Fit Cities:
How Active Design Can Build Healthier and More Sustainable Communities

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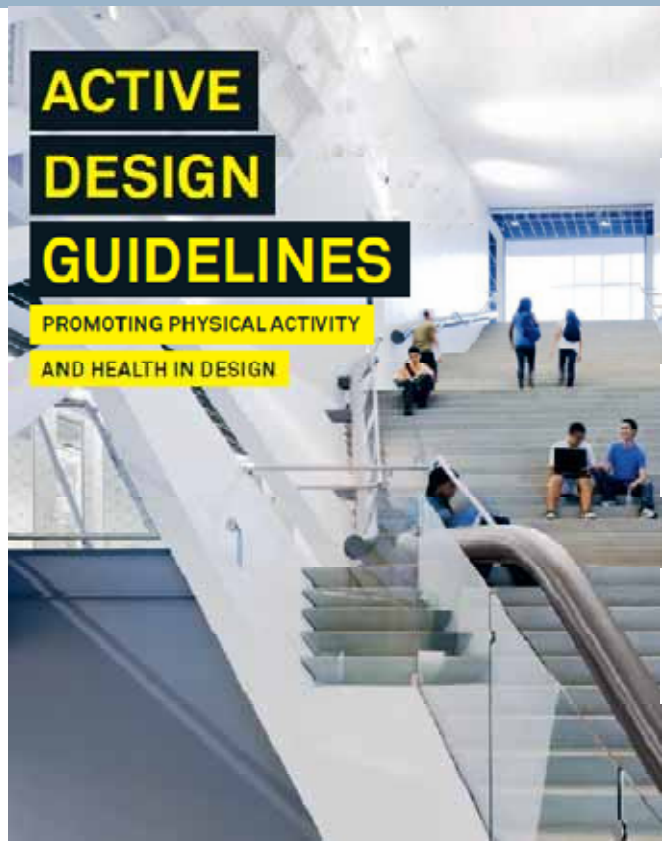
NYC Dept of Health and Mental Hygiene



Why Active Design?

- Brief History of Health and the Built Environment
- Today's Epidemics: Non-Communicable Diseases
- Health and Sustainability Benefits
- Active Design in NYC
- Upcoming Events in the U.S.
- Going Forward: A Global Proposal

History of health and the built environment

- 100+ years ago, urban conditions in NYC were a breeding ground for disease epidemics

Over-crowding:
By 1910, the average density in lower Manhattan was 114,000 people/ sq. mi; two wards reached densities > 400,000. (Today's density: 67,000/ sq. mi.)

+

Inadequate systems for garbage, water, and sewer, leading to pervasive filth and polluted water supplies.

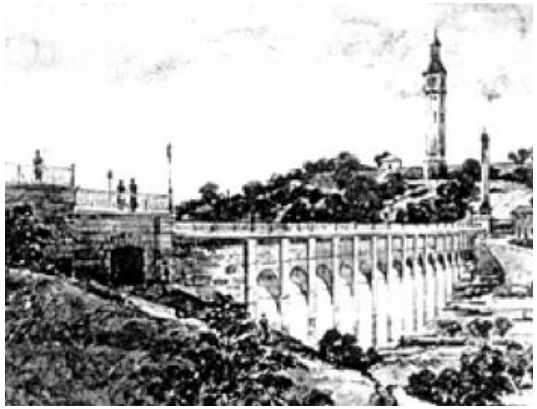
Major epidemics:

Air/droplet-borne diseases:
TB

Water-borne diseases:
Cholera

Vector-borne diseases:
Yellow-fever

The design response



1842 New York's **water system** established – an aqueduct brings fresh water from Westchester.

1857 NYC creates **Central Park**, hailed as "ventilation for the working man's lungs", continuing construction through the height of the Civil War

1881 Dept of Street-sweeping created, which eventually becomes the **Department of Sanitation**

1901 **New York State Tenement House Act** banned the construction of dark, airless tenement buildings

1904 First section of **Subway** opens, allowing population to expand into Northern Manhattan and the Bronx

1916 **Zoning Ordinance** requires stepped building setbacks to allow light and air into the streets

The results

Deaths	1880	1940
Infectious Diseases	**57.1%**	**11.3%**
- Contagion	12.5%	0.2%
- Diarrhea	9.6%	0.5%
- Tuberculosis (TB)	20.8%	5.0%
- Pneumonia	13.2%	5.6%
- Typhoid	1.0%	0.003%

Today, about 9% of deaths in NYC of are due to infectious diseases.

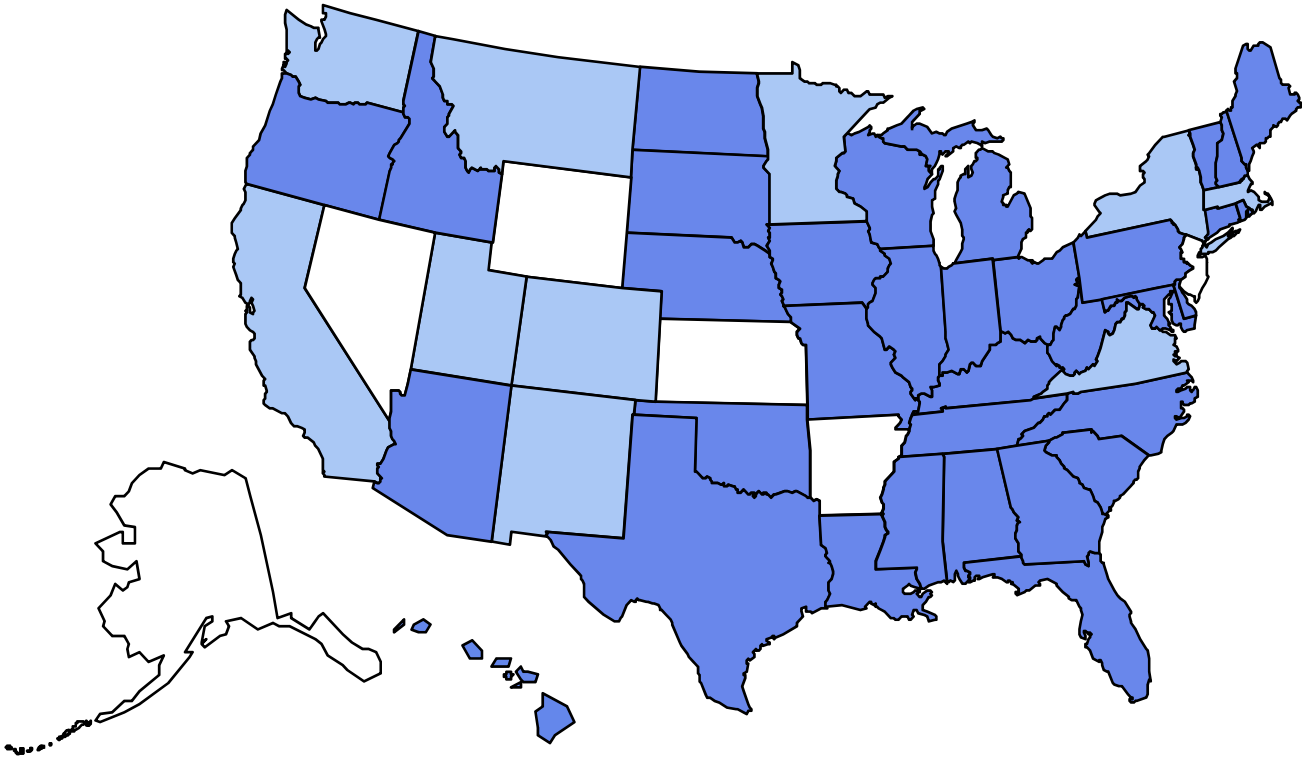
Chronic Disease (heart disease, strokes, cancer, diabetes, etc) accounts for 75% of deaths.

Globally, heart disease and strokes are now the leading causes of death. Traffic injuries are another leading cause of death, especially in younger people.

Obesity Trends* Among U.S. Adults

BRFSS, 1990

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)



Source: U.S. Centers for Disease Control and Prevention (CDC)

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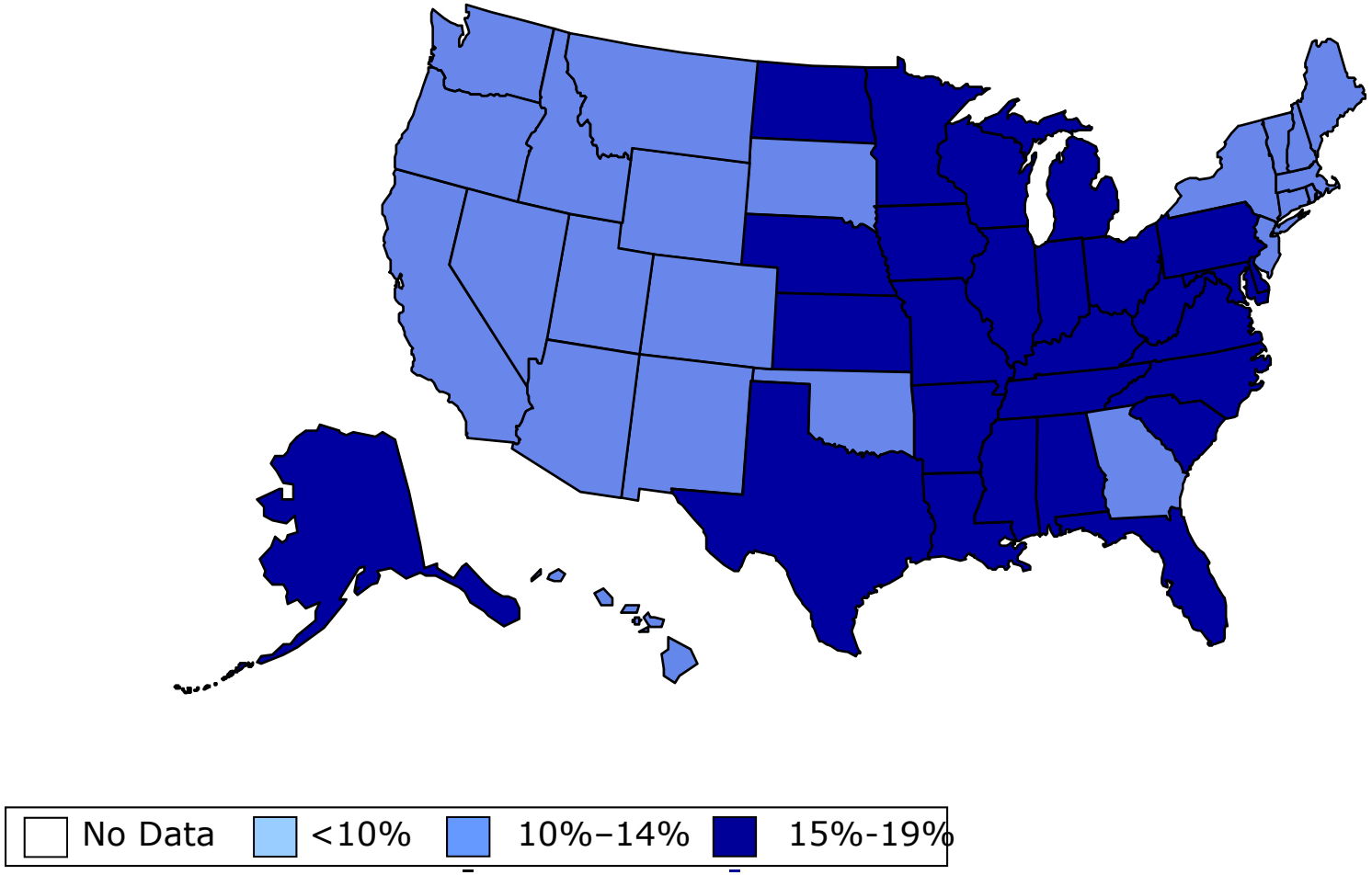

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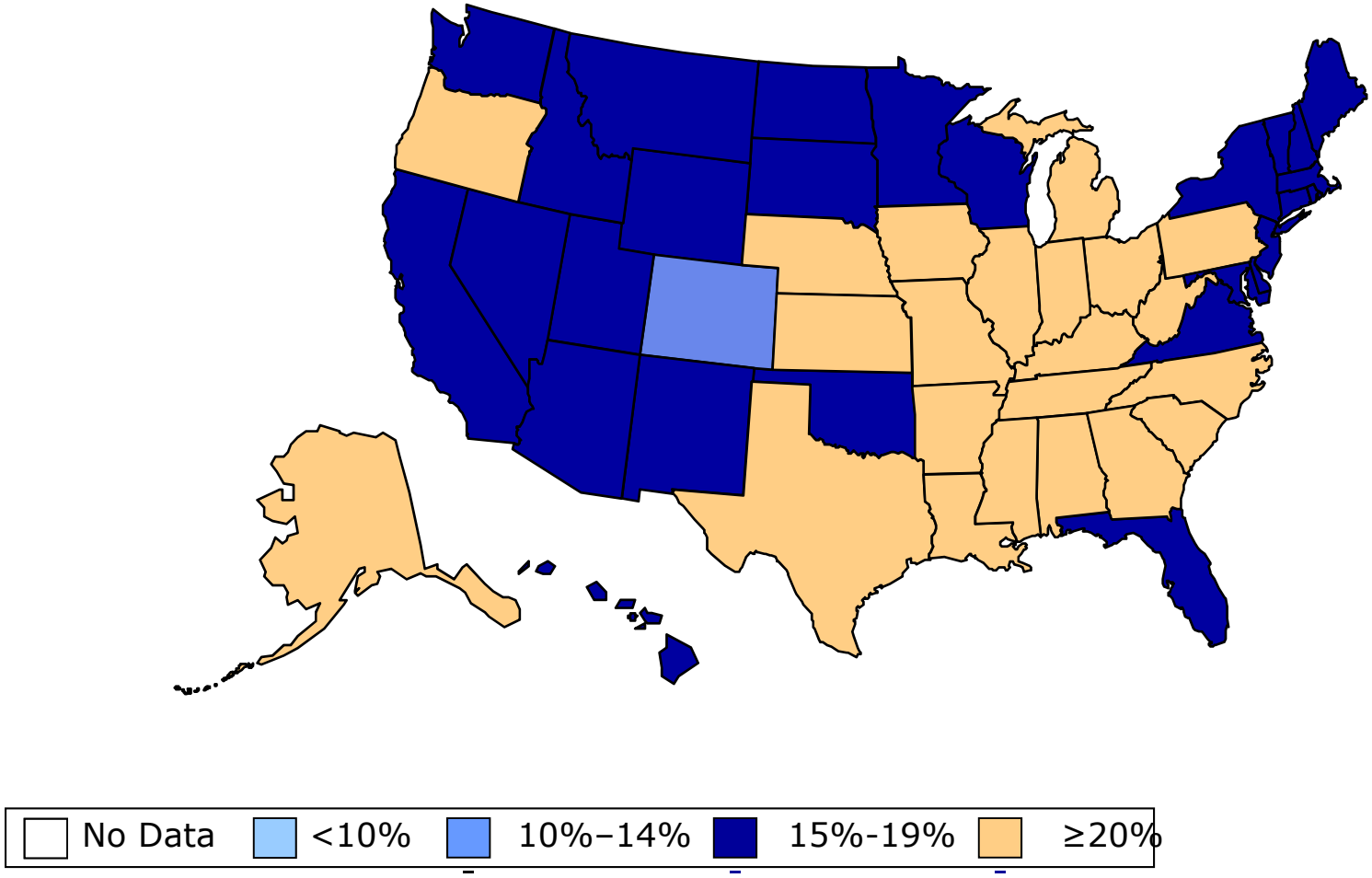

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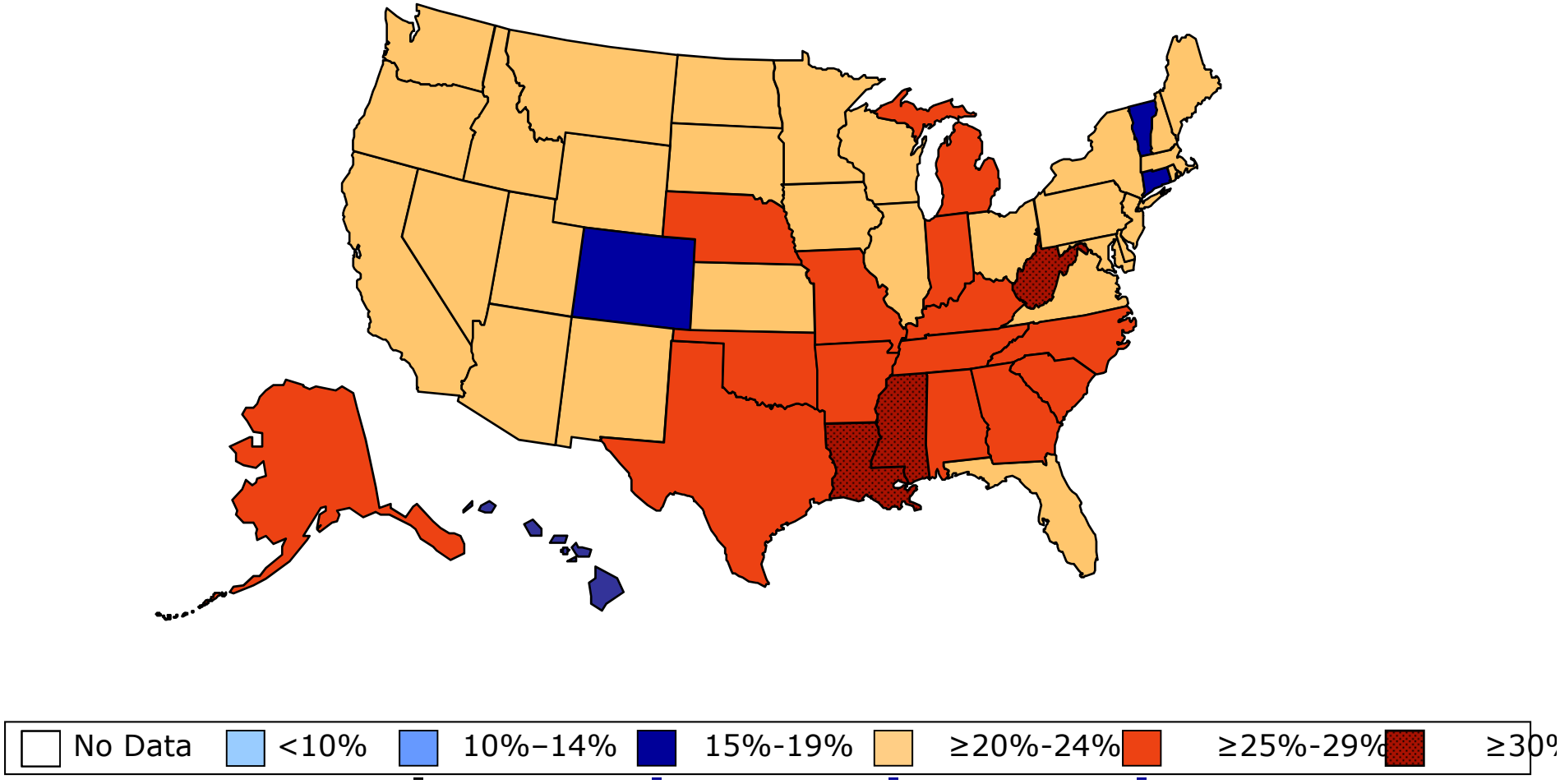

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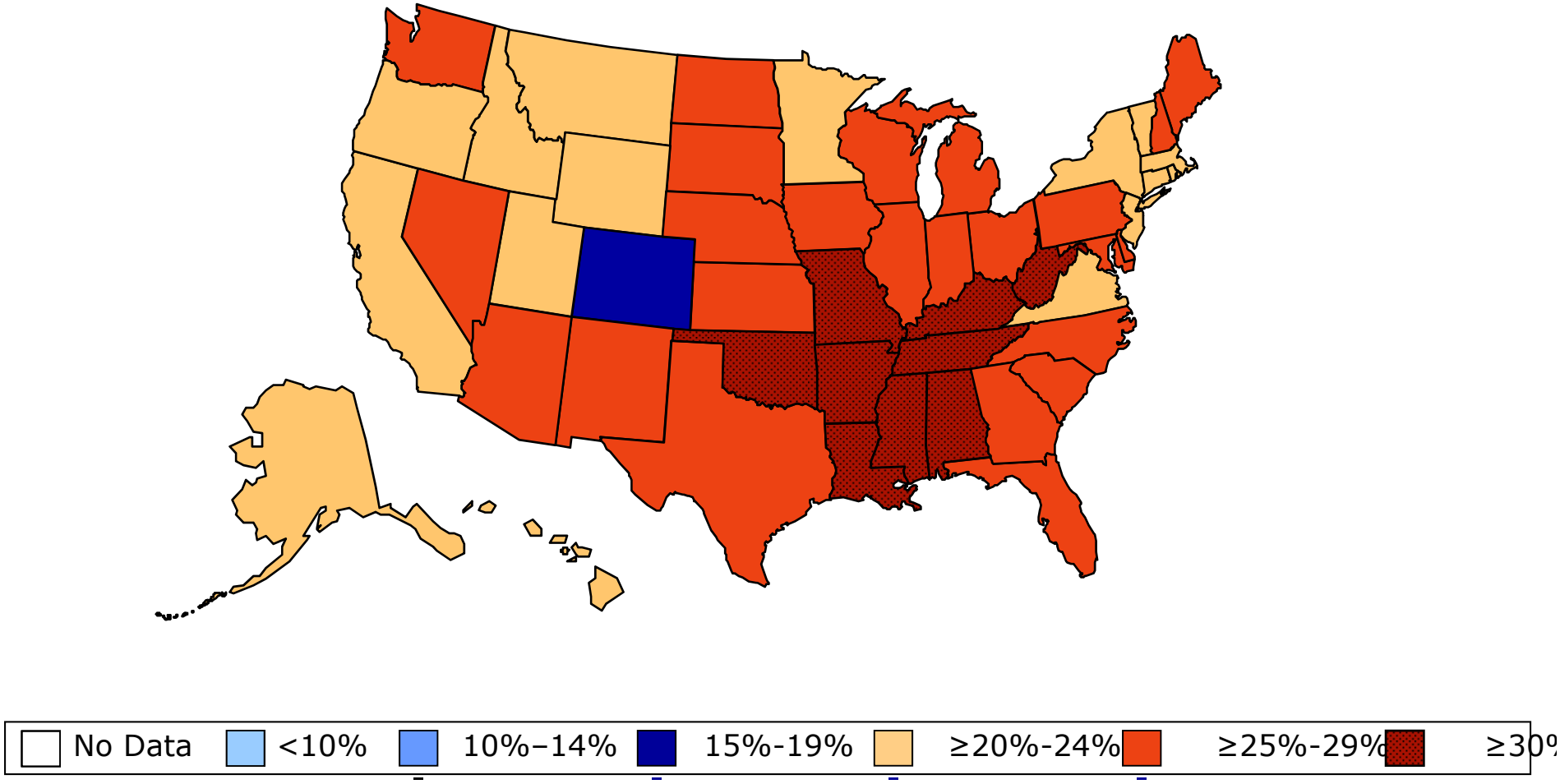
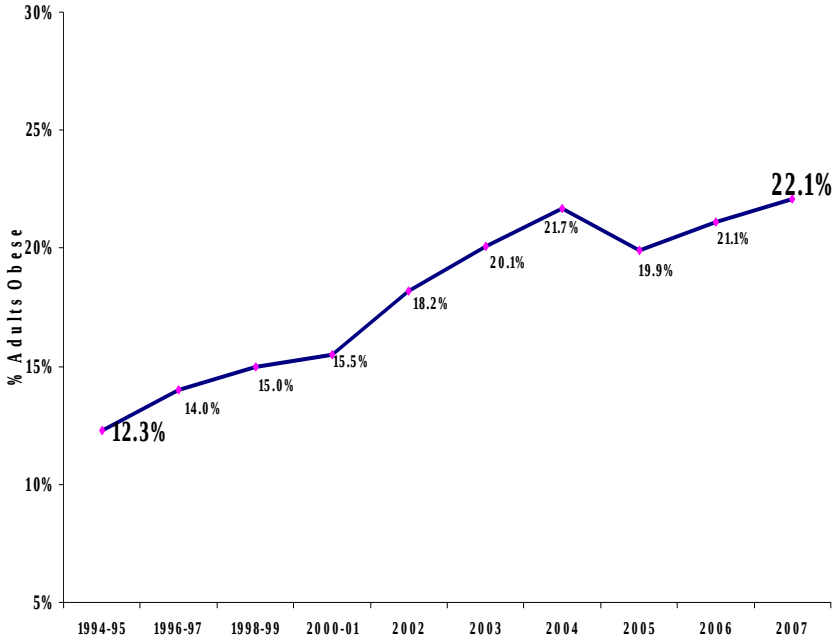


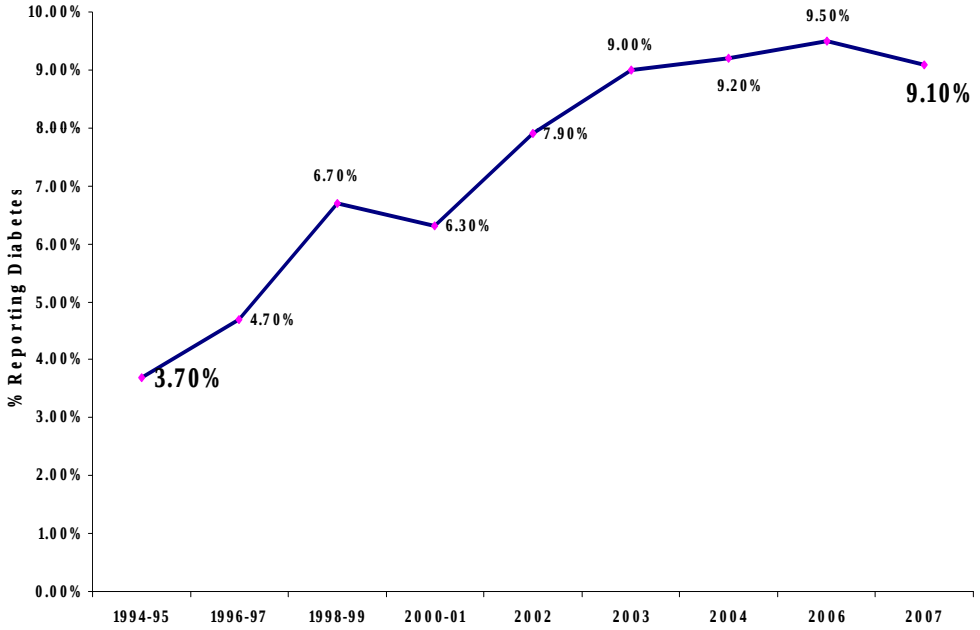
Source: U.S. Centers for Disease Control and Prevention (CDC)

Adults with self-reported obesity and diabetes, 1994-2007

Obesity

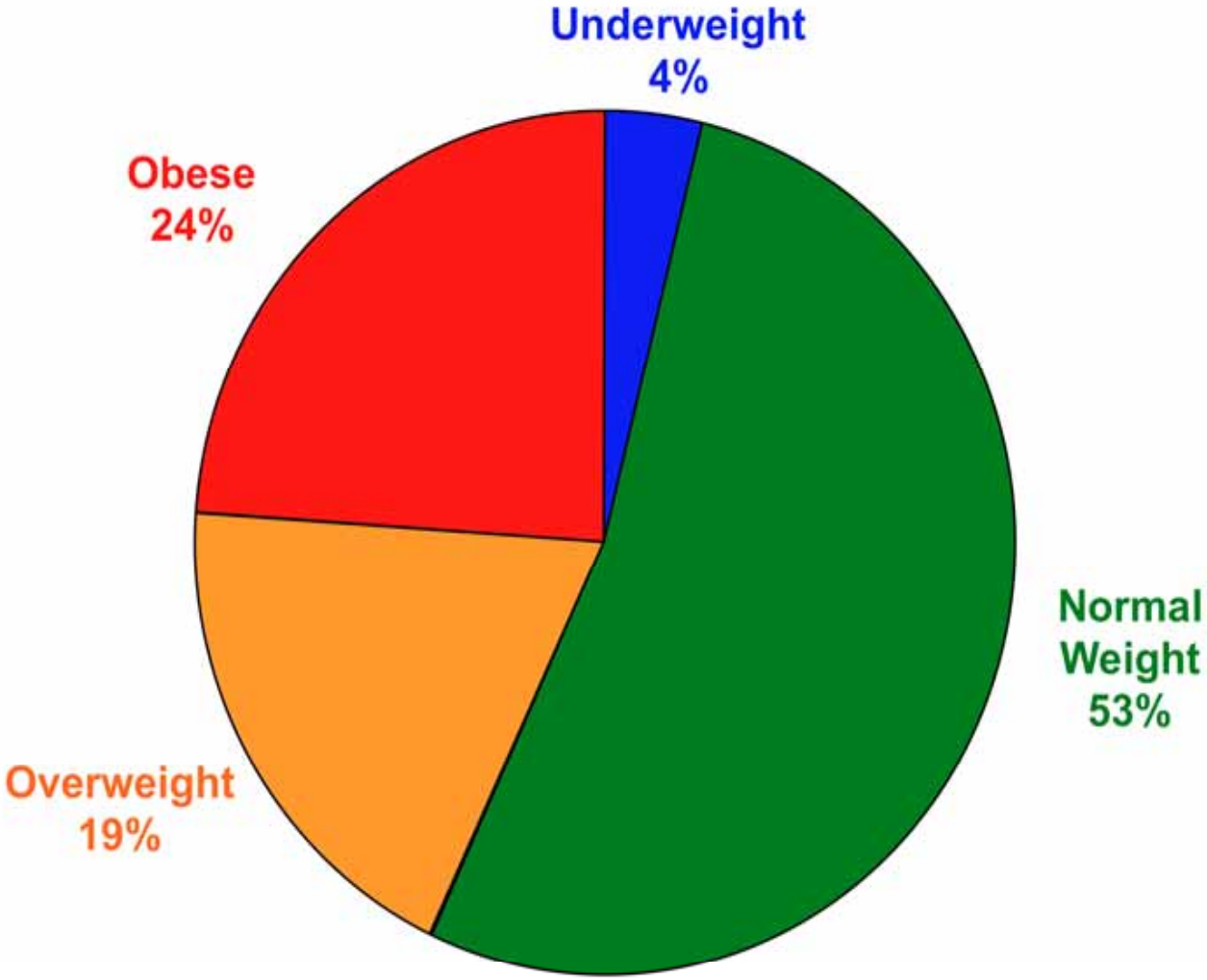


Diabetes



Sources: Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention, 1994-2001; NYC Community Health Survey, New York City Department of Health and Mental Hygiene, 2002-2004; NYC Health and Nutrition Examination Survey, New York City Department of Health and Mental Hygiene, 2004

Only half of NYC elementary school children are at a healthy weight



Source: *NYC Department of Health and Mental Hygiene, NYC Vital Signs, 2003.*

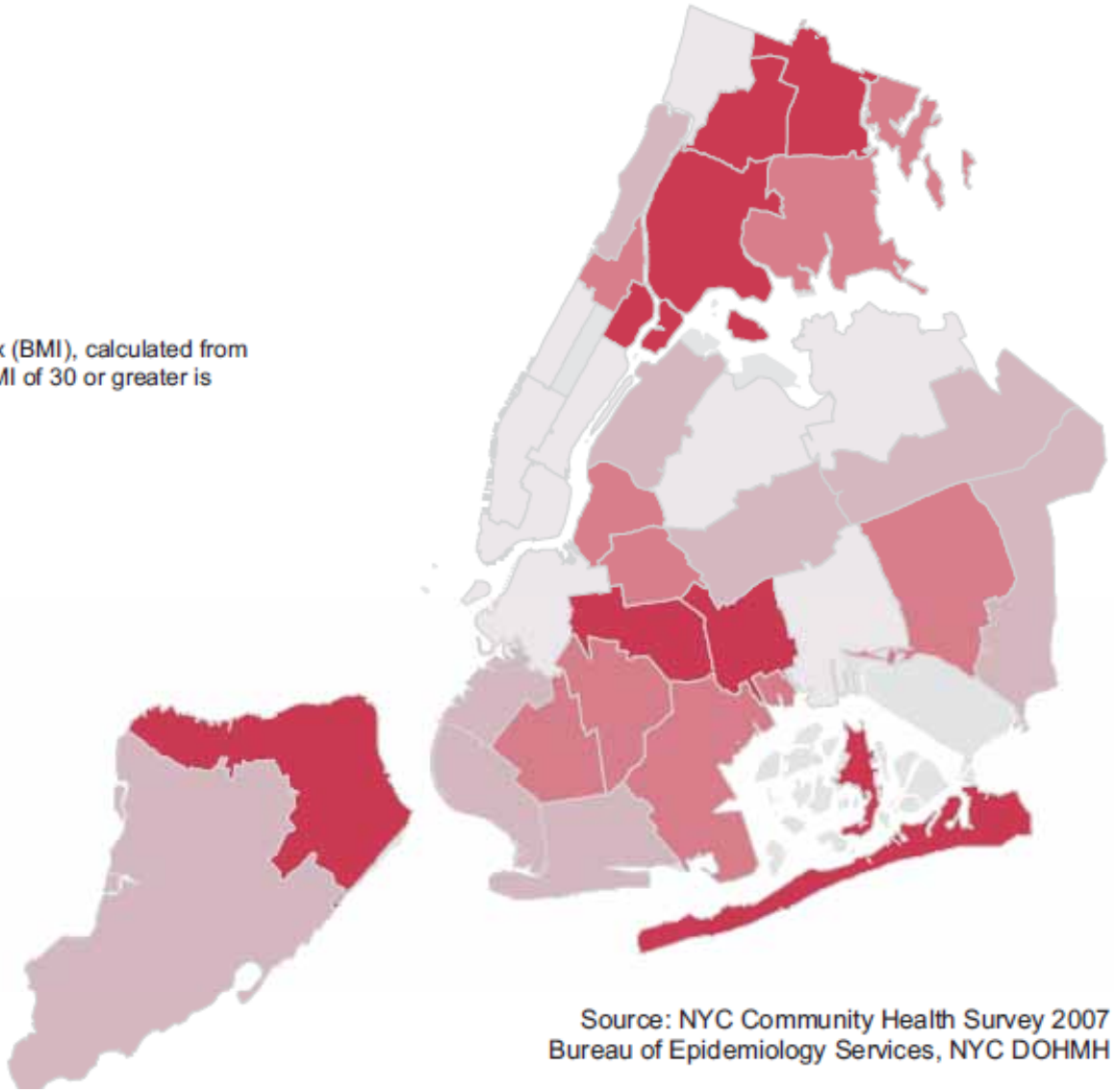
Obesity in New York City

Obesity

- 7.3% - 17.9%
- 18% - 22.5%
- 22.6% - 28.6%
- 28.7% - 39.2%

*Percentages are age adjusted.

Obesity is based on Body Mass Index (BMI), calculated from self-reported weight and height. A BMI of 30 or greater is classified as obese.



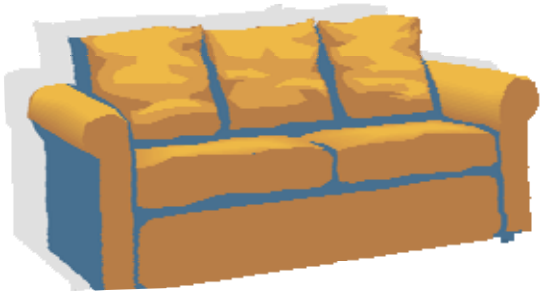
Source: NYC Community Health Survey 2007
Bureau of Epidemiology Services, NYC DOHMH

Risk factors contributing to chronic disease

Risk Factors that must be addressed:

- **Physical Inactivity**
- **Poor diets (food and beverages)**
- **TV viewing**
- **Not breastfeeding**
- **Tobacco**

Building & Urban Design and Policy can affect ALL of the above, and traffic injuries.



Urban design can help address today's health epidemics also

THE 19th CENTURY:

Infectious disease

19th Century codes, planning and infrastructure as weapons in the battle against contagious disease

These strategies were built into the city fabric, and they were effective

THE 21st CENTURY:

Chronic Diseases, many of which are "**Diseases of Energy**"

The emerging design solutions for health parallel **sustainable design** solutions

Effective designs will have to be an **invisible, pervasive, and inevitable** part of life

	Fuel / Electricity Use	Air Quality	Obesity/Diabetes/ Heart Disease
Automotive transport rather than biking or walking	√	√	√
Elevators and escalators rather than stairs	√	√	√
Television rather than active play	√	√	√
Bottled and canned beverages rather than tap water	√	√	√
Unhealthy processed foods rather than fresh local produce	√	√	√

Design and physical activity

Physical activity built into everyday life is very important

- Just **2 minutes** (about 6 floors) of **stair climbing** a day burns enough calories to prevent average U.S. adult annual weight gain.

- Men climbing 20-34 flights of stairs per week have a >**20% lower risk of stroke**.

- **Bicycling** 15 minutes each way to and from work burns 10 lbs of weight yearly.

Design and physical activity
www.thecommunityguide.org/pa

Creating or improving access to places for physical activity

- Can result in **25% increase** in number of people who exercise at least 3 times per week

Creating a safer, more enticing and walkable public realm

- Can result in **35-161% increase** in physical activity (e.g. walking)

Establishing and Continuing Dialogue among Health, Architecture and Urban Planning

Fit-City: Promoting Physical Activity Through Design

Creation of the Active Design Guidelines

Process

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MAYOR

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COMMISSIONER
Department of Health and Mental Hygiene

Janette Sadik-Khan
COMMISSIONER
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Amanda Burden
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Thanks to all the design practitioners and organizations who participated in the 2009 Design Workshop to help us test the Guidelines.

THANKS TO THE FOLLOWING FOR FUNDING AND SUPPORT:

Robert Wood Johnson Foundation Active Living Research Program—Evaluation of the Active Design Guidelines

Milbank Memorial Fund—2009 Design Workshop

Creation of the Active Design Guidelines

Process

Testing the guidelines through an interactive and interdisciplinary **Design Charrette**

Participants: Agencies/ Developers/ AIA/ APA/ ASLA/Engineers

The Use of Research: Distinguishing Strength of the Evidence

Evidence-Based

- Design strategies supported by a pattern of evidence from at least 2 longitudinal or 5 cross-sectional studies.

Emerging Evidence

- Design strategies supported by an emerging pattern of research. Existing studies give reason to believe that the suggested environmental intervention will likely lead to increased physical activity.

Best Practice

- Design strategies without a formal evidence base. However, theory, common understanding of behavior within the environment, and experience from existing practice indicate that these measures will likely increase physical activity.

The Use of Research:
Helping to Inform Content and Implementation

Baseline Survey of Architects (n=457) – supported by ALR Grant

- **Design Factors Clients are "Somewhat" or "Very" Interested In:**
  - **Energy Efficiency – 91%**
  - **Universal Accessibility – 83%**
  - **Indoor Air Quality – 78%**
  - **Other Aspects of Healthy Environment, incl. PA promotion – 64%**
- **Architects' Intentions in Design:**
  - **Universal Design – 95%**
  - **Improve Air Quality – 84%**
  - **Increase PA – 45%**
- **Source of New Information:**
  - **Continuing Education Seminars – 86%**
  - **Architecture Industry Magazines – 84%**
  - **Websites – 73%**
  - **Guidelines – 56%**
  - **Research Journals – 32%**

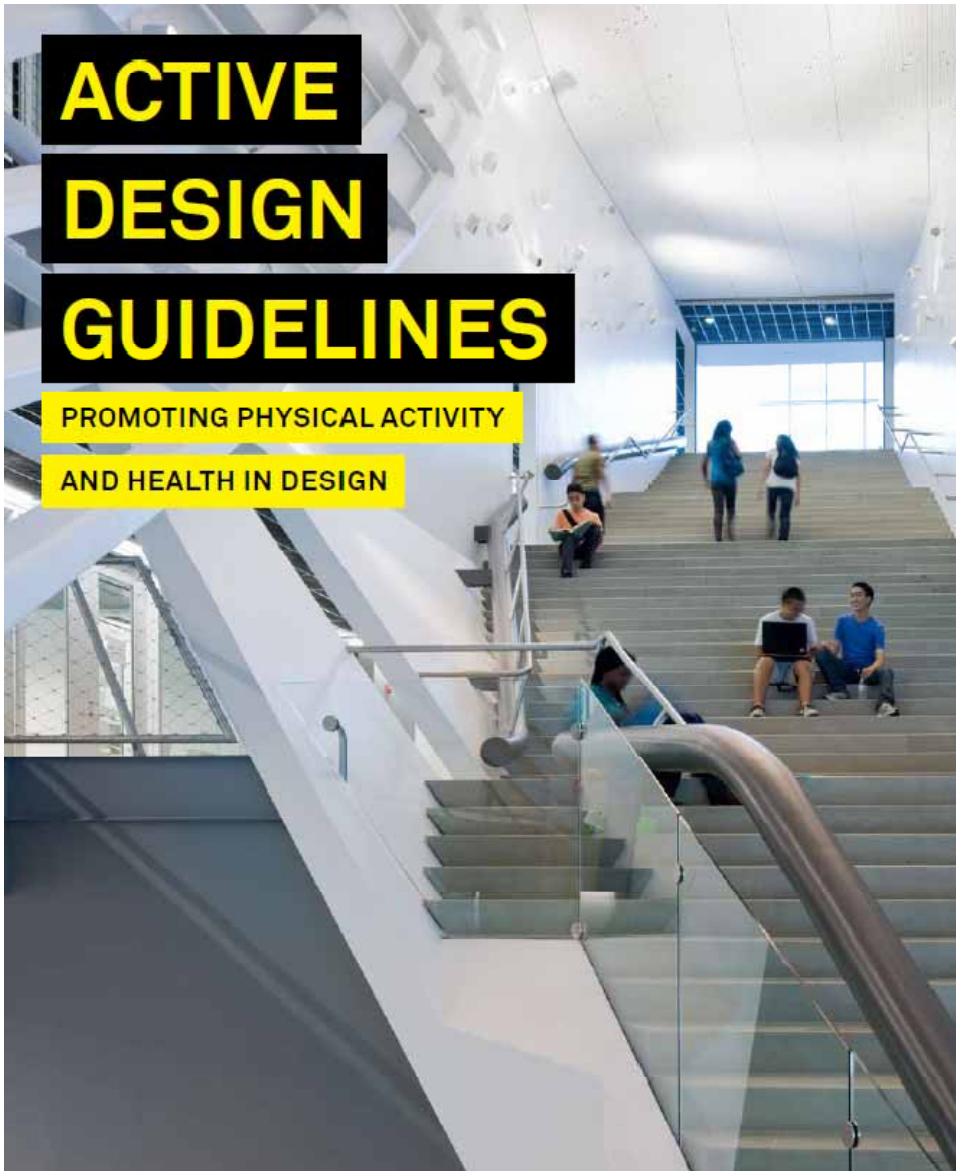
Creation of the Active Design Guidelines

Content

Chapters

1) Environmental Design and Health: Past and Present
2) Urban Design: Creating an Active City
3) Building Design: Creating Opportunities for Daily Physical Activity
4) Synergies with Sustainable and Universal Design

www.nyc.gov/adg

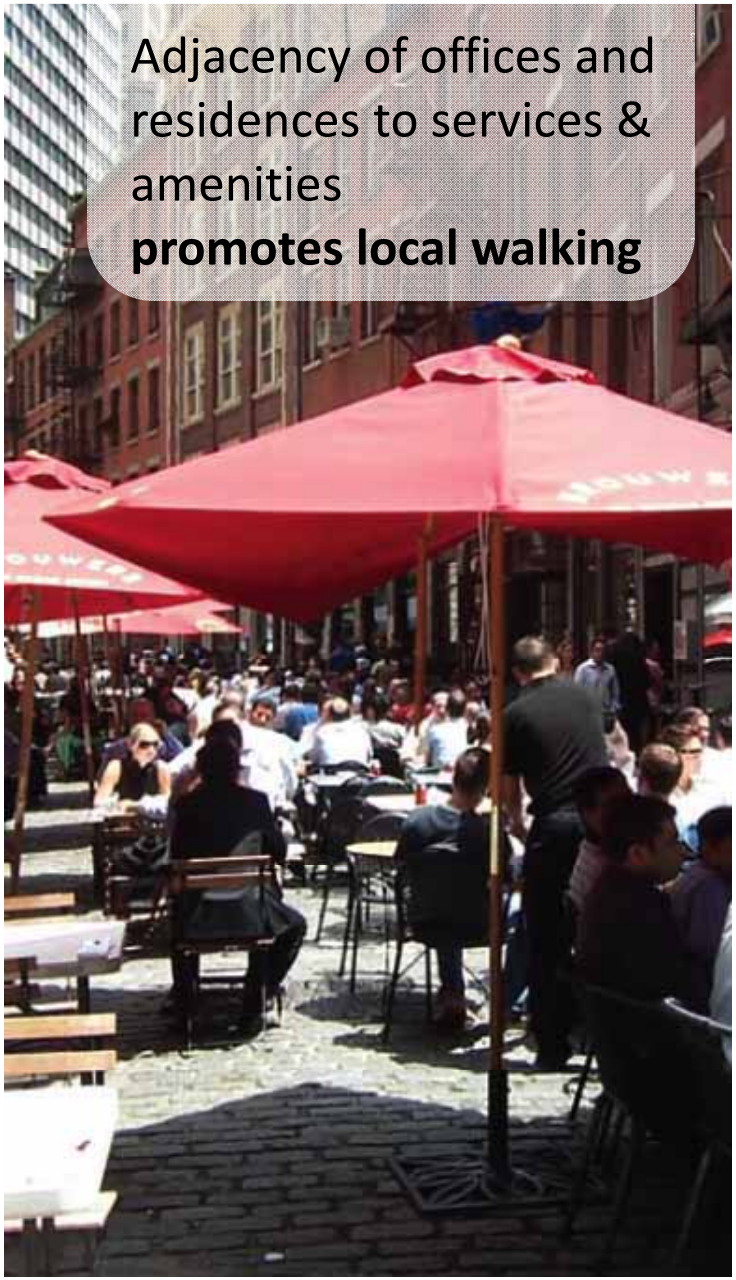


Urban Design

Land Use Mix to Promote More Walking for Transport

Take advantage of New York's **Rich Mix of Uses**

Adjacency of offices and residences to services & amenities **promotes local walking**



Supermarkets and farmers markets encourage **healthy nutrition**

Urban Design

Parks/ Play Areas/ Plazas to Promote Active Play

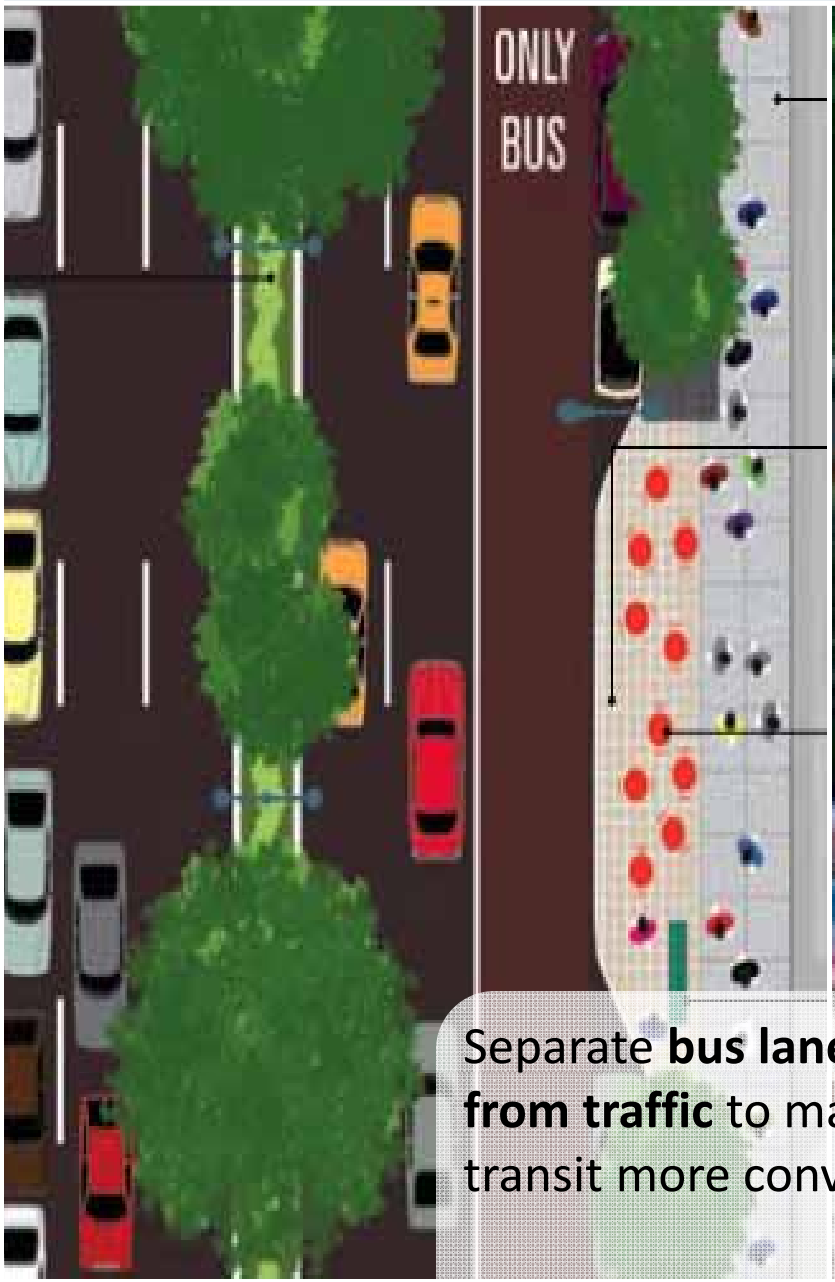
Convenient parks and plazas encourage **active utilization**

Design parks for **local cultures** and for **range of age groups**

Attractive plazas have **mix of trees, lighting, water fountains & movable/ fixed seating**

Urban Design

Transit Access to Promote Active/Sustainable Transport



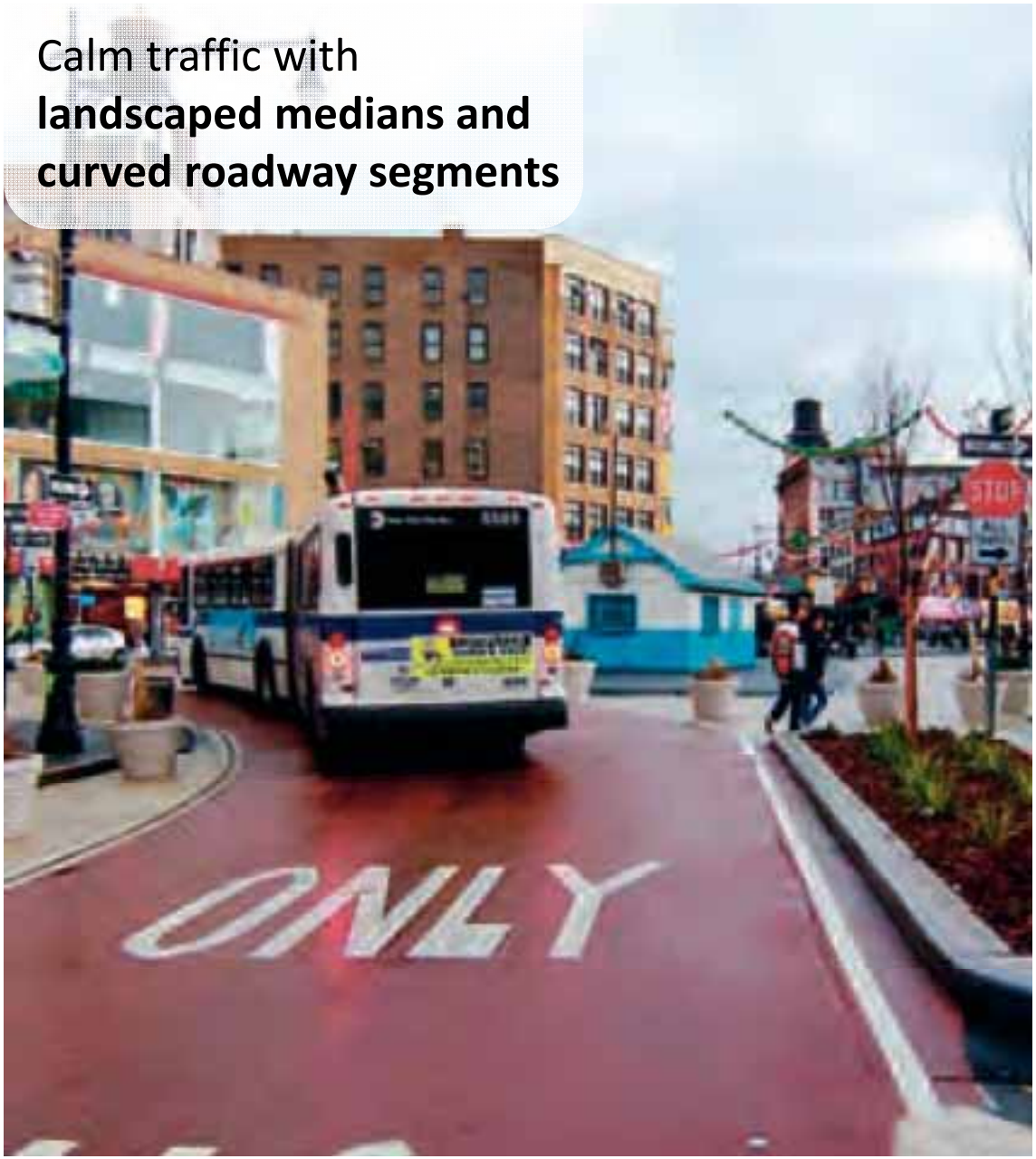
Separate **bus lanes from traffic** to make transit more convenient

Provide **attractive and sheltered seating areas** to encourage use of transit routes

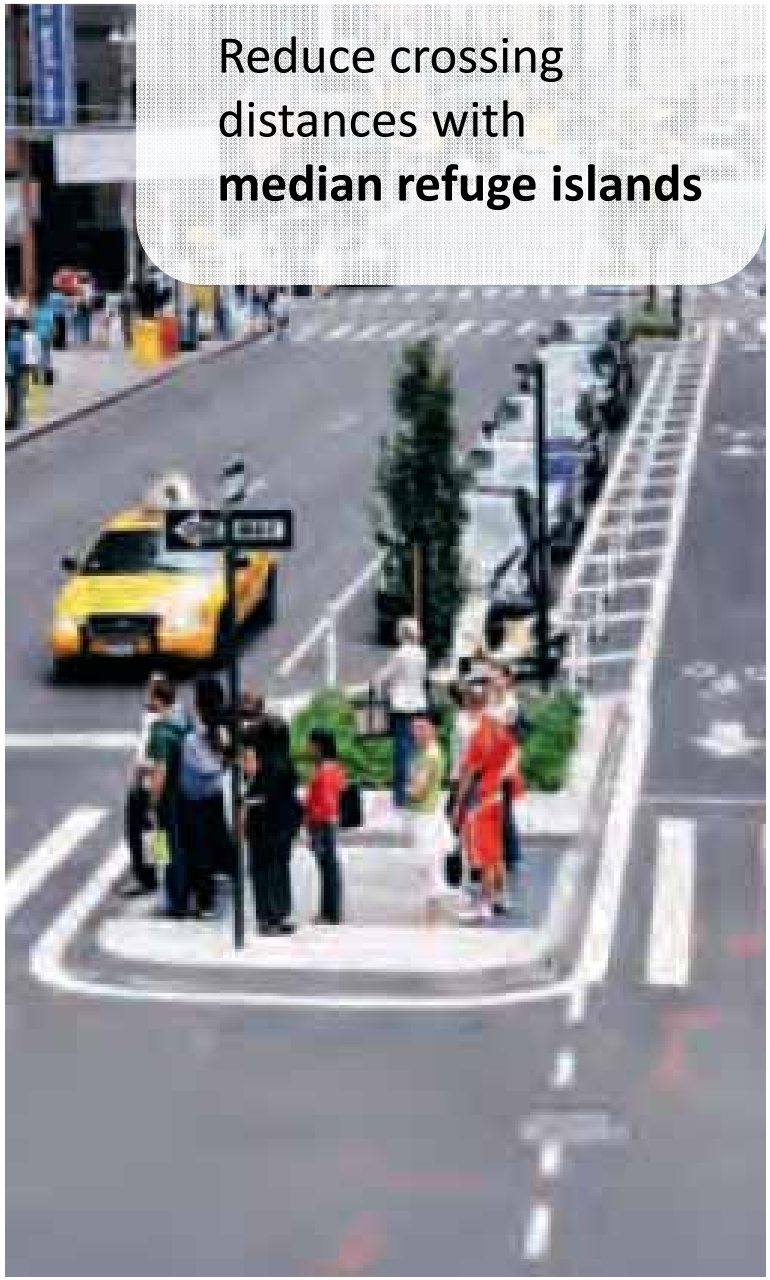
Urban Design

Traffic Calming to Promote Safe Walking

Calm traffic with
landscaped medians and curved roadway segments



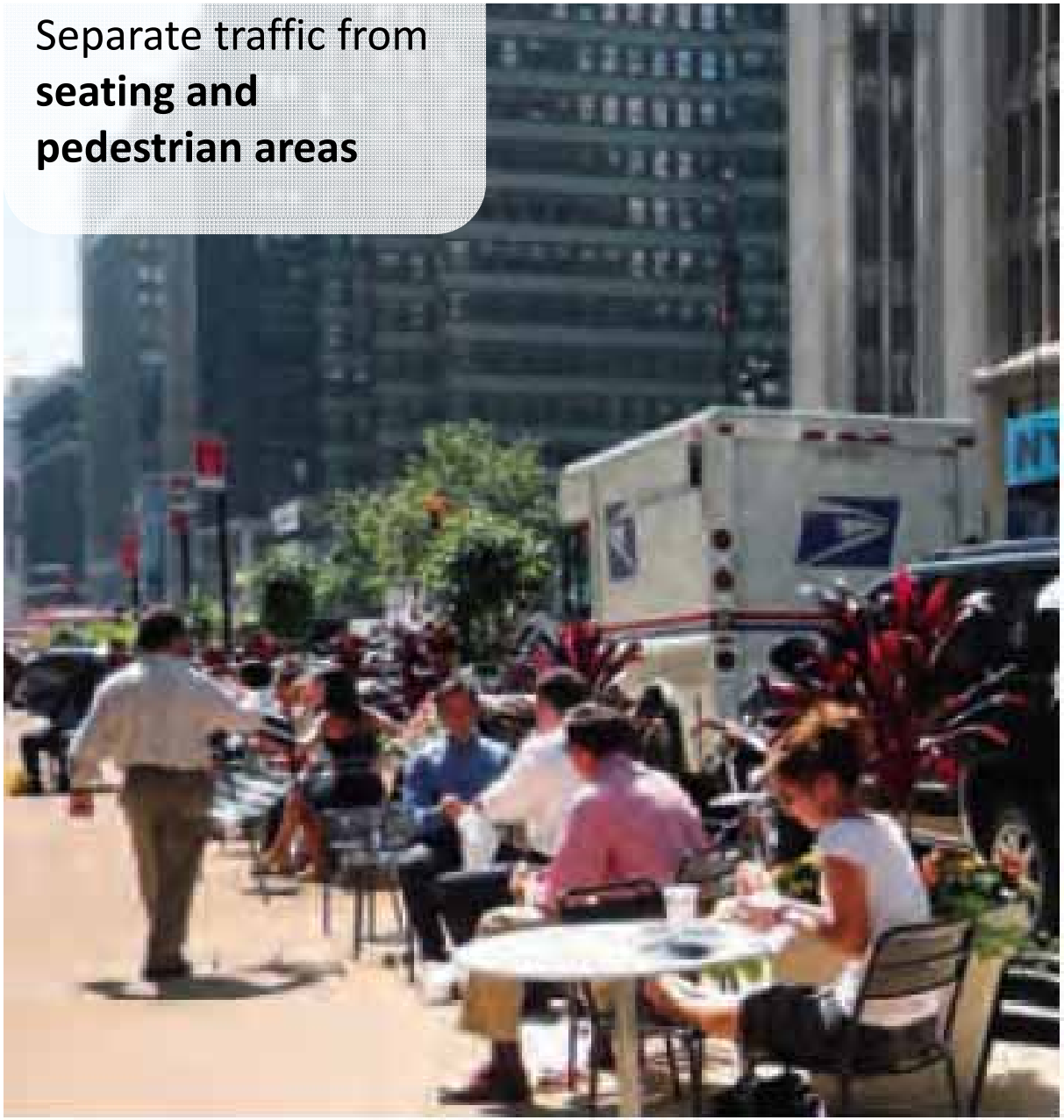
Reduce crossing distances with
median refuge islands



Urban Design

Pedestrian Streetscapes to Promote Walking

Separate traffic from **seating and pedestrian areas**



Use landscaping to **provide shade and an attractive environment**

Urban Design

Bicycle Network and Infrastructure to Promote Safe Cycling

Encourage use through development of **Interconnected Bikeways**

Graphically delineate and physically separate **bikeways from cars**

Site + Building Design

Bicycle parking + storage

Secure Bike Storage with **Easy Access**

Site + Building Design

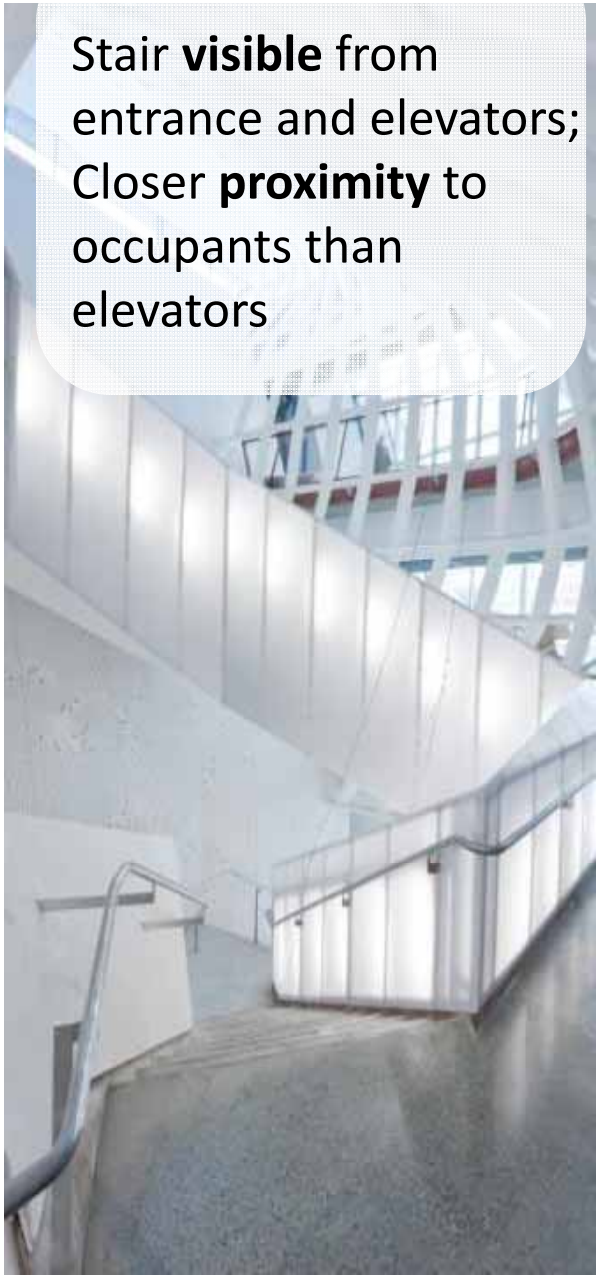
Recreational facilities, including children's play space

Mary Walton Children's Center, NYCHA + Public School 64, Queens
Provides **fun and affordable** recreational opportunities

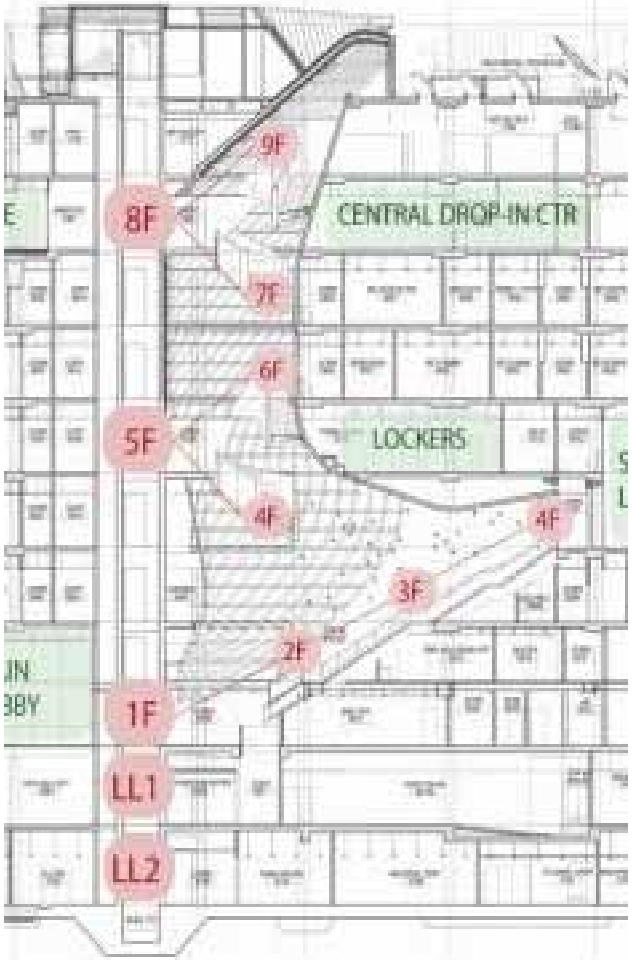
Building Design

Stairs: prominence, convenience, visibility

Stair **visible** from entrance and elevators; Closer **proximity** to occupants than elevators



Skip Stop elevators;
Stair **open** to each floor & public spaces;
Interconnecting stairs



Stairs **Transparency;**
Stair doors **unlocked** on every floor

Building Design

Stairs: aesthetics and signage prompting use

Aesthetically pleasing Stairs

Art and Music in Stairs

Stair prompts

Synergies: active design, sustainability + universal design

Queens Botanical Gardens:
1st LEED Platinum Building funded and constructed by New York City

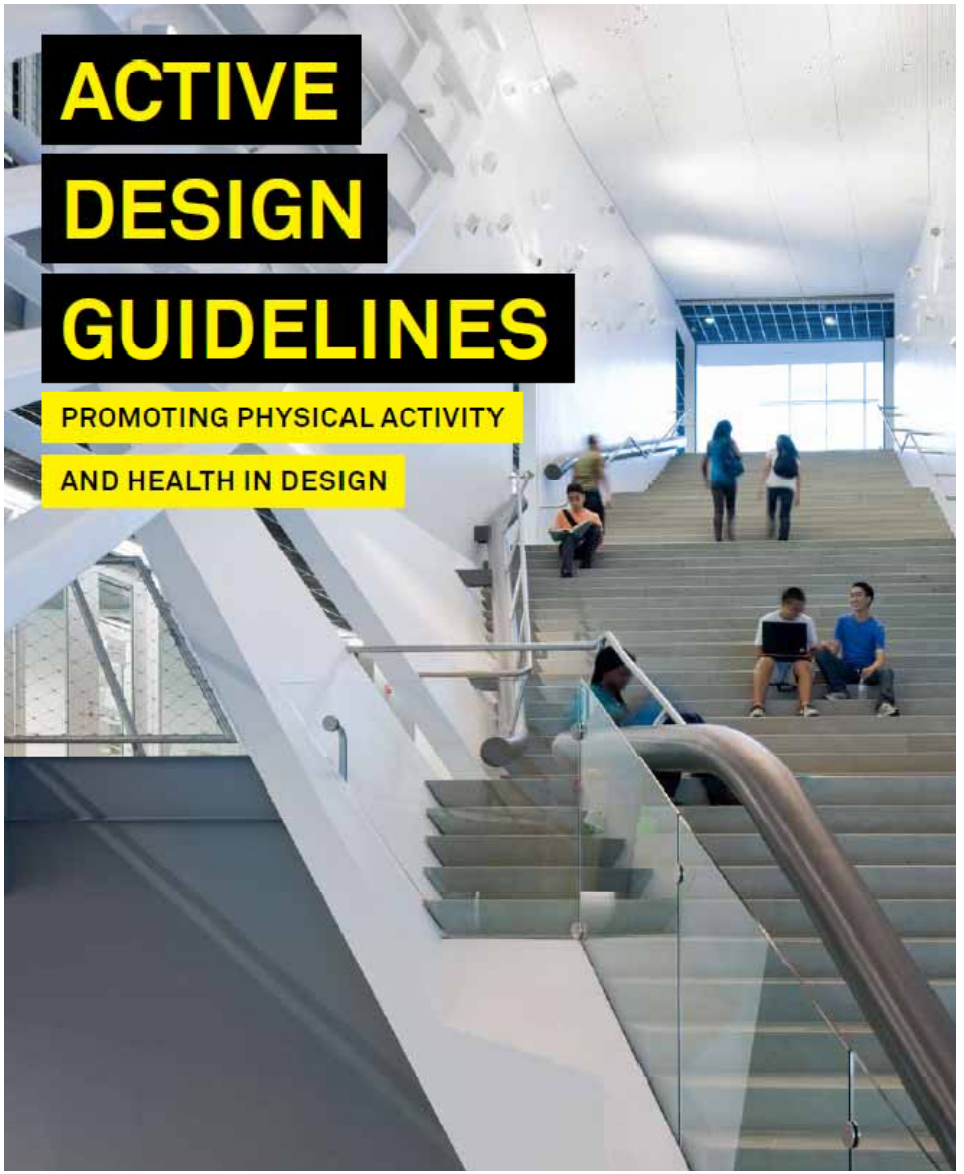
Trainings

Continuing Education Trainings

Leadership Training Institute

June 27-29, 2011 at Columbia University

Email ADGLeadership@ddc.nyc.gov



Next Steps in NYC: Implementation of the Active Design Guidelines

Outreach: Building Owners and Managers

Outreach to improve active design in buildings, incl. affordable housing

Dissemination of stair prompts:

- **Free to all building owners, managers, tenants who call 311 to order**
- **~20,000 signs disseminated to >350 entities since May 2008**

Next Steps in NYC: Implementation of the Active Design Guidelines

Outreach: Schools

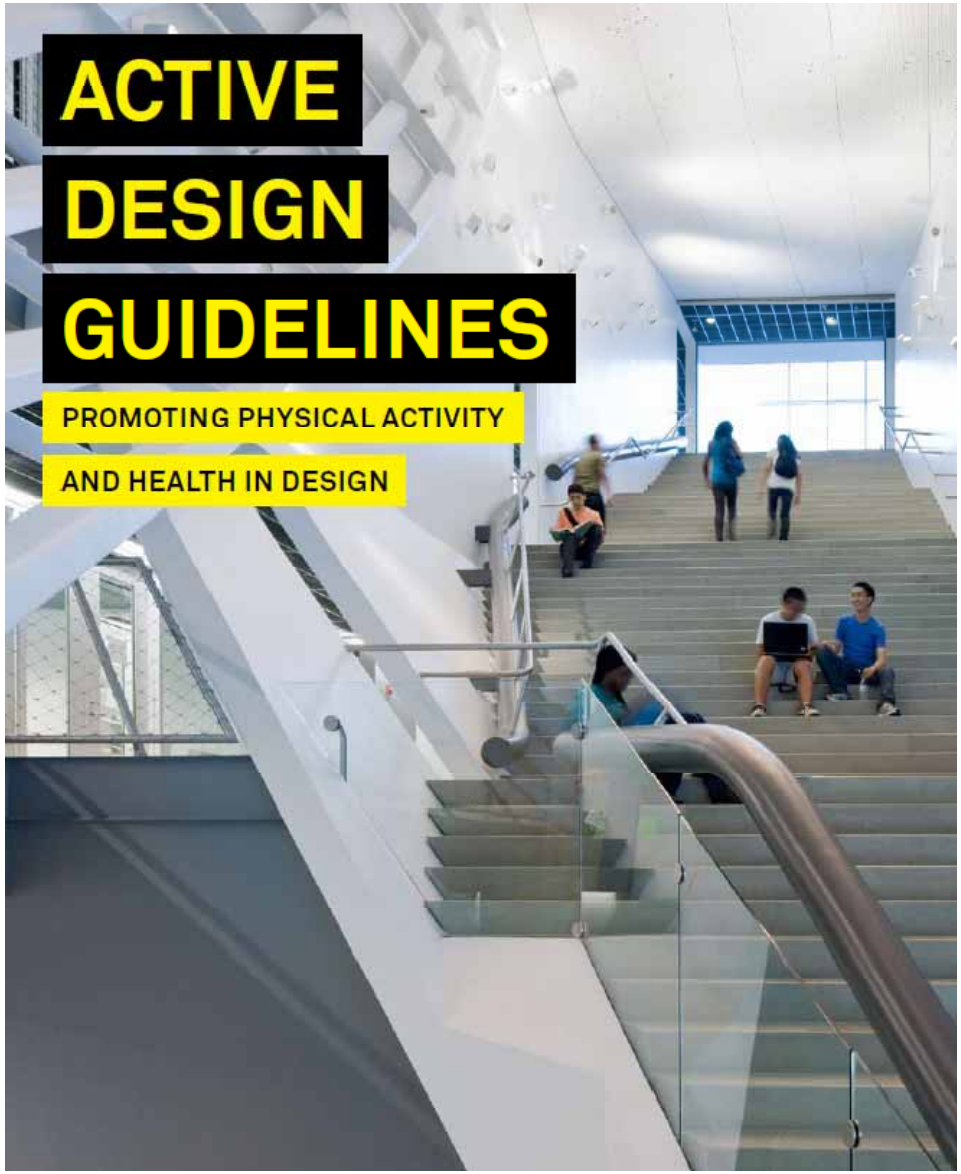
School Playspace Enhancement Sites

Next Steps in NYC: Implementation of the Active Design Guidelines

City Policy Efforts

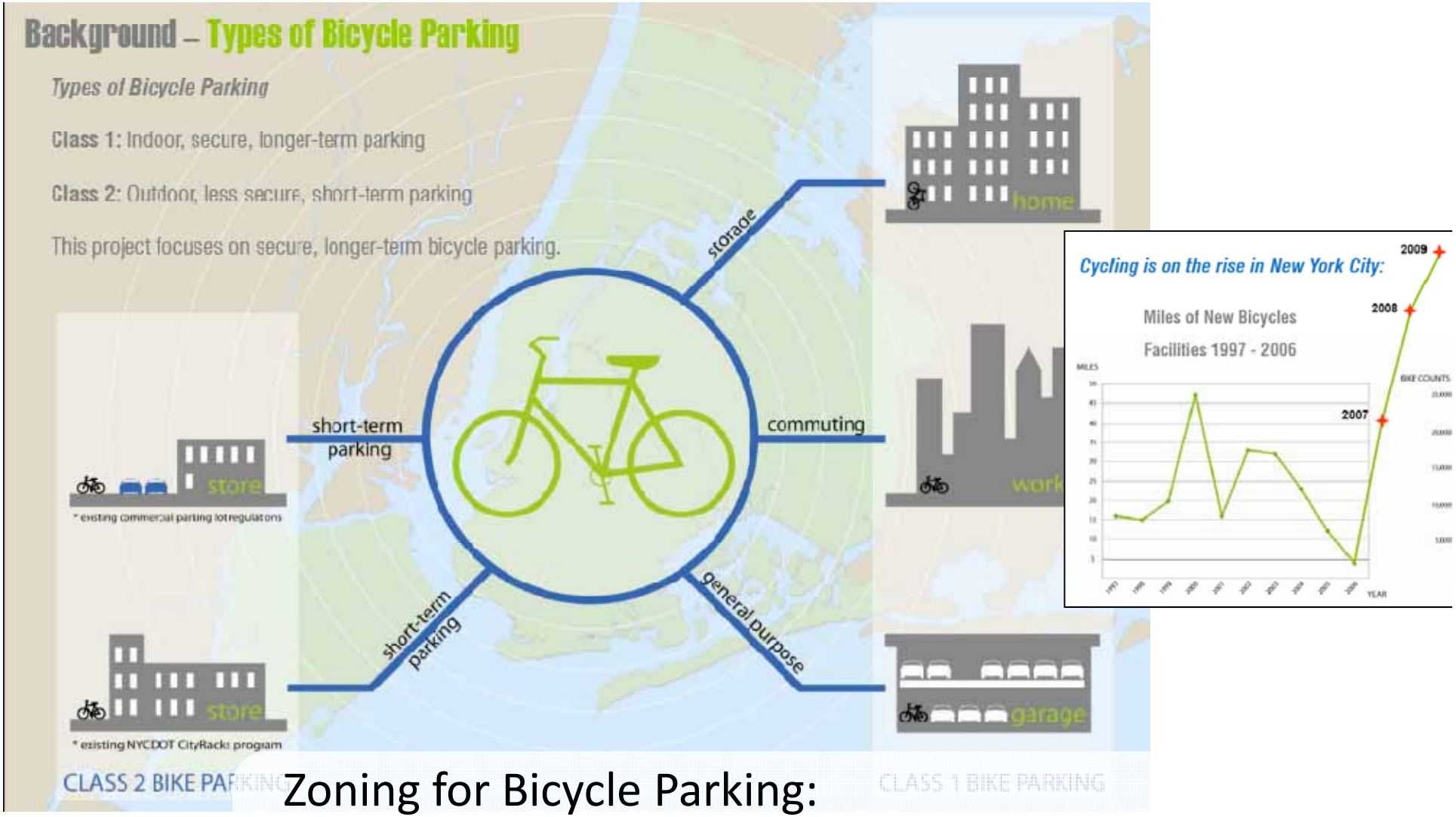
Decreasing Barriers and Increasing Incentives for:

- **Improving the Public Realm for Pedestrians and Cyclists**
- **Increasing Stair Use**
- **Increasing Tap Water Consumption**
- **Increasing Supermarket Access in High Needs Neighborhoods**



City Policy

Zoning for Bicycle Parking

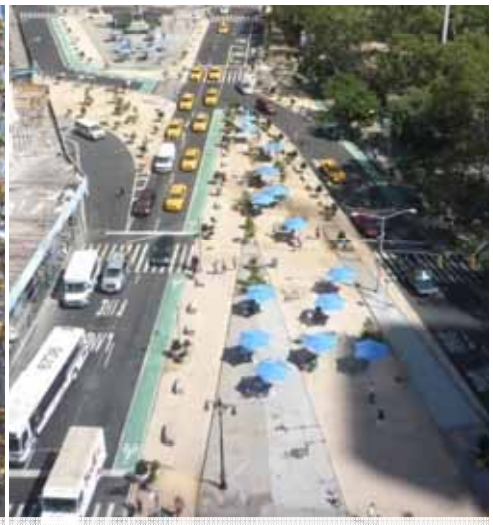


Zoning for Bicycle Parking:

Increasing active transport by providing safe and secure parking for bike commuters

City Policy

NYC World Class Streets



Remaking NYC's public realm:

- Plaza Program
- World Class Boulevards
- Complete Streets Projects and Design Standards
- Public Art Program
- New Streetscape Materials
- Coordinated Street Furniture Program
- Weekend Pedestrian and Cycling Streets

City Policy

Street Closures to Cars: Summer Streets

- DOT closes streets to traffic from Brooklyn Bridge to Central Park and the Upper East Side on 3 consecutive Saturdays in August

- Modeled off other successful programs, such as Bogota's Ciclovia

- Evaluation:
  - Average amount of physical activity from distances walked, ran, biked on route: >40 minutes of vigorous physical activity, or >70 minutes of moderate physical activity
  - 87% of participants got to event by active modes
  - Residents from outside Manhattan and from high needs neighborhoods underrepresented

City Policy

Street Closures to Cars: PlayStreets

Green = Community Sites

Red = School Sites

City Policy

Increasing Supermarket Access

Business Development Initiative

- **Effort with City Planning, Economic Development Corporation and Mayor's Office**
- **Creation and Promotion of <u>Financial and Zoning Incentives</u> for improving supermarket access in low-income neighborhoods**

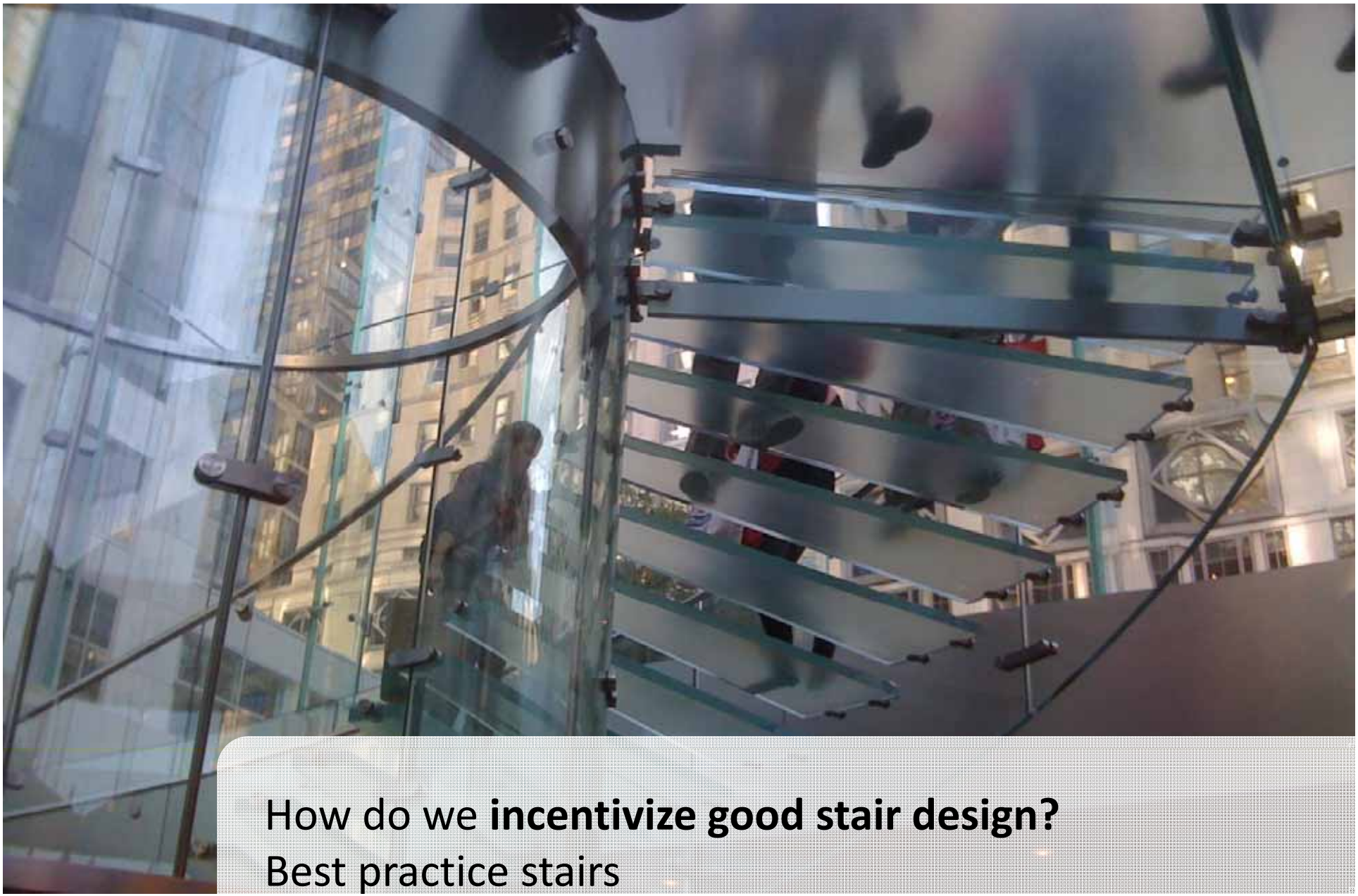
City Policy

NYC Green Codes - passed

How do we **encourage accessible water fountains**, which would reduce reliance on bottled and canned beverages including sugary drinks?

City Policy

NYC Green Codes



How do we **incentivize good stair design?**

Best practice stairs

Creation of LEED Innovation Credit for Physical Activity

Synergies: Riverside Health Center (using Health Dept bldg)

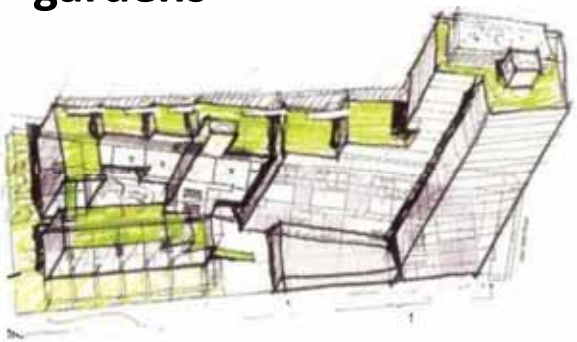
Meeting 22 out of 24 physical activity criteria

www.1100architects.com

Continued Use of LEED Innovation Credit for Physical Activity

Synergies: Via Verde (award winning Affordable Housing)

Programmed outdoor spaces including **community roof gardens**



18-story tower will harvest rainwater for **growing food**

Will include prominent **stairs, fitness center, + bike storage**

Additional criteria for children's active playspaces indoors and out, and siting near schools

www.brightpower.biz/greenbuilding/ID-designforhealth

Next Steps: Upcoming Active Design Events in the U.S.

- NYC Fit City 6 Conference – May 17, 2011
- Fit Nation Conferences in 2011 (tentative dates):
  - Fit Nation D.C. – Feb. 2
  - Fit Nation New Orleans – May 14 (with AIA National)
  - Fit Nation NYC – Oct. 2011

Moving Forward: Global Active Design (Fit World) Initiative

- Goal: Improve the Built Environment through Active Design to Address Chronic Diseases, Traffic Safety/Injury Prevention, Climate Change, and Social Equity

- Vision/Mission: Incorporation of Active Design internationally; all major regions globally, especially cities, are integrating Active Design into the design and construction of their buildings, streets, neighborhoods and communities.

- Methods: Builds on Key Initiatives and Policy Documents/Guides already begun, for example:
  - Active Design Guidelines and Fit City Conferences – NYC/US
  - Physical Activity Planning Guide – WHO Europe
  - Recommended Community Strategies and Measurements to Prevent Obesity in the United States – CDC/US

- Develop Regional Centers of Excellence with funding and staff to support regional initiatives

- Partners: CDC, WHO HQ, UN Habitat, Global Ad Firm, Cities (current discussions among NYC, London, Shanghai, Rio) – Canadian cities through UPHN?

- Biennial Conferences for progress updates and strategic next steps

Potential Milestones for Meetings and Conferences

1) UN Shanghai Meeting at World Expo – Oct. 21-24, 2010 – announce Initiative; link to UN World Urban Campaign; launch discussions with global Mayors and Ambassadors

2) NYC ICUH – Oct. 27-29, 2010 – launch discussions with global urban health leaders and delegates

3) Obtain Funding and Hire Staff; Formation of 1st Center of Excellence in NYC; Develop Partnerships among Cities – November 2010 - March 2012

4) Linking with NYC Fit City 6 – May 2011 – Initial Partner Cities sharing best practices; face-to-face planning meeting for Fit World 1

5) Additional Planning of Fit World 1 Meetings

6) London 2012 Olympics – Fit World 1 Conference

7) Rio 2014 World Cup / 2016 Olympics – Fit World 2 and 3 Conferences

Thank You!

Download the Active Design Guidelines at
www.nyc.gov/adg

Active Design Leadership Institute

(June 27-29 in NYC):

Email ADGLeadership@ddc.nyc.gov