



Request for City Council Committee Action From the Department of Public Works

Date: June 5, 2006
To: Honorable Scott Benson, Chair - Health, Energy & Environment Committee
Subject: Green Buildings Standards

Recommendation:

Direct staff to utilize "green" building guidelines and standards such as the Leadership in Energy and Environmental Design (LEED) Green Building Rating System and the State of Minnesota Sustainable Building Guidelines in the planning, design, construction, and commissioning of public facilities financed by the City of Minneapolis and utilized by the City's Charter Departments.

Previous Directives:

Prepared by: Greg Goeke, Facilities Manager – Property Services 673-2706

Approved by:

Steve Kotke, P.E., Acting City Engineer/Director of Public Works

Presenter: Greg Goeke, Facilities Manager – Property Services

Permanent Review Committee (PRC)	Approval _____	Not applicable <u> X </u>
Policy review Group (PRG)	Approval <u> X </u>	Not applicable _____

Financial Impact (Check those that apply)

- No financial impact - or - Action is within current department budget (If checked, go directly to Background/Supporting Information)
- Action requires an appropriation increase to the Capital Budget
- Action requires an appropriation increase to the Operating Budget
- Action provides increased revenue for appropriation increase
- Action requires use of contingency or reserves
- Business Plan: Action is within the plan. Action requires a change to plan.
- Other financial impact (Explain):
- Request provided to department's Finance Dept. contact when provided to the Committee Coordinator

Community Impact

Neighborhood Notification:	Not applicable
City Goals:	Maintain the physical infrastructure to ensure a healthy, vital and safe City; Preserve and enhance our environmental, economic and social realms to promote a sustainable Minneapolis
Comprehensive Plan:	In conformance
Zoning Code:	In conformance

Background/Supporting Information

Green Building for Municipal Operations

In 2002, the Environmental Coordinating Team, as part of the Green Government Initiative, created an internal staff team called the Green Buildings Team to review and evaluate current internal design and construction practices with the goal of making the City's current and future buildings more environmentally friendly and sustainable. Although the City has traditionally designed and constructed sound public facilities, with a strong emphasis on energy efficiency, a more comprehensive approach to the environment was needed. In essence the City needed to develop or adopt a methodology that would deliver a higher quality building on a consistent basis.

The Green Team is chaired by Property Services with membership currently comprised of staff from Public Works and Regulatory Services.

What is the role of the Green Buildings team?

The Green Buildings Team was charged with evaluating various green or sustainable design practices used by other agencies, both public and private, to determine common and best practices that could be applied on City of Minneapolis funded projects. Property Services was asked to pilot green design practices on upcoming projects and report back to the Environmental Coordinating Team on a regular basis as to their findings and experiences. By piloting and testing green building strategies on its own projects the City would demonstrate its commitment to protecting natural resources, improve the human environment for employees and visitors, significantly reduce the consumption of energy and other natural resources, demonstrate and evaluate emerging design strategies and technologies, and yield operational cost savings.

Similar efforts and programs exist for the Park and Recreation Board and Library Board projects.

What is the rationale for a Green or Sustainable building practices?

It is generally known and accepted that buildings account for a significant use of energy and natural resources in the construction, occupancy, and eventual demolition and disposal.

Worldwide, buildings are thought to account for up to:

- 40% of the total energy consumption
- 40% of the SO₂ emissions
- 33% of the CO₂ emissions
- 16% of the fresh water consumption
- 25% of the virgin wood harvesting
- 40% of the landfill volume (construction waste)

Green Building design practices and methodology

Various green buildings standards have been in development for approximately 15 years. In Minnesota, the two most widely recognized and utilized are the Minnesota Sustainable Design Guidelines developed by the University of Minnesota and Leadership in Energy and Environmental Design (LEED) as developed by the U.S. Green Building Council.

Both standards emphasize: 1) Performance Management (Quality and Commissioning), 2) Site and Water, 3) Energy and Atmosphere, 4) Indoor Environmental Control, and 5) Materials and Waste.

The City's staff has been utilizing the Minnesota Sustainable Design Standards as the chosen methodology for its pilot projects and testing.

City of Minneapolis Success Stories

The City has successfully piloted and tested green buildings standards and methodology for the following building projects since 2002:

- 1st Precinct
- Fire Station #6
- Animal Care and Control
- 3rd Precinct
- Columbia Heights Filtration Plant (Water Works)
- Fridley Maintenance Facility (Water Works)
- Fire Station #14

Examples of Green Building strategies that have been incorporated are:

Site and Water: Green Roofs, Rain Gardens, Infiltration Strips, Sustainable Landscaping, Retaining Ponds

Environmentally Friendly Products: Used, Recycled and Refurbished building products and furnishings, Low or No-VOC paints and Adhesives, Use of natural products

Materials and Waste: Re-use of Existing Buildings vs. New Construction, Strategic Space Planning (build only what is needed), Designing to Common Measurement (no cutting and waste), Separating and Recycling demolished materials and construction waste, Use of Durable Materials

Indoor Environmental Control: Natural light, Indoor Air Quality standards, Natural Ventilation, Acoustic Enhancement

Energy and Atmosphere: Energy Modeling and Verification, Fully Automated Building Systems with High Efficiency components, Solar Power and Solar Thermal heating. Day lighting controls, Energy Star appliances

Not always are these strategies visible or high profile in nature but they contribute to the overall comprehensive concept of building a higher quality building that uses less energy and natural resources. The pilot projects have consistently been able to exceed the current energy code by 30%. All of the pilot projects were expected to be completed within their original budgets and did not receive additional funding. Although the strategies often come with up-front costs, staff was challenged to properly evaluate strategies from a life-cycle cost/benefit concept and utilize project funding wisely. Additionally, design strategies had to be compatible with operating and maintaining the buildings in an environmentally friendly manner. As an example, interior surfaces needed to be compatible with green (plant based) cleaning systems.

Recommendations

The City's Green Buildings Team, having successfully piloted and tested green building practices, recommends that the City formally adopt the utilization of the green building standards, such as Leadership in Energy and Environmental Design (LEED) or Minnesota Sustainable Design Guidelines. Staff would select the set of standards appropriate for each project as the basis for decision making for the planning, design, construction and commissioning of new buildings, major renovations, and upgrades to building systems over \$100,000 that are owned and financed by the City of Minneapolis and utilized by the City's Charter Departments.

The Green Building Team does not recommend formal certification of the City's project due to the cost of staff and consultant time required to provide required documentation. Further, the City's commitment to formal commissioning has proven to be successful in verifying performance.

Att.: Minnesota Sustainable Design Guidelines
LEED Standards