Best Practices for Green Roofs
City of Minnetonka

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PA 5242 Environmental Planning, Policy, and Decision Making
Humphrey School of Public Affairs
University of Minnesota
Overview

Best practices for green roofs + rooftop gardens

Practices are diverse – policies, investments, incentives, standards, projects

Memos address applicability to Minnetonka

Case contexts
Milwaukee
New York City
Indianapolis
Boston
Seattle
Minneapolis
Nashville
Tempe
Germany
Switzerland
Austria...
Students

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6 memos
8 practices each
~48 best practices
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Chicago, IL

- Green Roof Grants program
- Expedited building permits for green projects
- Density bonuses for green roofs
- Demonstration green roofs, technical assistance
- Data and public outreach campaign
Chicago, IL

- 359 green roofs
- Just over 5 million square feet coverage
Chicago, IL

- Millenium Park = largest green roof in world
- More green roofs than any other American city
Bellingham, WA

- Green Roof Initiative
- Expedited permit review for green projects
- Waived half of stormwater impact fees
- Green code adoption
- Workshops/education
Bellingham population ~ 82,000
Minnetonka population ~ 50,000

F.A.Q.s

Frequently Asked Questions
- submit a query in the comment form below or, well, I'll just make up my own -

Q: How many acres of green roofs are there in Bellingham?

A: As of late 2012, the 11 green roofs that I currently know about here represent roughly 36,000 square feet, or about 3/4 of an acre. The current ownership mix is four public facilities, two commercial buildings, and five residences with green roofs.
Cambridge, MA

- Green Building/Zoning Task Force
- Green roof exclusion from GFA
- LEED requirements for new construction
- Zoning to encourage green roofs
- Accessible web information
On August 2, 2010, the City Council adopted a green building zoning amendment based on the Green Building/Zoning Task Force Recommendations. The amendment includes the following key elements.

**Green Building Standards for Large Development/LEED**

All major new construction and significant rehab of existing buildings already subject to special permit or development consultation would be required, at a minimum, to meet Leadership in Energy and Environmental Design (LEED) green building criteria at the following levels:

- 25,000 to 49,999 sq. ft. to meet LEED ‘Certified’ level
- 50,000 sq. ft. and larger to meet LEED ‘Silver’ level

Formal certification from US Green Building Council (USGBC)/ Green Building Certification Institute (GBCI) would not be required.

**Green Roofs**

Green roofs would be excluded from the calculation of gross floor area (GFA) even when access to the rooftop is provided. Currently, access to a rooftop, when located above the third floor, triggers the roof area being included in the GFA calculation.

As an incentive to create green roofs, decks or patios less than or equal to 15% of the green roof area and set back 10’ from all building edges may also be excluded from the calculation of GFA. This would be permitted as of right in non residential districts and high density residential districts (Residence C-1A, C-2, C-2A, C-2B, C-3, C-3A, and C-3B). A special permit would be required in the remaining residential districts.

**Impediments to Building Green in the Zoning Ordinance**

Certain green elements that may reduce a building’s energy consumption and improve indoor environmental quality would be excluded from the calculation of GFA. These include:
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Milwaukee Housing

• New housing development
• Built for residents earning 50-60% of median income in Milwaukee
• Limited space for at-grade water capture
• Average savings of 20% on energy bills
• 2315 Square feet can absorb 6500 gallons per rain event
• Lasts 40-60 years
• $172,278 of $5.2 million dollar project
• Easily transferrable to Minnesota
Mandate Plus Incentive

• Basel Switzerland/Toronto Canada
• Programs are somewhat different
• Provides subsidy for green roof development
• Mandates different amounts of green space depending on size/type of roof
• Basel has longer history (since mid 90’s) with program and had 23% of roofs greened by 2008
Philadelphia Tax Credit

• Tax break on Business Privilege Tax of 25% of cost of implementation
• Requires: Address, Square footages, projected cost, proof of suitability
• Modify to broaden base of people who can apply
• Do outreach campaign to avoid lag time
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St. Paul Fire Headquarters

St. Paul, MN

Best Practice: Utilize native species to expand preservation areas
John Deere Works
Mannheim, Germany

Best Practice: Recycle greywater & pretreat wastewater
Minneapolis, MN

Target Center

Best Practice: Stormwater Utility Tax Abatement Program

Seward Child Care Center

Best Practice: “Living Wall” alternative &/or complement
Next Steps

Compile best practices into report for Minnetonka

Integrate with PA 5321
Ecology of Agricultural Systems

Thank you!