Designs to Nurture Our Land & Ourselves from the sustainable to the sacred

Kathleen Wolf, Ph.D.
Research Social Scientist

University of Washington (Seattle)
School of Environmental and Forest Sciences

2018 Oklahoma Gardening School
Myriad Botanical Gardens
Oklahoma City :: March 2018
Sanitary City

- urban forestry
- climate response
- urban agriculture
- green stormwater systems
- ‘wildness’

Sustainable City

- increased ecological function/ green infrastructure

Sacred City

- human wellness & public health
- equity
- civic stewardship

- increased human connection, meaning & engagement
sanitary city

efficient and hygienic
supply & removal
of materials and services
natural systems disconnect
Industrial Age – ‘filthy cities’
Baltimore: Public Works Museum
sustainable city

ecological function,
green infrastructure, &
‘revealed’ processes

Pincetl, S. 2010. From the sanitary city to the sustainable city. Local Environment
stormwater retention
Thornton Creek Water Quality Channel (Seattle, SvR Design)
1 hectare, treats runoff from 275 hectares
Tanner Springs Park
Portland OR
linked to active living network
neighborhood
social cohesion

environmental
education &
social learning
environmental education & social learning

neighborhood social cohesion
Clear Creek Basin, 2 acre stormwater detention lake, 17 acres of greenspace & parks amenities
sacred city

civic sacred

health & wellness

reflection, contemplation, & mindfulness, spirituality

giving back, stewardship, gratitude
finding the sacred in gardens

place attachment

American Public Garden Association
Allerton Gardens - Kauai
West Martello Tower – Key West
Fairchild Tropical Garden - Miami
Atlanta Botanical Garden
Chicago Botanic Garden
Lady Bird Johnson Wildflower Center
Butchart Gardens
Bloedel Reserve – Bainbridge Island
San Diego Zoo
So the tree rustles in the evening . . . Trees have long thoughts, long-breathing and restful, just as they have longer lives than ours.

Hermann Hesse, *Trees: Reflections and Poems*
England’s Ancient Oaks
Gulfport, MS :: Katrina survivors
‘forest bathing’, Kyoto, Japan
Sanitary, Sustainable, Sacred:
understanding human health benefits
‘nearby nature’ experiences passive encounters for benefit
World Health Organization health definition

a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (1946)
Social Determinants
Green Cities: Good Health
www.greenhealth.washington.edu

Sponsors:
USDA Forest Service, U&CF Program
University of Washington
NGO partners

thanks!
to U of WA students:
Katrina Flora
Mary Ann Rozance
Sarah Krueger

research review & summaries
Local Economics

Trees in cities are not grown and managed for products that can be bought and sold on markets, but they do provide many intangible services and functions! This article serves two purposes. First, it introduces valuation methods that are used to convert intangible benefits to dollar sums. Then, it shows how nonmarket valuations can support local decision-making.

Fast Facts

- The presence of larger trees in yards and as street trees can add from 3% to 15% to home values throughout neighborhoods.

- Averaging the market effect of street trees on all house values across Portland, Oregon yields a total value of $1.35 billion, potentially increasing annual property tax revenues $15.3 million.

- A study found 7% higher rental rates for commercial offices having high quality landscapes.

- Shoppers claim that they will spend 9% to 12% more for goods and services in central business districts having high quality tree canopy.

- Shoppers indicate that they will travel greater distance and a longer time to visit a district having high quality trees, and spend more time there once they arrive.
Nature & Psych Development
children’s play & imagination

Richard Louv - Last Child in the Woods
Fiddleneck Forest School
Washington Park Arboretum (Seattle)
cognitive
social &
physical
learning
Hygiene Hypothesis

- presence of soil bacteria in body, *Mycobacterium vaccae* = increased serotonin
- may alleviate depression
- dirt or Prozac?

Lowry et al. 2007. Neuroscience
Classroom Views & Stress
Classroom Views & Stress
high school student response

attention scores

stress scores
Attention Restoration Theory
Rachel & Stephen Kaplan, U of MI
directed attention
fatigue . . . .
workplace nature views

Well-being

- desk workers without view of nature reported 23% more ailments in prior 6 months

Job Satisfaction

- less frustrated and more patient
- higher overall job satisfaction and enthusiasm

ART Design Elements

being away

‘soft’ fascination

extent

compatibility
Nature and Creativity
Give Your Ideas Some Legs

creative test – analogy generation

conditions: sit inside, treadmill walk, walk outside, wheelchair outside

walking outside produced most novel & highest quality analogies – walking opens up free flow of ideas

Oppezzo & Schwartz. 2014. Journal of Experimental Psychology
Nature & Creative Professionals

focused interviews in Denmark

nature:
makes us more curious
supports flexible thinking
recharges directed-attention

aids 2 phases of the creative process:
Preparation phase and Incubation phase

sensory dimensions: space & serene

Plambech & Konijnendijk van den Bosch. 2015. Urban Forestry & Urban Greening
role of nature in creativity development

http://daycare.sulekha.com
Mindfulness

Mind Full, or Mindful?
constant busyness
attempted multi-tasking
‘out of balance’

Anna and Elena Balbusso, NY Times
Mindfulness/Meditation Training

- meta analysis; clinical/non situations
- focus on moment-to-moment experience and mental awareness
- more veridical perception (reality check)
- reduce negative affect
- improve vitality and coping
- medical symptoms & sensory pain

Mindfulness/Meditation Training

- healthy workplace employees
- 8 week mindfulness training
- brain electrical activity – positive affect
- brain activation – reduce stress event response
- more antibodies after influenza vaccine = better immune function

Davidson et al. 2003. Alterations in Brain and Immune Function Produced by Mindfulness Meditation. Psychosomatic Medicine
Nature and Mindfulness

focus
soft fascination
undirected attention

Attention Restoration Theory

Rachel & Stephen Kaplan

credit: Michael Hellgren
Design Elements
Open Spaces Sacred Places

Portal

Path

Destination

Surround
temperate – higher precipitation
drier climate – lower precipitation
TKF Foundation
Nature Sacred :: bench journals

> 10 years
> 100 gardens
> 10,000 journal entries
image content analysis

analysis:
straight edge (purple) vs non (green)

result:
more non-straight edge, more thoughts of spirituality & meaning

Summary

+ sanitary city (hygiene for health)
+ sustainable city (socio-ecological systems)
+ sacred city (engagement & experience)
  aka biophilic city

= human health & wellness
importance of nature, gardens
& good design!
Sanitary City
- urban forestry
- climate response
- urban agriculture
- green stormwater systems
- ‘wildness’

Sustainable City
- increased ecological function/
- green infrastructure

Sacred City
- human wellness
- & public health
- equity
- civic stewardship
- increased human connection,
- meaning & engagement
TKF Foundation
exploring civic sacred

The Nature Conservancy
conservation for health
Human Dimensions of Urban Forestry and Urban Greening

featuring research on peoples' perceptions and behaviors regarding nature in cities

www.naturewithin.info