Going Green:
Practical Approaches for Health Care

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Why are organizations going green?
Why are Facilities Going Green?

- Improve operational efficiencies
- Reduce operating cost and maintenance
- Demonstrate leadership
- Respond to residents or staff interests
- Provides marketing edge
- Personal conviction - value based
Other reasons for going green...

- Facilities performance improvements; e.g., lighting, reduced housekeeping, etc.
- Meaningful activity for resident involvement
- Morale improvements

Lessen environmental impacts
Understanding your Environmental Impacts?

- Carbon Footprint
- Energy Use and Costs
- Healthy Indoor Air Quality
- Water use – Drought Actions
- Medical Waste Management
- High Perf LEED Buildings
- Recycling
- Green Cleaning Products
- Environmental Purchasing
- Stormwater Runoff
- Supporting Green Power
- Environmental Policy
- Staff Involvement
- Transportation
- Renovations & New Construction Decisions
External Environmental Driving Factors

- Waste management requirements & bans
  - Recently banned material from landfills
    - Plastic bottles, pallets, oil filters (Oct ‘09)
    - TV’s and computer equipment (Jan ‘11)

- NC droughts - local water-use restrictions

- NC Renewable and Energy Efficiency Portfolio Standard – incentive

- Federal and state energy incentives
Green Team formation
- Top down leadership
- Management team or resident driven
- Assemble team members
- Identify resources
Data Input: Utility bills & product purchases

- Educational awareness
- Recycling programs – step up
- Energy- & water-use audits
- Purchasing review and requirements
- Environmental policies
Energy Use:
Maximize energy efficiency and use of renewables.

Transportation and Travel:
Minimize impacts & encourage alternative transportation.

Office Waste Reduction and Purchasing:
Practice resource efficiency, sound waste management and recycling in all office operations, purchases and services.

Water Resources:
Protect water resources through water conservation and storm water management.

Health & Comfort:
Ensure healthy indoor air quality and comfort for patient & staff.

Renovations & New Construction:
Incorporate sustainability strategies in major renovations and new construction projects.
Energy Cost-Saving Measures

- Review and track your utility bills
  - Usage - Kw, kWh, Therms, not just costs

- Employ temperature set-back on HVAC
  - Use programmable thermostats
  - Express goals in service agreements

- Upgrade lighting
  - Consider fluorescents, CFL, and LED

- Behavioral
  - e.g., sleep mode on monitors, copiers, etc.

- Support renewable energy
  - Buy NC Green Power blocks, solar
  - [www.ncsc.ncsu.edu](http://www.ncsc.ncsu.edu)
## Example Energy-Saving Projects

<table>
<thead>
<tr>
<th>Area</th>
<th>Measure</th>
<th>Energy Savings</th>
<th>Payback Typical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>Upgrade old 4’ fluorescents</td>
<td>30-35%</td>
<td>3 years</td>
</tr>
<tr>
<td>HVAC</td>
<td>Programmable thermostats</td>
<td>10 -30%</td>
<td>&lt; 1 year</td>
</tr>
<tr>
<td>Envelope</td>
<td>Weatherstripping doors/windows</td>
<td>1-5 %</td>
<td>&lt; 3 months</td>
</tr>
<tr>
<td>Appliance</td>
<td>Choose Energy Star refrigerator</td>
<td>35%</td>
<td>1.3 years</td>
</tr>
</tbody>
</table>
What about Renewable Energy?

- Solar hot water - best applications
  - Pool heating
  - Food prep – preheat
  - Laundry – preheat
- Photovoltaics (PV)
- Leverage tax incentives
### Water Use – Health and Rehabilitation

**Costs of Water & Sewer**
$6.76 per 1000 gallons (NC avg)
Hot Water = 2 times water costs

**Water – Use Benchmarks**
95 gallon/day per resident (post 1995 renovations)
160 gallons/day per resident (pre-1995 renovation)
Water Efficiency

- Upgrade pre-1995 toilets
  - Consider high-efficiency toilets (HET, HEU) - look for WaterSense label (5 yr. payback)

- Install lavatory faucet aerators (3–month payback)
  - 0.5 gallons per minute (gpm)

- Use low-flow showerhead – 1.5 gpm (<1 year)

- Low flow – pre-rinse sprayers

- Eliminate once-thru water cooling of ice machines, autoclaves
Environmental Services

Housekeeping
- Cleaning and disinfecting chemicals
  - Review and reduce # of products
  - Bulk dispensing with recyclable containers
  - Biodegradable

Sanford Health and Rehabilitation Example
- Reduce cleaning chem: 5 to 2
- 5x reduction in weight
- Reduced shipments
- 2.5 times life of soap dispenser
Office Waste Reduction

- Sound waste management and minimization
  - Medical wastes

- Enhance recycling programs
  - Paper & shredded doc recycling
  - Plastics, metal
  - E-waste

- Reduce disposables

- Buy recycled
  - Look for recycled contents

- Smarter, cheaper, faster practices; e.g., EMR

- Buy Energy Star office equipment

- Buy Water Sense plumbing fixtures
Recycling Programs

- Expanding paper
- Plastic containers
- E-electronics, batteries
- Grease
- Others
- Composting project
Transportation and Travel

- Optimize scheduling – resident transport
- Buy, lease or rent highest MPG and cleanest vehicles
  - ULEV – Ultra-low emission vehicles
  - SULEV, Super-ultra-low emission vehicles
  - Alternative Fuel Vehicles – CNG, ethanol, & biodiesel
  - Hybrids
    - [www.fueleconomy.gov](http://www.fueleconomy.gov)
- Encourage staff carpooling programs
  - Support public transportation systems
  - Encourage biking or walking to work
  - Plan for showering facilities, bike racks, etc.
Procurement & Policies

- Office products
- Energy Star rated equipment
- WaterSense rated devices
- Green Seal labeled housekeeping products
- Food services
Food Services

- Vendor sourcing review
- Local emphasis on procurement
- Composting
Site and Grounds Ideas

- Stormwater, watering & irrigation
  - Rain gardens, cisterns, pond reuse

- Landscaping and plant
  - Native species, drought tolerant
Renovations and New Construction

- Integrated high-performance design considerations for sustainability

- LEED Building, Energy Star
  - Addressing all aspects of design, construction and operations.
  - 0% to +5% cost per sf

- Work with LEED accredited architects & green builders/contractors

- “Greenhouse” – design concepts

- [www.usgbc.org](http://www.usgbc.org)
Performance Improvements
Health & Comfort of the Indoor Environment

- Best HVAC controls for proper humidity, filtration and fresh air needs
- Use/require low-toxic, low-odor janitorial products
  - Use concentrated product dispensing system
  - Green Seal certified products
- Use/require low-VOC paints, carpets, etc.
## Resources – Save Time, Get Educated

<table>
<thead>
<tr>
<th>Category</th>
<th>Website</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health Care Focus</strong></td>
<td><a href="http://www.practicegreenhealth.org/">www.practicegreenhealth.org/</a> Practice Green Health</td>
<td>A-Z tools, resources, some fee based</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.gghc.org">www.gghc.org</a></td>
<td>BMPs, checklists, certifications</td>
</tr>
</tbody>
</table>
| **Best Environmental Resource Sites** | [www.p2pays.org](http://www.p2pays.org)  
NC Division of Pollution Prevention | Waste reduction resources, recycling directories |
|                                 | [www.wastereductionpartners.org](http://www.wastereductionpartners.org) Waste Reduction Partners | Facility resources, energy water, solid waste     |
| **New Facility Design**         | [www.wbdg.org/design/nursing_home.php](http://www.wbdg.org/design/nursing_home.php) Whole Building Design Guide | Nursing home design                               |
|                                 | [www.usgbc.org](http://www.usgbc.org)  
US Green Building Council       | LEED certifications                                |
|                                 | [www.ncsc.ncsu.edu](http://www.ncsc.ncsu.edu)  
NC Solar Center                | Renewables, design resources, AFV                 |
| **Financial Incentives**        | [www.dsireusa.org](http://www.dsireusa.org)  
Database of State Incentives | Compiled list of energy and green building incentives |
Getting Started:
Greening Your Organization

- Engage staff - select a lead
- Solicit ideas
- Develop a policy
- Identify the opportunities
  - Engage current vendors & service providers
  - Seek technical assistance
- Implementation
  - (no-cost, low-cost, capital projects)
Waste Reduction Partners
Dedicated Professionals Sharing Expertise

**Services:**
- Energy Auditing, Solid Waste Reduction, Water Efficiency, and Pollution Prevention Technical Assistance

**Approach:**
- Innovative, Efficient, Cost-Saving Strategies

**Staff:**
- Team of Retired Volunteers and Staff Engineers, Scientists, and Architects

**Clients:**
- Business, Industry, Institutions

**Service Area:**
- NC - Statewide

Confidential - Non-regulatory - No-cost services