AtSite - Sustainable Buildings Group

Presentation to:

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Leadership in Environmental Sustainability of Buildings

A Call to Action

Forming Conscientious of Faithful Citizenship – USCCB November 17, 2007

"Care for the earth and for the environment is a moral issue. Protecting the land, water, and air we share is a religious duty of stewardship and reflects our responsibility to born and unborn children, who are most vulnerable to environmental assault. Effective initiatives are required for energy conservation and the development of alternate, renewable, and clean-energy resources. Our Conference offers a distinctive call to seriously address global climate change.",

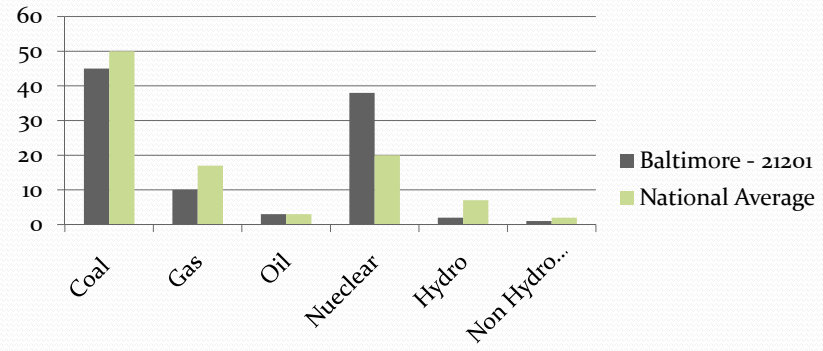
Environmental Impact of Buildings

In the United States, buildings account for:

- 65%+ of electricity consumption
- 36%+ of energy use
- 30%+ greenhouse gas emissions
- 30% of raw materials use
- 30% of waste output
- 30% of potable water consumption

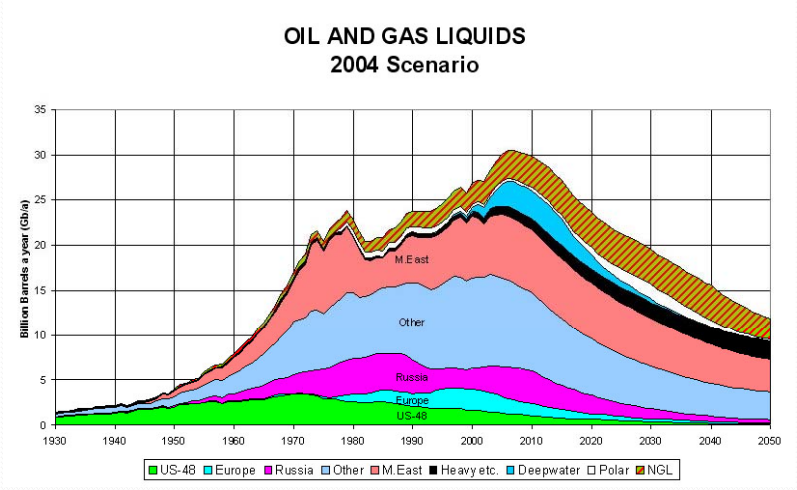
Nearly 40% of global primary energy is used in buildings

Baltimore's Energy Profile



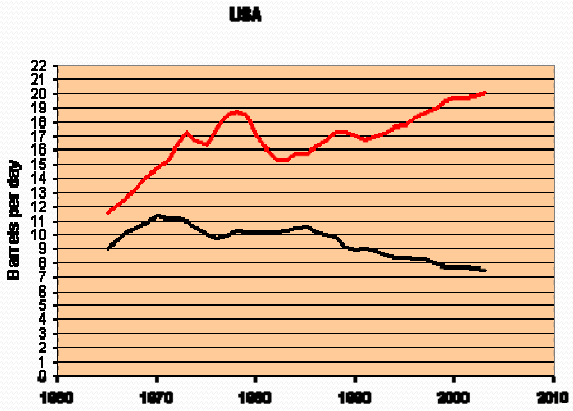
EPA http://www.epa.gov/cleanenergy/energy-and-you/how-clean.html

Peak Production of Oil and Gas



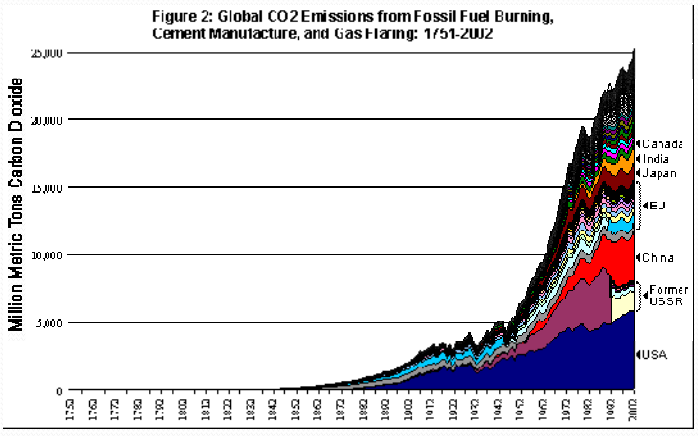
Oil and Gas Liquids, 2004 Scenario, by Colin J. Campbell

Oil Consumption vs. Supply



Red = Consumption
Black = Production

Carbon Dioxide Emissions



Reference: Carbon Dioxide information Analysis Center

Typical Building Conditions

- Energy and water usage at comparable levels of non LEED buildings (10 – 30% higher)
- Indoor Air Pollution – may be 5X higher than outdoors
- Consumption of materials and resources at institutional levels
- Employee Productivity - Absenteeism and Healthcare Cost Impacts on level with non-LEED buildings

What can building Owners/Operators Do?

- Lower the use of natural resources by our buildings
- Promotes reuse and recycling
- Improve the performance of our buildings
- Lower the waste generated by our buildings
- Select better products consumed in our buildings
- Education on Sustainable issues
- Form a Green / Sustainable Committee

Establish a Sustainable Platform for buildings!

Benefits of a Sustainable Platform

- Lower operating expenses
- Optimized life-cycle economic performance
- Improved Occupant/User Satisfaction
- Increase long-term value of building
- Stake-holder relations
- Reduces environmental impact
- Reduces demand on landfills and incineration
- Socially Imperative

Typical Sustainable Areas of Study

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Innovation & Design Process

Sustainable Site

- Erosion and Sediment Control
- Green Site and Exterior Building Maintenance
- Alternative Transportation
- Protect and Restore Open Spaces
- Heat Island
- Light Pollution

Water Efficiency

- Minimum Water Efficiency
- Discharge Water Compliance
- Water efficient Landscaping / Irrigation
- Innovative Waster Water Technologies
- Water use reduction

Energy & Atmosphere

- Existing Building Commissioning
- Minimum Energy Efficiency
- Ozone Protection
- Renewable Energy
- Building Operation & Maintenance
- Enhanced Performance Metering
- Documenting Sustainable Cost Impacts

Materials & Resources

- Source Reduction & Waste Management
- Toxic Material Source Reduction
- Construction Demolition & Renovation Waste Management
- Optimize Use of Alternative Materials
- Sustainable Cleaning Products & Materials
- Occupant Recycling

Indoor Environmental Quality

- Outside Air Introduction & Exhaust Systems
- Control of Tobacco Smoke
- Asbestos & PCB Management
- Documenting Productivity Impacts
- Indoor Chemical & Pollutant Source Control
- Controllability of Systems
- Daylight Views
- Green Cleaning

Sustainability Certification

- Sustainability is not synonymous with LEED or any other 3rd party certification requirement
- Objective should be to establish a Sustainable Platform
- Competing 3rd Party Certification organizations (USBGC , BREEAM , GBI)
- LEED and Green Globes
- Similar certification criteria with significant differences

USGBC and LEED

- U.S. Green Building Council
  - Organized in 1993
  - Coalition of leaders from building industry
  - Promotes buildings that are environmentally responsible, profitable and healthy places to live and work
- LEED: USGBC's voluntary rating system
  - First published in 1998
  - Point based
  - Independent, 3rd Party review to establish level of sustainable accomplishments
  - Different categories for Certification and Levels
  - LEED EB intro 2004

Benefits of 3rd Party Certification

- Helps building owners and operators benchmark operations and related improvements
- Provide implementation plan on a consistent scale, with the goal of maximizing operational efficiency
- Seek consistent ways to minimize environmental impacts
- Address whole-building cleaning, maintenance and operating policies on a consistent basis
- Establish recycling programs, exterior maintenance programs, and regular system upgrades on a consistent basis

Why do anything now?

- Lower Operational Expenses
- Increase Building Performance
- Extend Equipment Life-Cycles
- Improve User/Occupant Satisfaction
- Reduce consumption of resources
- Socially / Morally responsible
- Municipal/Federal Mandates
- Supports Maryland's “Empower" goals of reducing energy by 15% by 2015

AtSite Sustainable EB Platform

- AtSite has established a 3-Phase Green sustainable platform to help organizations incorporate sustainable initiatives into their real estate and occupancy.

Phase I: Thinking Green

Phase II: Going Green

Phase III: Staying Green

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Phase I:Thinking Green

- **Evaluate current state of a facility**
- **Evaluate the facility in relation to the 3rd Party Certification Criteria (such as USGBC's LEED EB System)**
- **Identify opportunities to increase the energy efficiency of the facility**
- **Propose ways to reduce the annual costs associated with equipment and energy**
- **Improve sustainability features in the facility**
- **Prepare a roadmap for facility upgrades, including accurate cost estimates**
- **Recommend the steps and process necessary to establish a Sustainable Platform and gain 3rd Party Certification**

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Phase I- Specifics

- Inventory and review all MEP systems
- Building Envelope review
- Fresh air delivery and exhaust system review
- Review of EMS and Lighting systems
- Water efficiency evaluation
- Review of metering and sub- metering practices
- Operational maintenance review
- Preliminary Cost Estimation to implement Sustainable Platform

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Phase II – Going Green

- Review and confirm detailed schedule , scope of work and budgets to implement Sustainable Platform
- Develop Sustainable Management Practices to transform organization culture
- Define projects specific details – drawings / design build
- Implement Sustainable Platform
- If desired, Obtained 3rd Party Certification

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Phase III – Staying Green

- Measure improved operation performance against established baseline
- Improve system and operational practices to achieve consistent performance
- Monitor systems and operational practices to deliver high performance operations
- Compliance reporting to management and third party auditors to ensure realization of sustainable platform objectives

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