



October 2008 *Green Guide for Health Care* Quarterly Report

Introduction

The *Green Guide for Health Care* is the health care sector's first quantifiable sustainable design toolkit integrating enhanced environmental and health principles and best practices into the planning, design, construction, operations and maintenance of their facilities. Designers, owners, and operators can use this voluntary, self-certifying toolkit to guide and evaluate their progress towards high performance healing environments. In addition, the *Green Guide* provides industry education on tool use and best practices, and engages in research to remove barriers and advance action. Through website and project registrations, the *Green Guide* has built a learning community for the health care sector to accelerate a leadership position in green building and operations informed by human health considerations.

The *Green Guide's* structure is based on an organizational framework borrowed by agreement from the U.S. Green Building Council's LEED® (Leadership in Energy and Environmental Design) Green Building Rating System. While the *Green Guide* uses a credit and point system defined by specific, verifiable design and technology strategies, its goal is market transformation through education in and implementation of best practices. The *Green Guide* serves as a voluntary educational guide to support sustainable design, construction, and operations practices, encourages continuous improvement in the health care sector, and provides market signals to catalyze a diverse palette of strategies.

The *Green Guide for Health Care* is a joint project of the Center for Maximum Potential Building Systems and Health Care Without Harm. Its sponsors are Merck Family Fund, Practice Greenhealth, New York State Energy Research and Development Authority (NYSERDA), Pacific Gas & Electric (PG&E), and Southern California Edison (SCE).

Overview: 2008

This year, the *Green Guide's* steady growth continued as measured by two indicators: new website registrants and new registered projects. While the national economic downturn beginning in Second and Third Quarter 2008 will likely slow health care construction for a period of time, financial worries have contributed to the health care

sector's heightened interest in the financial benefits associated with sustainable planning, design, construction, and facilities operations. Benefits include reduced operating costs (e.g., energy and water efficiency, waste reduction), increased staff retention, and increased market share.

The *Green Guide* also continued its collaboration with Practice Greenhealth on educational initiatives such as the monthly webinar series. These webinars now offer continuing education credit through the American Institute of Architects, an added value to the design professionals who make up a large proportion of their audience. Other professional organizations' continuing education credits are planned to be offered in the future.

A significant focus in 2008 has been revising the *Green Guide's Operations* section. A fourteen-person volunteer *Operations* Section Review Committee representing facilities managers, engineers, architects, landscape architects, environmental non-profits, and government agencies, supported by a dedicated group of content experts, reviewed every credit in the *Operations* section for relevance, timeliness, and achievability. The resulting expanded section—from 72 points under GGHC v2.2 to 119 points under the 2008 Revision—reflects the emerging priorities in health care operations and maintenance such as facility emissions reporting; integrated pest management; sustainable food service departments; and, multi-attribute, environmentally preferable purchasing policies. The revised *Operations* section is currently under public comment review and is anticipated to launch in fourth quarter 2008.

With the launch of the 2008 Revised GGHC *Operations* section, both the *Green Guide's Construction and Operations* sections will have been revised in response to its Version 2 Pilot. Building on those compelling precedents, the *Green Guide* is now positioned to develop the next generation tool, conscious of other emerging tools in the marketplace, including LEED for Healthcare (still in development) and other organizations developing other tools.

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Green Guide for Health Care Website Registrants

As a testament to the internet's effectiveness as a fundamental communications medium, the *Green Guide* has built a global online community over 22,000 strong and growing (Figure 3). Over the first three quarters of 2008, the pace of website registration averaged more than 550 per month. The *Green Guide's* international reach has expanded to 113 countries, and includes every state in the U.S. (Figure 2) and every province in Canada (Figure 1).

The following list provides examples of the *Green Guide's* international breadth:

- | | |
|--------------------|----------------|
| ARGENTINA | INDONESIA |
| AUSTRALIA | IRAQ |
| BAHRAIN | IRELAND |
| BANGLADESH | ITALY |
| BELGIUM | JAPAN |
| BRAZIL | KENYA |
| CANADA | LITHUANIA |
| CHILE | MEXICO |
| CHINA | NIGERIA |
| COLOMBIA | PAKISTAN |
| DENMARK | SAUDI ARABIA |
| DOMINICAN REPUBLIC | SINGAPORE |
| EGYPT | SOUTH AFRICA |
| FRANCE | SOUTH KOREA |
| GERMANY | TURKEY |
| INDIA | UNITED KINGDOM |

Figure 1: Green Guide Website Registrants in Canada

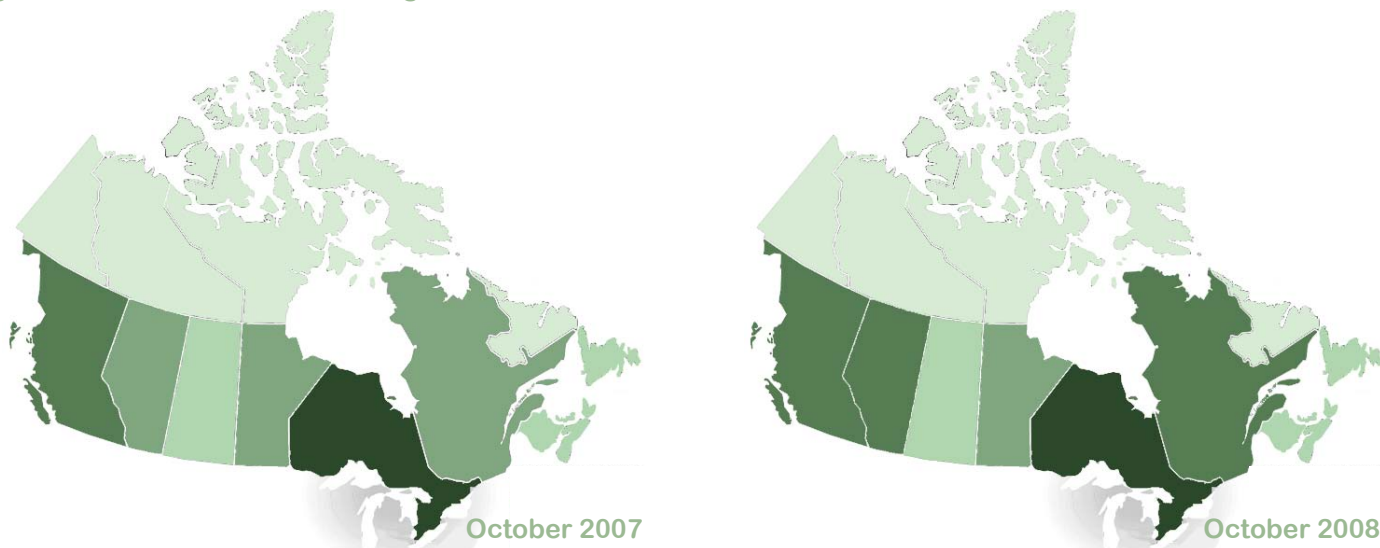
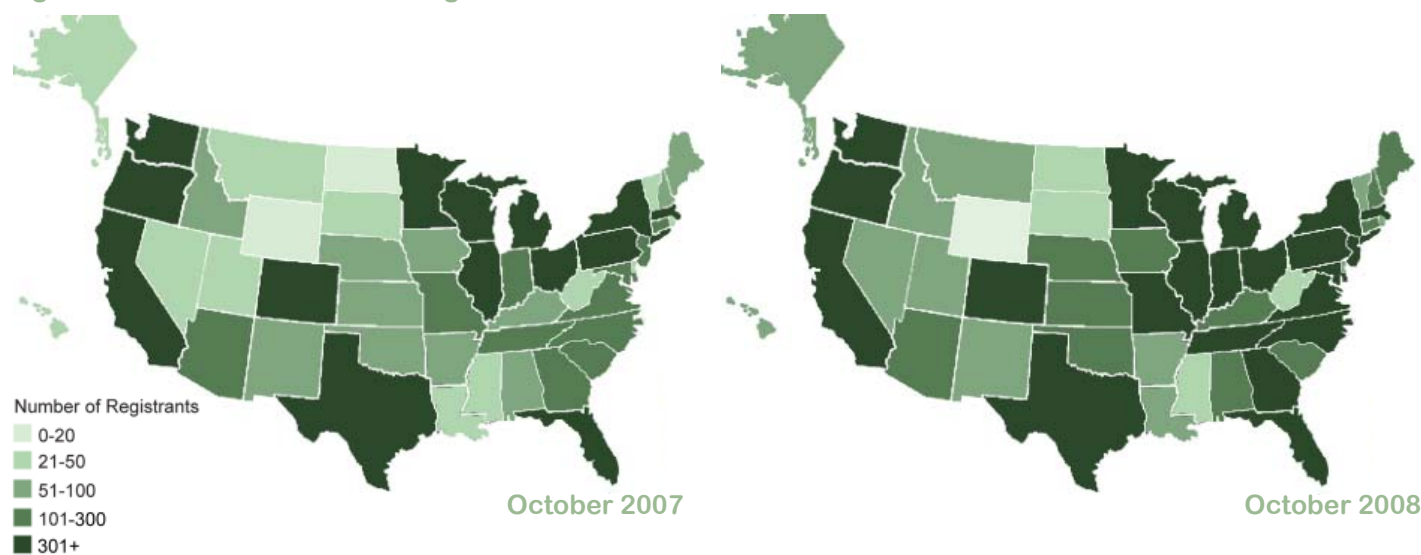


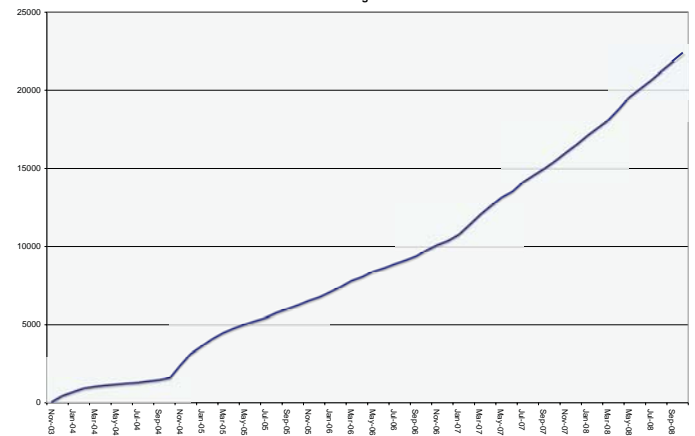
Figure 2: Green Guide Website Registrants in the U.S.



Benefits of Website Registration

Green Guide website registrants can access a free, downloadable copy of the *Green Guide*, an archive of the *Green Guide's* e-newsletter, an Events calendar that posts *Green Guide* and related educational events, and the ability to register projects. Occasionally, *Green Guide* website registrants participate in polls that measure current priorities in the green health care market. The continuous and rapid growth of the *Green Guide's* online community demonstrates the health care sector's desire for education and green building tools tailored to the unique challenges of health care construction, emphasizing a healing environment for patients and staff, and regional and global environmental health considerations.

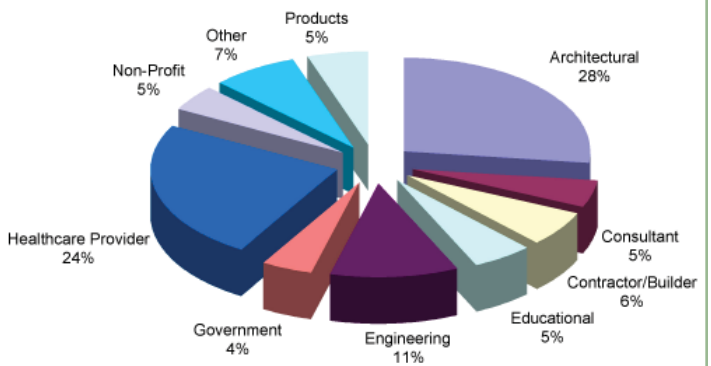
Figure 3: Green Guide Website Registrant Growth



Green Guide Website Registrant Affiliations

The *Green Guide* community is strengthened by its diversity (Figure 4). While design professions dominate, health care providers represent almost one quarter of the total. The *Green Guide's* recognition of emerging innovative technologies has prompted the educational and product manufacturing sectors to take notice and share their knowledge and experience through public comments and email correspondence.

Figure 4: GGHC Website Registrant Affiliations



Green Guide Registered Project Green Leaders

Owners' representatives represent roughly one quarter of website registrants leading *Green Guide* registered projects (Figure 5). However, when broken down into project type (e.g., new construction, addition) a larger percent of owners' representatives identify themselves as the sustainability project lead in sustainable operations and renovation projects (Figure 6).

Figure 5: GGHC Registered Project Green Leaders

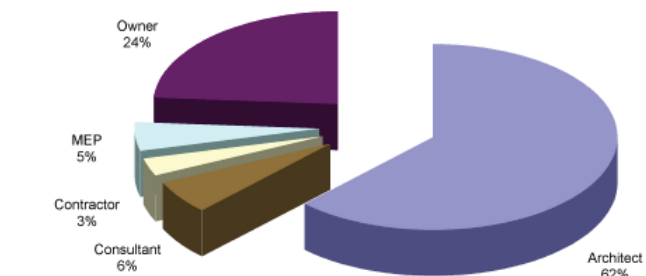
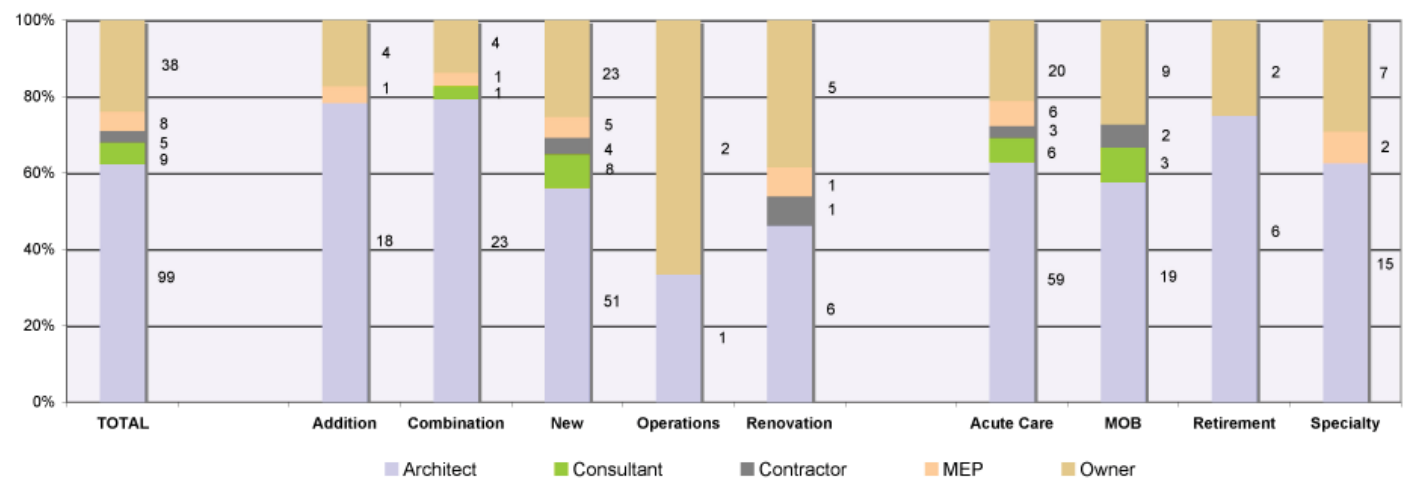


Figure 6: GGHC Green Leaders by Project Type and Facility Type



Green Guide Registered Projects

By the Numbers

- 159** Registered projects
- 39** Million square feet of construction
- 36** U.S. states
- 5** Canadian provinces
- 7** Other countries: China, Guatemala, Malaysia, Philippines, Poland, Portugal, South Africa

- 37** Average *Construction* points pursued (up from 32 in October 2007)
- 19** Average *Operations* points pursued (up from 16 in October 2007)

Green Guide 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 free, fast and easy and grants up to 14 team members access to Green Guide online tools such as checklists and the peer-to-peer Green Guide Forum open only to Green Guide registered project teams.

As of October 2008, 159 projects are registered with the Green Guide (Figure 7), representing 39 million square feet of construction in 36 U.S. states, 5 Canadian provinces, and 7 other countries (Figure 8). U.S. regions hosting a critical mass of registered projects are creating a context for innovation and exemplary performance in the health care community (Figure 9). The project registration program has provided the opportunity for the Green Guide to collaborate with a broad cross-section of leading health care institutions—from seasoned trendsetters in green design and operations to newcomers.

The Green Guide's flexible structure continues to accommodate all sizes of projects, from small renovations to major replacement facilities and operations (Figure 10). The scope of the smallest Green Guide project is 1,900 square feet; the largest, over 3 million square feet. But, the majority (56 projects, or 40% of the total) continue to fall between 100,000 and 500,000 square feet.

Figure 7: GGHC Registered Project Growth

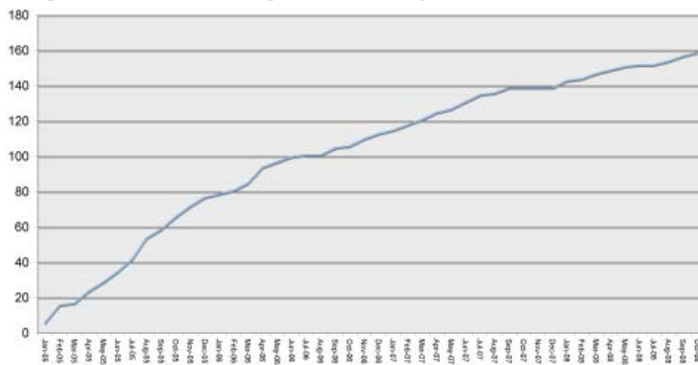


Figure 8: GGHC Registered Project Geographic Distribution



NASA ESIP funded project
(Image Source: Mission to Planet Earth Education Series)

Figure 9: Green Guide Project Regional Distribution

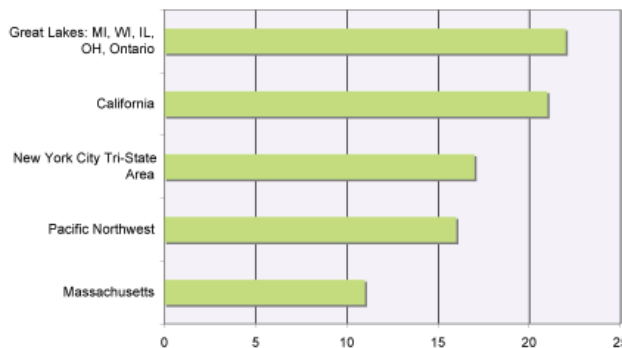
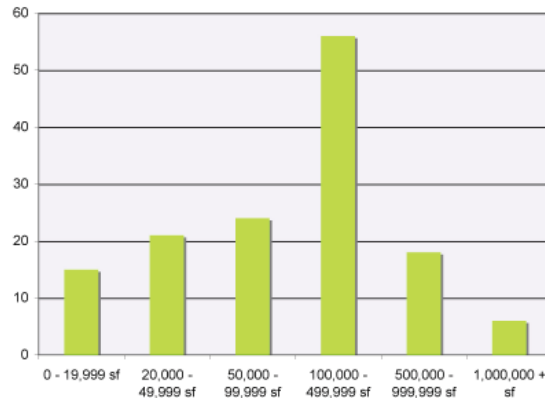


Figure 10: Green Guide Registered Project Size



Continuing past trends, the majority of *Green Guide* registered projects are acute care facilities (59% by number) and new construction projects (57% by number) (Figure 11). However, the other facility categories (medical office buildings, specialty facilities, and retirement) continue to grow. Additions, renovations, and combination construction projects (e.g., a mix of new construction, addition, and/or renovation) also continue to use the *Green Guide* and register new projects.

Green Guide Registered Project Credit Achievement

Forty percent of projects registered with the *Green Guide Construction* section anticipate achieving a percentage of points equivalent to LEED certified and above (Figure 12). 20% of projects registered with the *Green Guide Operations* section anticipate a similar achievement level.

Despite the large number of new, acute care projects registered with the *Green Guide*, this grouping of facility type and construction type does not ensure attaining the highest point totals (Figure 13). On average, combination projects (e.g., a mix of new construction, renovation, and/or addition) have achieved the highest point totals using the *Green Guide's Construction* section, while additions have fallen slightly behind the others (e.g., new construction, renovation, and combination). Although the *Green Guide* is tailored to acute care facilities, medical office buildings and retirement facilities have reached equivalent levels of achievement using the *Construction* section. For the *Operations* section, renovations showed the strongest performance in the construction type category; specialty hospitals showed the best performance of all facility types.

Figure 11: GGHC Registered Projects: Breakdown of Construction Type and Facility Type by Number

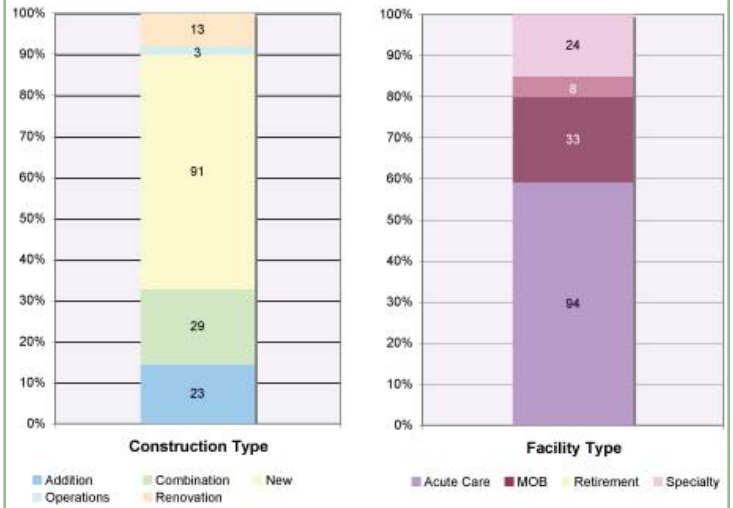


Figure 12: GGHC Registered Project Credit Achievements

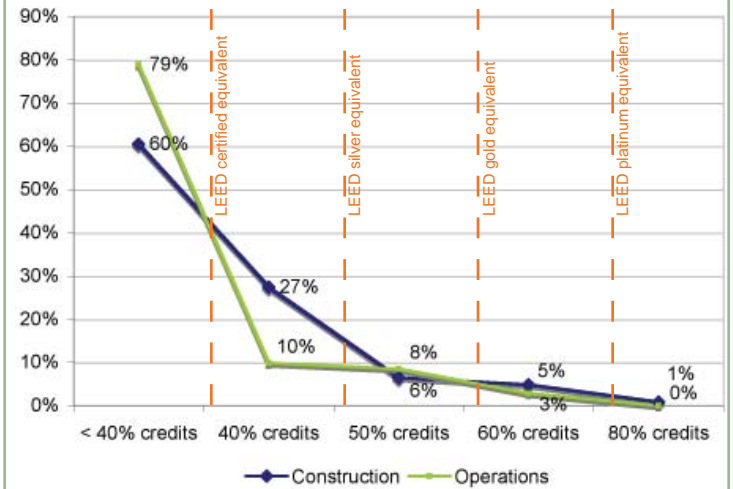
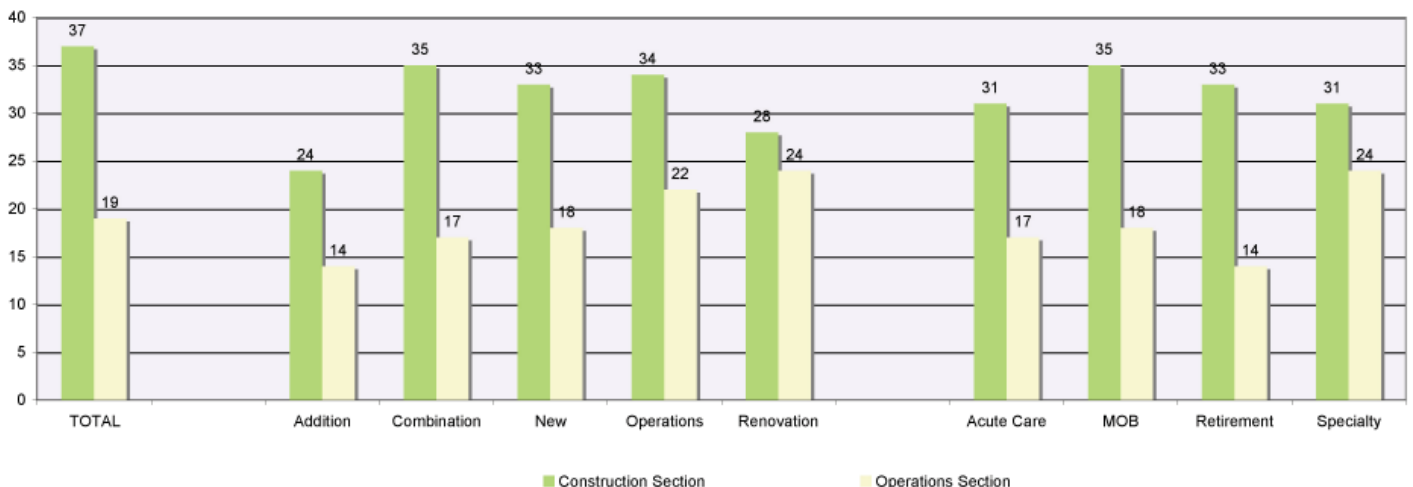


Figure 13: GGHC Ave Credit Achievement by Construction Type and Facility Type



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The profile of average credit achievement in new construction and a combination of project types most closely follows the average credit profile of all projects (Figure 14 & Figure 15), with Sustainable Sites, Materials & Resources, and Environmental Quality boasting the highest achievement levels.

Acute care and specialty hospitals, the most energy intensive and highly regulated of the facility types, lag behind medical office buildings and retirement in Energy & Atmosphere and Environmental Quality, while retirement lags behind in Materials & Resources. The Water Efficiency section has proved difficult for all facility types—averaging two points out of six possible across the board. Retirement facilities have excelled in the Energy & Atmosphere category, possibly reflecting their less intensive energy needs and smaller footprint. Medical office buildings, in contrast,

have concentrated their effort in the Materials & Resources and Environmental Quality sections. Many medical office buildings encounter less regulatory barriers to achieving LEED for New Construction certification than the acute care and specialty hospital projects. In fact, many are cross-registered with both the Green Guide and LEED. Targeting third party certification using LEED for New Construction, these projects often register with the Green Guide to take advantage of its health-based credits that go beyond LEED requirements, especially in the Materials & Resources and Environmental Quality sections.

The Integrated Design section is not included in these graphs, because it is limited to Prerequisites encouraging projects to establish a structured integrated design process and a health issues statement in the project's design intent document.

Figure 14: GGHC Average Credit Breakdown: Construction Type

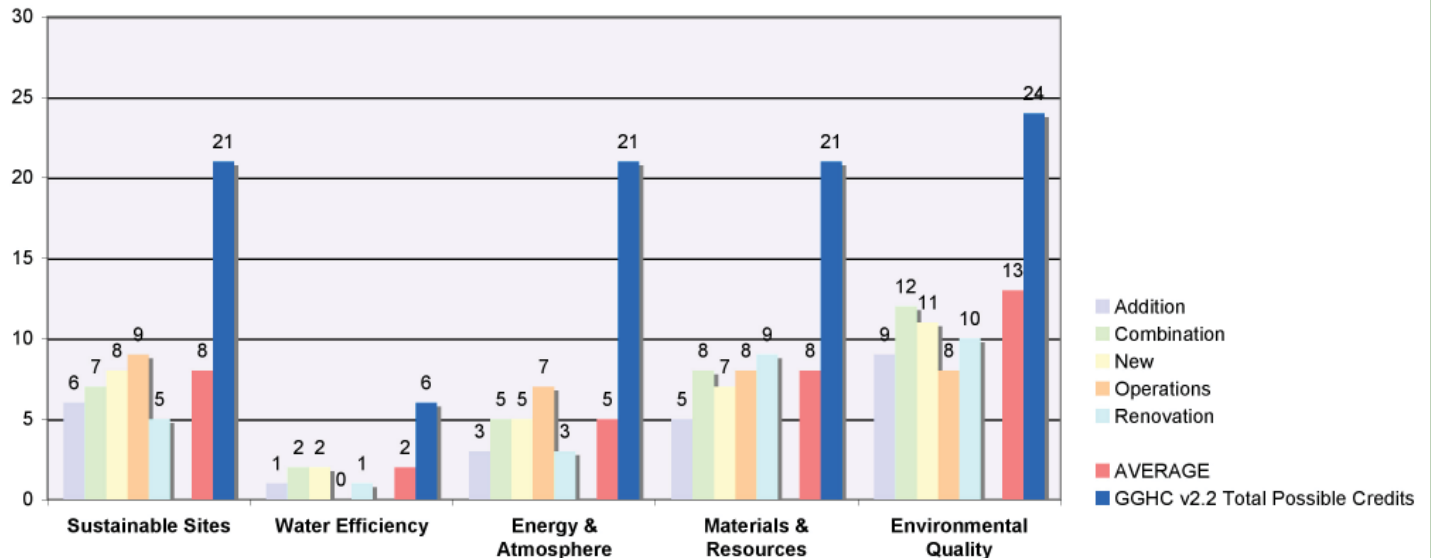
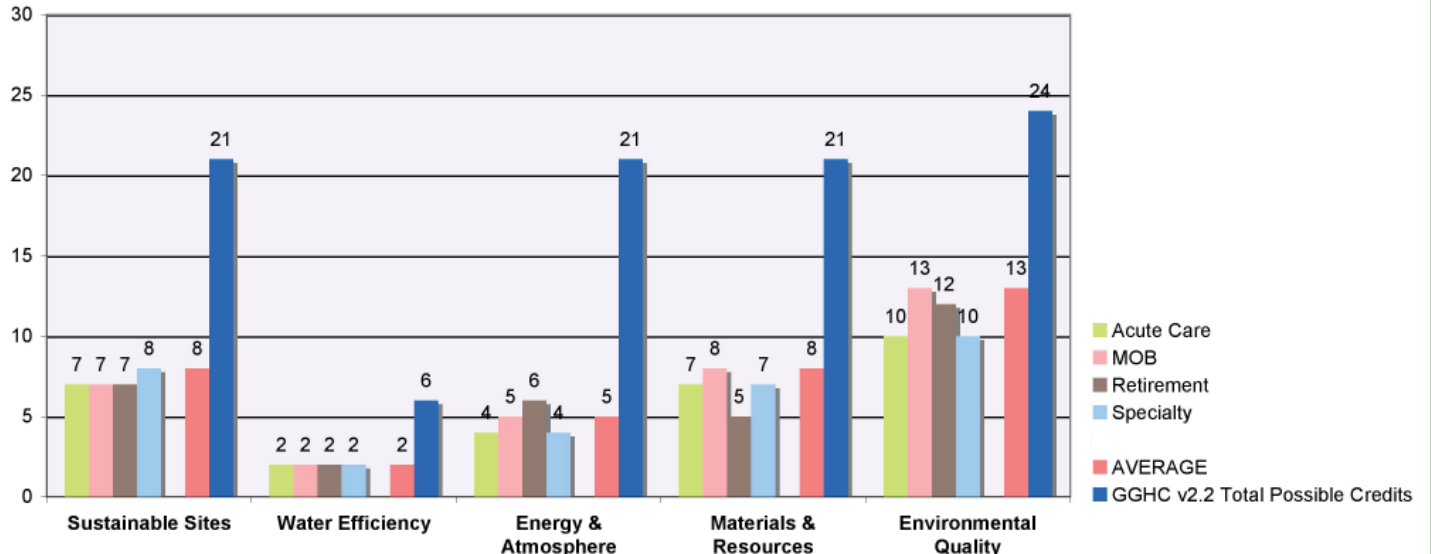


Figure 15: GGHC Average Credit Breakdown: Facility Type



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Green Guide Public Registered Projects as of October 2008

Note: The Green Guide only releases the names of projects granting permission.

ARIZONA

Phoenix Children's Hospital, Phoenix, AZ
San Carlos Alternative Rural Health Care Center, Peridot, AZ

CALIFORNIA

Highland Hospital, Oakland, CA
Kaiser Permanente Modesto Medical Center, Modesto, CA
La Maestra Community Health Center, San Diego, CA
Palomar Pomerado Health, San Diego, CA
Santa Barbara Cottage Hospital, Santa Barbara, CA
Veterans Homes of California, West Los Angeles, CA
Veterans Homes of California, Ventura, CA
Washington Hospital, Fremont, CA

COLORADO

Denver Health Medical Center, Denver, CO
Longmont United Hospital, Longmont, CO
Grand River Medical Center, Rifle CO

CONNECTICUT

MidState Medical Center, Meriden, CT

IDAHO

Boise Medical Center, Boise, ID
Saint Luke's Magic Valley Regional Medical Center,
Twin Falls, ID

ILLINOIS

Rush University Medical Campus, Chicago, IL

IOWA

Jefferson County Hospital, Fairfield, IA

INDIANA

Indianapolis Community Hospital South, Indianapolis, IN
Saint Joseph's Regional Medical Center, South Bend, IN

MAINE

Orthopaedic Associates Windham Clinic, Windham, ME

MASSACHUSETTS

Beverly Hospital, Beverly, MA
Brigham and Women's Hospital, Boston, MA
Children's Hospital, Boston, MA
Dana-Farber Center for Cancer Care, Boston, MA
Spaulding Rehabilitation Hospital, Boston, MA

MICHIGAN

Metropolitan Hospital, Grand Rapids, MI

MINNESOTA

Maple Grove Hospital, Maple Grove, MN

NEVADA

Ft. McDermitt Health Station, Ft. McDermitt, NV

NEW JERSEY

Hackensack University Medical Center Gabrellian
Women's and Children's Pavilion, Hackensack, NJ
Holy Name Hospital, Teaneck, NJ
Morristown Memorial Hospital, Morristown, NJ

NEW YORK

Bedford Stuyvesant Family Health Center, Brooklyn, NY
New York Presbyterian Hospital, New York, NY
Risk Reduction Institute of Brooklyn, Brooklyn, NY

OHIO

The Christ Hospital, Cincinnati, OH
Salem Community Hospital, Salem, OH

OKLAHOMA

Muskogee Community Hospital, Muskogee, OK
Saint John Owasso Hospital, Owasso, OK

OREGON

Donald Dexter Dental Clinic, Eugene, OR
Oregon Health & Science University Patient Care Facility,
Portland, OR
Salem Hospital, Salem, OR
Wellspring Medical Center, Woodburn, OR

PENNSYLVANIA

Saint Luke's Riverside, Bethlehem, PA

TENNESSEE

Bon Aqua Health Care, Bon Aqua, TN

TEXAS

Christus St. Catherine Hospital, Katy, TX
Dell Children's Medical Center of Central Texas, Austin, TX

VIRGINIA

Kaiser Permanented Manassas Medical Center, Manassas, VA

WASHINGTON

Saint Anthony's Hospital, Gig Harbor, WA

WISCONSIN

Amery Regional Medical Center, Amery, WI

VARIOUS LOCATIONS

US Department of Health and Human Services Critical Access
Hospital Prototype (200 nationwide)

INTERNATIONAL

BHCI Birthing Home, Zamboanga City, the Philippines
Casa de Saude, Portugal (various locations)
CSSS de la Montagne, Montréal, Quebec, Canada
McGill University Health Centre, Montréal,
Quebec, Canada
Peace Country Regional Health Centre, Grand Prairie,
Alberta, CA
Khayelitsha District Hospital, Western Cape, South Africa