“High performance buildings are the future. As we continue to grow our city, we will do so in a way that is even more sustainable.”

Mayor Thomas M. Menino

1,000’ Tower RFP: “proposals that go beyond LEED Platinum…”
# Green Building Policy Development

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Event</th>
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<tr>
<td><strong>June 2003</strong></td>
<td>Mayor’s Green Building Task Force</td>
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<tr>
<td><strong>2003-2004</strong></td>
<td>Task Force Convenes over 12 months</td>
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<td><strong>Fall 2004</strong></td>
<td>Task Force Recommends 10 Point Action Plan</td>
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<td><strong>November 2004</strong></td>
<td>Mayor Accepts Recommendations &amp; Initiates 3 Year Implementation Plan</td>
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Mayor Menino’s
Green Building Task Force Report
Executive Summary
Fall 2004

*everyone benefits from green building...*
Change Drivers - Energy, Environment, and Health

- Cost of Energy
- Pollution and Depletion of Natural Resources
- Public Health
- Climate Change
- Extreme Heat
Change Drivers - Energy, Environment, and Health

- Cost of Energy
- Pollution and Depletion of Natural Resources
- Public Health
- Climate Change
- Extreme Heat
- Sea Level Rise

Source: NECIA/UCS, 2007 (see: www.climatechoices.org/hec)
Change Drivers - Energy, Environment, and Health

The Actual Spark was Leadership and Initiative
Green Building Policy Development

Mayor’s Green Building Task Force

- **Task Force Membership** - Real estate industry leaders including architects, engineers, lawyers, developers, bankers, property managers, and representatives of area education and healthcare institutions.
- **Peer Advisors** - Green building experts and advocates.
- **City Staff** – Mayor’s Office, Environment, Planning, Public Health, Neighborhood Development. Capital Construction was missing.

Twelve Month Workplan

- Education, Awareness, and Training
- Building a Green Team
- Capital and Operating Finance
- Incentives
- Sustainable Planning and Leadership
- Economic and Business Development
- Standards, Measurement, and Verification

Building Tours, Fact Finding Delegations, Public Meetings and Hearings
Best Practices

Green City Buildings

George Robert White Environmental Conservation Center at the Audubon Nature Center [completed]

- Uses 30-35% less energy than traditional construction. Includes geothermal pump, photovoltaic shingles, solar hot water, day lighting and energy efficient features.
Best Practices
Green Commercial Buildings
Manulife Financial Headquarters

Skidmore Owings & Merrill (SOM)
Best Practices
Green Institutional Buildings
Harvard University One Western Ave
Best Practices
Green Institutional Buildings
Artists For Humanity

Arrowstreet Architects

photos by Richard Mandelkorn
Best Practices
Green Affordable Housing
Eire-Ellington Homes

Hampton + Elton Architects
Cost of Green

“...something interesting came to light: the cost per square foot for the LEED-seeking buildings was scattered throughout the range of costs for all buildings”

Costing Green Revisited: A Comprehensive Cost Database & Budgeting Methodology
July 2007
DAVIS LANGDON
Municipal Green Building Programs

Sixteen months ago 52 US cities had Green Building programs that used the LEED Rating Systems, today there are 166 (USGBC)

- Most are commitments for municipal buildings

66 US cities use LEED in private building permitting

- Most offer incentives if using LEED:
  - Density and Height Bonus
  - Expedited Permitting
  - Permit Fee Rebates/Incentives

- Most set min. SF or Construction Cost thresholds
- Most require LEED Certified, some Silver, some will escalate

- **In January 2007 Boston became the first major US City to require LEED Certifiable for private buildings**
# Boston Green Building Zoning Article 37

**First Major US City to require green private development**

<table>
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GreenBoston
GREEN BUILDINGS
MAPING
GreenBoston

GREEN BUILDINGS MAPING

LEED Certified Projects
61 Project Certified
10M+/- SF
4 Platinum
16 Gold
28 Silver
13 Certified Projects
GreenBoston

GREEN BUILDINGS MAPING

LEED Certified Projects
61 Project Certified
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LEED Registered Projects
200+ Projects Registered
40M+ SF
GreenBoston

GREEN BUILDINGS MAPING

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Article 37 Review
30 Projects Completed
4M+ SF
18 USGBC Certified or seeking

48 Projects Under Review
17M+ SF
25 seeking US GBC Certification
(25 Yes / 9 No / 14 TBD)
GreenBoston  http://gis.cityofboston.gov/greenboston/

GREEN BUILDINGS MAPING

LEED Certified Projects
32 Project Certified
5M+ SF
1 Platinum
8 Gold
12 Silver
11 Certified Projects

LEED Registered Projects
139 Projects Registered
28M+ SF

Article 37 Review
13 Projects Completed
2.2M+ SF
10 are seeking US GBC Certification

48 Projects Under Review
17M+ SF
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(25 Yes / 9 No / 14 TBD)
Greening Boston - Lessons Learned

Work with Stakeholders
- Recognize value structures and listening
- Listen well; make sure folks know they have been heard
- Identify ALL Stakeholders

Leverage Leadership
- Both civic and market

Be Boldly Pragmatic
- Goals that are ambition and inspiring
- Incremental and achievable steps; change takes time

Capitalize on Success
- Build on your work and that of others
- Celebrate accomplishments
Model Green Growth Districts
Government Center

Green Growth District Area  50.6 ac
Public Owned Parcels      24.5 ac
Private Owned Parcels     8.8 ac

Opportunities
• Green Development Model
• Adaptive Reuse of Existing Buildings
• Interdisciplinary Approach
• Innovation in Sustainability
• New Construction and Permanent Jobs
• Promote Green Industries
Greening Boston - Comprehensive Approach

A. Energy Conservation
   → Municipal Energy Management
   → Boston Energy Alliance
   → Lights Out Boston

B. Renewable Energy
   → Purchase Green Power
   → Biomass Energy Generation
   → Distributed Generation
   → Solar and Wind Power installations at City facilities

C. Clean Transportation
   → Ultra Low Sulfur Fuel
   → Bio-diesel
   → School Buses with Pollution Control Technologies
   → CleanAir Cabs

D. Green Infrastructure
   → 100,000 New Trees by 2020
   → Increase Tree Canopy Cover from 29% to 35% by 2030
   → Storm Water Management through LID

E. Green Building & Zoning
   → Green Private Development
   → Large Projects (50+Ksf) to meet LEED Certified Standards
   → Boston Priority Points
Greening Boston - Programs to Come

A. Energy Conservation
   - Municipal Energy Management
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- Energy Protocol
- Capture Small Projects 20k SF
- Benchmarking Existing Buildings
- Zero Energy and E+ Buildings
- Building Adaptation
- Green Development Area

BedZED, Wallington UK
National Leader in Sustainability

 Ranked one of the most sustainable cities in the US:

- 3rd by Popular Science Magazine (2008)
- 6th by SustainLane.com (2008)

6. Boston, MA
2008 CITY CHART

3. Boston, Mass. 22.7

- Electricity: 5.7
- Transportation: 8.7
- Green Living: 3.4
- Recycling/Perspective: 4.9

CASE STUDY: Grass Power

Boston has preliminary plans for a plant that would turn 50,000 tons of fall color into power and fertilizer. The facility would first separate yard clippings into grass and leaves. Anaerobic bacteria feeding on the grass would make enough methane to power at least 1.5 megawatts' worth of generators, while heat and agitation would hasten the breakdown of leaves and twigs into compost.
… OR HAVE WE ONLY JUST STARTED