



**Green Guidelines
for Healthcare Construction**


Turning Green Into Gold
High Performance & Sustainable Healthcare Facilities

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FDA Warns Mercury in Tuna Harms Fetal Development

Increasing Childhood Asthma Rates Linked to Ambient Air Quality

Bill To Help Thousands Exposed to 9/11 Dust Plume



environmental health
overview



Building materials & designs impact health

Occupants - Patients, Staff & Visitors

Engineered wood, insulation, carpet, resilient floor

- phthalates, formaldehyde, VOCs (volatile organic compounds)
- asthma, cancer, endocrine disruption



environmental health
overview



Building materials & designs impact health

Local Community

Paint, fuels, roof coatings

- particulates and more VOCs
- smog, more bronchial problems



environmental health
overview



Building materials & designs impact health

Global community

PVC manufacture & disposal

- dioxin
- Persistent
- Bioaccumulative
- Toxic chemicals
- cancer
- birth defects



environmental health
overview



Healthcare's primary mission to protect health = sustainability

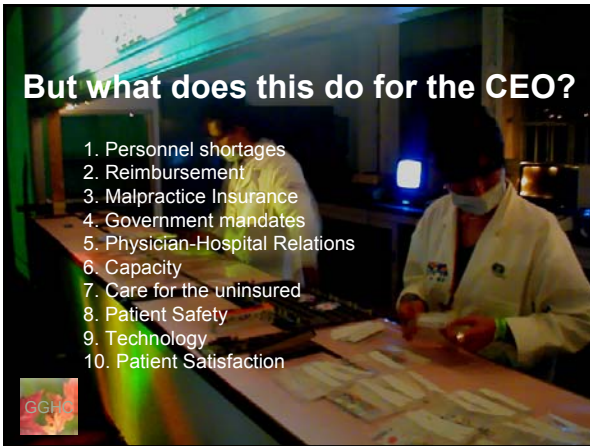

Design & operation of our facilities = opportunities for improvement




environmental health
overview

But what does this do for the CEO?


1. Personnel shortages
2. Reimbursement
3. Malpractice Insurance
4. Government mandates
5. Physician-Hospital Relations
6. Capacity
7. Care for the uninsured
8. Patient Safety
9. Technology
10. Patient Satisfaction

2001 ASHE Green Healthcare Construction Guidance Statement

- 1 Protect the immediate health of building **occupants**.
- 2 Protect the health of the surrounding **local community**.
- 3 Protect the health of the **global community** and natural resources.






strategies
overview





How green is my facility?

benchmark


strategies
overview


Convened by **Center for Maximum Potential Building Systems**




Sponsored by **ASHE**



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strategies
overview



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strategies
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strategies
overview





The H2E is a voluntary program designed to help health care facilities enhance work place safety, reduce waste and waste disposal costs and become better environmental stewards and neighbors.

5 **Operational** issue, such as mercury elimination, have defined industry's environmental stewardship



operational attributes

overview

6 Construction frequently occurs **adjacent to occupied buildings** (where health is fragile, or steadiness of hand required)

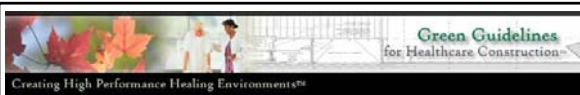
7 Infection Control Risk Assessment (**ICRA**) protocols to minimize the impacts of construction on occupants demonstrate leadership to the wider sustainable building industry

8 Healthcare **construction managers** can evolve a rigorous, sustainable set of practices for the healthcare industry that may inform wider construction practice



construction attributes

overview

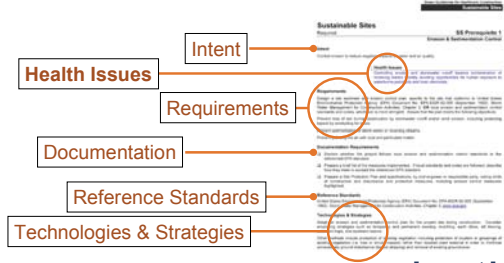


| Section | PreReqs - Points |
|--------------------------------------|------------------|
| 1 – Integrated Design and Operations | 4 - 0 |
| 2 – Sustainable Sites | 1 - 20 |
| 3 – Water Efficiency | 1 - 12 |
| 4 – Energy & Atmosphere | 3 - 22 |
| 5 – Materials & Resources | 2 - 25 |
| 6 – Indoor Environmental Quality | 4 - 23 |
| 7 – Innovation | 0 - 4 |



organization

overview

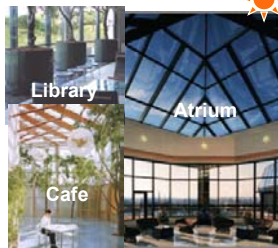


organization

overview

Credit 9 Connection to the Natural World

Establish 5% of the building program as programmed **places of respite** easily accessible to patients, visitors, and staff. Provide at least one place of respite dedicated to staff and separate from patients and visitors.



sustainable sites

Credit 8: Medical Equipment

Use **Energy Star® qualified products** or equipment in the top 25th percentile for at least 75% of new equipment that is not building systems related, and at least 30% of all such equipment.



energy & atmosphere

**Prereq 2:
Mercury Elimination**

Switches, thermostats, gauges



Low-mercury lamps

Medical devices

Dental amalgam separators

Demolition protocol



**prerequisite
materials & resources**

**Credit 8.1: PBT Elimination -
Dioxin (1):**
Reduce PBT's associated with
building materials

**Persistent
Bioaccumulative
Toxins**

PVC is a major
source of dioxins

Avoid cement from
kilns fired with
hazardous waste



materials & resources



**Credit 9.1: Medical Waste
Reduction (1):**

Reduce solid waste disposal in
landfills and incinerators

Reduce total waste volume by
33% below 1998 volumes.

Utilize alternative waste
treatment technologies to
reduce reliance on
incineration.

Waste management plan



Recycle

Reduce use of
disposables

Reduce packaging



materials & resources

**Credit 3: Construction IAQ
Management Plan (2):**

During construction and before
occupancy

3.1 During construction:
IAQ management plan.

3.2 After construction:
2-week minimum flush out
OR
Baseline IAQ testing procedure



JCAHO outline
for IAQ
Management
Plans

ICRA protocols



environmental quality

"Healing
Potential?"



Credit 8: Daylight and Views (3):
Provide occupants with connection
between indoor spaces and the outdoors.

8.1 2% **daylight** factor -
- In 75% of Nursing units
- Surgical units
(excluding ORS)
-and D&T areas

8.2 **Views** in all the the above



environmental quality

**Architects
Engineers
Interior Designers
Builders &
Contractors**

Integrated design process

**Facility managers
Administrators
Medical Staff
Patients**

winning
solutions

**Group
purchasing
organizations,
Support services**



integrated design & operations

**DO Prerequisite 1:
Integrated Design Process**

Use **cross discipline decision making**
starting early in the design process &
continuing throughout to maximize
interrelationships between systems.



Creating High Performance Healing Environments™

- Prereq 1 Erosion & Sedimentation Control
- Credit 1 Site Selection
- Credit 2 Urban Redevelopment
- Credit 3 Brownfield Redevelopment
- Credit 4.1 Alternative Transportation, Public Transportation Access
- Credit 4.2 Alternative Transportation, Bicycle Storage & Changing Rooms
- Credit 4.3 Alternative Transportation, Alternative Fuel Refueling Stations
- Credit 4.4 Alternative Transportation, Parking Capacity



organization
overview



Creating High Performance Healing Environments™

self-certifying

| |
|-----------------------------|
| Points: 106 possible |
| 80 Platinum |
| 60 Gold |
| 50 Silver |
| 40 Basic |



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GGHC Public Comment Draft
Released December, 2003
Version 1.0 anticipated Summer 2004



process
overview



Creating High Performance Healing Environments™

Green Guidelines for Healthcare Construction



www.gghc.org



Download the public comment draft now
Register for version 1.0 release this summer

