

SESSION 3: THE BIG GREEN NETWORK

STEVE NYGREN

DR. JAY EXUM

DESIGN FVALUE F NATURE CONNECTION

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Steve Nygren, Serenbe

Serenbe's Path To Development



The Beginning, *1991*

Connecting our children to nature

Developing Sprawl

Threatened our Natural Nature

IF YOU ARE GOING TO DEVELOP...







Put On My land

Not in My back yard Put in near infrastructure

Traditional Development Pattern

Conver 30,000	ntional Deve Homes	lopment	7
3			
8	0% of Land [Disturbed	
)(Ż

Commercial

Services

Civic

Balancing Density with Nature



Commercial

Services Civic



Lake Wales by the Numbers

6,600 Households12,800 Acres of landOne Household Per 1.9 Acres

Obstacles to Develop a Model Community

- Zoning
- Government regulations
- Community Attitudes
- Lending Institutions Perceptions of Profitable Housing Models
- Down zoning is commonly thought of as a solution to urban sprawl, but in reality it causes it.
- During the past decades, the US has been sanitizing the zoning regulations and clustering similar land uses and home values into separate zoned areas
- Small lots are generally associated with housing for low income people and many neighborhoods fight against small lot zoning because they fear lower property values
- Preserved forest or farm land has never been perceived as creating value for the residential lots adjoining that land in the same way that golf courses were perceived as an asset in previous decades.

Covid-19 Has Exposed Existing Conditions That Are Effecting Our Health Due to our Built Environment

- Mental health due to **isolation**
- Physical health due to poor diets and a lack of movement
- Access to fresh foods
- Pollutants due to landscaping

Wellness Communities address many of these issues.

Per Capita Health Consumption Expenditures, U.S. Dollars



Note: U.S. values obtained from National Health Expenditure data. 2020 data for Canada and Sweden is provisional. 2021 data for all other countries but the United States are provisional. 2021 data for Canada represents a difference in methodology from the prior year.

Source: KFF analysis of National Health Expenditure (NHE) and OECD data • Get the data • PNG

Health System Tracker

Health Consumption Expenditures as Percent of GDP, 1970-2021



Notes: U.S. values obtained from National Health Expenditure data. Health consumption does not include investments in structures, equipment, or research. 2021 data not yet available for Australia, Belgium, Japan or Switzerland. Provisional 2021 data for Austria, Germany, Netherlands, Sweden, France, United States and the United Kingdom. Provisional 2020 data for Sweden, Japan, Australia and Canada. Difference in methodology for Canada in 2020 and 2021.

Source: KFF analysis of National Health Expenditure (NHE) and OECD data • Get the data • PNG

Health System Tracker

Morbidity is related to a green living environment

J Maat, 3 B A Verhei, 7 S de Wies, 3 P Spreeuwerberg, 7 F G Schollevis, 12 P P Groenewegen^{1,4}

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UNSTRACT Background: As a result of more service hairs the prospect of isong in environments with low premispones. There is increasing surdences for a positive relation between green spece in perpir's fairing processent and saff-reported industors of physical and mental health. This study investigates whether physicing same workday is also tabled is prev spice te's burg enumerant. Mathematicative data seem failure this electronic

practicmi, serving a population of \$45 140 propin. Modelity was classified by the private practitioners. according to the International Classification of Primary Cars. The pervertage of greet space within a 1 km and 3 kin radios around the pestal linde coordinates was derived hors an existing database and was calculated for each Incentrold. Multilevel Ingetic repression analyses were performed, controlling for demographic and sociocontrait sharactaricits

Results: The avoid prevalence rate of 15 of the 24 disates chatters was lower in long interpreterits with more green space in a 1 km solur. The relation was storagent he presety depends and dependent. The velocity was storger for chidren and people with a lower socioeconursic status. Furthermore, the velation was smorph urbait areas.

Conclusion: The study indicates that the previously of self-reported inverse integrors of physical and mental inscital constacts are ensured close to their homes." health can also be haved for clusters of specific physicisegreen space close to home for children and lower iocitecolumic groups.

INTRODUCTION

As a result of increasing urbanisation, combined. For this study data from with a planning policy of special devaluation, use more people fair the prospect of living inresidential seven-rements with little green up At the same time, increasing evidence threat showed that there is a positive relation between - of the data, because after the selection the an genera space and restoration from stress and mental was still a taligne. More specific, expresse to statute has been hand to have a position effect on mond, unsure- mount GP has integer than 12 months price to the

people living in greater environments report better physical and exerted health. The docrease in growt space could therefore have leadth conveniences However, it remains unknown whether living in midential momentuments with little pres spear also has negative consequences for objective health In this explosative study we will go one step medical records of 195 general practitioners in 96 Jutch . Further than orther studies and inventigate whether the prevalence of unergol physicies assessed root halory showers is also related to the answer of green space in people's living revisionment. This is the first study to investigate the relation between genes space and prevalence of physician assessed resolution: This study has an explorative character and salars into account a broad momber of disasses highly prevalent in society. To gain more marght note the relation between

indication of physical and mential health. The

Research report

groups and different social

Supporthening that the relation is stronger for sliderly prophe and children that: adults because, as a result of their lower mobility, they spend more time in strongest is slightly unlast areas and not apparent in only . the vacanity of their horse, sensiting in higher approace to great space in they living enveron ment. The same applies to people with a lower statilished relation between green space and a number increase oncourse status SED, whose activities and Therefore see also hyperbasise that people with a assessed workids. The stark enternas the importance of lowere SES are more exposed to the given space to their living environment. Finally, the relation was analysed for different levels of urbanicity to investigate whether the relation varies between orban and rural assess

METHODS

end Position (DMSICP-2 hich included a nationraide, representative task posts apace has beneficial effects mer people's pie of 304 general practices with 185 GPs and a mable. Evolvenue has been found for a position practice population of approximately 400 000 relation between green space and add-perceived industed people, who were representative for the health,14 horgevity,2 manihor of symptoms and the Datch population in terms of age, gender and type min of psychiatric modulity.' Agrees to a genien of bacht moutance." For this study data from 98 and doorser distances to given assas from the practices that recented michiday for a full period dwelling were associated with less stress and a of 12 months or more serve and. This relation lower likelihood of obesity? Experimental studies - had no significant effect on the representativene

matter, and downplane and physical areas." study (n = 345 143) were included, because we

There is increasing evidence for a positive relation between green space in people's living environment and self-reported indicators of physical and mental health

The annual prevalence rate of 15 of the 24 disease clusters was lower in living environments with more green space in a 1km radius.

Increasing evidence shows that green space has beneficial effects on people's health.

Exposure to nature has been found to have a positive effect on mood, concentration, self-discipline and physiological stress.



What is the cost of providing healthy places to live?

What is the cost of thoughtful planning?

HOW CAN WE NOT AFFORD IT?

THE MARKET: CORPORATIONS GO "NATURE POSITIVE"

Salesforce to create 75-acre employee work-andwellness center for its staff

- According to a recent <u>Deloitte</u> study, employees are working three more hours a day compared to before the pandemic, and 80% of respondents ranked wellbeing as important or very important to their organization's success.
- "After years of being on Zoom calls and staring at computer screens, we're encouraging our employees to step away from their screens and get outdoors."
- Building a nature positive corporate culture provides an opportunity to disconnect from technology and connect with each other.

- Strongly encouraged by the World Economic Forum and the United Nations, nature positivity involves resetting humanity's relationship with nature by radically improving on issues such as biodiversity, land degradation, and climate change.
- Being nature positive goes far beyond merely protecting ecosystems or even achieving netzero targets; the ultimate goal is to create "more nature" by 2030 compared with 2020.

https://sloanreview.mit.edu/article/businesspeoplemust-reconnect-with-nature-to-save-the-planet/

Wellness Real Estate is a **\$134 billion global industry in 2017** Over **740** residential projects in the pipeline, across **34** countries



ONE WORD THAT COMES TO MIND ABOUT THE CORE OF LAKE WALES

NOW:

IN THE FUTURE:



The Value of Density



1 House Per Acre Average





Food grown behind homes, at crosswalks and common areas





Front Porches Pulled Near Sidewalks





Walk Out Your Front Door to Retail





Nature Within Steps From Every Back Door





Pockets To Gather Among The Houses



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Serenbe Farms

West Georgia Camper Rentals

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ingate 1 Golf

The Barn at Oak Manor Temporarily closed

Franks

Piggly Wiggly

er-Cook Rd

Palmetto





he Pavilion **Serenbe Clustered Density Model** mentine Serenbe hidden 👔 playground Deer Hollow at Serenbe Pro Bike Repair (PBR les at Seren Art Farm at Serenb Serenbe Swim Clu The General Store at Serende Serenbe Farms earingSmit Schwartz International Chatt Hills Golf Cart Renta **160 Kids Within Walking Distance**

The Economics of a Balanced Tax Base

- Chattahoochee Hills has 39,000 acres
- Serenbe is 1,400 acres
- Serenbe has disturbed 200 acres for development
- Serenbe represents 60% of the taxes for the city with full time fire and police department
- Fully staffed public works department
- In the past 10 years the millage rate has been rolled back twice due to the taxes from Serenbe's 200 developed acres





Connection to Nature and Each Other + Authentic Placemaking



CONVENTIONAL DEVELOPMENT

SERENBE'S DEVELOPMENT MODEL



WE INVITE YOU TO VISIO

serenbe

Jay Exum, Ph.D. Exum Associates, Inc.





Consider an ecological basis for planning and design as an alternative to the urban transect concept

- Focus on ecological benefits
- Use historical natural systems and biological diversity as the transect metric



Flip the context to <u>Biocentric</u>:
T-1: Wilderness (Rural Preserve)
T-2: Natural (Rural Reserves)
T-3: Fragmented (Sub-Urban)
T-4: Isolated (General Urban)
T-5: Relict (Urban Center)
T-6: Extirpated (Urban Core)





Wilderness Limit roads	Natural	Fragmented Manage fertilizer use	Isolated Don't use to	Relict oxic chemicals that poll	Extirpated lute downstream	
Natural influences of fires, hurricanesPockets of natural lands						
Land acqui	isition progr	ams Contr	rol exotic species	Ecologi	cally benign	
Native Biological Diversity Sustain natural hydrology Protect groundwater recharge						
Compatibility with adjacent natural lands			Minimize water use			
Restore natural systems Prevent downstream impacts						
Ecotourism/Networks of trails Agriculture Non-native plants in ornamental landscapes						
Wilderness experi Natural	iences Rural	Low mainter Suburban	nance landscapes General Urban	High maintenance I Urban Center	landscapes Urban Core	



How they are different:

- The Urban Transect is anthropocentric and potentially self-serving
- The Ecological Transect is biocentric and potentially quantitative/objective



Still; the two transects have a convergent purpose related to the environment:

Minimize the human footprint to maximize conservation of natural resources



<u>General Design Themes</u>:

Wilderness – Ecologically Pristine Natural – Ecologically Diverse Fragmented – Ecologically Restorable Isolated – Ecologically Inclusive Relict – Ecologically Relatable Extirpated – Ecologically Benign



Extirpated Natural Diversity (T6 Urban Core)

Biodiversity characteristics: Generally incompatible *Resource objectives*: Prevent off-transect or downstream impacts *Conservation actions**:

Protect water quality (minimize fertilizers, herbicides and pesticides)

- Reduce water consumption
- Prevent the spread of exotic species

Design Considerations:

- > Concentrate areas of high maintenance landscapes
- > Don't feel compelled to use native plants
- > Manage for healthy aquatic systems

*All transect zones should include approaches to reduce greenhouse gas

production, hazardous waste disposal and toxic emissions



T6: Extirpated Natural Diversity (Urban Core): Ecologically Benign Design





T5: Relict Natural Diversity (Urban Center): Ecologically Relatable Design

Design Considerations:

Seek ways to meaningfully integrate with embedded or adjacent aquatic or natural systems





T5: Relict Natural Diversity (Urban Center): Ecologically Relatable Design

Design Considerations:

> Use long-lived, native canopy species







T4: Isolated Natural Diversity (General Urban): Ecologically Inclusive Design

Design Considerations:

- Minimize the area of high maintenance landscapes; prescribe native plants
- Plan for access to isolated conservation lands via trail networks







T4: Isolated Natural Diversity (General Urban): Ecologically Inclusive Design

Design Considerations:

Seek ways to incorporate natural lands as active classrooms







T3: Fragmented Natural Diversity (vs Sub-Urban): Ecologically Restorative Design

Design Considerations:

Incorporate wetland habitat in stormwater systems adjacent to conservation lands







T3: Fragmented Natural Diversity (Sub-Urban): Ecologically Restorative Design

Design Considerations:

Design trail systems within and through natural lands







T2: Natural Biological Diversity (Rural Reserves): Ecologically Diverse Design

Design Considerations:

> Use only natives and no fertilizers or herbicides







T2: Natural Biological Diversity (Rural Reserves): Ecologically Diverse Design

Design Considerations:

Consider the effects of wildlife (from herbivory by rabbits and deer to bearwise programs)





T1: Wilderness Diversity (Rural Preserves): Ecologically Pristine Design

Design Considerations:

- > Stimulate wilderness experiences
- Create wilderness-based recreation plans





T1: Wilderness Diversity (Rural Preserves): Ecologically Pristine Design

Design Considerations:

Monitor human activities and rectify causes of natural resource impacts





Tiger Creek Preserve









Lake Wales Ridge Wildlife and Environmental Area





Babson Park Audubon Center









Bok Tower Gardens





Tools to Achieve the Objectives of the Ecological Transect

- Land Acquisition
- Conservation Easements
- Land Trusts
- Conservation and Mitigation Banks
- Density Credits
- Developer and Landowner Incentives
- Comprehensive Plan policies
- Land Development Codes
- Regulations
- > Partners
- Grants



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CLOSING REMARKS

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