

**CH2MHILL®**

# **Sustainable Solutions at CH2M HILL**

**National Academies Roundtable on Science and Technology for Sustainability Meeting  
May 6, 2011  
Glen T. Daigger, Ph.D., P.E., Ph.D., BCEE, NAE  
Senior Vice President and Chief Technology Officer**

Who is CH2M HILL?

# CH2M HILL today

*We are an industry leader in engineering, construction, operations, and program management*

- 140 Countries/All Continents
- 23,000 Employees
- 100 % Employee Owned
- US\$6.3 Billion in Revenue
- Diversified Across Multiple Sectors

**ENR** ranks **#1**  
**CH2M HILL**

- Wastewater Treatment
- Sewerage / Solid Waste
- Program Management
- Construction Management

**FORTUNE**  
**100 BEST**  
**COMPANIES**  
**TO WORK FOR** 2009



# Founded on Values

Established in 1946 by three engineers and a professor, CH2M HILL operated from its very beginning on four simple values: take care of clients, deliver great work, do right by employees, and stay true to our integrity and honesty.

Holly Cornell



James Howland



Burke Hayes



Fred Merryfield



Clair Hill



**CH2MHILL**

# Values Established 60 Years Ago are Still Strong Today

Many of these values are captured in *The Little Yellow Book*, a guide for business conduct written by Jim Howland and distributed to all employees around the world, in multiple languages.

- Honesty, Integrity, and Trust
- Focus on our Clients and our People
- Employee Ownership
- Innovation and Technological Leadership
- Collaborative and Enjoyable Work Environment
- Challenging Work
- Opportunities for Individual Growth



# Commitment to Health, Safety, Security, and the Environment

Our goal is **Target Zero**:

- Zero Injuries and Illnesses  
(World-Class Safety)
- Zero Adverse Impacts  
(Environmental Stewardship)
- Zero Errors, Omissions,  
and Defects (First-Time Quality)

**CH2MHILL**

**HSSE**  
**Target Zero**  
World-Class Performance



# Global Reputation

## Verdantix

- In Sept. 2010 Verdantix, an independent analyst firm focused on sustainable business issues, named CH2M HILL a top leader in sustainable engineering.

## 2009 Catalyst Award

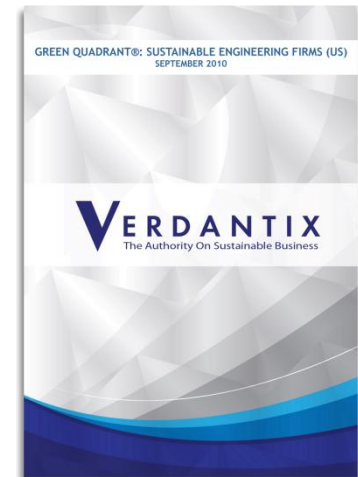
- CH2M HILL's Women's Leadership Initiative became the first in the engineering and construction industry to receive this prestigious award, which honors innovative organizational approaches that advance women in the workplace.

## **FORTUNE Magazine**

- 100 "Best Companies to Work For" 2011, 2009, 2008, 2006, and 2003
- "America's Most Admired Companies" named six times

## **Environmental Business Journal**

- "Project Merit Award" and "Lifetime Achievement Award" for helping clients achieve LEED certification



# Global Reputation

## *2011 World's Most Ethical Companies*

- CH2M HILL is proud to have been recognized by the Ethisphere Institute as one of the World's Most Ethical Companies for the third year (2009, 2010, and 2011), recognizing CH2M HILL's advancement of best practices in business ethics, compliance practices, and corporate social responsibility.



## **Top Employer in Canada**

- Named to Canada's Top 100 Employers List (2009, 2010) and to The Financial Post's "Ten Best Companies to Work For" (2009)



## **Top 50 "Best Companies to Work For in Australia"**

- CH2M HILL has been named one of the Top 50 "Best Companies to Work For in Australia" by the Great Place to Work® Institute, Inc., which is a research and management consultancy based in the U.S. with international affiliate offices across the world.



## **Top Employer in Poland**

- CH2M HILL ranked the fourth best company to work for in Poland (within the service industry) for the company's commitment to work/life balance, its focus on people, and for overall benefits.



# Industry Recognition

## U.S. Small Business Administration

- Two Dwight D. Eisenhower Awards for Excellence in the use of small businesses and subcontractors
- Frances Perkins Vanguard Award for leadership and commitment to women-owned small businesses

## EPA Administrative Award

- Outstanding Accomplishments by a Prime Contractor for our increased outreach and utilization of small businesses on the Region 5 Remedial Action Contract

## U.S. Department of Defense

- Maintained an “Outstanding” rating for its Supplier Diversity and Small Business Program through the Defense Contract Management Agency and the U.S. Small Business Administration since 1998
- Nunn-Perry Award for a successful mentor-protégé program with a small disadvantaged business



What Do We Do?

# Diverse Business Portfolio



As a global leader in full-service consulting, design, design-build, operations, and program management services, we help our clients build a better world in the areas of:

**Energy**

**Environmental**

**Facilities**

**Resources**

**Transportation**

**Water**

# London 2012 Olympic and Paralympic Games

*Client: Olympic Delivery Authority*

*Location: London, England*

## Project Scope

- 7-year program
- A 500-acre Olympic Park with nine new venues, including modifications to historic locations such as Wimbledon and Lord's Cricket Ground
- A robust sustainable legacy plan that provides national benefits in culture, sport, volunteering, business, and tourism
- Transport program that integrates London's air, road, and rail networks
- A strong program for coordinating safety and security

## Our Role

- One of three firms comprising the consortium, CLM Delivery Partner
- Providing global engineering, construction, and program management expertise



# U.S. Forces Korea Base Relocation Program

*Client: U.S. Department of Defense*

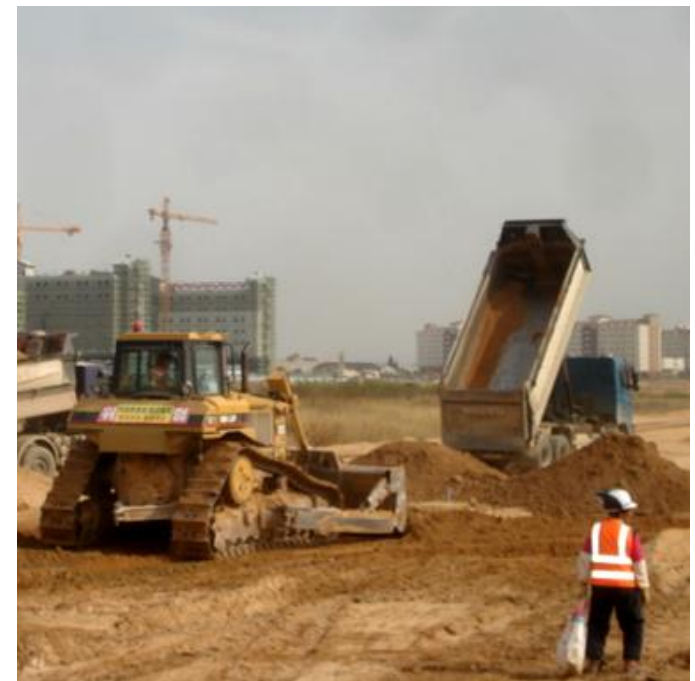
*Location: South Korea*

## Project Scope

- First of its kind program management in Korea requiring program controls, design, construction, and contract/claims management
- Numerous administrative, medical, support and quality of life facilities, and living quarters
- Rapid mobilization, fast-track schedules, and rigorous controls to successfully meet an aggressive program schedule

## Our Role

- Consortium with four South Korean firms to provide a proven combination of technical capabilities, cultural knowledge, client-focused service, innovative project controls technology, and sensitivity to public and governmental concerns
- Oversee relocation of 30,000 existing U.S. troops from locations across Korea to a single, expanded base south of Seoul



# Panama Canal Expansion Program

*Client: Panama Canal Authority (ACP)*

*Location: Republic of Panama*

## Project Scope

- New locks and navigational channels for both Pacific and Atlantic entrances
- Widening and deepening of Gatun Lake
- Deepening of Gaillard Cut

## Our Role

- Assist client with management of contracts and procurements
- Develop, install, and maintain Program Management Information System
- Interface with locks design/builder and with all other design and construction activities
- Provide construction oversight, including quality, safety, and operability
- Support the ongoing development of client's project delivery



# Hanford Central Plateau Remediation Site

*Client: U.S. Department of Energy*

*Location: Hanford, Washington, USA*

## Project Scope

- Disposition of SNM, remediation, exhuming, and disposing of buried waste
- Decommissioning and demolition of more than 800 facilities and structures
- 586-square mile site is the U.S.'s largest environmental cleanup effort
- Remediation of contaminated environmental sites and groundwater
- Project estimated completion by 2015

## Our Role

- Prime contractor for the cleanup of hundreds of buildings and 1,200 waste sites
- Decommissioning the site to less than 75 square miles
- In 2009, the DOE entrusted CHPRC with an additional \$1.359 billion in American Recovery and Reinvestment Act (Recovery Act) funds to accelerate decommissioning and cleanup work across the site



# Deep Tunnel Sewerage System and Changi Water Reclamation Plant

*Client: Singapore Public Utilities Board*

*Location: Republic of Singapore*

## Project Scope

- Delivered in a complex regulatory and permitting system (British model)
- Constructed more than 50 kilometers of 3.5 to 6.0-meter diameter deep tunnels across island
- Decommissioned 6 treatment plants and 139 lift stations
- Packaged construction contracts to maximize supply chain competition

## Result

- Delivered world's largest, most sophisticated wastewater system
- Opened up prime land for redevelopment





# Golden Ears Bridge

*Client: Golden Crossing General Partnership*

*Location: Vancouver, British Columbia, Canada*

## Project Scope

- Large, complex infrastructure project including 1 kilometer cable-stay bridge
- Extensive regulatory considerations
- More than 600 new businesses forecasted across the river
- Innovative procurement due to shortage of local skilled labor

## Result

- Improve mobility and safety
- Design-build-operate-finance delivery method
- Joint venture partner with major European firm



# Sandy Springs Operations

*Client: City of Sandy Springs*

*Location: Sandy Springs, Georgia, USA*

## Project Scope

- Efficiently managing all city infrastructure and administrative operations
- Trained workforce in providing safe, efficient, responsive service
- Improved community image and property values

## Result

- Recognized and created a new market for CH2M HILL
- Reduced costs by 40% with better service
- Developed new revenue streams for the city



# BP Exploration Alaska Arctic Oil Fields

*Client: British Petroleum (BP)*

*Location: Prudhoe Bay, Alaska, USA*

## Project Scope

- US\$1 billion Arctic site development
- Engineering, operations & maintenance, drilling, fabrication, and construction services from the conceptual phase through startup
- Largest modules assembled in Alaska; over 13,000 tons total and a single module over 3,500 tons
- Less than 1% transfer work from assembly yard

## Result

- Provided engineering, drilling support, fabrication, and construction services
- More than 1 million field man-hours without a lost-time incident
- Provided 1,700 operations & maintenance personnel and 1,200-piece equipment fleet



# Masdar City

***Client: Abu Dhabi Future Energy Company***

## Project Scope

- World's first zero-carbon, zero-waste city
- Government program to address sustainable energy sources and environmental practices
- Focus on developing and commercializing advanced, innovative technologies in renewable, alternative, and sustainable energies

## Our Role

- Program integrator for Masdar City
- Quantify environmental impacts through Masdar's life cycle – carbon, energy, water, waste



# Sustainability at CH2M HILL

# Operational model leverages BG strengths and facilitates strategic growth

## Sustainability Leadership Team (SLT)



- Endorse CWG focus, budget and deliverables
- Represent CH2M HILL's sustainability focus at strategic external events
- Support CWG on enterprisewide conflicts
- Participate in shaping the direction in Thought Leadership

The Collaborative Working Group is charged with the strategic management of all firm sustainability-related concerns from our internal EMS program to our efforts to strengthen our expertise in this field and increase our market share.

## Sustainability Community of Practice

**Email the group at:**  
CH2MHILL Sustainable Solutions CoP



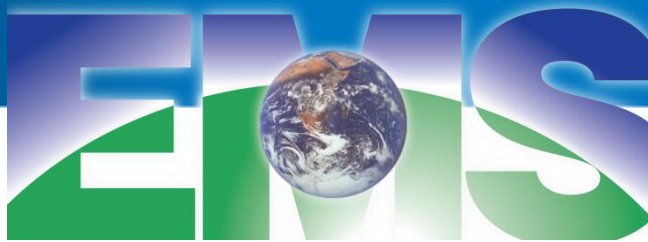
Sustainable Solutions site on the VO

[VO > Client Services > Sustainable Solutions](#)

### Links to:

- Marketing materials
- Sample presentations
- Sustainability Experts Directory
- Sustainability policy document
- Business case\*
- Text for proposals\*
- How to get into sustainability work at CH2M HILL\*

\*to be developed or updated



Environmental Management System

## CH2M HILL walking the talk since 2005

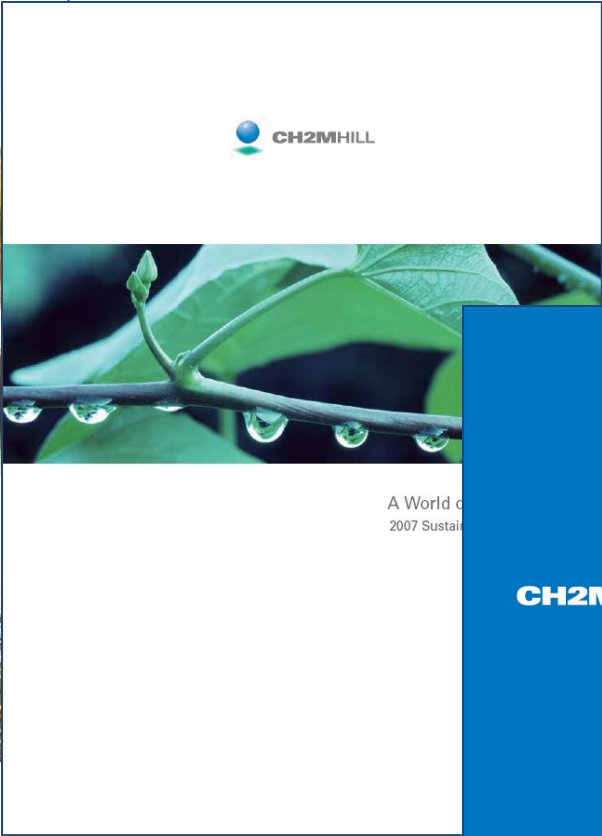
### Beyond the Math

<i>Cumulative Paper Savings</i>	
Total EMS spending since 2005	\$695,000
Total paper savings since 2005	\$944,000
<b>Savings to Company</b>	<b>\$249,000</b>
<i>Projected Teleworking Savings</i>	
Projected teleworking savings in 2009 from leased space and furnishings	\$2 million
Projected savings in 2010	\$2.6 million
<b>Total Savings to Company (Paper + Telework – EMS Spend)</b>	<b>\$4.9 million</b>

Additional cost saving program (not quantified): Improving access to and training for virtual meeting technologies

- Cost of doing business
  - Required by many clients and programs as a **prerequisite to compete**
  - Required for **UN Global Compact** and the CEO Water Mandate
- Steward of our brand
  - **Integrity:** we walk the talk
  - **Transparency:** this is our *Sustainability Report*
  - **Best Workplace:** attract and retain employees
  - **Verdantix:** Half of our rating was on projects, half on the measures we take ourselves

# CH2M HILL sustainability reporting: holding ourselves accountable





# Vision of Market Leadership



## Viewed by Clients and Competitors as:

- Pre-eminent firm in delivery of global complex multi-BG sustainability projects
- Providing “best value” delivery of sustainability projects
- Providing most innovative and effective sustainability tools

# Sustainability takes on a variety of meanings for clients



## Self-defined approach:

*'Vision of Zero: zero injuries, zero incidents, zero harm to the environment'*

## Efforts:

- Local Corporate Citizenship
- Increasing Commitment to Product Stewardship and Innovation
- Reduce Global Footprint



## Self-defined approach:

1. Generate *competitive advantage*
2. *Improve business results*
3. Fulfill responsibilities as a global member of the community

## Efforts:

- Identify potential reductions in energy and water resource consumption
- Introduce new sustainable product offerings



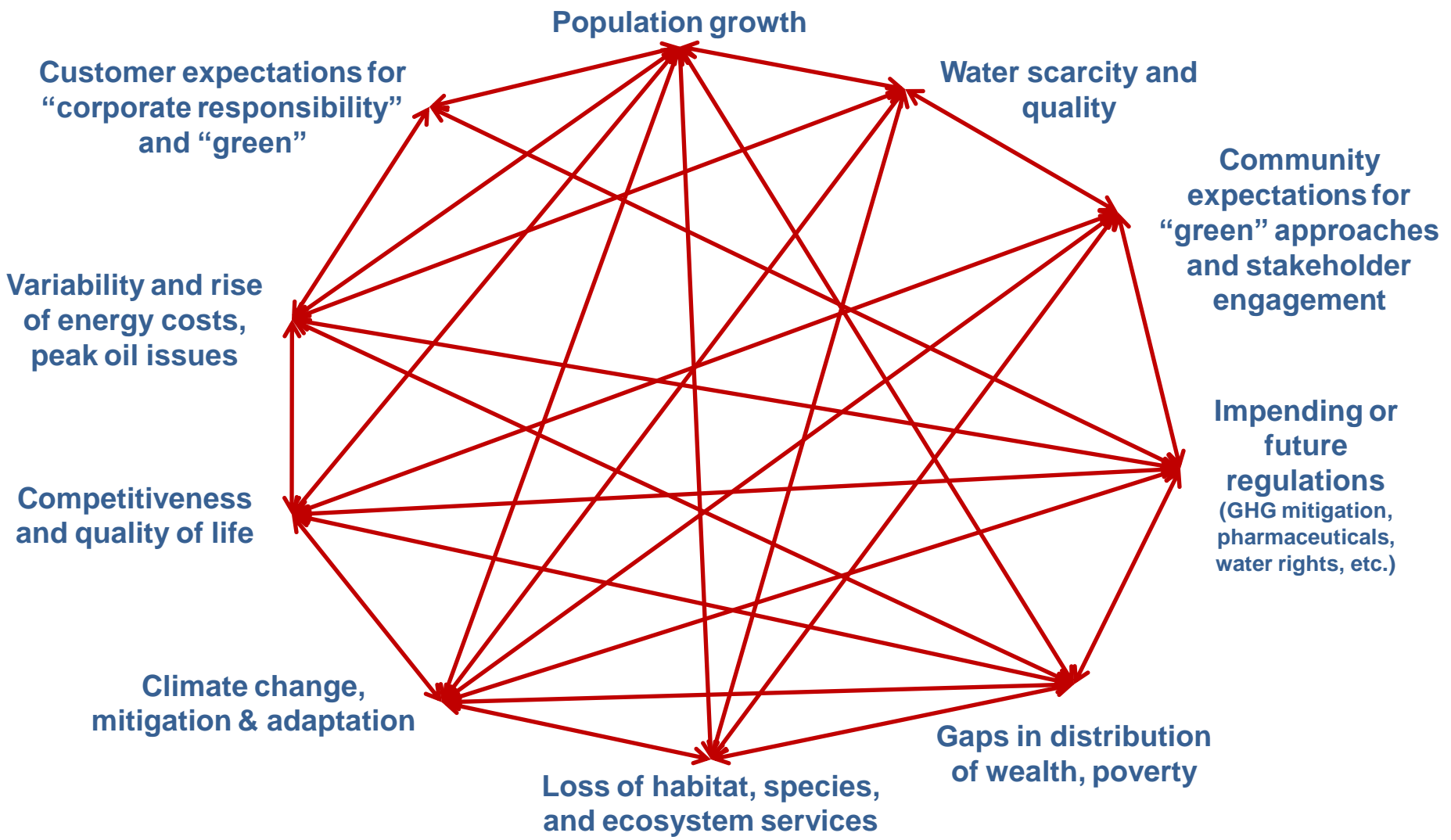
## Omaha Combined Sewer Overflow Program

The City of Omaha CSO Control Program will apply the principles of sustainability in a fiscally responsible manner to add meaningful and lasting *social, environmental, and economic benefits* to the implementation of the LTCP and serve as a model for the application of sustainability in the *design, construction and operation of infrastructure*.

# Cities, communities and commercial businesses are learning that integrating sustainability results in higher profitability and enhanced competitiveness through:

- **Reduced operating costs** by extracting value from waste streams, reducing water usage, becoming more energy efficient, utilizing natural capital and ecosystem services
- Enhanced market opportunities for **changed or new products/ services**
- **Minimizing risks** related to compliance and liability
- **Adaptation to sustainability issues**, such as increasing water scarcity and more severe storms from climate change
- **Positive differentiation** with investors
- Solidifying **license to operate** requirements and approval of facility/plant expansion
- Improved **employee recruitment, satisfaction, and retention**
- Corporate social responsibility (CSR) – **branding, stakeholder relations**

# Sustainability services should respond to CLIENT DRIVERS



# Sustainable services and projects are those that help our clients:

1. Respond to global sustainability drivers (climate change, energy, water)
  2. Respond to local drivers (pollution, cultural values, community expectations, air/water quality, jobs).
  3. Achieve basic sustainable approaches:
    - Minimize energy consumption, use renewables
    - Minimize waste
    - Minimize water and material consumption
    - Minimize GHG emissions
    - Minimize, eliminate pollution
    - Respect people and communities
    - Foster financial responsibility and economic vitality.
  4. *Ultimately, create a better future for people and the planet.*
- Sustainability is built into the way we do business
  - It's about solving interrelated challenges using an integrated "systems" approach
  - As a result, we help our clients:
    - Operate more efficiently
    - Reduce costs
    - Better manage risk
    - Improve quality of life
    - Improve their social, economic and environmental position

**We integrate sustainability into each step of the project life cycle**

# Where are your clients on the “Sustainability Continuum”?

## Increasing Integration of Sustainability



Necessity	Feasibility	Opportunity	Innovation
Compelled <b>MUST</b>	Pressured <b>SHOULD</b>	Enabled <b>CAN</b>	Inspired <b>WILL</b>
<b>Compliance</b> ✓ Meeting Executive Orders ✓ Cutting costs ✓ Reducing risks	<b>Performance</b> ✓ LEED/green buildings ✓ Reporting standards such as ISO 14001 EMS ✓ Design/construction guidelines	<b>Strategic</b> ✓ Sustainability Framework Planning ✓ Beyond-requirement initiatives such as zero-waste	<b>World-Class Performance</b> ✓ Comprehensive, “game-changing” programs ✓ Masdar, London 2012
Primarily interested in solutions to meet requirements, cut costs	Interested in meeting proven best practices	Interested in strategic use of sustainability	Want to continue to “push the envelope”

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