

Sustainability in Parks Planning

How and Why...



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What is Sustainability?

“Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

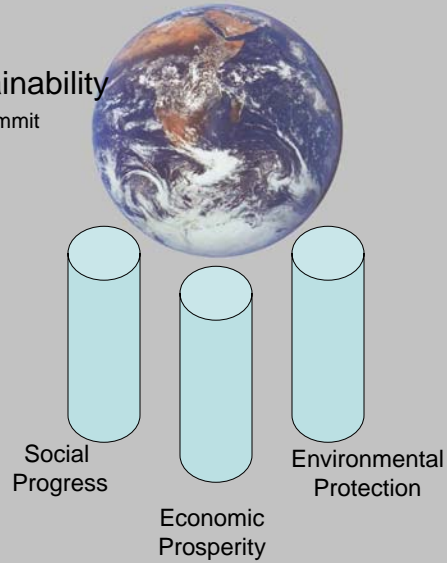
-1987 World Commission on the Environment

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What is Sustainability?

3 pillars of Sustainability

– 1992 Rio Earth Summit



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What is Sustainability in Planning and Design?

One Approach:

- Protect, integrate and enhance the natural environment
- Promote sustainable transportation systems
- Plan for the climate
- Protect water resources
- Promote resource efficiency
- Preserve cultural resources and promote human health
- Plan regionally as well as locally

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Sustainable Park Planning

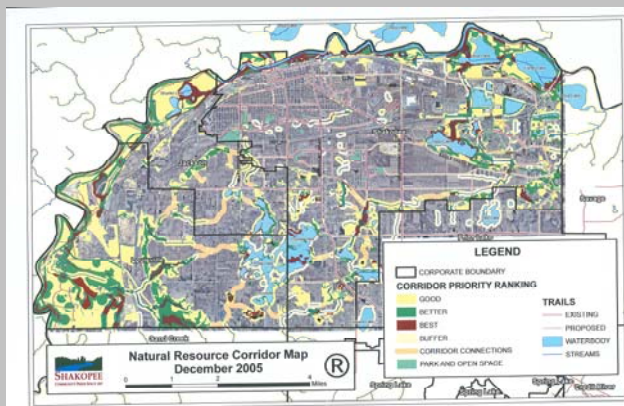
- Suitability Analysis
 - Recreation Needs
 - Water and Natural Resources
- Built Environment
 - Site Planning and Design
 - Building Planning and Design



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Suitability Analysis

- A layering of natural resource and land use data to identify areas suitable for specific uses.
- Used to identify parks and trails systems in conjunction with wildlife habitat and stormwater management



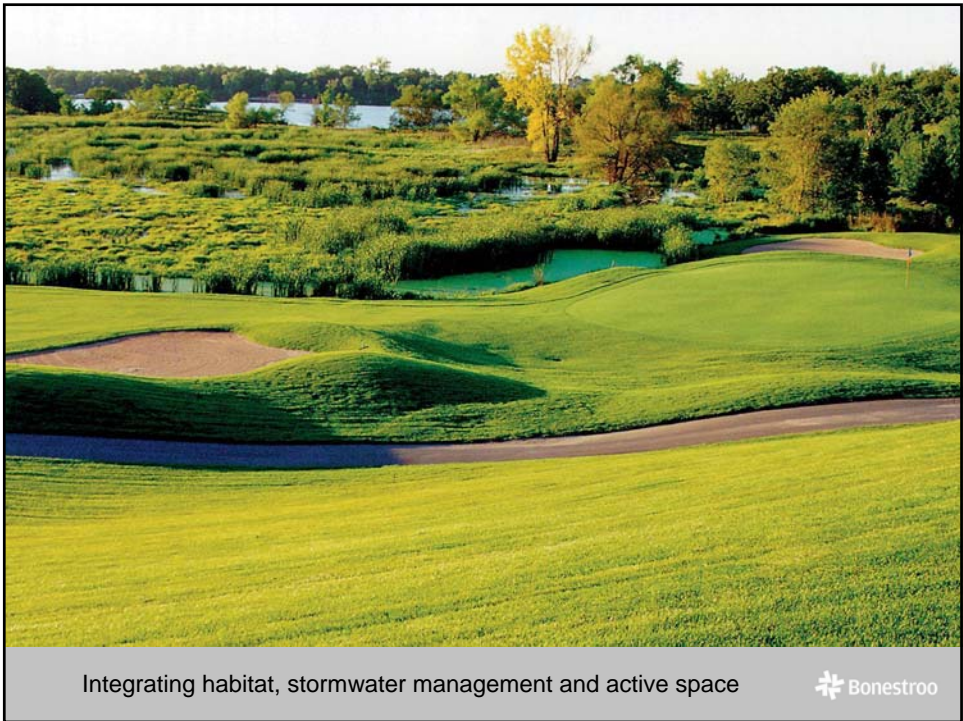
Sustainability in the Built Environment: Stormwater Management using LID

- Low Impact Development
- Could be incorporated in to park planning
- Can provide an amenity, as well as possible habitat
- LID Goals:
 - Preserve and incorporate existing natural areas into development
 - Reduce impervious cover
 - Preserve or enhance soil permeability
 - Utilize appropriate BMPs for effective stormwater treatment



Rain Gardens at U of M Landscape Arboretum







Integrating habitat, stormwater management and active space



Integrating habitat, stormwater management and active space



Roof Drainage Garden



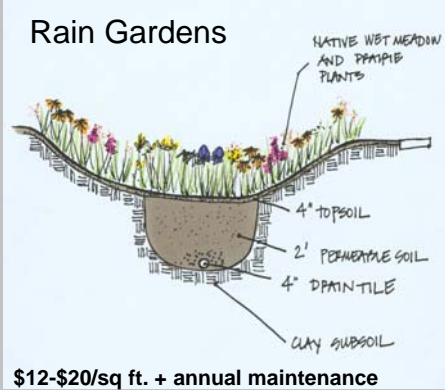
\$11/sq ft.

Permeable Pavers



\$8 to 20/sq ft.

Rain Gardens



\$12-\$20/sq ft. + annual maintenance

Infiltration and Bioretention techniques





Mendota Homes, Lillydale

Reducing impervious surface



Reducing impervious surface



Alternative Stormwater Management Techniques Can:

- Reduce infrastructure costs (30%)
- Provide an amenity
- Improve water quality
 - On-site
 - Downstream
- Reduce energy use



Rain Gardens at Minnetonka City Hall



Sustainability in the Built Environment: Evaluating Sustainable Buildings and Land Use

- LEED for Buildings
- LEED-ND
- Minnesota B3
- Conservation Design Techniques



Virginia Ave Park Community Building – LEED Silver Certified

LEED: Leadership in Energy and Environmental Design



Sustainability in the Built Environment: Features and Techniques

Sustainability includes:

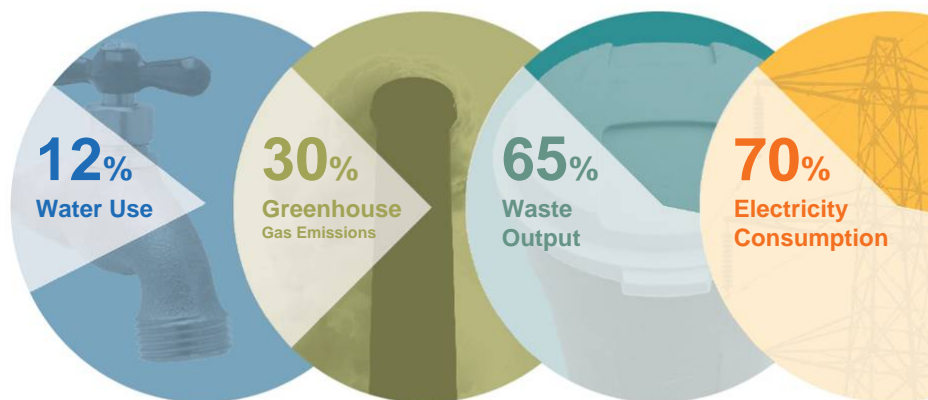
- Building function
- Occupant health
- Energy use
- Resource conservation and reuse

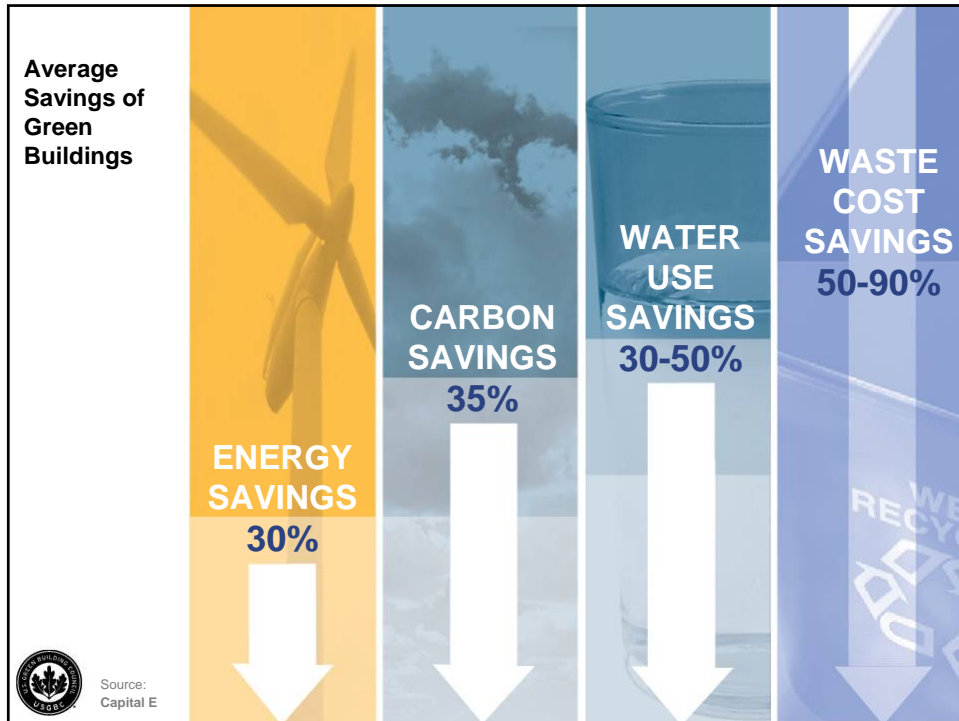


Minneapolis Green Institute



U.S. Building Impacts:





What is LEED-ND?

- ND = Neighborhood Developments
- A LEED rating system being developed through a partnership between:
 - US Green Building Council
 - Natural Resources Defense Council (Smart Growth)
 - Congress for the New Urbanism
- A rating system that combines elements of smart growth, new urbanism, and green building

What is LEED-ND?

- Moves beyond buildings
- Focuses on additional characteristics of the built environment:
 - Regional location
 - Population and employment density
 - Mix of land uses
 - Transit access and availability
 - Connectivity
 - Access to parks and trails
 - Slower speeds on roads
 - Sidewalks, crosswalks
 - Attractive and interesting streets
 - Bike lanes, bike trails and safe bike storage



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LEED-ND in relation to parks and trails...

Projects can get points towards accreditation for:

- Access to public spaces
 - 90% of dwelling units and building entrances within 1/6 mile walk of a park, green space or plaza at least 1/6 acre in size
- Access to active spaces
 - 90% of dwelling units within 1/2 mile walk distance of active open space
- Access to trails and/or bicycle networks
 - 50% of buildings within 1/4 mile walk of trail at least 3 miles in length



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Other technologies...



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Alternative Energy Sources

U of M Morris Wind Turbine



Biomass Heating/Energy



Minneapolis Royalston Maintenance Facility

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Alternative Fuels



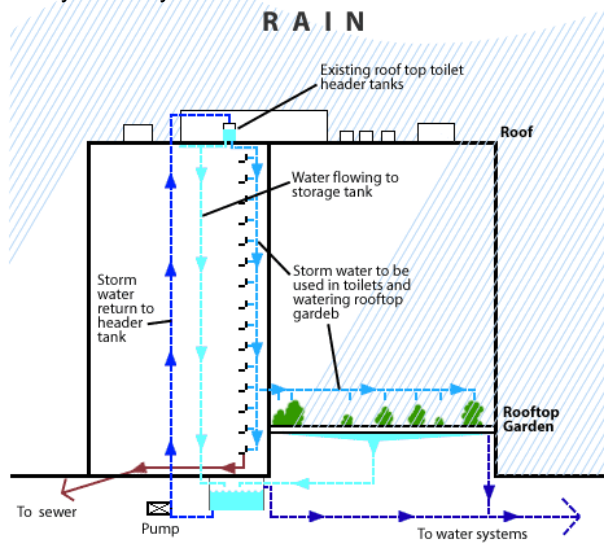
Biofuel Station



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Water Conservation

Greywater Systems



Native Plantings

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Light Pollution Prevention



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Recycled Building Materials



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Green infrastructure can be incorporated into Park Planning

- Construction of park buildings
- Site design
- Decisions about energy use and greenhouse gas reductions
- Environmental Education programs



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Questions or Comments?

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