#37 **HARPER CONSTRUCTION CO. INC.** has 98% of its projects registered for green certification because the bulk of the firm's work is for the U.S. Navy.

RANK 2011		ACC. STAFF	2010 GREEN REVENUE IN $ MIL.	2010 GREEN REVENUE % OF TOTAL REVENUE	RETAIL / OFFICE	GOVERNMENT OFFICE	EDUCATION	HEALTH CARE	HOTEL	MULTI-RESIDENTIAL	SPORTS / ENT. / CIVIC	OTHER BUILDINGS	OTHER MARKETS
36	**THE YATES COS. INC.,** Philadelphia, Miss.	90	355.4	28	3	23	19	13	0	22	0	19	0
37	**HARPER CONSTRUCTION CO. INC.,** San Diego, Calif.	9	353.5	98	0	24	4	0	0	72	0	0	0
38	**LAYTON CONSTRUCTION CO. INC.,** Sandy, Utah	25	332.2	48	3	0	27	23	42	0	5	0	0

The Top 100 Green Contractors

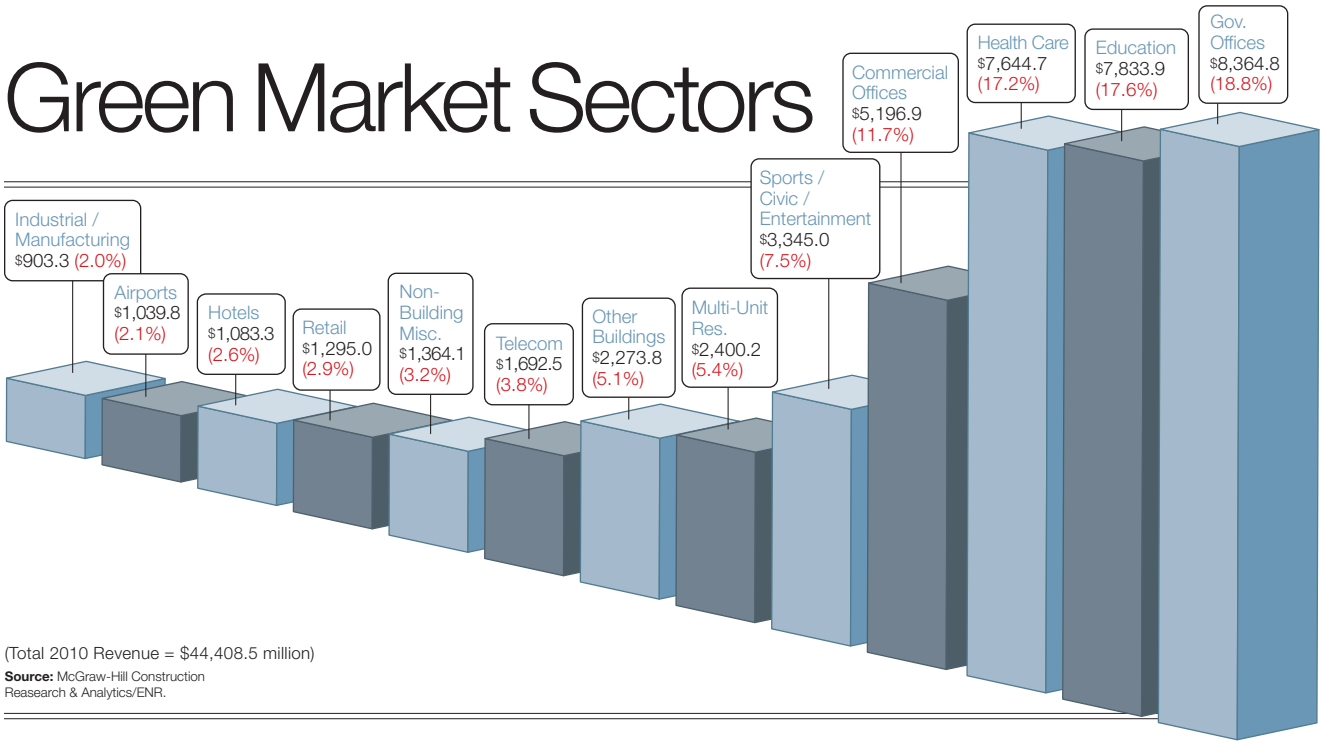
#47 **FORRESTER CONSTRUCTION** built the 25,000-sq-ft Robinson Nature Center in Columbia, Md., a LEED Platinum building, which opened on September 10, 2011.

Public Construction and Sustainable-Building Laws Push Green Contracting Ahead

By Gary J. Tulacz

The industry has taken a beating in the past three years, as the recession stubbornly refuses to fade. However, there seems to be no loss of interest in sustainable construction. Even as the buildings sector struggles on the private-sector side, those owners that are green-lighting projects, primarily in the public sector, continue to build in a sustainable manner. Furthermore, many owners are not merely paying lip service to sustainable construction—they are pushing the envelope of how environmentally friendly a building can be.

Green Market Sectors



(Total 2010 Revenue = $44,408.5 million)

Source: McGraw-Hill Construction Reasearch & Analytics/ENR.

Evidence of the increasing interest in green construction can be seen in the numbers from ENR's Top 100 Green Contractors list. As a group, the Top 100 generated $44.41 billion in contracting revenue in 2010 from projects registered with, and actively seeking certification from, third-party ratings groups under objective sustainable-design standards, such as the U.S. Green Building Council's Leadership in Energy and Environmental Design standards. This revenue is a 3.2% increase over $43.05 billion in 2009 for the group. Domestically, green contracting revenue rose 3.3%, to $42.68 billion in 2010 from $41.31 billion in 2009. The Top 100 had $1.73 billion in revenue from green projects outside the U.S. in 2010, down 0.9% from $1.74 billion in 2009.

As a measure of the green market's penetration of the overall buildings sector, the Top 100's revenue from green contracting represented 38.8% of the group's total contracting revenue in 2010. This percentage is a significant rise from 33.6% in 2009.

These high percentages are a reflection of the increasing interest in many sectors of green building. One of the biggest reasons for the increase is that the public sector, particularly federal work, where green building is often mandated by laws and regulations, has been strong. On the other hand, the private sector, where green is not as prevalent, is down.

One of the biggest beneficiaries of the trend in the public sector is Harper Construction, which had more than 98% of its revenue come from projects registered with green certification groups. "It is the nature of our market that resulted in [the firm having] such a high percentage," says Jeff Harper, president. He points out that, currently, most of the firm's work is for the U.S. Navy, particularly at Camp Pendleton in Southern California, and the U.S. Army at Fort Sill, Okla., both of which now require certification from the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program.

"Design-build ... gives [contractors] the opportunity to do more than just the bare minimum to comply with green standards."

Jeff Harper, President, Harper Construction

"The military used to self-certify, but now they are requiring LEED Silver at minimum. And now the Navy plans to require LEED Gold in 2013," Harper says. "We have 14 projects going for LEED Platinum," including barracks projects for the military.

However, Harper Construction is doing other public-sector work. "We are doing a lot of work for the Los Angeles Community College District, which passed a massive bond issue a few years ago," Harper says. He also notes that many of the firm's private-sector customers are asking for LEED.

Perhaps no contractor is more experienced in green building than Turner Construction, the No. 1 contractor on the ENR Green Contractors list for the fourth consecutive year. On July 19, it announced that Yale University Health Center in New Haven, Conn., was the 200th Turner project to win LEED certification. "Despite the recession, green building continues to grow, to be something everybody asks for in their project," says Michael Deane, Turner's vice president and chief sustainability officer. He says that 57% of Turner's sales are going for LEED certification.

Sustainable construction is going mainstream, cutting across markets. "Two years ago, 90% of LEED projects were in the commercial, educational, health-

#1 **TURNER CONSTRUCTION** topped the Green Contractors list for the fourth straight year. It also had the most LEED-accredited employees.

The Top 5 by Sector

COMMERCIAL OFFICES

RANK	FIRM	$ MIL. REVENUE
1	THE TURNER CORP.	461.5
2	MORTENSON CONSTRUCTION	387.3
3	DAVID E. HARVEY BUILDERS INC.	350.0
4	STRUCTURE TONE	341.5
5	CLAYCO INC.	336.0

EDUCATIONAL FACILITIES

RANK	FIRM	$ MIL. REVENUE
1	THE TURNER CORP.	1,157.3
2	GILBANE BUILDING CO.	795.4
3	THE WHITING-TURNER CONTRACTING CO.	440.4
4	SKANSKA USA	322.8
5	HENSEL PHELPS CONSTRUCTION CO.	294.6

GOVERNMENT OFFICES

RANK	FIRM	$ MIL. REVENUE
1	HENSEL PHELPS CONSTRUCTION CO.	1,134.5
2	CLARK GROUP	1,000.8
3	B.L. HARBERT INTERNATIONAL LLC	563.2
4	MANHATTAN CONSTRUCTION GROUP	524.7
5	THE TURNER CORP.	393.0

HEALTH CARE

RANK	FIRM	$ MIL. REVENUE
1	THE TURNER CORP.	1,016.1
2	GILBANE BUILDING CO.	900.4
3	CLARK GROUP	738.6
4	SKANSKA USA	456.0
5	PCL CONSTRUCTION ENTERPRISES INC.	268.4

MANUFACTURING & INDUSTRIAL

RANK	FIRM	$ MIL. REVENUE
1	THE TURNER CORP.	299.4
2	HASKELL	168.9
3	GRAY CONSTRUCTION	96.9
4	GILBANE BUILDING CO.	83.3
5	DPR CONSTRUCTION INC.	58.3

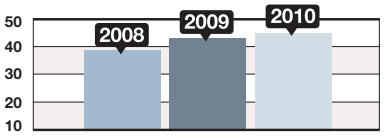
MULTI-UNIT RESIDENTIAL

RANK	FIRM	$ MIL. REVENUE
1	LEND LEASE	448.6
2	HARPER CONSTRUCTION CO. INC.	253.2
3	THE WALSH GROUP LTD.	242.4
4	BALFOUR BEATTY US	115.4
5	CLARK GROUP	113.1

SPORTS, ENTERTAINMENT & CIVIC

RANK	FIRM	$ MIL. REVENUE
1	TUTOR PERINI CORP.	1,366.3
2	HUNT CONSTRUCTION GROUP	432.0
3	MORTENSON CONSTRUCTION	323.8
4	WEBCOR BUILDERS	126.5
5	PCL CONSTRUCTION ENTERPRISES INC.	117.5

GREEN CONTRACTOR REVENUE $ BIL.



Source: McGraw-Hill Construction Reasearch & Analytics/ENR.

RETAIL

RANK	FIRM	$ MIL. REVENUE
1	PCL CONSTRUCTION ENTERPRISES INC.	478.3
2	JACOBSEN CONSTRUCTION CO. INC.	195.0
3	OHL USA INC.	162.0
4	SHAWMUT DESIGN AND CONSTRUCTION	124.1
5	BNBUILDERS	65.0

care and government markets," says Deane. But he says that markets such as sports arenas, airport terminals and even data centers are going green.

Some private clients still worry about the costs of going green. "Private owners seem less interested in expending funds for certification. However, their interest in incorporating sustainable features into capital projects is still strong," says Patricia Lindsey, senior project manager for Brasfield & Gorrie. She says some clients are considering other sustainability rating systems, such as Green Globes and Society of Environmentally Responsible Facilities. This interest in alternate rating systems appears to be cost-driven as owners seek a less expensive method of third-party certification, Lindsey says.

While there still is some resistance to green building in the private sector, state and local laws increasingly are pushing for green building. "We are seeing changes in our local energy code that require more green building systems and higher energy performance, and we anticipate that these changes will continue in the coming years," says Yancy Wright, director of sustainability for Sellen Construction. For example, he has seen local mandates for vegetative roofing and green walls.

The firm with the highest percentage of revenue qualifying as green construction is Webcor Builders, which works under some of the strictest green regs in the country. "California had the most smog in the past, so we have always had the toughest environmental regulations," says Andy Ball, CEO. The state first adopted, in 2008, a green building code, which became mandatory as of Jan. 1, 2011. "CalGreen is now akin to a statewide green building code throughout California," he says.

"CalGreen is now akin to a statewide green building code throughout California."

Andy Ball, CEO, Webcor Builders

Among Webcor's prominent projects are the 277,000-sq-ft San Francisco Public Utilities Commission building, which is pursuing LEED Platinum, as well as the $1-billion TransBay Terminal. "We hope that will be the terminus of the proposed California high-speed-rail project," Ball says.

Now, LEED certification is just a starting point for many clients. "The bar continues to be raised in terms of green, with LEED Gold and Platinum projects becoming more commonplace and net-zero-energy and living buildings starting to become the standard for excellence in sustainability," says Grant French, corporate sustainability manager, Swinerton Builders.

Deane says the new frontier is the "Living Building Challenge," which calls for buildings to achieve net-zero energy and water use and builders to vouch for their materials. "The Living Building Challenge is

#15 **WEBCOR BUILDERS** had the highest percentage on the Top 100 of revenue derived from projects registered for third-party certification.

LIVING BUILDING Phipps Conservatory Center for Sustainable Landscapes is a Turner Construction project.

what LEED was 10 years ago, when people said it was too expensive or impossible to build," he says.

Deane notes that there have been prototype projects to demonstrate the viability of a living building. But now, Turner is working on what may be one of the first large living buildings built for general use: the 24,000-sq-ft Phipps Conservatory Center for Sustainable Landscapes in Pittsburgh. Designed by The Design Alliance Architects, Pittsburgh, the building will be a new center for education, research and administration. The building will generate all its own energy and capture and treat all its water on-site.

Partners in Green

The increasing move toward green building has encouraged closer ties between designers and contractors. "USGBC has been very supportive of the notion that contractors should be actively involved at the early stages of every LEED project," says Victor Bonardi, vice president of preconstruction and design-build services, Forrester Construction Co.

Design-build makes a big difference in optimizing green building. "In the past, projects were often so far down the design road that, by the time we were brought on board as the GC, it was often challenging to insert meaningful sustainability measures that were cost-effective," says French. He says contractors that lead the design-build process can specify green elements from the outset and achieve higher levels of sustainability at lower cost.

Harper agrees that design-build has had a positive impact on sustainable building. Design-build allows contractors a greater voice in shaping the sustainability of a project. "It gives us the opportunity to do more than just the bare minimum to meet green standards," he says.

Building information modeling also has enhanced the effectiveness of green construction. "BIM has become an effective tool to help analyze and document a building's specific performance [as far as] meeting sustainability standards and criteria," says Bonardi.

For many contractors, successful green construction requires a firm-wide commitment. For example, Sellen Construction created Sellen Sustainability, headed by Wright, to train its people and share best practices with the industry. Sellen also has created its own Green Contractor Best Management Practices "to standardize our approach to the construction of all projects, regardless of LEED or sustainable certification goals," says Wright.

Most contractors say that sustainable products are becoming more effective and cost-efficient. But some contractors worry about the American commitment to sustainable innovation. "China decided to jump into the solar market with government support, and the result was the price of solar panels was driven down 80%," says Ball of Webcor.

Ball says the U.S. government should support manufacturers of environmental products and providers of materials (for example, rare earths) that go into these products or face countries such as China undercutting the domestic market.

"We do not want to be dependent on foreign governments controlling rare earths the way we are on oil. It is a national security issue," Ball says. ■

How to Read the Tables

Companies are ranked according to revenue for contractors' services generated in 2010 from projects that have been registered with or certified by a third-party organization that sets standards for measuring a building's or facility's environmental impact, energy efficiency or carbon footprint. Such groups include the U.S. Green Building Council (USGBC) and the Green Building Initiative. The volume of revenue is measured in ($) millions. Some markets may not add up to 100% due to rounding. Revenue from construction management on a fee-only basis is not included.

Accredited Staff This is the number of people employed by the contractors who have been certified as knowledgeable in green construction by third-party accreditation organizations, including groups such as USGBC and Green Advantage.

% of Total Revenue This percentage shows a firm's total contracting revenue derived from green contracting, based on its responses to the Top 400 Contractors survey and Top Green Contractors survey. NA=Did not submit a Top 400 survey.

Education comprises public and private educational facilities, including both K-12 and higher education.

Entertainment/Civic includes sports facilities, entertainment facilities, casinos, theme parks, and religious and cultural facilities.

Government Office includes federal, state and local government office facilities.

Health Care includes hospitals, clinics, medical assistance facilities, nursing homes and assisted-living centers.

Hotel includes hotels, motels, resorts and convention centers.

Multi-Residential includes co-ops, condominiums and apartment buildings.

Retail/Office includes commercial offices and retail facilities.

Other Buildings comprises miscellaneous buildings.

Other Markets comprises industrial process and pharmaceutical plants, food processing plants, manufacturing facilities, telecommunications facilities, infrastructure and cabling, towers and antennae, data centers and web hotels, etc.

RENDERING COURTESY OF TURNER CONSTRUCTION