate. The rate for nurses who became obese was 90 percent higher. Even if they were still thin but inactive, there was a 60 percent increase in death. Fitness is not a pleasantry, it is important. The nurses who became inactive and obese, had 2 ½ times the death rate.

I would assert that to build in that exercise, we need to do more than set aside exercise time, we need to build incidental exercise into our lives—walking to destinations, going up and down stairs, and maximizing our “incidental” work-out during the day.

With the lead poisoning epidemic, each of the responsible industries argued that someone else was the cause of the lead poisoning epidemic. But the success came because no one was let off the “lead hook.” Each source had to be held accountable. It is the same with the obesity and inactivity epidemic; the first source we must control is high-fat low-nutrition food and the worst actor of these is sugar, especially the High Fructose corn sugar in soft drinks and other foods.

Much of the fast food we sell is a smart, short-term economic decision and a miserable long term health decision. This is one reason why poor people are fatter and wealthy people are thinner – one can get a lot of calories for a couple bucks, if you are poor and if you are black in America, you see 2.5 times as many fast food places per square mile than folks in white, upper-class neighborhoods.

We've now paved over 60,000 square miles of the United States of America - an area equal to the entire state of Georgia. The United States is losing

► CLOSING REMARKS BY RICHARD JACKSON, MD, MPH

thousands of acres a day of prime farmland to development, in part because we are not efficiently using space in already developed areas. Think of how many trees we have removed, in fact, one sixth of global warming is ascribed to deforestation. New York City is the model for quality and high density, and people can be healthy in it.

There is about a six pound body mass difference between people in highly walkable areas and those in highly sprawling areas but Americans have gained considerably more than that. It is about more than just obesity, but a lot of us would be far better off without those six pounds. On the basis of the recent validity assessment of clinical evidence for disease prevention benefits of walkable high density environments, I am confident in the statement: "How you build things really does make a difference to health and well-being." There is strong evidence that the creation of places for physical activity, and telling

people to do that activity, and there is sufficient evidence about community and street scale changes. Nothing is as nutritionally good for health as limiting dietary fat and oil intake and increasing consumption of fruits and vegetables. Nothing reduces your traffic fatality risk more than reducing your driving miles. Nothing works as well in preventing diabetes in a pre-diabetic person as exercise. Nothing helps alleviate mild depression as much as exercise and socializing in healthful surroundings. And nothing works as well at reducing our carbon footprint more than living, working, walking and biking in well-designed urban areas. And nothing makes human beings happier than being with people they love and who love them. Well designed buildings, communities, states and nations can work to meet all these needs. This is why I argue that urban planners, architects and landscape architects, and progressive political leaders can be powerful public health leaders.

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Fit City Challenge Homepage

<http://www.fitcitychallenge.org/>

ACE FitnessMatters

This bimonthly magazine is the source for the most accurate, up-to-date fitness information you need to live a healthy, active life. Subscribe to ACE FitnessMatters online at <http://www.acefitness.org/fitnessmatters>

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Fit City: Promoting Physical Activity through Design

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