B. Energy
Funded by a settlement with electrical utility Commonwealth Edison, the City Hall Green roof is projected to save $3,600 in heating and cooling per year. Ambient air and surface temperatures were monitored at the City Hall roof and the adjacent Cook County black roof. On August 9, 2001 at 1:45 pm, there was a 50°F (28°C) difference between the surface of the green roof and the surface of the black roof. After three years of summer data collection at City Hall, monitoring continues at test plots at the Chicago Center for Green Technology.

**Location**  
Chicago, Illinois  
**Green Roof Designer**  
William McDonough + Partners  
**Year Completed**  
2001  
**System Type**  
Mixed  
**Project Area**  
20,300 sf (1,890 m²) total  

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**D. Structure**  
The design of the roof garden echoes the structure of the existing roof deck. The trees in intensive planting areas (18" (450 mm) deep) are centered over columns, while semi-intensive planting areas (4-8" (100-200 mm) deep) are in raised beds that coincide with former skylights. The remainder of the roof is extensive (3-4" (75-100 mm) deep). To avoid overloading the structure, polystyrene insulation above the roof membrane was used to create the contours of the garden. Two 150-gallon (570-L) cisterns were secured to the structural steel of the renovated penthouse walls.

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**A. Storm Water**  
**B. Energy**  
**C. Acoustics**  
**D. Structure**  
**E. Compliance**  
**F. Cost**  

Insulation: Photo © 2003, Roofscapes, Inc. Used by permission; all rights reserved.
Chicago City Hall’s gardens are visible from adjacent towers.

Beehives

Flowering annuals

A home for wrens

**Location**
Chicago, Illinois

**Green Roof Designer**
William McDonough + Partners

**Year Completed**
2001

**System Type**
Mixed

**Project Area**
20,300 sf (1,890 m²) total

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**E. Compliance**
The City Hall green roof was the initial demonstration project of the Chicago Department of Environment’s Urban Heat Island Initiative. The gardens were initially planted with 156 species, and now sustain plants ranging from prairie grasses to traditional green roof sedums to flowering annuals. The gardens are frequently maintained and replanted for aesthetic reasons. Results of the project include guidelines for future green roof projects in Chicago, a performance specification for green roofs, and data demonstrating environmental benefits.

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A. Storm Water
B. Energy
C. Acoustics
D. Structure
E. Compliance
F. Cost