

Sustainability comes of age

What got us thinking... Environmental sustainability is important. Practically everyone agrees with that, despite varying levels of understanding about environmental issues and different levels of commitment to them.

The larger issue is how to define sustainability. The word has transcended its original environmental roots and become part of everyday conversation. Sustainability has grown as a concept to include economic and social meaning.

This “triple bottom line” definition redefines sustainability, makes it a more important issue for business, and also makes it easier for everyone to support it.

So what is the full meaning of sustainability, and how does the built environment figure into it?

The triple bottom line may be a new term, but the concept has been around for a long time.

Consider an example from a century ago, a time when American grain production fed half the world. Large industrial farms covered huge expanses of land in this country. Agriculture was a big, successful business.

It was also shortsighted. Dust storms ravaged the Great Plains in the 1930s, and 100 million acres of once productive farmland became a huge “dust bowl.” Farms, homes, and livelihoods were lost. Hundreds of thousands of people were forced to migrate in search of work. It was an ecological and human disaster.

Dust storms happen naturally, of course. But the cause of the devastation was due more to over-farming and over-grazing, the destruction of grasslands, and production methods that combined

to deplete the land, the agricultural industry’s greatest resource. In short, the agricultural practices of the time were unsustainable.

It’s a stark example of how a business can fail if it does not take care of its resources—economic, social, and environmental.

On the other hand, if a business nurtures its varied resources, it helps insure its own success, i.e., it operates as a sustainable enterprise.

Sustainability was defined by the World Commission on Environment and Development in 1987: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The definition included environmental concern but wasn’t limited to it.

Today the concept is usually considered in broader terms. Andrew Savitz, author

and sustainability consultant, defines a sustainable business as “one that creates profits for its shareholders while protecting the environment and improving the lives of those with whom it interacts.”

This larger view turns the idea of sustainability around, from focusing on, say, what an organization can do to protect the environment, to how sustainability in fact is a two-way street; it is a means to protect the organization, too. Nurture your environmental, social, and economic resources, and you help ensure the future of the organization and all of its stakeholders. Thus, the triple bottom line (TBL) view of sustainability demonstrates how the organization both receives and provides benefits.

Bottom line measurements

Credit for coining the term “triple bottom line” goes to consultant and author John Elkington, who used it as another way of measuring business success. Instead of a financial bottom line measured in profit, ROI, etc., businesses could also measure their impact on a wider scale: the broader economy, the environment, and the society in which they operate.

Businesses, after all, use economic resources (e.g. investment capital, credit), environmental resources

(energy, water, raw materials), and social resources (labor, goodwill). They should also be able to show a bottom line impact from all three resources.

Here's how we might present the triple bottom line in a simplified spreadsheet view:

Economic
Profit
Return on Investment
Jobs provided
Environmental
Energy usage / reduction in usage
Waste created / reduction in waste
Working conditions (air quality, ergonomics, etc.)
Social
Reputation in the community
Third party evaluations
Employee well being / labor relations

To effectively measure any bottom line impact, quantitative data are needed for each factor.

Economic factors should be easy to measure, right? After all, financial yardsticks have been used by business for a long time. But the reality is more complex. Financial data represent more than mere numbers. That's why annual reports contain lengthy auditor footnotes and management explanations of financial results.

So too environmental and social factors may need explanation, but these measures have come a long way. Rare is the annual report today that doesn't include at least a summary of the organization's environmental and social efforts.

Consider one resource every business requires: energy. Measures for how efficiently it's used, how the organization

has reduced its use, etc., are more sophisticated than ever. New buildings often feature visual demonstrations of wise energy use. For example, water retention system can help reduce water use and save on the HVAC bill, adds to the visual appeal of a facility, and provides a clear measure of energy efficiency and environmental impacts.

Energy affects each of the three TBL measures because the cost of energy is more than a financial cost of doing business. How well it's used is a measure of how efficient the business is. The source of the energy (coal, nuclear, hydro, wind, etc.) speaks to the company's environmental approach. How efficiently the organization uses energy also has implications for the company's standing in the market and the community, with an impact on the company's stock price, corporate image, and its brand in the marketplace. Image and brand can be measured through research, and measuring the respect and trust companies engender in their markets and communities is a continual concern.

Yet every bottom line indicator, whether economic, environmental, or social, requires some level of analysis because the three factors are interrelated. Pick one from column A, or B or C, and there are corresponding impacts in the other two columns. The realization that these factors are synergistic accounts for the increasing acceptance of the TBL view.

More organizations see that this larger view is important to its constituents both inside and outside the organization, and they're reporting triple bottom line results. CorporateRegister.com features over 16,500 reports that include some blend of TBL reporting from over 4,000 companies across more than 100 countries. Fifteen years ago, 80% of the reports focused on environmental results; in 2007, 40% used a TBL approach. CoreNet Global, the international association of real estate professionals, says that 90% of the Fortune 500 will adopt triple bottom line reportings by 2010.

A major impetus for the increase is the growing importance of the

organization's stakeholders: employees, customers, suppliers, investors, communities, government agencies, non-governmental agencies, regulators, the media, et al. They have more access to information about the organization and are more vocal, influential, and effective in influencing it. Their concerns—labor issues, human rights, consumer protection, community relations, and more—are in turn becoming more important to organizations.

For example, insurance companies take a dim view of risky environmental strategies and equate them with increased financial risk. Competitors use environmental issues as competitive strategies in the market. Corporate executives are responding with sustainability strategies, which often begin with the design of the company's facilities.

Designers for sustainability

From a design perspective, each of the factors in the TBL spreadsheet has implications for the built environment. So it's no surprise that architects and designers have been among the earliest adopters of environmental sustainability. The number of LEED accredited professionals, for example, grew from less than 2,500 in 2005 to nearly 40,000 by 2008. Now the design profession is embracing the triple bottom line view of sustainability, even if it's not expressed specifically as TBL. "Architects are trained that way. We tend to think that way. We're dealing with the environment, with the economics, the social aspects, that's why we design," says architect Mark Miller, AIA, of MKThink, San Francisco.

Elizabeth Ogbu, a designer with Public Architecture, a San Francisco-based non-profit architecture studio and advocacy organization, compares the acceptance of TBL to the buy-in of the LEED standard at the turn of the millennium. "Sustainability automatically means 'green' to a lot of people. There's not been much attention paid to the economic and social aspects of sustainability. There's slowly emerging a group of people pushing it and getting heard, but we're still a long way from being mainstream.

“Fortunately it’s not a difficult concept to understand. The moment you explain it, and talk about how having viable communities is also part of saving the planet, people have an ‘Aha!’”

Since the idea of community applies to internal and external spaces, whether local town or corporate building, designers say focusing on just green strategies misses the point about all that’s needed to create a community.

“Work in today’s office environment is first and foremost a social activity. In order to fully understand how to support effectiveness and efficiency in the office workspace, we must understand how financial, social, and environmental issues are interdependent,” write Robin Baxter, Niki Bey, Catherine Gall, and Adrian Tan, a group of Steelcase researchers from Denmark, France, and Canada in their white paper, “Connecting the dots between workspace design and the triple bottom line.”

Companies have long viewed the physical workplace as a necessary cost of doing business, an asset perhaps, but one that contributed little to performance. Baxter, et al argue that while “salaries and health care costs are by far the greatest cost to companies and the physical workspace is just a fraction of total costs... the impacts of the physical workspace on work performance are considerable.”

Research into effects of the physical workplace, the authors continue, point to “numerous influencing factors that are interdependent.” They include lighting, ergonomics, indoor climate, acoustics, space planning, technology, and others. Clearly there’s more to consider than just green design, and the most popular green design measuring stick, LEED.

LEED is part of the story

“Executives say, ‘we’re interested in a LEED-certified building, but we’re afraid the space won’t be inspiring,’ or they’re worried the materials won’t be warm and inviting.” says Gall, a researcher in Steelcase’s Workspace Futures group.

“LEED wasn’t created to produce inspiring, inviting spaces. LEED means better physical health, but there is nothing in LEED about more engagement, improving morale, increasing satisfaction, better collaboration, etc. All of these are important things, but it’s easier sometimes to measure the physical health aspects.”

Complicating matters at companies in North America and Europe is the effort to shrink real estate footprints. Companies continually strive to maximize the value of their space and often specify workstations in smaller footprints. Ideally, some of the freed up real estate is used for shared services all workers can benefit from.

Mergers and acquisitions, another fact of daily business life, trigger strategic real estate issues, notes Gall. “When real estate managers and facilities managers, or heads of business units, really get interested in the triple bottom line is when they have to manage a merger or acquisition. Then they have huge, complex issues to solve. They start thinking more about not only the physical workplace, but how to schedule and organize work. Do all of our workers need to be in the office every day? How does telecommuting affect the social process of business? How will people commute to and from work? How will that equate to carbon emissions? Will a merger increase absenteeism?”

These issues are clearly interrelated:



“In the city of London, for example,” says Gall, who works primarily in Europe, “many knowledge workers can’t afford to live in the city, so they live someplace they can afford, which is usually a good distance from work.

That means a four-hour commute each day. There’s a burn-out factor there, and eventually a sense that these people will not be as committed to their work.”

When PricewaterhouseCoopers (PwC) opened a new headquarters in Dublin, Ireland, the issue of transport was a big one for the professional service firm’s workers. Management was concerned that adequate transport to the new building would not be in place by the time it opened, so PwC supplemented public bus and rail transport with busses that ran throughout the day for PwC staffers.

Same issue, different continent: a new headquarters under construction in downtown Winnipeg for Manitoba Hydro, the province’s major energy utility. The company is working with local transit authorities to have the best transport in place for the 1,800 workers who will begin using the 690,000 sq. ft., 23-story office tower later this year.

But Manitoba Hydro took a broader view than just its own work force. The company set a goal to have a positive impact on Winnipeg’s downtown area, says Tom Goldsborough, division manager for corporate planning and development. “We’ve thought about the urban fabric downtown, how we can influence that, and we’re creating a space people will want to be. The prime entrances are on to the street. Most of the buildings downtown are two to three stories high, so we set our building back one-and-a-half meters from the property line for bigger trees and wider sidewalks.”

The perimeter space on the main floor is retail, and the building is also angled off the street and includes a park area. The perception from the sidewalk is that it’s a two-or three-story building. “It’s about animating the street, promoting street life,” Goldsborough says.

Across the street from the new building stand the results of old style urban planning: a 70s-era mall allowed retailers to choose whether to open their shops to the street or the mall. All of them chose to open to the mall,

effectively killing street life. Similarly pedestrian unfriendly neighborhoods dot cities across North America.

Goldsborough says Manitoba Hydro's building will operate at "60% below the model energy code;" provide a signature architectural statement for the city ("people told us, 'don't build another boring building'"); demonstrate and promote the conservation of energy; meet the business requirements of the utility; and make financial sense as well, including "a 5 to 10% premium" for the building's environmental design elements.

If that sounds like a triple bottom line approach, Goldsborough wouldn't disagree. "We don't use the term triple bottom line, but a lot of what we do can fit into that.

"What we're looking at is an overall balance. It's not about achieving short term financial gain at the expense of employees, or at the expense of the environment. It's not about achieving environmental goals at the expense of social goals. It's about a balance. We look at the perspectives of employees, customers, the public, all of our stakeholders."

A trip everyone can take

One could argue that Manitoba Hydro is a government utility with deep pockets, able to take a longer term view than most companies. But smaller companies are also taking a more holistic view of sustainability.

Esther Patzia is a principal of Smith Carter in Winnipeg, the architects of record for the Manitoba Hydro building. Another one of her clients is Bison Transport, a truckload carrier with a main terminal in Winnipeg, and serving the Canada and the U.S.

The trucking industry has notoriously high turnover. "It can be in excess of 100% a year," says Don Streuber, Bison president and CEO.

"They wanted to create an environment where the drivers were treated the same as the rest of the workers, not the

typical back room with tables and chairs," Patzia says.

Bison converted a warehouse into a staff facility. "The trucker's entrance and their amenity spaces have the same quality of finishes and furniture. They use the same café as management and everyone else. It really sends a message that the drivers are important, and part of the company, not just in a truck driving back and forth."

"It's about looking for respect," says Streuber. "Part of respect is how the workplace delivers it." Bison's turnover rate is 24%, one of the lowest in the industry.

Patzia says Bison Transport's workplace strategy can apply to any industry. "We talk a lot with clients about staff attraction and retention, how people are more productive in an environment where they're happy to be there," she says. "We've seen that in our own facility."

The design firm's Winnipeg office, opened in 2006, was designed "to express the value we place in the sustainability of our people, the community, the business, and the environment," said Scott Stirton, CEO.

Instead of reducing space per worker, Smith Carter nearly doubled it to 450 sq. ft., much of it shared space. The building features an open studio concept, a raised access floor that routes HVAC, and staff amenities including a wrap-around deck and a second-floor "skybox" with a large lounge, exercise centre, and quiet room. Patzia says "most visitors comment on how quiet it is. We have a hundred people working in one big, open space, and they can't get over how quiet it is."

The design firm wanted their facility to demonstrate their beliefs: how space can help grow intellectual capital, enhance and sustain creativity, and develop a more agile organization. So they measured the performance of their space against those goals. For example, in terms of enhancing and sustaining creativity, post-occupancy research at Smith Carter revealed impressive results:

Performance Factor	Improvement
Quick access to information	11%
Quiet space/ privacy when needed	37%
Access to right technology	13%
Right furniture and tools	26%
Spaces for sharing and exchanging ideas	23%
Natural light	12%
Helps productivity	26%
Helps communication	19%
Helps effectiveness in job	15%
Helps creation of new ideas	17%

Like most design firms, Smith Carter uses their space as a client showcase for what's possible. "We talk about the health aspects of the workplace, such as under floor air, the ability to control your own HVAC, how that makes a difference for people's comfort and in the long run affects their performance."

They use the LEED scorecard as a guideline. "You can say, these are some of the things available to you, and they all have different paybacks. They can see how far they're willing to go. Just little things, like using low-water faucets, and if you reduce water use it has a faster payback than a grey-water retention system. Very often organizations don't understand what the potential is, what's available."

Most clients "will at least consider the options presented. They won't always pursue it, but they'll at least ask questions."

"Belief trumps proof"

At some point, the decision comes down to the client's experience, knowledge, and situation, and the rationale is not always an economic one. "My experience is that either people are committed to it or not, it isn't just about the economics. That's why it's so hard to sell it to someone who isn't committed to it. It's more than just looking at the numbers and saying this makes sense," Patzia

says. “If they believe in this approach, that matters more than all the proof you can present.”

“You’re dealing with sustainability, finance, social issue, urban design, and more,” says Manitoba Hydro’s Goldsborough. “The trick is you have to consciously look at all of these components at the same time, in advance. You can’t design and then say how do we fit this into a triple bottom line model.”

Balance is a recurring theme with those who believe in and practice a TBL approach. MKThink’s Miller says “sustainability is about achieving balance. If we get philosophic about it, society is based on the notion of public domain and the common good. We have to participate as a community to get what we want. If we don’t have a collective understanding, we can’t get individual gain.”

Whether it’s called TBL, “people, planet, profit” or another label, the mission is the same: creating sustainable communities where people can live and work. That will be a defining challenge for architects and designers in the new century.

¹ “The Dust Bowl: Could it Happen Again?” by John Russell Pursell, Oklahoma State University, www.englishdiscourse.org/edc.1.1pursell.html.

² The Triple Bottom Line, by Andrew Savitz with Karl Webert, (Jossey-Bass, 2006)

³ Cannibals with Forks: The Triple Bottom Line of 21st Century Business, by John Elkington (New Society Publishers, 1998)

⁴ Global Report Output by Type, www.corporateregister.com/charts/bytype.html, accessed April 14, 2008

⁵ “Connecting the dots between workspace design and the triple bottom line” by Robin Baxter, Niki Bey, Catherine Gall, and Adrian Tan, unpublished.

Get trashy with the triple bottom line

Reducing your trash footprint not only has environment benefits, it also contributes socially and economically to your business and community. Here are nine easy ways to get started:

Cell Phones

130 million phones are retired each year, but less than 20% of are recycled. Trashed phones contain cadmium, lead, mercury and arsenic, heavy metals that can get into groundwater and cause cancer and birth defects. If the phone still works, donate it to charity or sell it via an online auction. Recycle dead phones at one of the places listed on epa.gov/cellphones

Batteries

Recycling batteries from cell phones, laptops, cameras, PDAs, etc. is easy. Enter your zip code at call2recycle.org for places that will take your drained batteries, from a list of 40,000 participating retailers and community waste centers.

Computers

Most defunct computers are sent to developing countries for disassembly and processing, exposing workers to toxic materials. The Electronics Take Back Coalition promotes responsible recyclers. Dell and Sony, for example, take back all of their products. Others take back specific items, or require purchase of new products as part of a take-back. computertakeback.com

Furniture

Rather than send unused furniture to a landfill, you may be able to refurbish, resell, donate, or recycle it. Steelcase’s Environmental Partnership Program links organizations having more than 50 Steelcase Inc. furniture items with green alternatives, depending on the type, quantity and condition of the furniture. steelcase.com

Carpet

Over 4 billion pounds of wall-to-wall get tossed every year. And it sticks around: figure 20,000 years for that nylon, polyester, etc. to decompose. The Carpet America Recovery Effort is a joint industry-government that helps you find a carpet reclamation center in your area. carpetrecovery.org

Televisions

When the flat screen goes, what next? TV take-back programs are limited. Sony is the only company with one in the U.S. Consumer Reports.org suggests donating workable TVs to charity, or watching for a recycling event at retailers such as Best Buy. The Basel Action Network offers a list of North American recycling locations and mail-in recyclers. consumerreports.org or ban.org

CDs & DVDs

The Worldwatch Institute estimates 45 tons of CDs become obsolete—every month. If you separate the disks, cases, and paper booklets, CD Recycling Center of America will recycle yours. cdrecyclingcenter.org

Compact Fluorescent Light bulbs, Paint, etc.

Much recycling is still locally-based. Earth 911, a recycling portal, identifies recycling and re-use locations by city, state or zip code in the US for CFLs, paint, plastics, electronics, and more. A map and link to the local organization are included. earth.911.org

Kitchen Scraps

Recycle those hard bagels and leftover turkey sandwiches! Vermicomposting—using worms to turn food waste into nutrient-rich compost—is the trick. Sound too icky for an office? At McDonough + Partners, Charlottesville VA, they made room in an closet for thousands of red worms in a vermicomposting system. Kira Gould, the firm’s director of communications, reports the worms eat a half-pound of scraps a day, even shredded office paper. “Composting isn’t really part of design. But it’s interesting to think of our whole existence as part of the system. Just the thinking behind it is what we like to promote.” And no, there’s no odor from the composter; “just a refreshing rainforest smell when the lid is lifted.” composters.com