



What Makes a Community Livable?

Livability

101



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Acknowledgments

The following authors provided their invaluable expertise to this publication: David Allison, AIA; Dina Battisto, PhD; David D. Dixon, FAIA; Diane Georgopoulos, FAIA; William A. Gilchrist, AIA; James A. Moore, PhD, AIA; Barbara A. Nadel, FAIA; Søren D. Simonsen, AIA; Ellen Vanderslice, AIA; and Daniel Williams, FAIA. The pen and ink drawings are by Stanley Stark, FAIA. Project manager for this guide was Francisca M. Rojas and Daniel G. Lobo. Nancy B. Solomon, AIA, served as contributing editor.

All photographs by Francisca Rojas unless otherwise noted.

Design by Paras Productions, Inc.

Published in 2005 by
The American Institute of Architects
1735 New York Avenue, NW
Washington, DC 20006-5292
800-242-3837
www.aia.org

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Architects
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Printed in the United States

ISBN 1-57165-012-1

Cover images:

Courtesy of the Department of Planning and Permitting, City and County of Honolulu, Illustrations by Steve Price-Urban Advantage and coordination by Harrison Bright Rue, Citizen Planner Institute.

About the AIA – The American Institute of Architects

Since 1857, the AIA has represented the professional interests of America's architects. As AIA members, more than 75,000 licensed architects, emerging professionals, and allied partners express their commitment to excellence in design and livability in our nation's buildings and communities. Members adhere to a code of ethics and professional conduct that assures the client, the public, and colleagues of an AIA-member architect's dedication to the highest standards in professional practice.

About the AIA – Center for Communities by Design

The Center for Communities by Design is a catalyst, convener and source of information that helps AIA members work with citizens and other stakeholders to envision and create more sustainable, healthy, safe and livable communities.

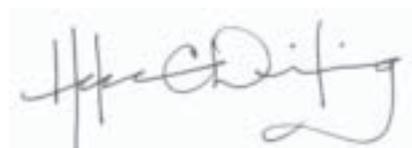
To learn more about the AIA Center for Communities by Design, visit www.aia.org/livable

Livability 101 for Communities

Livability 101 offers communities the resources to develop a vision for the future and enables them to be engaged in a successful process with the expertise offered by the architectural profession. As designers of the built environment, architects play an important role in shaping our communities. Their design affects our safety, health, and the environment as well as the quality of life in our neighborhoods, towns, cities, and regions. This publication seeks to strengthen the relationship of citizens and architects by sharing a common vocabulary to create a sustainable framework for building more livable communities.

Livability 101 for Architects

Livability 101 engages architects as members of their communities, to use and share their knowledge, skill, and experience to participate in civic life. Architecture expresses the values of society and has the power to enrich the human spirit and ensure livability for this and future generations. Livability 101 provides architects with the necessary vocabulary and elements needed to empower communities and make decisions that will shape more livable communities.



Helene Combs Dreiling, FAIA, Hon. SDA,
Team Vice President, AIA Community



Physical activity is increasingly becoming "exercise" instead of a part of people's daily lives.

Courtesy www.pedbikeimages.org/ photographer: Dan Burden

Physical Health and Community Design

By David Allison, AIA, ACHA, and Dina Battisto, PhD

A majority of Americans today live in suburban settings that have been designed, albeit unintentionally, to discourage active, healthy lifestyles. The prevalence of single-use zoning and sprawl requires most of us to spend ever-increasing amounts of time driving from place to place in automobiles rather than walking to at least some of our daily destinations. And most of the routes we travel along daily—between home and work, school, stores, and recreational venues—are not designed for safe walking or biking, even for those who happen to live close enough that they could, at least in theory, leave their cars at home. The lengthy distances to our daily destinations mean that many people spend a greater part of their day in their car, which leaves less time for engaging in the minimum recommended amount of regular physical activity. As a result, physical activity is no longer an integral part of daily life for all but instead is a distinct, programmed event for only those who are both highly motivated *and* have the time.

The Health Problem

Unfortunately, this common phenomenon is far from insignificant to our society: There is growing evidence that our physical health is directly tied to our physical activity. According to an annual survey in 2000 by the Behavioral Risk Factor Surveillance

System, only 26.2 percent of adults met the recommended requirements for physical activity. A surge of studies presented in public health journals and conferences, plus increased funding for research into links between physical activity and health, indicates the growing interest in the health professions in how the design of the built environment influences health. The September 2003 issues of both the *American Journal of Public Health* and the *American Journal of Health Promotion*, for example, focused on the role of the built environment on health outcomes.

Following the 1996 publication of “Physical Activity and Health: A Report of the Surgeon General,” the Centers for Disease Control and Prevention (CDC) identified physical inactivity as one of the top three risk factors—along with smoking and poor nutrition—for premature death. Based on numerous studies, the CDC concluded that physical inactivity plays a significant role in the onset of four main chronic diseases: heart disease, cancer, diabetes, and strokes. Chronic diseases account for 70 percent of all deaths in the U.S., and the costs of health care for people with chronic diseases account for 75 percent of the nation’s total health care costs. Everyone pays for these social costs because the financial burden is ultimately carried by individuals, families, employers, local communities, and government agencies.



Sprawl makes it hard to reach daily destinations without an automobile.

Image from the Metropolitan Design Center Image Bank. © Regents of the University of Minnesota. All rights reserved. Used with permission.



Car-oriented environments are one of the many barriers to safe pedestrian movement.

Courtesy David Allison



Safe, engaging places to play encourage children to be more active.

Although people of all ages suffer from an environment that is poorly designed for physical activity and mobility, the young and the old, and those who care for them, bear the brunt of the problem. Childhood activity today is mostly a scheduled and transported event that limits spontaneous and sustained physical activity and places a special burden on single-parent households and families in which both parents must work full time outside the home. Consequently, children are more physically isolated and inactive than those of previous generations and are suffering in larger numbers from obesity and other chronic health conditions related to the lack of physical activity. And the very old, who typically lose their ability to drive, are left with options that drastically diminish the quality of their lives: They either remain homebound and isolated, or must move out of their homes and communities for unfamiliar age-segregated retirement communities or institutions. These settings remove them from lifelong social networks, which can greatly affect their mental and social health.

Design Solutions

To overcome these problems, it is incumbent on civic leaders to encourage their respective communities to be planned and designed in ways that provide incentives for spending more time walking and less time in automobiles, thereby increasing opportunities to seamlessly reintegrate healthful physical activity into the normal course of daily life. The three most significant design strategies to facilitate physical health and active living in a community are:

- Implementing planning guidelines and zoning regulations that promote the close proximity of daily-living activities, services, and settings so that walking to work, school, shopping, and recreation is both possible and convenient.

- Providing connected networks of pedestrian-friendly pathways (sidewalks, jogging trails, footpaths, bike-ways) that link residential neighborhoods to each other, residential neighborhoods with community services, and community services with each other.
- Designing the pedestrian and bicycle pathways that make up these networks so that they are both safe and inviting.

Proximity between daily activities

Mixed-use development enhances human health because it locates the various activities of daily living within closer proximity to each other, thus providing greater incentives for people to walk or bike to them. Communities should not only allow but actively encourage the development of compatible and sensitively designed small-scale businesses, workplaces, schools, civic institutions, parks, and other open areas within walking and biking distance of residential neighborhoods. Planners and designers can locate small-scale civic uses (such as libraries, recreation centers, parks, and greenways) in ways that appropriately buffer residential development from large-scale, higher density commercial elements.

Smaller public schools, particularly those for the primary grades, should be located within safe walking distance of residential neighborhoods, especially those that offer a high proportion of affordable housing for young families. By designing these facilities as “community” schools, they can be used for community meetings, to house community libraries and learning resource centers, and for sports and other outdoor public recreation. This form of cross-programming helps ensure that every tax dollar has the greatest total impact on the health and well-being of the community.

When planners increase residential density and decrease lot size, a greater range of community services can be located within walking or biking distance of residential neighborhoods. As a result, a greater number of people, young and old, can more easily access these services without a car. Such close proximity minimizes infrastructure costs for roads, sidewalks, bike paths, and utilities, while at the same time helping commercial and civic organizations thrive.

It is important to note, however, that the integration of compatible nonresidential uses within or near residential neighborhoods requires that planning officials and designers sensitively address residents’ legitimate concerns regarding such uses—for example, increased vehicular traffic, late-night disturbances, and noise and light pollution—which originally led to single-use zoning. Otherwise, the public may resist mixed-use development for fear of these potentially noxious factors.

Networks of pedestrian-friendly pathways

Provide networks of limited-traffic residential streets, sidewalks, bike paths, and greenways that connect adjacent residential neighborhoods to each other and to nearby commercial and civic services so that pedestrians can avoid busy connector and arterial streets. Consider, for example, the following approaches:

- Prohibit new “cul-de-sac” neighborhoods where the only access is from arterial streets or roads. Cul-de-sac neighborhoods force people to move along busier arterial streets in order to leave the neighborhood.
- Require that new residential developments link to existing adjacent neighborhoods internally or be designed so that connections can be made to future residential developments.



This pathway at the College of Charleston, S.C., forms part of a broad pedestrian network.

Courtesy David Allison



This school is connected to the neighborhood by a series of paths.

Image from the Metropolitan Design Center Image Bank. © Regents of the University of Minnesota. All rights reserved. Used with permission.



A mixed-use, pedestrian friendly street

Courtesy David Allison



Buffers can vary according to urban condition, vehicular speed, and traffic volume.
 Courtesy of David Allison

- Require that new residential and commercial developments include sidewalks along all public streets fronting the development and along new streets within the development.
- Local governments should implement a phased plan of creating sidewalks and bike paths on existing streets where traffic is heavy and speeds are higher than 25 mph. All residential streets should have sidewalks on at least one side. Residential streets that extend for more than one block or connect two or more residential neighborhoods should have sidewalks on both sides. All arterial and connecting streets should have sidewalks and bike lanes on both sides. And the annual budget should include monies for repairing, upgrading, and maintaining existing sidewalks.
- Provide greenways, bike paths, and jogging trails within floodplains and utility rights-of-way between existing, isolated neighborhoods.

Well-designed sidewalks and bike paths

Provide incentives for using these pathways by designing them to be both pleasurable and safe. For example:

- Except in urban conditions, a landscape buffer should separate sidewalks and bike lanes from vehicular traffic on all streets. This buffer should provide greater separation from vehicular traffic as the traffic density of the street increases.
- Provide deciduous street trees between the road and sidewalks to make walking more pleasant and tolerable in hot and cool weather. Street trees can also provide pedestrians with a real and perceived sense of security and separation from vehicular traffic.



Sidewalk with canopies, benches, and street trees
 Courtesy David Allison

- Provide canopies on commercial storefronts for sun and rain protection.
- Provide adequate lighting of pedestrian pathways to ensure safety and security at night. Lighting should be designed to avoid light pollution in residential areas.
- Reduce front-yard setbacks and require usable front porches on residences to encourage walking as a form of social interaction and allow for casual surveillance between residents and passersby.
- Footpaths, jogging trails, and bicycle paths that are not adjacent to public roads should be designed to optimize safety by locating them in a way that maximizes casual observation from adjoining residential areas and other active uses and by limiting dense understory planting alongside them.

David Allison and Dina Battisto are, respectively, associate professor/director and assistant professor at Clemson University's Graduate Studies in Architecture and Health.



A safe and inviting sidewalk with shade trees and benches that serve as buffers from vehicular traffic

AIA's 10 Principles for Livable Communities

1. Design on a Human Scale

Compact, pedestrian-friendly communities allow residents to walk to shops, services, cultural resources, and jobs and can reduce traffic congestion and benefit people's health.



Good sidewalks create an environment where people feel comfortable walking.

2. Provide Choices

People want variety in housing, shopping, recreation, transportation, and employment. Variety creates lively neighborhoods and accommodates residents in different stages of their lives.



Farmers' markets bring a community together, provide healthy food, and support the local economy.

3. Encourage Mixed-Use Development

Integrating different land uses and varied building types creates vibrant, pedestrian-friendly, diverse communities.



First-floor retail and commercial uses, like this restaurant at the base of an office building, contribute to street life.

4. Preserve Urban Centers

Restoring, revitalizing, and infilling urban centers take advantage of existing streets, services, and buildings and avoid the need for new infrastructure. This helps to curb sprawl and promote stability for city neighborhoods.



A former auto shop is converted to a neighborhood supermarket.

5. Vary Transportation Options

Giving people the option of walking, biking, and using public transit, in addition to driving, reduces traffic congestion, protects the environment, and encourages physical activity.



Bike lanes and sidewalks are important elements of transportation infrastructure.

6. Build Vibrant Public Spaces

Citizens need welcoming, well-defined public places to stimulate face-to-face interaction, collectively celebrate and mourn, encourage civic participation, admire public art, and gather for public events.



A small canal flows through the Lurie Garden at Chicago's Millennium Park.

7. Create a Neighborhood Identity

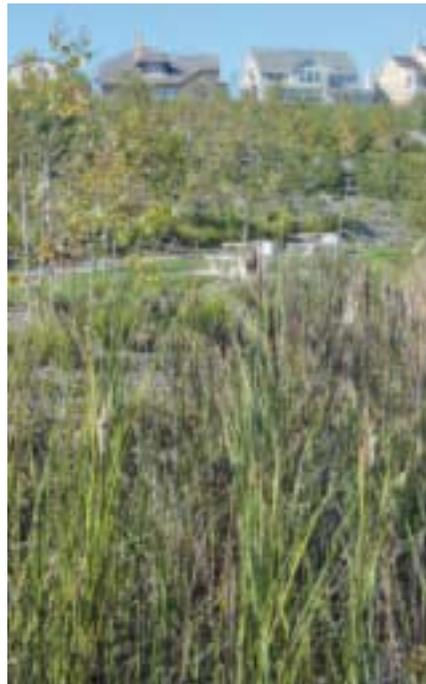
A “sense of place” gives neighborhoods a unique character, enhances the walking environment, and creates pride in the community.



The arch in Washington Square Park in New York City makes this an instantly recognizable place.

8. Protect Environmental Resources

A well-designed balance of nature and development preserves natural systems, protects waterways from pollution, reduces air pollution, and protects property values.



Wetlands help control storm water runoff in Ladera Ranch, California.

9. Conserve Landscapes

Open space, farms, and wildlife habitat are essential for environmental, recreational, and cultural reasons.



The Bay Trail waterfront promenade along Chrissy Field in San Francisco.

10. Design Matters

Design excellence is the foundation of successful and healthy communities.



Frank Gehry's amphitheater at Chicago's Millennium Park.

References and Resources

A Sense of Place

AIA Regional/ Urban Design Assistance Team, www.aia.org/liv_rudat
Main Street Program, www.mainstreet.org
Mayor's Institute on City Design, www.archfoundation.org/micd
National Trust for Historic Preservation, www.nationaltrust.org
Project for Public Spaces, www.pps.org
The Townscape Institute, www.townscape.org

Mixed-Use Development

Affordable Housing Design Advisor, www.designadvisor.org
Congress for the New Urbanism, www.cnu.org
Congress for the New Urbanism, *Greyfields Into Goldfields*, 2001
Form-Based Codes Alliance, www.formbasedcodes.org
Urban Land Institute, www.uli.org

Density

Boston Society of Architects, 2003 National Conference on Density: Myth and Reality, www.architects.org/shaping_communities/index.cfm?doc_id=116
Haughey, Richard M. *Higher-Density Development: Myth and Fact*. Washington, DC: ULI- the Urban Land Institute, 2005.
Jones, T., M. Pyatok, W. Pettus. *Good Neighbors: Affordable Family Housing*. New York: McGraw-Hill, 1996.
Knowledgeplex, the Affordable Housing and Community Development Resource for Professionals, www.knowledgeplex.org
Lincoln Institute of Land Policy, www.lincolinst.edu

Effective Planning for Regional Transportation

Atlanta Friends of the Beltline, www.beltline.org
Brookings Institution Metropolitan Policy Program, www.brook.edu/metro/
Car sharing: Flexcar, www.flexcar.com, and Zipcar, www.zipcar.com
Envision Utah, www.envisionutah.org
Smart Growth Network, www.smartgrowth.org
Texas Transportation Institute Urban Mobility Studies, mobility.tamu.edu/ums/
U.S. Environmental Protection Agency's Smart Growth Program, www.epa.gov/smartgrowth

Street-Saavy Design

Bikeability checklist, www.bicyclinginfo.org/cps/checklist.htm
Context Sensitive Solutions, www.contextsensitivesolutions.org
Pedestrian and Bicycle Information Center, www.pedbikeinfo.org
Walkability checklist, www.walkinginfo.org/cps/checklist.htm
Walkable Communities, www.walkable.org

Public Health and the Built Environment

Active Living By Design, www.activelivingbydesign.org
Benfield, F., M. Raimi, and D. Chen. *Once There Were Greenfields: How Urban Sprawl Is Undermining America's Environment, Economy and Social Fabric*. New York: Natural Resources Defense Council, 1999.

Centers for Disease Control and Prevention. *Chronic Diseases and Their Risk Factors: The Nation's Leading Causes of Death*. Atlanta: Centers for Disease Control and Prevention, 1999.

Centers for Disease Control and Prevention. "Prevalence of Physical Activity, Including Lifestyle Activities Among Adults—United States, 2000–2001." *Morbidity and Mortality Weekly Report* 52, no. 32 (2003): 764-769.

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. *Chronic Disease Overview*. Available at www.cdc.gov/nccdphp/overview.htm, accessed March 14, 2005.

Dannenberg, A.L., R.J. Jackson, H. Frumkin, R.A. Schieber, M. Pratt, C. Kochtitzky, H.H. Tilson. "The Impact of Community Design and Land Use Choices on Public Health: A Scientific Research Agenda." *American Journal of Public Health* 93, no. 9 (2003):1500-08.

Frank, Lawrence D., P. Engelke, and T. Schmid. *Health and Community Design*. Washington, D.C.: Island Press, 2003.

Frumkin, Howard, L. Frank, and R. Jackson. *Urban Sprawl and Public Health*. Washington, DC: Island Press, 2004.

Hancock, Trevor. "The Evolution, Impact, and Significance of the Health Cities/Communities Movement," *Journal of Public Health Policy*, Spring (1993): 5-18.

Jackson, Richard J., C. Kochtitzky. *Creating a Healthy Environment: The Impact of the Built Environment on Public Health*, 2001. Available at www.sprawlwatch.org/health.pdf

Killingsworth, Rich. "New Public Health Paradigm: Active Living," Active Living by Design, www.activelivingbydesign.org/resources/New_Public_Health_Paradigm_Active_Living.pdf, accessed December 15, 2004.

Macara, C.A., D.A. Jones, M.M. Yore, S.A. Ham, H.W. Kohl, C.D. Kimsey, C. Buchner. "Prevalence of physical activity, including lifestyle activities among adults – United States, 2000 – 2001." *Morbidity and Mortality Weekly Report* 52, no. 32 (2003): 764-769. Available at www.cdc.gov/mmwr/preview/mmwrhtml/mm5232a2.htm, accessed February 1, 2005.

Saelens, Brian E., J.F. Sallis, J.B. Black, D. Chen. "Neighborhood-Based Differences in Physical Activity: An Environment Scale Evaluation." *American Journal of Public Health* 93, no. 9 (2003).

Pratt, M. et al. "Higher Direct Medical Costs Association with Physical Inactivity." *The Physician and Sportsmedicine* 28, no. 10 (2002).

U.S. Department of Health and Human Services. *Health people 2010*. Volume 1. Washington: U.S. Department of Health and Human Services, November 2000.

U.S. Department of Health and Human Services. *Physical activity and health: A report of the surgeon general*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 1996.

U.S. Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity, 2001*. Rockville, Md: Public Health Service, Office of the Surgeon General, 2001.

Public Safety, Personal Security

AIA Disaster Assistance Program, www.aia.org/liv_disaster

The American Institute of Architects. *Handbook for Disaster Assistance Programs*. Washington, D.C.: American Institute of Architects, 1999. www.aia.org/SiteObjects/files/DAHHandbook.pdf

The American Institute of Architects. *Security Planning and Design: A Guide for Architects and Building Design Professionals*. Edited by Joseph A. Demkin. New York: John Wiley & Sons, 2003.

Federal Emergency Management Agency (FEMA), www.fema.gov

Florida Building Code (includes hurricane, glazing, and high-wind criteria), www.floridabuilding.org

The Illuminating Engineering Society of North America, www.iesna.org
Institute for Disaster Research, Wind Science and Engineering Research Center (Texas Tech University, Lubbock, Texas), <http://www.wind.ttu.edu/>
International Codes Council, www.iccsafe.org

Lower Manhattan Development Corporation (Urban Design Solutions for Lower Manhattan and Ground Zero), www.renewnyc.com

Nadel, Barbara A., ed. *Building Security: Handbook for Architectural Planning and Design*. New York: McGraw-Hill, 2004.

National Capital Planning Commission. *The National Capital Urban Design and Security Plan*. Washington, D.C., October 2002. Document at www.npcp.gov

National Crime Prevention Council, www.npcp.org

National Memorial Institute for the Prevention of Terrorism, www.mipt.org

National Institute of Standards and Technology, www.nist.org

New York City Local Law 26 of 2004 (addresses post-9/11 lessons learned for high-rise construction), www.nyc.gov/html/dob/html/code_update.html

Russell, James S., Elizabeth Kennedy, Meredith Kelly, and Deborah Bershad, eds. *Designing for Security: Using Art and Design to Improve Security/Guidelines from the Art Commission of the City of New York*. Art Commission of the City of New York, March 2002.

U.S. Department of Homeland Security, www.ready.gov

U.S. General Services Administration (See Public Buildings Service, Design and Construction), www.gsa.gov

A Sustainable Approach to Urban and Regional Development

AIA Committee on the Environment (COTE), www.aia.org/cote

AIA/COTE Top Ten Green Projects, www.aiatopten.org

AIA Roundtables on Sustainability, www.aia.org/liv_partnerships

AIA Sustainable Design Assessment Program, www.aia.org/liv_sdat

Beatley, Timothy. *Green Urbanism: Learning from European Cities*. Washington, DC: Island Press, 2000.

The Enterprise Foundation Green Communities, www.enterprisefoundation.org/resources/green

Green Infrastructure, www.greeninfrastructure.net

James, Sarah, and Torbjörn Lahti. *The Natural Step for Communities: How Cities and Towns can Change to Sustainable Practices*. New Society Publishers, 2004.

National Association of Home Builders. *Building Greener, Building Better: The Quiet Revolution*. Washington, D.C.: National Association of Home Builders, 2002. www.nahb.org/publication_details.aspx?publicationID=17§ionID=154

Natural Resources Defense Council Cities & Green Living, www.nrdc.org/cities

U.S. Department of Energy, Smart Communities Network, www.sustainable.doe.gov

U.S. Green Building Council/LEED, www.usgbc.org

Wheeler, Stephen and Timothy Beatley, eds. *The Sustainable Urban Development Reader*. Routledge, 2004.

ISBN 157165012-1



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