

# Sustainable Federal MOU and YOU



Body Shop:  
Building  
Strategies

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# Federal Leadership in High Performance/Sustainable Buildings



EPA Kansas City Science & Technology Center



# MOU: Background

- History:
  - Executive Orders -- esp. EO 13123
  - Office of the Federal Environmental Executive
    - Federal green building report
  - Interagency Sustainability Working Group
- Goals:
  - “LEED+”
  - Define green building for Feds
    - Minimum level of performance



# MOU Overview

- Components:
  - Preamble
  - Guiding Principles
  - Technical Guidance
- Guiding Principles:
  - *Employ Integrated Design Principles*
  - *Optimize Energy Performance*
  - *Protect and Conserve Water*
  - *Enhance Indoor Environmental Quality*
  - *Reduce Environmental Impact of Materials*



# Integrated Design



EPA New England Regional Lab, Chelmsford, MA



# *Employ Integrated Design Principles*

- Use collaborative, integrated planning and design for all building lifecycle stages:
  - Integrated project teams
  - Green performance goals and procedures to institutionalize them
- Employ commissioning
  - Verify performance and ensure that design goals are met



# Energy



EPA National Computer Center, Research Triangle Park, NC



# *Optimize Energy Performance*

- Energy Efficiency:
  - Establish whole building performance target:
    - Consider all projected energy use, including plug loads
    - Design to earn ENERGY STAR
  - New buildings: reduce energy cost budget 30% from ASHRAE 90.1-2004
    - Increase efficiency of components
  - Major renovations: reduce energy cost budget by 20 percent below pre-renovations 2003 baseline

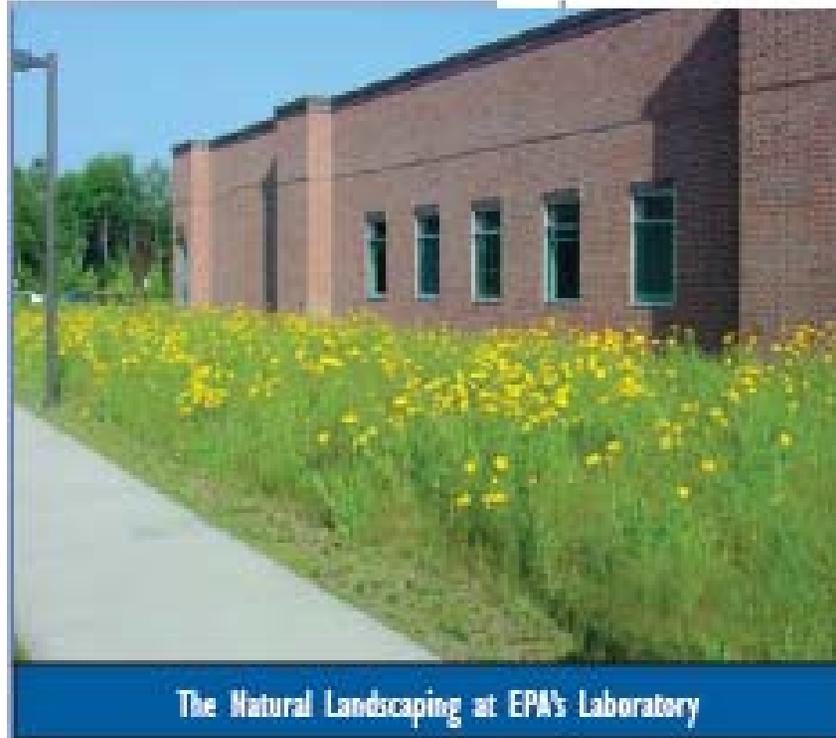


# *Optimize Energy Performance*

- Measurement and Verification:
  - Install building level utility meters
  - Measure and verify energy use
    - Compare performance data to design target
    - Use EPA's Energy Star® Benchmarking Tool to rate energy performance
  - Enter data and lessons learned into High Performance Buildings Database:  
[www.highperformancebuildings.gov](http://www.highperformancebuildings.gov)



# Water



EPA New England Regional Lab,  
Chelmsford, MA

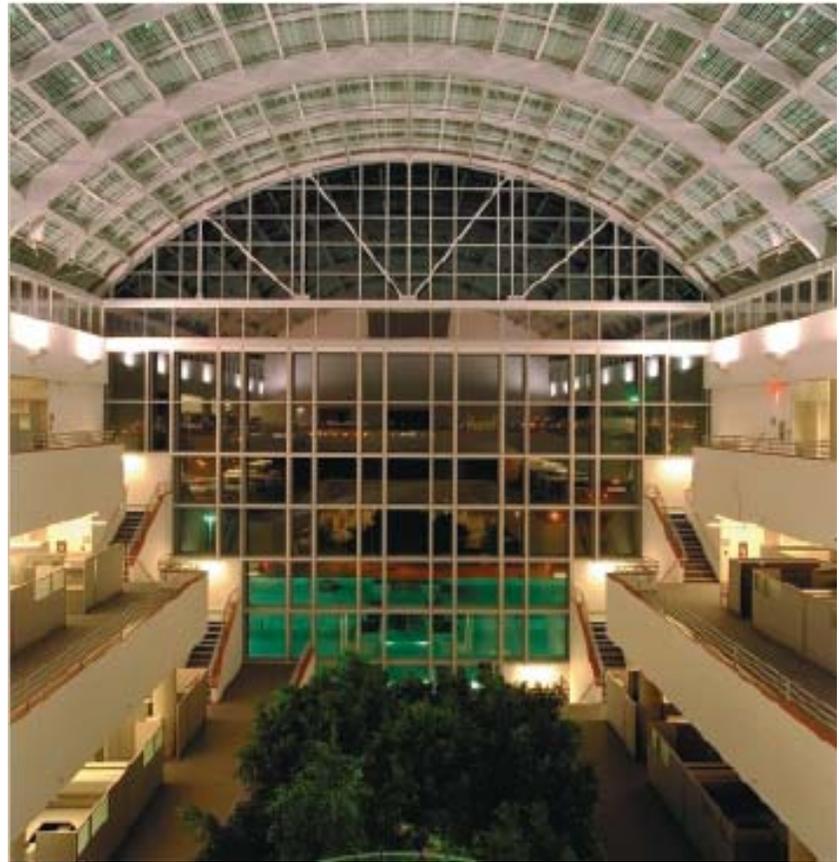


# *Protect and Conserve Water*

- Indoor Water:
  - Use 20% less potable water than building baseline
  - Calculate indoor water use baseline (FEMP guidance)
- Outdoor Water:
  - Use efficient landscape & irrigation methods to cut outdoor potable water use by 50% from typical levels
  - Reduce runoff of storm water & polluted site water



# Indoor Environmental Quality



EPA Research Triangle Park, NC Main Building and EPA Region 7 HQ in Kansas City, KS



# *Enhance Indoor Environmental Quality*

- Low-Emitting Materials:
  - Specify low-emitting materials & products
- Protect Indoor Air Quality during Construction.
  - SMACNA (Sheet Metal and Air Conditioning Contractor's National Association) IAQ Guidelines
  - Flush-out: Post-construction, pre-occupancy: 72-hour flush-out with maximum outdoor air (humidity < 60%)
- Moisture Control:
  - Control moisture flows and condensation



# *Enhance Indoor Environmental Quality*

- Ventilation and Thermal Comfort:
  - ASHRAE 62.1-2004, Ventilation
  - ASHRAE 55-2004, Thermal Comfort
- Daylighting:
  - Minimum daylight factor of 2% in 75% of all space occupied for critical visual tasks
  - Provide automatic dimming controls or manual lighting controls, plus glare control



# Materials



Recycled ceiling tiles, floor tiles and carpet used in EPA Kansas City Science & Technology Center



# *Reduce Environmental Impact of Materials*

- Recycled Content:
  - Buy EPA-designated recycled content products
  - Other categories: Post-consumer content + 1/2 pre-consumer content  $\geq$  10% of total value of materials
- Biobased Content:
  - Purchase USDA-designated products
  - Other categories: use biobased products made from rapidly renewable resources & certified wood



# *Reduce Environmental Impact of Materials*

- Construction Waste:
  - Recycle or reuse  $\geq$  50% construction, demolition & land clearing debris (except soil)
- Ozone Depleting Compounds:
  - Use alternatives to ozone depleting compounds



# Resources

- General:
  - [www.wbdg.org/sustainablemou](http://www.wbdg.org/sustainablemou)
  - [wbdg.org/design/greenspec.php](http://wbdg.org/design/greenspec.php)
  - [www.epa.gov/greenbuilding](http://www.epa.gov/greenbuilding)
  - [www.highperformancebuildings.gov](http://www.highperformancebuildings.gov)
- Energy: [www.energystar.gov](http://www.energystar.gov)
- Water: [www.epa.gov/watersense](http://www.epa.gov/watersense)
- IEQ: [www.epa.gov/iaq](http://www.epa.gov/iaq)
- Environmentally Preferable Purchasing: [www.epa.gov/oppt/epp](http://www.epa.gov/oppt/epp)



Thanks for your time!

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