



Green Guide for Health Care Newsletter

May 2008

Health Care's Role in Climate Change Mitigation

Highlights from CleanMed 2008

Green building presentations at CleanMed 2008 presented climate change as a central theme for health care. This, in part, reflects health care's national ranking as the second most energy-intensive commercial sector after food service. The summary below highlights the topics discussed. The presentation slides will be made available on the CleanMed website, <http://www.cleanmed.org>.

Design Strategies

- **The Integrated Design Process**, including integration with ongoing facility environmental programs, allows project teams to assess and integrate climate mitigation strategies across systems and across the life of the building.
- **Daylighting Design** often results in fundamental shifts in a project's footprint and massing by incorporating elements such as plan enclosed courtyards. These allow daylight to penetrate deep into all occupied areas of the building, including Diagnostic & Treatment.
- **Envelope Design and Building Orientation** are the first defense against excessive mechanical cooling loads resulting from unwanted solar heat gain. Building orientation should respond to regional climatic conditions, including targeted passive solar strategies where applicable; envelope systems should be designed to provide thermal comfort and enhanced energy performance. Commissioning programs should review envelope system performance to minimize mold growth.
- The **Roof** is a design resource for many climate change mitigation strategies, from vegetated roofs that reduce the heat island effect and curb stormwater runoff, to a surface to hold photovoltaic arrays, solar water heaters, and other on-site renewable energy sources.

Energy Efficiency

- Selecting **energy efficient equipment** for building systems and medical equipment is often a facility's first step towards reducing its carbon footprint. Many licensed facilities are not required to comply with the energy code and have therefore not upgraded to high efficiency equipment available for large institutional uses. In some cases, facilities have reduced their energy usage by 10-15% simply by installing high efficiency equipment. Download "A Prescriptive Path to Energy Efficiency Improvements in Hospitals" from the GGHC website (<http://www.gghc.org>) for more information on simple steps to achieve a minimum 14% reduction in energy usage independent of climate zone.
- An estimated 2/3 of all **water** used in acute care facilities is tied to mechanical systems and medical equipment (such as sterilizers). The process to treat potable water treatment is energy intensive – often appearing as a municipality's number one energy expenditure. All energy efficiency measures should incorporate water efficiency and re-use criteria, such as closed loop recirculating systems and non-potable water sources for cooling tower blowdown, where they do not conflict with infection control.
- **Research** into new technologies to reduce energy use in health care facilities is expanding the palette of potential strategies. For example, researchers are investigating reducing the number of air changes per hour currently required in exam rooms using wall-mounted displacement ventilation systems to determine whether this could reduce the energy requirement of those areas, possibly by as much as 30%.

Energy Procurement

- **On-Site Renewable Energy Installations** such as photovoltaic (PV) arrays, solar thermal technologies, and building-integrated wind turbines can offset a percentage of a health care facility's energy load. Combined technologies, such as adding water coils to PV installations to capture and reuse excess heat often produce multiple benefits, such as increasing the PV array's efficiency and lengthening its life.
- **Healthcare Clean Energy Exchange**, a reverse auction energy procurement program offered by Practice Greenhealth, establishes a competitive bidding process for energy packages ranging from 100% brown energy/0% green energy to 0% brown energy/100% green energy. The blind auction often results in a package that allows health care facilities to increase their percentage of green energy procurement without increasing their energy budget. <http://cms.h2e-online.org/material/110>
- **On-Site Combined Heat and Power Plants** can increase the efficiency of energy transmission from the industry average 35% efficiency rate to 75% by capturing and reusing the waste heat produced during energy generation and decreasing transmission losses.

Financing Climate Change Mitigation Practices

- **Federal, State, and Local Tax Credits** often target energy efficiency and renewable energy strategies. Non-profit health care institutions may consider teaming up with a for-profit partner that would benefit from the tax credit and pass an equivalent value to the health care provider. Helpful links: U.S. EPA Energy Star (<http://www.energystar.gov>), Database of State Incentives for Renewables & Efficiency (<http://www.dsireusa.org>).
- **Purchase Power Agreements and Long-Term Contracts** with utilities can improve sufficient life cycle return on investment (ROI) for some green technologies to provide the financial justification for them.
- Many health care organizations have begun reducing their carbon footprint in anticipation of a future mandatory **Cap and Trade** policy that would financially benefit energy efficient and carbon neutral facilities.

Resources

- *Addressing Climate Change in the Health Care Setting*, Health Care Without Harm and Practice Greenhealth. Email Janet Brown for a copy at jbrown@practicegreenhealth.org.
- EPA Energy Star Portfolio Manager allows facilities to track their carbon footprint, <http://www.energystar.gov>

News

1. Join us for the June Practice Greenhealth webinars:
Friday, June 13 (1-2:30 ET) Practice Greenhealth Design & Construction webinar: [How To Series: Sustainable Development & Community Engagement – Design & Construction](#).
Friday, June 27 (1-2:30 ET) [How To Series: Operations webinar: Sustainable Development & Community Engagement – Operations](#).
 A subscription is required to access the webinar series. Click [here](#) for more information.
2. Submit **public comments** on the **2008 Revision to the GGHC Operations Section! Deadline Extended to June 20, 2008.** The 2008 Revision represents the most significant update to the *Green Guide for Health Care Version 2.2 Operations* section to date. Log in to <http://www.gghc.org> to download the revised tool and submit comments.
3. **Purchase Sustainable Healthcare Architecture**, co-authored by Robin Gunther, FAIA, and Gail Vittori, LEED AP at Amazon.com. *AIArchitect* describes this newly released monograph on green building in health care as "a very important book."
4. Download the *Green Guide for Health Care's* report "**A Prescriptive Path to Energy Efficiency Improvements for Hospitals**": visit www.gghc.org, log in, and go to the Downloads section.
5. **Register your project with the *Green Guide for Health Care*!** Website registrants can register projects at no charge by logging onto www.gghc.org and following the prompts on the [Project](#) web page. Project registration is fast and easy and grants up to 14 project team members access to GGHC online tools such as checklists and a peer-to-peer Forum open only to *Green Guide* registered project teams.
6. **Support the *Green Guide for Health Care*!** Visit the [Supporters](#) section of the *Green Guide* website for information on how to support our work. All donations to the *Green Guide* are tax deductible to the fullest extent of the law.