Urban Design and Sustainable Sites: Dual Performances or Dueling Performances?
Outline

• What Do We Mean By Urban? And Urban Design?
• The Case For Hybrid Cities
  – Economic
  – Social
  – Environmental
• Case Studies
cities v. nature
Cities are Nature.
bellevue v. seattle
ann arbor v. detroit
burnaby v. vancouver
new jersey v. new york
silver spring v. washington dc
sarasota v. tampa/st. petersburg

What Is Urban?
walkable

v.

drivable

Image by flickr user alexabboud
The Case For Cities
Typical Site Considerations

- Economic
- Social
- Environmental
Toward Sustainable Sites

Resource Investment Considerations

Economic

Social

Environmental
Sustainable Urban Sites

Economic

Social

Environmental

Resource Investment Considerations
Economic

- Cities speed the accumulation of wealth
- Workers in cities earn 33% more than their non-urban counterparts
- 18% of the US GDP comes from 3 largest metro regions
Social

• Physical + Psychological Well-being
• Economics
• Violence, Crime + Social Norms
• Equity
  – Diversity
  – Perspectives
  – Job prospects
Psychological Well-being

Image via Mithun
Obesity Trends* Among U.S. Adults

BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1986
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1987

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1988

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends Among U.S. Adults

BRFSS, 1989
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1990

(*BMI $\geq 30$, or $\sim 30$ lbs. overweight for 5’ 4” person)
Obesity Trends Among U.S. Adults

BRFSS, 1991

(*BMI ≥30, or ~30 lbs. overweight for 5’4” person)
Obesity Trends Among U.S. Adults

BRFSS, 1992

(*BMI \geq 30, or \sim 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1993

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1994

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

*BMI ≥30, or ~30 lbs. overweight for 5’4” person

BRFSS, 1995

No Data        <10%        10%–14%       15%–19%
Obesity Trends Among U.S. Adults

BRFSS, 1996

(*BMI \geq 30, or \sim 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1997

(*BMI ≥ 30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 1998

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

[Map of obesity trends in the United States for 1998, with states color-coded according to the percentage of adults with BMI ≥30.]

Legend:
- No Data
- <10%
- 10%–14%
- 15%–19%
- ≥20%
Obesity Trends* Among U.S. Adults

BRFSS, 1999

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
*BMI ≥30, or ~30 lbs. overweight for 5’ 4” person*
Obesity Trends* Among U.S. Adults

BRFSS, 2001

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2002
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2003
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends Among U.S. Adults

BRFSS, 2004

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2005

(*BMI \geq 30, or \sim 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults

BRFSS, 2006

(*BMI ≥ 30, or ~ 30 lbs. overweight for 5’ 4” person)
OBESITY TRENDS* AMONG U.S. ADULTS

BRFSS, 2007

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends Among U.S. Adults

BRFSS, 2008

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Airshaft of a dumbbell tenement, New York City, taken from the roof, ca. 1900. 196-GS-14.
3.3% of trips on bike or foot

14.9% of trips on bike or foot
Why is energy part of sustainability?

CO₂ emissions from fossil fuels in Washington State
Total: 78.7 million metric tons

Source: Sightline Institute
Embodied Energy

Minnesota Building Materials Database
http://www.buildingmaterials.umn.edu/

Total Global Emissions Outputs of Various Materials via TecEco.com
cities v. nature

cities w/ nature
grafting  pruning

image by flickr user IITA Image Library
image by flickr user ax2groin
Bell Street Park: urban context
THREE MOVES: reclaim. elevate. mix.
THREE MOVES: reclaim. elevate. mix.
THREE MOVES: reclaim. elevate. mix.

Combinatorial Micromixer (Neils and Folch)
water section: down garden
Thornton Creek, Seattle WA
Water Quality Channel

- Treatment of 680 Acres of urban runoff
- Community participation
- Negotiated Property Agreement
- Public/Private Joint construction
TCWQC: Urban Stormwater Treatment + Mixed Use + Neighborhood Connectivity
habitat
• in-stream and riparian habitat with large woody debris
• upslope bird habitat
• base flow channel for downstream habitat

water
• sediment pool
• channel & bioswale terrace
• lower cascade & water feature
• upper cascade, swale, & water feature
• weir walls
• levee

mobility
Pedestrian connections to:
• Northgate Mall & 5th Ave
• residential neighborhood
• regional transit hub
• commercial & mixed-use

community
• central promenade
• central bridge across channel
• overlook area
• public art
• seating areas

utility
• high flow bypass
• offline facility
• diversion structure
• Thornton Creek headwaters
• water quality monitoring equipment
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