



Growing the Economy Through Environmental Sustainability

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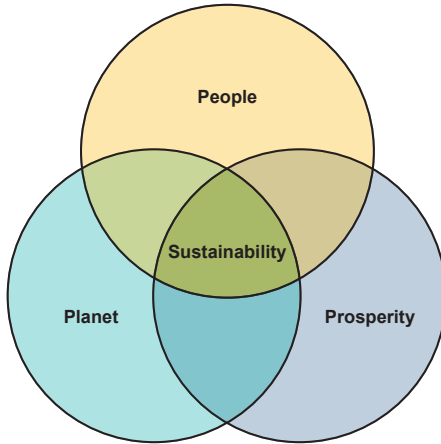
What is environmental sustainability? Is it about recycling? Saving natural resources, like water and trees? Eating organic food? Or is it something larger that can fundamentally change the economy and our quality of life?

Environmental sustainability is about all of these things and more. At its core, environmental sustainability is about making decisions and taking actions that protect our natural world and preserve the ability of the planet to provide the food, water and energy we need to prosper in the future.

The Value of Sustainability

In the past, business has treated the environment as an unlimited resource for fueling economic growth. Today, business and community leaders are increasingly realizing that the health of our economy is dependent on the health of the environment. Additionally, the health of our planet cannot be achieved without addressing the basic needs of all people. The realization that our business, policy, and planning decisions need to give the same consideration to the impacts on the environment and people as they typically give only to financial return, is called a triple bottom line approach.

Triple Bottom Line Concept



The triple bottom line concept is often simplified to **the three P's – people, planet, and prosperity**. Environmental sustainability cannot be realized unless all three intersect. Sandy Wiggins, founder and principal of Consilience, LLC, and founding chair of the Green Building Certificate Institute, has been working with residents in south Wood County to redesign the Tribune Building, an historic building in Wisconsin Rapids that formerly housed a local newspaper and radio station. Incourage purchased the building with the intent that the community decide its future use.



Wiggins describes the interdependence of the three P's: "Our economy cannot exist without a healthy and productive natural environment, from which come all the resources that support it. A healthy environment cannot be maintained without the support of every human being ... Therefore, to build real and lasting prosperity ... all our business decisions need to be made in consideration of all three domains of the triple bottom line."



New Belgium Brewing Company

One way to better understand the three P's is to look at the case of a particular business. New Belgium Brewing Company is based in Fort Collins, Colorado and was started in 1991 when Jeff Lebesch and Kim Jordan turned their basement brewery into a commercial enterprise. Before they ever sold a bottle of beer, they hiked into Rocky Mountain National Park with a jug of home brew in one hand and a pen and pad in the other. The core values and beliefs they wrote down that day cemented their path as a leader in the world of triple bottom line businesses.

People

Two core values of the company are 1) balancing the needs of the company, co-workers, and their families and 2) having fun.

In addition to offering employee stock ownership and profit sharing, New Belgium offers a wide array of benefits including full coverage of employee health insurance premiums and significant time off - 14 days in the first year of employment and 18 days in the second year and thereafter. The company also offers anniversary incentives such as a Fat Tire bicycle after one year and a one-week trip to Belgium after five years.

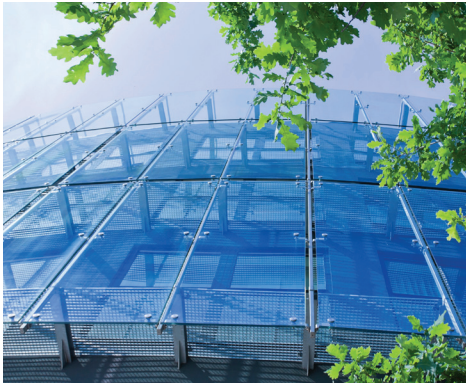
Planet

Another core value for New Belgium is to "honor nature at every turn of the business." The company tracks and reports annually on its progress toward reducing the waste it produces and the energy and water that it uses. About 13%

of the electricity that the company uses is produced on-site through solar power and biogas, but they are striving to reduce their use of electricity and natural gas even further. In 2008, they set a goal to reduce the usage by ten percent over the next ten years. By 2014, they had already exceeded their goal, reducing the use of electricity and natural gas by over 23%.

Prosperity

Between 2009 and 2012, their revenue grew 41% from \$128 million to \$180 million, and they added 122 jobs. The founders of the company have shared their prosperity from the beginning, giving employees the opportunity to be part-owners in the company. In December 2012, New Belgium became 100% employee-owned when the Employee Stock Ownership Program (ESOP) purchased the balance of company shares.



What Is Green Building and Why Is It Important?

The three P's can be applied to the construction of a new building or redevelopment of an existing one. In green building, the developers look at the impact on people, the planet and prosperity during design and construction and also over the life of the building.

Any building can be green: homes, schools, hospitals, office buildings, community facilities, and even manufacturing plants. When designing a green building, several key elements are taken into consideration:



Site

The first consideration is the actual location of the building and its impact on the occupants of the building and the surrounding environment. Ideally, a sustainable site will promote walking and bicycling to encourage healthy lifestyles and reduce harmful emissions. A good location will help foster a sense of community by inviting people to come together and will cause no direct harm to a protected area like a wetland or wildlife habitat.



Sustainable materials and resources

Green buildings use environmentally preferable materials such as those made with recyclable content or rapidly renewable resources, and those that are harvested and manufactured locally. Also, the construction process is designed to dramatically reduce the amount of waste sent to landfills or incineration. The goal for green building projects is to minimize the quantity and environmental impact of what they take from the earth, moderate the waste generated through manufacturing and construction, and eliminate pollution caused.



Indoor environmental quality

The indoor environment impacts human health and well-being. Air quality, temperature, humidity, lighting, sound and ergonomics all affect how people feel and perform. Green buildings provide a stimulating and comfortable environment for occupants and minimize building-related health problems. For example, maximizing natural daylighting of the interior and views to the outdoors has a proven impact on increased worker productivity, reduced sick days and improved student performance.



Energy efficiency

Much of our current energy consumption relies on resources such as oil, coal and natural gas that are non-renewable. In addition, these energy sources produce greenhouse gases that lead to climate change. To address these impacts, green buildings are well-insulated, weatherized and use energy efficient lighting, appliances, and heating and air systems. To the greatest extent possible, they also generate their own energy from local renewable resources.



Water efficiency

As our economy and population grow, the demand for our limited supply of drinkable water increases. Increases in wastewater from new development can overwhelm already stressed collection and treatment facilities. Untreated stormwater overflows can contaminate rivers, lakes, and aquifers. Some examples of ways to address these challenges include low-flow plumbing fixtures, rainwater harvesting and the use of non-drinkable water for landscaping.

While the initial costs of green buildings can be more than conventional structures, the financial benefits impact all three P's of the triple bottom line. Not only are the net costs to build/redevelop and operate the building reduced, but there are other quantifiable benefits for people and the planet. Over time, the building owners will see reductions in the cost of energy and water usage as well as an increase in their property value. People will benefit from increased health, productivity and reduced health care costs, as well as from the additional jobs that are created by green building. And the planet will benefit from a reduced and responsible use of our limited and nonrenewable resources.

What is LEED Certification?

The U.S. Green Building Council has established a certification system called LEED, or Leadership in Energy and Environmental Design. LEED certification has become a widely adopted standard by which green buildings are evaluated to determine their environmental responsiveness. There are four levels of certification – certified, silver, gold, and platinum. The number of points a building is awarded across seven categories determines the level of certification. For new construction and major building renovations, the criteria within each category address the following questions:

Sustainable Sites – Is the building located near other buildings and community amenities? Does parking take up a limited amount of space? Does the project create open space for public use? Has local habitat for native plants and animals been protected or restored? Is light pollution reduced?

Water Efficiency – Has water use been reduced? Does the project save water through the use of low-flow toilets and faucets? Does the landscaping use water efficiently? Is wastewater used in innovative ways?

Energy and Atmosphere – Has energy use been reduced? Does the project create renewable energy such as solar or wind power?

Materials and Resources – Were sustainable building materials used? Were materials harvested and manufactured in the local area? Have the existing walls, floor, and roof been reused? Was the amount of construction waste minimized?

Indoor Environmental Quality – Do the paint, flooring, and other building materials produce low levels of emissions? Does the building provide access to daylight and outdoor views? How controllable are the lighting and air systems? How comfortable are people when they are inside the building?

Innovation – Were LEED accredited professionals part of the design process? Were other innovative design strategies used?

Regional Priority – This is the seventh category in LEED certification. In Wisconsin Rapids we're focusing on the priorities of: protecting or restoring habitat, maximizing open space, and using water efficient landscaping.





The Tribune has been designed as a public education site where sustainable features are showcased. Artist rendering. April 2015.

What Sustainable Features Will The Tribune Building Have?

The Tribune Building Project (www.tribunebuilding.org) began in 2012 when Incourage purchased the historic property in downtown Wisconsin Rapids with the intent that residents would decide its future use. Since that time, over 1,200 residents have invested more than 6,300 hours to discuss all aspects of the building – how the building should be used, as well as how it should be designed, including building layout, materials, art and environmentally friendly features.

The Tribune will serve as a “community accelerator” – accelerating economic growth and opportunity, environmental sustainability, learning, creativity, and connections for community benefit. The building will include a cafe/brewpub, creative workshop/makerspace, culinary kitchen, microbrewery, recreational rental, art studio and gallery, game room and play area, rooftop lounge, meeting spaces, retail store for local goods, and additional flexible space.

The site will maximize outdoor spaces, promote pedestrian usage, and model community livability. The Tribune has been designed as a public education site where sustainable features that reduce carbon emissions, water use and waste lead to improvements in the quality and sustainability of local and regional natural resources. These features will be implemented to promote best practices for future developments. Incourage is pursuing LEED Gold certification.

During the public meetings, community members considered a range of potential green features and prioritized those that were most important to the community. The final building design and construction budget are still being determined, but the following elements are being evaluated for inclusion in the project:

Potential Green Features

Geothermal Energy System

Just a few feet below the surface of the earth, the temperature is a consistent 55 degrees year round. But air temperatures vary greatly from summer to winter, making traditional heating and cooling least efficient when it is needed the most. A geothermal heating and cooling system takes advantage of the stable temperature underground using a pipe system that is referred to as a “loop.” Water circulates in the loop to exchange heat between the building, the heat pump, and the earth. In the winter, the system absorbs heat stored in the ground through the water that circulates in the underground loop. This heat is carried to the heat pump where it is concentrated into warm air for the building. During the summer, the system absorbs heat from within the building and sends it to the underground loop where it is absorbed by the earth. The heat pump uses the cool water returning from the earth to create cool air for the building. The energy model for the Tribune building projects that the geothermal system will reduce heating, cooling, and hot water costs by 40%.

LED Lighting Fixtures and Controls

Over the past two decades, there has been a transition from incandescent light bulbs to the twist-shaped CFL bulb, which lasts longer and uses 70% less energy yet costs only about one dollar more per bulb. However, LED bulbs are quickly overtaking the CFL bulb. LED bulbs last up to five times longer than any other bulb on the market. Many of us may remember calculators or the first digital watches using LED displays. Until recently, the technology behind LED was too expensive for larger light needs, but current prices are much more affordable. LED fixtures will be used for all applications

inside and outside the Tribune building including landscape lighting, parking lots, and exit signs. Over a 23-year period, the total operational costs for just one LED bulb – the cost of the bulb and the cost of the electricity used – is just \$38, compared to \$201 for one incandescent bulb. In addition, carbon emissions will be reduced and indoor air quality will be improved. LED bulbs do not emit heat or noise. LED bulbs also have the added benefit of being recyclable, versus CFL or T8 fluorescent lamps, which contain toxic materials and require disposal by landfill.

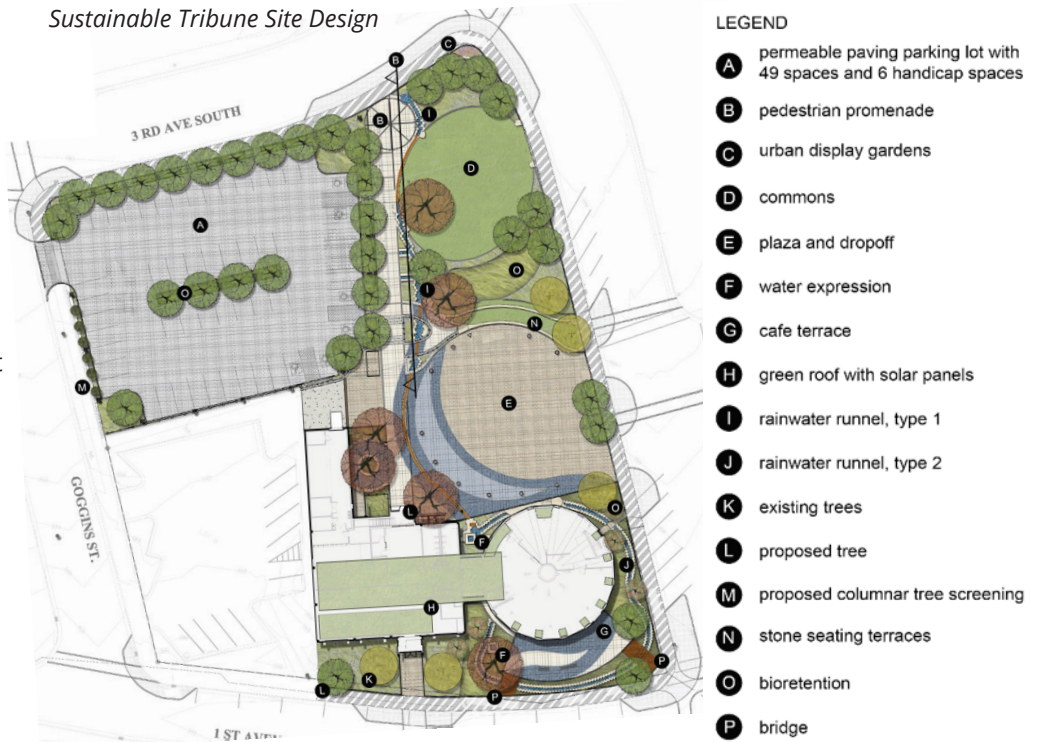
PV Solar Panels

Another way the Tribune building can reduce the use of nonrenewable energy sources is to rely on the sun, the planet's most plentiful and widely distributed renewable energy source. In Wisconsin, the sun shines about half of the days each year. Photovoltaic (PV) solar panels will be installed on the roof to create solar energy that provides electricity to the building and creates a high-visibility example of using alternative power sources to generate energy at the Tribune building.

Building Automation System (BAS)

The BAS will be a central "brain" that will give the Tribune its own "ears" and "eyes" to provide the right amount of lighting, heat, or air for the people in the room at any given time. A network of controls and sensors will determine if people are in the room and will adjust the temperature accordingly. Sensors will also detect how much daylight is in the room to determine if and how much lighting is needed. If a room is not being used, then the amount of energy needed will be minimal. The BAS will reduce utility costs and create more comfortable environments. It will also provide regular data to the building operators so they can continue to make adjustments to help the building run efficiently.

Sustainable Tribune Site Design



Building Envelope

A building's "envelope," or its exterior skin, includes the foundation, walls, roof, windows, doors, and floors. In the Tribune building, the envelope will include some of the building's original elements, as well as new features. Over half of the original building structure will be preserved. Some of those elements, including concrete roofs and brick walls, are not ideal in terms of reducing energy usage. However, it is important to the community's history to keep the basic structure of the building intact. Therefore, the building design will include strategies to improve the energy efficiency of the building envelope by glazing the windows and insulating the walls with high-performing building products that provide a buffer for changes in climate throughout the seasons.

Energy Recovery

Another way to meet energy needs in the Tribune building is to recover the byproducts of processes in the building and reuse them. Conventional buildings, for example, use tremendous amounts of energy to heat and cool indoor air, and then they exhaust that air to the outside. The Tribune will use energy recovery ventilators that capture the thermal properties (temperature and humidity) of the exhaust air and transfer them to the fresh incoming air so they are not wasted.

Site Design

Finally, the area around the building will be designed to increase environmental sustainability on site and in the community. Reusing rainwater is a key component. A rainwater harvesting system will allow rainwater to be stored on site and used to irrigate the landscape. Rainwater will also be allowed to filter back into the ground through permeable pavers, which will reduce the contaminated runoff from streets and parking lots that can harm the river. Using native plants that can thrive in Wisconsin's climate will reduce water usage as well.



What Else Is Our Community Doing Around Sustainability?

Sustainability is not a new concept in our community. Efforts are already underway to create a sustainable community through increased adoption of practice proven approaches in areas that include community health and environmental stewardship.

Clean, Green Action

Incourage's Advanced Leadership Institute (ALI) incubated a new generation of leaders, working together in new ways to create thriving communities. In 2008, ALI participants saw an opportunity to focus on improving local sustainability efforts. They held an inaugural meeting which attracted broad community representation. Thus, the Clean, Green Action group was created. This grassroots, resident-led group's mission is to create a sustainable community through education, recycling and conservation efforts in greater south Wood County.

Direct benefits seen already include: helping Wisconsin Rapids earn and keep its designation as a Bird City Wisconsin and partnering with Wood County Health Department and Incourage's Teen Leadership program to introduce River Riders Bike Share program, among other projects. Clean, Green Action's "fire souls" are creating ripples throughout this community, producing newly shared values, strengthening relationships and helping shape new conditions here.

Local Municipal Efforts

Incourage's ALI also helped launch Choose to Reuse (a freecycle program). It was started in 2010 in the Town of Rome by an ALI graduate, as a way to keep usable items from being discarded in local landfills. By recycling items at no charge, these items went to a new home, providing enjoyment for their new owners, many of them low income residents. Through collaboration and cooperation, Choose to Reuse has spread to five other municipalities: Nekoosa, Grant, Seneca, Saratoga and Grand Rapids. Currently, four municipalities hold at least one Choose to Reuse per year.

In 2015, Wisconsin Rapids Mayor Zach Vruwink introduced his Mayor's Council on Sustainability, inviting interested residents to join. This group's mission is to lead Wisconsin Rapids in developing, implementing, and maintaining measurable practices that drive the City and its constituents to become more sustainable: economically, environmentally and socially. Prominent aspects include: recycling (including implementing Choose to Reuse), public/private land use, energy, waste disposal, food and health. With support of City departments, residents are now engaged to create positive, sustainable change in Wisconsin Rapids.

Conclusion

The future economic prosperity of Central Wisconsin is dependent on the community's ability to sustain the environment and provide healthy living and working conditions for its people. The Tribune Building Project will serve as a model for the region on how sustainable development can lead to prosperity for all. Over time, we believe that the success of the building, as well as groups like Clean, Green Action and local municipal efforts will lead to other environmentally sustainable businesses and buildings that set the region on a course for environmental and economic leadership and success.

Educational Paper Series by Incourag

A sample of educational briefs are online
<http://incouragecf.org/news-media/publications>

Making Workforce Work for Central Wisconsin
by John Molinaro

Bridging the Digital Divide to Improve Life in Central Wisconsin
by Jon Newberry

Growing the Economy in Central Wisconsin
by Angela Duran

Growing the Economy Through Environmental Sustainability
by Angela Duran

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About Incourage: Established in rural Wisconsin in 1994 to serve the changing needs of the south Wood County area, Incourage has become a nationally-recognized leader in place-based philanthropy and community development. Guided by values of equity, opportunity and shared stewardship, Incourage envisions a community that works well for all people. One physical manifestation of this vision is the Tribune, which demonstrates Incourage's resident-centered approach to growing a strong and inclusive local economy. To learn more, visit incouragecf.org.