

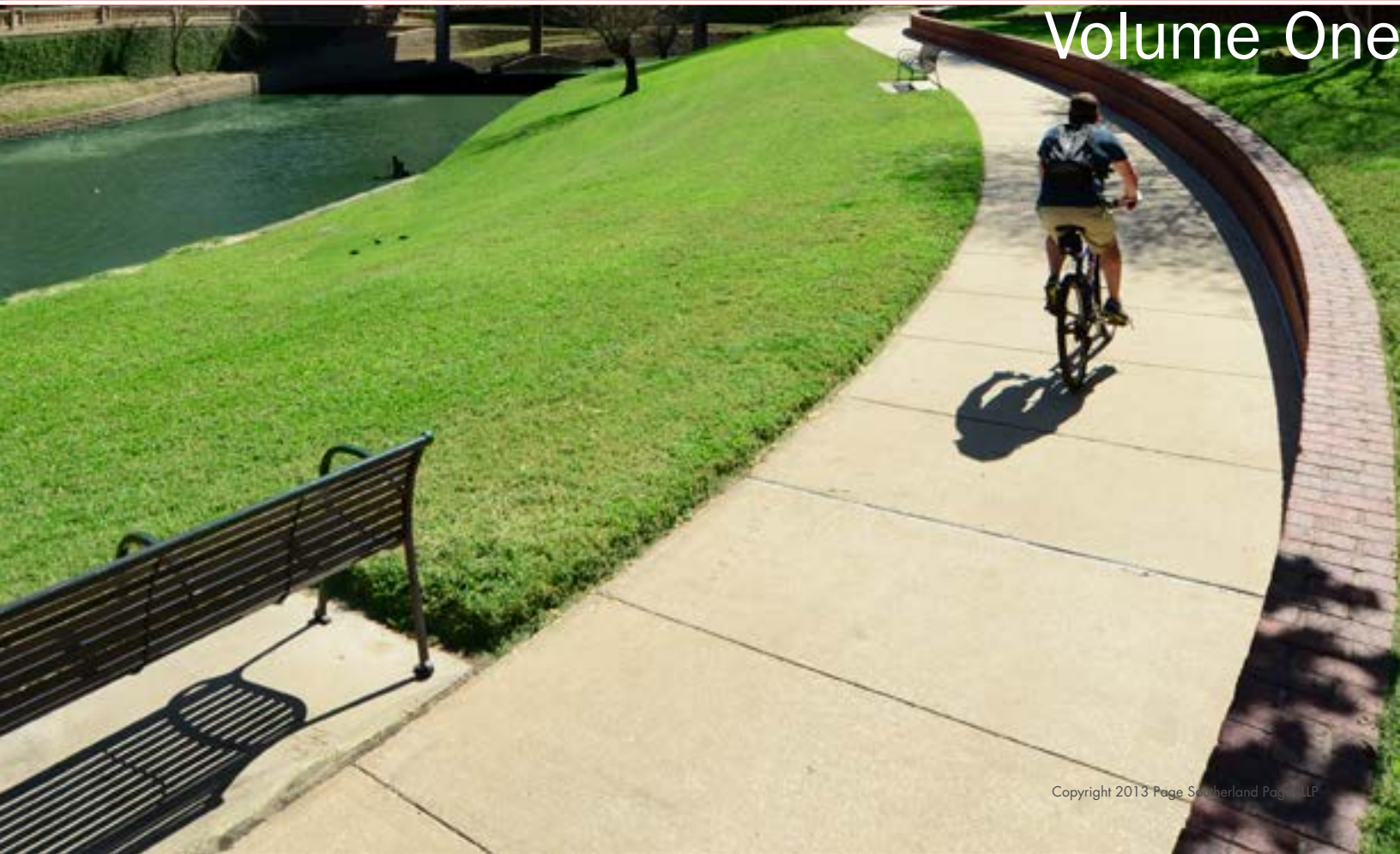


ACTIVE DESIGN

THE INTERSECTION OF ARCHITECTURE + PUBLIC HEALTH

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Volume One



PREFACE

This Primer is divided into three volumes.

The intended audience includes the full spectrum of design, planning and construction professionals, government representatives, owners, and developers.

Volume One

Volume One is intended to answer the following two questions.

- A. What is the Public Health crisis in America?
- B. How has the nation responded so far?

Part One: **Definitions**

The National Response: Examples

Volume Two

Volume Two is intended to answer the following question.

- A. What role does the built environment play in the solution to the public health crisis?

Part Two **Walkability**

Volume Three

Volume Three is intended to answer the following question.

- A. How is Houston responding, and what more can be done?

Part Three **A Regional Response: Houston**



ACKNOWLEDGEMENTS

Special thanks goes to the following:

Matthew Cohen..... for his superior research skills

Lawrence Stewart..... for his enthusiasm and superior design and rendering

Richard Phan..... for his superior graphic design

Nancy Fleshman..... for her insight, encouragement and red pen

Walkable and Livable Communities..... for their advocacy



DEFINITIONS

DEFINITIONS

Then and Now

The Industrial Revolution was marked by rapid mass urbanization of workers resulting in congested living and working conditions. These close living conditions caused an epidemic in infectious diseases such as tuberculosis and cholera.

The urban design response, in combination with regulations on working conditions, dramatically curtailed infection rates. Strategies such as building setbacks, safe drinking water and sanitation laws, and life safety regulations helped improve the public's health, safety and wellbeing. Loss of life due to building fires was reduced once fire codes went into effect.

Life safety codes first conceptualized during this period have evolved, and today they continue to help prevent loss of life.

Transportation systems in the U.S. rely heavily on the use of single occupancy vehicles. Dense urban areas (and more and more medium density areas) suffer from congested highways, despite best efforts to accommodate more vehicles by adding new lanes.

While it is difficult (and impractical) to re-imagine our cities with no reliance on single occupancy vehicle travel; increasingly, citizens and traffic planners alike are expressing an interest in reducing this dependence.

Our current environment negatively affects public health through air pollution and noise pollution, but most importantly, our street structure is intolerant to any alternative transportation, and prevents incidental physical activity such as daily walking. Increased incidents of asthma, heart disease, and obesity find their origins in an environment that precludes healthy habits.



Industrial Revolution

Unidentified factory environment



21st Century

Typical highway environment

DEFINITIONS

Our nation's public health crisis

Urban sprawl with little mass transit and very little opportunity to travel on foot, coupled with limited access to fresh food in low income areas, have contributed to an epidemic in chronic diseases such as heart disease, respiratory disease and diabetes, which are all linked to our habits and behaviors. Asthma cases have been steadily rising in the past decade, and the rise in obesity rates over the past two decades is widely cited and documented. Public health in the U.S. is in crisis. Poor health across the population is impacting our quality of life, and contributes towards escalating healthcare costs.

The response to this public health crisis must come from multiple avenues, including from the designers of the built environment. The urban design response- sustainable neighborhood design, reduced dependence on cars, improved walkability, and development of alternative transportation options- will help to reverse sedentary habits, resulting in healthier lives and healthier communities.

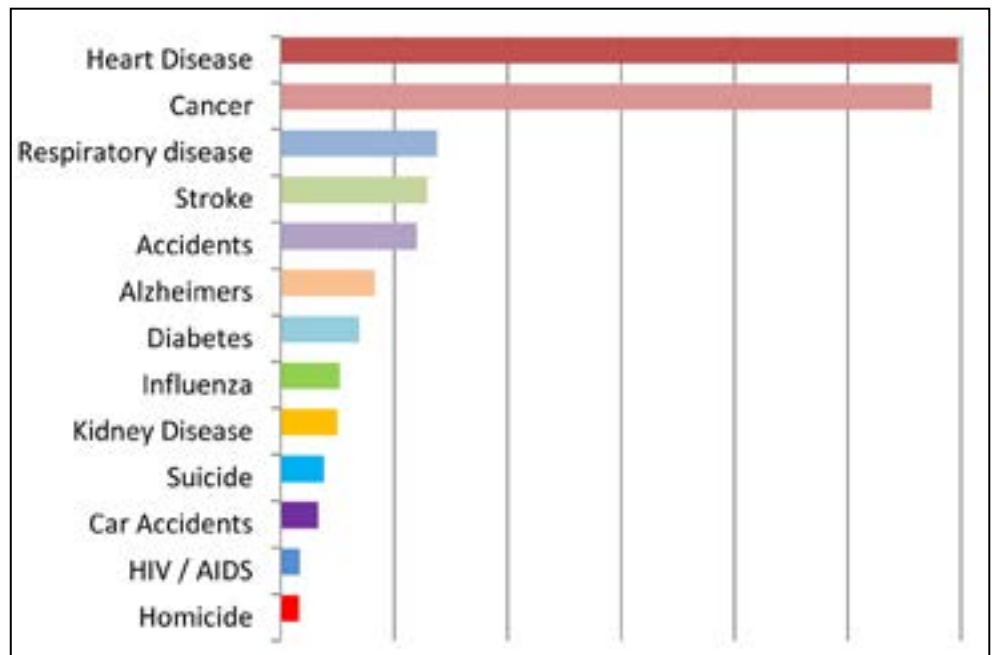
According to the Journal of American Academy of Pe-

diatrics, the incidental activity level (non play and non sports activities) in children has dropped significantly. In 1969, 40% of children walked to and from school daily. By 2009, this number had dropped to below 13%. In some regions of the country, this number dips to as little as 5%. The reduction in walking as transportation is directly affected by the design of our communities, and the proximity and access to local amenities, such as schools.

There may be numerous reasons for this shift, but it signifies a significant change in our daily habits and in our relationship to our streets, and to our communities as a whole.

by the numbers

Center for Disease Control statistics



Current statistics indicate that, by far, the leading causes of death in the U.S. are illnesses related to heart disease and cancer. In fact, diseases (some of which have a direct correlation with lifestyle choices) occupy most of the top positions on the list shown above.

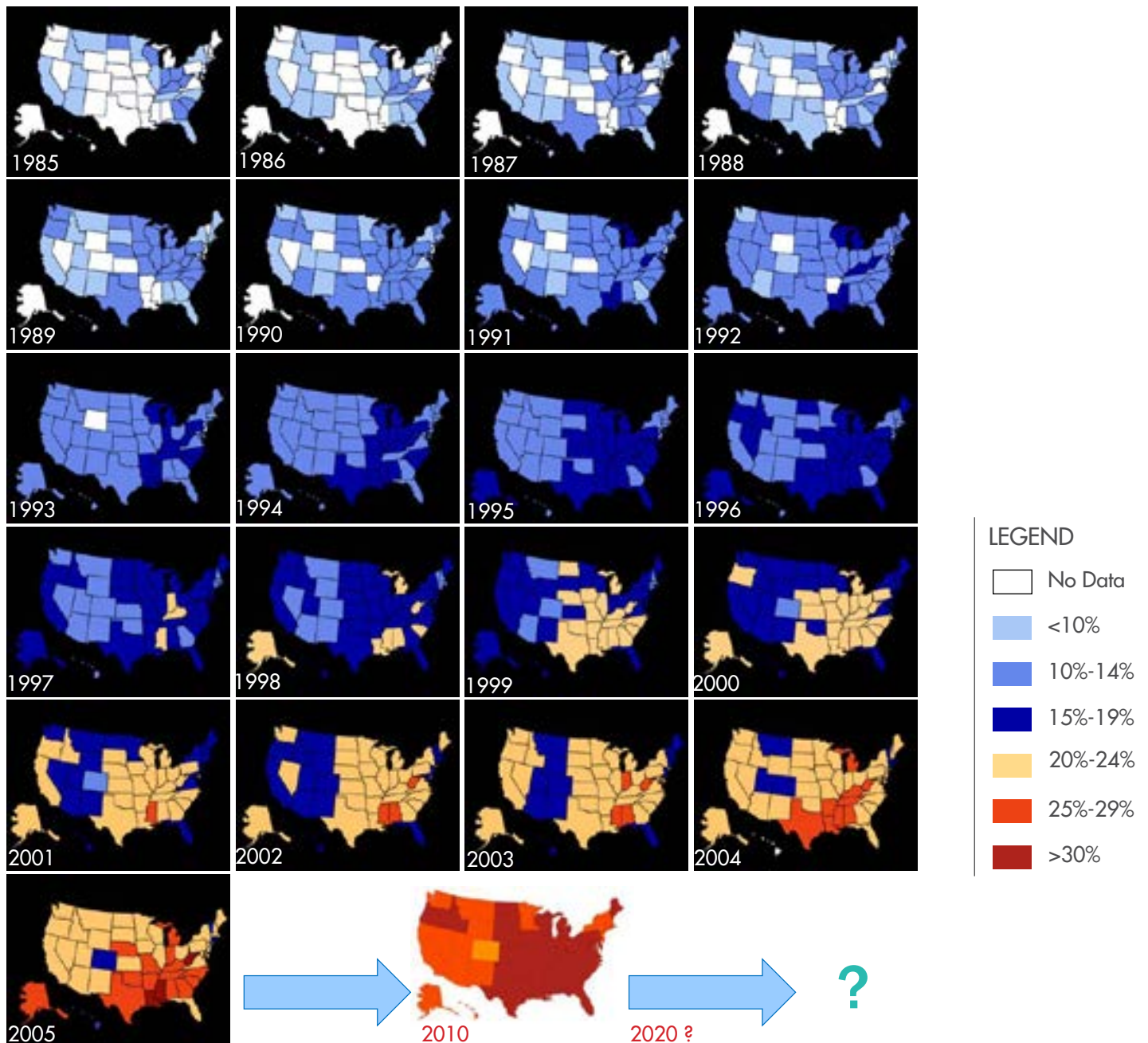
Although a good deal of time and energy is spent discussing the dangers of gun related violence (on both sides of the gun control debate), it is clear that the incidence of homicide as a cause of death is far outweighed by the silent danger of chronic disease.

DEFINITIONS

Growth of the Problem

The history and rapid expanse of obesity is illustrated graphically below by the Center for Disease Control National Obesity Maps. This series of maps spans from 1985, when only a few states had an obesity rate of less than 10% (shown in the light blue color), to 2010 when the majority of states had an obesity rate above 30%

(shown in the deep red color). Looking toward the future, it is difficult to imagine the impacts on chronic diseases (and related healthcare costs) stemming from rising obesity rates if they continue unmitigated.



DEFINITIONS

What is Active Design?

Active Design is the theory that the design of the built environment has a direct impact on public health, and specifically today's public health epidemics of obesity and related chronic diseases.

Active Design calls on the architect, urban planner, landscape architect, public official, and building owner to help contribute to the solution.

In doing so, it focuses on four primary ways by which healthier habits may be introduced and fostered: alternate transportation, active buildings, active recreation, and access to healthy nutrition.

Alternate transportation emphasizes increased access to safe and usable cycling and walking routes. This involves creating complete streets- streets which are usable in a safe manner for cyclists and pedestrians. This strategy requires carefully designing bike lanes and sidewalks for maximum safety and effectiveness.

Active buildings encourage the use of stairs over elevators/ escalators. They also feature outside walking paths, bike storage, and wellness education. Finally, active buildings are located within the urban fabric allowing for access via alternate transportation.

Active recreation can be realized in many different ways- from increasing access to existing parks to designing outdoor plazas and playgrounds which are vibrant and engaging.

Access to healthy nutrition comes from introducing community gardens and farmers markets in cities as well as numerous other strategies aimed at eliminating food deserts.



DEFINITIONS

Shifting Attitudes

As Gertrude Stein famously said “there is no there there”. (Gertrude Stein, *Everybody’s Autobiography* New York, Random House, 1937, p289)

This statement is a suitable description for many U.S. cities, where it seems there really is no “there there”. Outside of a few exceptional cities (such as New York, Washington D.C., Chicago, and San Francisco) our city landscapes lack a sense of true center or destination. Although many cities feature a Central Business District, these downtown areas are treated separately from “the rest of the city”, the places where people live, shop, learn and play.

Although many neighborhoods and communities may (by city ordinance) include sidewalks to encourage pedestrian activity, there is often no useful destination accessible to the walker.

Only schoolchildren who live within a block or two of school report walking to school on a regular basis. Very few American cities are designed to allow residents to walk to get a carton of milk, visit a friend, or report to work. Commercial centers, learning environments, and the dubiously named “office park” are designed out of range for pedestrians, accessible only by vehicle.

Our cities have evolved into a loose collection of isolated areas where remote gated residential communities separate residents from the community at large. However, studies in numerous U.S. cities indicate a shift in thinking on how we wish to live.

Increasingly, residents report a desire to move from suburbs back into the central city. Survey respondents cite shorter commute times, stronger adjacency to basic amenities, and (most importantly) a greater sense of community.

Changing demographics indicate that two rapidly growing groups are increasingly interested in urban living: empty nesters, and singles or couples without children. Both groups report diminishing interest in large lawns and long drive times, and rising interest in urban living and walkability.

Scope of this Paper

While the public health crisis takes many forms and will require solutions from multiple sources, the scope of this paper is not broad enough to cover all possible solutions, only those solutions which may draw from the built environment.

Therefore, this paper does not include solutions related to the availability of healthy nutrition, access to healthcare, civic engagement/outreach, public policy or advocacy, or violence prevention.

Rather, the intent is to focus on the relationship between the built environment and preventive healthcare strategies such as increased incidental physical activity.

This paper also offers a brief overview of the many local and regional efforts underway across the U.S. It also focuses more strongly on the City of Houston and the efforts currently underway there. It concludes with a hypothetical urban intervention design meant to exemplify the strategies discussed throughout the paper.



NATIONAL RESPONSE: EXAMPLES

NATIONAL RESPONSE: EXAMPLES

Leading by Example

Between 2010 and the present, local governments and non-governmental organizations across the country have spontaneously, yet quietly, started a national conversation on how best to improve our urban communities. In some cases, they started with shovels, but in most cases, they started with pens.

Policies related to land development include incentives for brownfield remediation, as well as sustainable affordable housing, and the development of “eco districts”. City-wide campaigns have also focus on access to parks and recreation and healthy nutrition.

The following summaries highlight some of the work being performed at the local level to improve urban living one neighborhood and one policy at a time.

Portland, Oregon

Expanding on Wellness

Well known for extensive sustainable initiatives, Portland extends the conversation to include wellness for all citizens. Specifically, public private partnerships are working on innovative and affordable housing for seniors. Incentives include reduced development review fees or tax exemptions for retrofitting housing for accessibility. Projects offering increased access to public transportation, community gardens or public outdoor space are also incentivized..

Los Angeles, California

Aiming for Complete Streets

Local policies such as the Model Design Manual for Living Streets 2011, Citywide Design Guidelines 2011, and the Los Angeles County Healthy Design Ordinance 2013 have served as model policies for improving urban mobility through “complete streets” (re: page 19). The city’s Healthy Design Ordinance expands the requirements for building projects to promote walkability (through sidewalk widths, street trees, shading requirements and provisions for bike storage).

Seattle, Washington

Promoting Ecodistricts

Recognizing that true impact comes from scaling up to a district scale, the city of Seattle encourages the development of ecodistricts, such as Capitol Hill EcoDistrict. (www.capitolhillhousing.org). An ecodistrict is a masterplanned development which aims to reduce waste, optimize energy use, conserve water, use materials responsibly- all at the scale of a neighborhood.



NATIONAL RESPONSE: EXAMPLES

Milwaukee, Wisconsin

Menomonee Valley Sustainable Design Guidelines
Milwaukee has worked hard at brownfield remediation and has found that it not only eliminates waste and creates buildable land, it also helps spark economic progress.

New York, New York

Active Design Guidelines
In 2010, the Center for Active Design (a non-profit in New York City) published the first version of the Active Design Guidelines which outline practical ways to encourage physical activity through the design of buildings, streets and neighborhoods.

On June 27, 2013, Mayor Bloomberg signed an Executive Order requiring city agencies to review the design of construction projects in the city to assess the opportunities to incorporate active design principles.



Houston, Texas

Houston is the nation's leader in purchasing green power, and is working to provide a continuous network of trails along the city's bayou network. Houston is also working on a transformative method for collection of solid waste and recyclables.

Columbus, Ohio

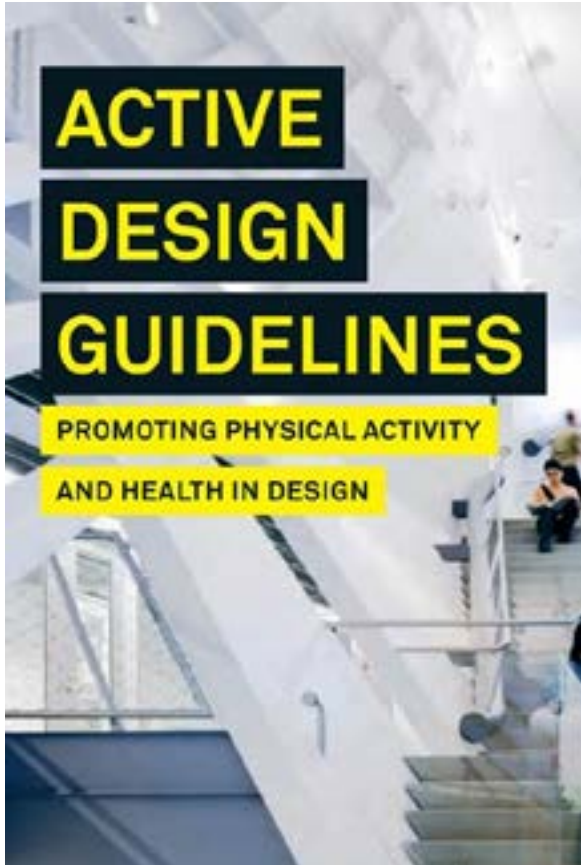
Green Columbus Fund
Established in 2010, the Green Columbus Fund assists in brownfield remediation, reimbursement of US Green Building Council LEED certification, developing wellness centers and expanding healthcare for low income families.

Nashville, Tennessee

Rising to the Challenge
The Mayor's office is credited with broad initiatives aimed at shaping healthy neighborhoods. There is support for local conferences and discussions relating to establishing complete streets as well as identifying and eliminating food deserts.

NATIONAL RESPONSE: EXAMPLES

Center for Active Design



Since its publication in 2010, over 15,000 copies of the Active Design Guidelines have been distributed

The Center for Active Design in New York City is a partnership of architects, planners and city officials whose mission is to prevent and treat, through careful design of the built environment, the chronic diseases marking our nation's public health crisis.

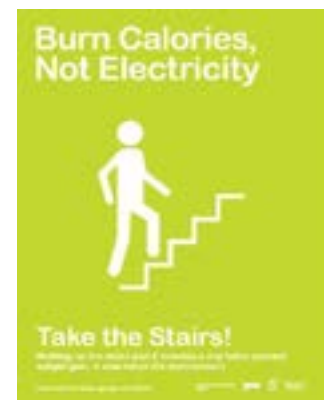
It strives to fulfill this mission by focusing on reducing our dependence on single occupancy vehicles, encouraging active design in buildings, increasing access to recreational space, and expanding access to healthy nutrition.

The Center published the Active Design Guidelines in 2010 to codify the elements of active design in buildings and in the public realm. It addresses urban design and green building design, and offers case studies demonstrating successful implementation of active design principles.

Since its initial publication, four supplements have followed: Promoting Safety, Active Design for Affordable Housing, and two volumes on Shaping the Sidewalk Experience.

LEED recognizes the role that active design plays in developing healthy buildings and healthy occupants. Projects participating in LEED green building certification can earn an Innovation in Design credit for Design for Active Occupants.

This LEED credit encourages the design of attractive, user-friendly staircases (to minimize reliance on elevator travel), the design of wellness or fitness centers in projects, and the design of exterior places for walking or recreation, such as walking paths on site.



NATIONAL RESPONSE: EXAMPLES

High Line- New York City

The High Line, which opened on the west side of Manhattan in 2009 is a 1.5 mile long elevated urban park converted from abandoned railway. Accessible by both elevators and stairs, it offers a space for urban circulation, recreation and respite without replacing any real estate at grade level.

The park is a source of local pride, and provides an event space with programmed activities, a walking and running path, art exhibition space, a transportation corridor, and a hub for local street vendors.

In terms of its use for exercise and transportation, the primary benefit of the High Line is that it provide a safe place for cyclists and pedestrians separate from traffic, and street intersections. It also separates the human breathing zone from the zone of automobile exhaust, a constant threat in a high density urban environment.

The High Line takes full advantage of its potential as a learning tool in sustainable design, structural design, neighborhood history, and ecosystem ecology. Programs offered throughout the year appeal to both adults and children. It is a popular destination for school field trips.



Photo credit: John Gloetzer



Photo credit: John Gloetzer

Rails to Trails

Consider the opportunities for adaptive reuse in your region. What can be re purposed, renovated or preserved to help mitigate the health risks posed by sedentary lifestyles or poor habits?



The Rails to Trails Conservancy is a non-profit organization working to convert abandoned railroad corridors to walking / cycling trails. This widely successful program uses the (often) straight, uninterrupted, and extensive rail network to offer public trails without disrupting the existing urban fabric.

There are Rails to Trails projects in all 50 states.

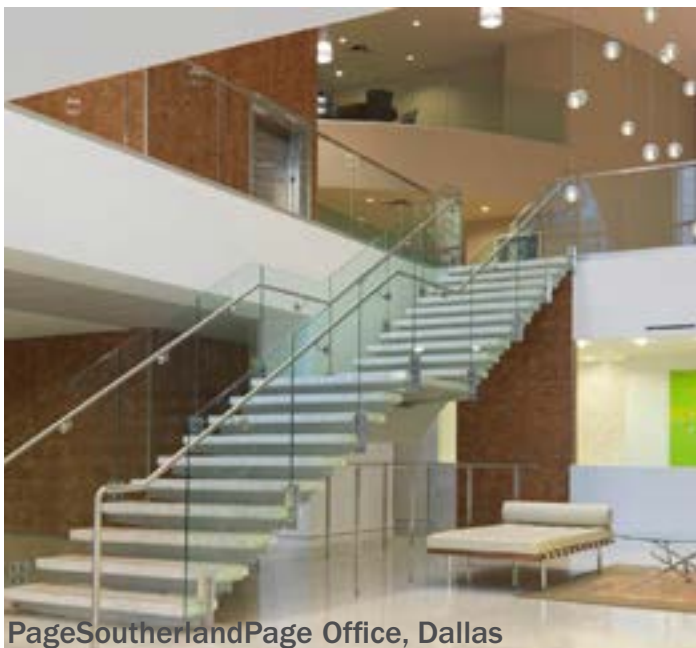
NATIONAL RESPONSE: EXAMPLES

Active Design- Building Scale: Interiors

Design at the individual building scale plays an important role in Active Design. Ramps and monumental stairs help to encourage increased physical activity in commercial offices and in many other public spaces such as theaters, museums, and retail. Medical professionals and public health experts have widely discussed and published evidence showing small incremental increases in physical activity daily can improve overall wellness.



PageSouthernlandPage Office, Houston



PageSouthernlandPage Office, Dallas

But, how can designers optimize a building's vertical transportation systems to promote wellness? The Active Design Guidelines offer the following recommendations.

Monumental Stairs

1. Communicate between two frequently occupied floors
2. Be visible from the main entrance (or center of activity)
3. Be visually appealing
4. Have a gentle rise/run slope
5. Be located stair close to (but slightly more visible than) elevators
6. If fire rated enclosure cannot be avoided (due to code), consider implementing fire rated glass enclosures to increase transparency, visibility and aesthetics
7. Be wide enough to easily accommodate expected flow
8. Be located in a naturally daylit area if possible

Ramps

1. Communicate between two frequently occupied floors
2. Consider locating the primary lobby on the second floor nearest to the monumental stair or ramp
3. When designing in double height spaces, consider designing work areas on an elevated platform accessible via ramp and elevator. (This may help to capture additional storage space underneath, and enables the work areas to use underfloor air distribution systems).

Elevators

1. Locate out of direct line of sight from building entrance
2. Program controls to run just slightly slower than average (hint, this helps to save energy also!)

Building Design

1. Include shower and changing areas for staff who cycle to work
2. Include a parklike walking path outside to enable staff to exercise before or after work (or take a break midday)
3. Provide educational displays on how the building contributes towards wellness
4. Locate amenities such as breakrooms, copy rooms, mailrooms, shared equipment spaces, and meeting rooms a pleasant walking distance from work areas.

NATIONAL RESPONSE: EXAMPLES

Active Design-Neighborhood Scale: Exterior

How can designers / urban planners plan for a vibrant, useful and healthy public realm? The Active Design Guidelines offer the following recommendations.



Pedestrian Life

1. Create a pedestrian zone in the overall streetscape separate from bicycle, furniture, and storefront zones.
2. Design wayfinding and security lighting that minimizes light pollution.
3. Ensure safe pedestrian crossing with clear markings, signals, and crossing islands (across wide streets).
4. If no street trees are required by local zoning, plant them anyway.
5. Consider ways to add drinking fountains to pedestrian corridors.

Playtime

1. Coordinate with local schools on the potential to open play areas and playing fields when school is not in session.
2. Preserve or create natural terrain in parks for city kids.

Riding Bikes

1. Coordinate with local cycling clubs. Many cyclists prefer bike lanes on secondary and tertiary roads in lieu of heavily trafficked arterial roads (to maximize safety).
2. Bike racks. Showers. There, we said it.

Land Use Mix

1. Collocate places where people live and work with the places where they learn and play. Develop areas which locate office and commercial areas with relative adjacency to schools, parks and housing.

Street Connectivity

1. Avoid designing street networks with block lengths longer than 200 -250 feet.
2. Minimize the use of "closed streets" which prohibit traffic flow.
3. Focus on Safety First in designing places where pedestrians and vehicles may cross perpendicular to one another.
4. Include local emergency personnel in PreDesign vision sessions when laying out street structures in new developments to ensure emergency vehicles can safely travel.

Transit, Traffic and Parking

1. Develop sites near public transit
2. Design attractive, shaded, and accessible bus and rail stops which allow users to view the system map or purchase tickets.
3. Optimize traffic flow with bus drop off lanes
4. Utilize traffic calming measures such as curb extensions, medians and raised speed reducers.
5. Coordinate traffic signals and pedestrian crossing phasing to protect pedestrian safety.

Parks and Recreational Space

1. Ensure bikes + pedestrians have easy access to parks
2. Design parks according to local cultural preferences and allow for use by all age groups.

Plazas

1. Design plazas as open space within the urban fabric along pedestrian routes.
2. Provide sun shading devices in hot climates, and provide overhead coverage in rainy climates.
3. Incorporate public art and/or areas for street vendors.

NATIONAL RESPONSE: EXAMPLES

An idea grows

depave

“depave” is a non profit organization in Portland Oregon which organizes volunteers to spend their weekends removing unnecessary pavement in urban areas to create community green spaces and mitigate stormwater runoff. Portland has large quantities of stormwater which must be managed to prevent flooding. It also has an abundance of underutilized paving. Houston (and other cities) have the same combination of challenges.

“depave” partners with the local water conservation district, Oregon Dept of Environmental Quality, Portland Parks & Recreation, and the private sector, to help organize and fund “depave” projects every month.

In the photo sequence shown at right, an existing parking lot in Portland is depaved and replaced with a community garden. The site went from an area which was prone to flooding, added to the heat island effect, and failed to serve the neighborhood, to one which manages stormwater naturally and effectively, mitigates the heat island effect, promotes biodiversity, improves air quality and contributes to the local food chain.

Recent projects include paved lots at elementary schools and community colleges, both of which contribute towards educating students about construction waste removal, ecology, landscaping, and the power of collaboration between the community and local governments.

To learn more, check out the manual “How to depave” available online.



from paved parking lot to a community garden in a single weekend, all using volunteer labor



Photo credits: depave

NATIONAL REPOSE: EXAMPLES

Guerilla Urban Intervention

Parklets

Parklets are “mini parks” which spring up in unexpected places. Many cities have programs encouraging the conversion of parking spaces into green spaces. Architects and Landscape Architects collaborate with business owners to design these small spaces to enhance the streetscape, making the area in front of their businesses more attractive to passersby.

The designs respond to local needs. This movement began in 2005 as public art interventions, where designers paid the meters throughout the day, then set up temporary, day long art exhibits. The following day, the parking space would be back in service.

In 2012, Houston City Councilman Ed Gonzalez introduced a Parklet Program designed to allow business owners to adopt an existing parking space outside their businesses and convert it a miniature pocket park. While it has yet to gain widespread exposure, it has the potential of giving business owners greater power to increase the “curbside appeal” of their businesses while offering a small place of respite in the city (even if it is at the expense of a parking space).

Recognizing the appeal of an engaging and vibrant streetscape, many cities across the country have also opened parklets (or eliminated barriers to temporary impromptu parklets).



Volume Two *(published separately)*

Volume Two

Volume Two will answer the following question.

- A. What role does the built environment play in the solution to the public health crisis?

Part Two **Walkability**
(published separately)