Sustainable Buildings & Offices

SUSTAINABLE BUILDINGS & OFFICES

Overview

When it comes to sustainability in buildings, the same environmental concerns apply whether it's your retail store, factory, warehouse, office, or any other facilities.

Unlike other business aspects where sustainability can seem more abstract and difficult to measure, implementing sustainability in buildings can be incredibly satisfying with results that are both easy to measure and save you money.

NOTE

Don’t forget about people!

This section focuses on providing you with tools and resources to implement environmental sustainability. It should be used in congruence with tools found in the People section regarding employees, communities, and supply chain workers. Though some certifications listed here take human wellbeing into account - like the WELL or Living building standards.

For example, the WELL Building Standard includes key criteria like fitness, comfort, and mind in addition to things more typically measured in regards to sustainability (for example air and water). Factors like health and wellness awareness, healthy sleep policies, workplace family support, biophilia (the idea that humans have an affinity towards the natural world), ergonomics, noise, thermal comfort, and beauty.

WORLD GREEN BUILDING COUNCIL

The benefits of green buildings

The world over, evidence is growing that green buildings bring multiple benefits. They provide some of the most effective means to achieving a range of global goals, such as addressing climate change, creating sustainable and thriving communities, and driving economic growth.

Highlighting these benefits, and facilitating a growing evidence base for proving them, is at the heart of what we do as an organisation.

The benefits of green buildings can be grouped within three categories: environmental, economic and social. Here, we provide a range of facts and statistics from various third-party sources that present these benefits.

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Environmental

One of the most important types of benefits green buildings offer is to our climate and the natural environment.

Green buildings can not only reduce or eliminate negative impacts on the environment by using less water, energy or natural resources, but they can, in many cases, have a positive impact on the environment (at the building or city scales) by generating their own energy or increasing biodiversity.

At the Global Level

- The building sector has the largest potential for significantly reducing greenhouse gas emissions compared to other major emitting sectors – UNEP, 2009.
- This emissions savings potential is said to be as much as 84 gigatonnes of CO2 (GtCO2) by 2050, through direct measures in buildings such as energy efficiency, fuel switching and the use of renewable energy – UNEP, 2016.
- The building sector has the potential to make energy savings of 50 percent or more in 2050, in support of limiting global temperature rises to 2°C (above pre-industrial levels) – UNEP, 2016.

At a Building Level

- Green buildings achieving the Green Star certification in Australia have been shown to produce 62 percent fewer greenhouse gas emissions than average Australian buildings, and 51 percent less potable water than if they had been built to meet minimum industry requirements.
- Green buildings certified by the Indian Green Building Council (IGBC) results in energy savings of 40 - 50% and water savings of 20 - 30% compared to conventional buildings in India.
- Green buildings achieving the Green Star certification in South Africa have been shown to save on average between 30 - 40 percent energy and carbon emissions every year, and between 20 - 30 percent potable water every year, when compared to the industry norm.
- Green buildings achieving the LEED certification in the US and other countries have been shown to consume 25 per cent less energy and 11 per cent less water, than non-green buildings.

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Economic

Green buildings offer a number of economic or financial benefits, which are relevant to a range of different people or groups or people.

These include cost savings on utility bills for tenants or households (through energy and water efficiency); lower construction costs and higher property value for building developers; increased occupancy rates or operating costs for building owners; and job creation. Since the publication of WorldGBC's groundbreaking 2013 report, *The Business Case for Green Building*, we have sought to strengthen the link between green buildings and the economic benefits they can offer.

At the global level

- Global energy efficiency measures could save an estimated €280 to €410 billion in savings on energy spending (and the equivalent to almost double the annual electricity consumption of the United States) European Commission, 2015.

At a country level

- Canada's green building industry generated $23.45 billion in
  GDP and represented nearly 300,000 full-time jobs in 2014 – Canada Green Building Council / The Delphi Group, 2016.
- Green building is projected to account for more than 3.3 million U.S. jobs by 2018 – US Green Building Council / Booz Allen Hamilton, 2015.

At a building level

- Building owners report that green buildings - whether new or renovated - command a 7 per cent increase in asset value over traditional buildings – Dodge Data & Analytics, 2016.
- Green building is projected to account for more than 3.3 million U.S. jobs by 2018 – US Green Building Council / Booz Allen Hamilton, 2015.

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Social

Green Green building benefits go beyond economics and the environment, and have been shown to bring positive social impacts too. Many of these benefits are around the health and wellbeing of people who work in green offices or live in green homes.

- Workers in green, well-ventilated offices record a 101 per cent increase in cognitive scores (brain function) - Harvard T.H. Chan School of Public Health / Syracuse University Center of Excellence / SUNY Upstate Medical School, 2015.
- Employees in offices with windows slept an average of 46 minutes more per night - American Academy of Sleep Medicine, 2013.
- Research suggests that better indoor air quality (low concentrations of CO2 and pollutants, and high ventilation rates) can lead to improvements in performance of up to 8 per cent–Park and Yoon, 2011.

Our Better Places for People project focuses on creating buildings which are not only good for the environment, but also support healthier, happier and more productive lives.

WorldGBC and the Green Building Council of South Africa established a joint project to develop a framework to enable complex socio-economic issues to be integrated into any green building rating system in the world.

WORLD GREEN BUILDING COUNCIL

Retail opportunities

Retail offers a unique opportunity as sustainability efforts come face-to-face with consumers in the retail space. They can see your action (or non-action) and quickly learn about the efforts your company is making. This also applies to e-commerce and packaging. There are multiple areas to consider when looking at retail operations:

Communicate to Consumers

Consider your retail presence great opportunity to put your values out there and share them with consumers. Whether it's your flagship store or you're one of many brands sold by a separate vendor, use your creativity to tell your story. See Communication & Marketing Strategies for more ideas.

Community

What impact do the retail operations have on the community? Do you have public spaces? Do you hold public events? We recognize this is not appropriate or useful for all brands, but having a presence in the local communities around your stores is a great place to start.

Displays

In-store signage and displays (including window displays) can all impact overall sustainability. Do your signs, posters, and other displays get thrown out when you are done with them? Consider alternative ways of reusing them. Could they be shred for packaging? Donated to local schools or creative reuse stores for art projects? Donated to prop houses or other retail rental companies?

Packaging

See the Packaging section of this guide.

WORKSHEET

Sustainable buildings & offices

1. Use less water

Use Low-Water Appliances

- This includes things like low flow toilets, washing machines, dishwashers, faucets, and any other water-using appliance. (The ENERGY STAR® seal means you're buying an appliance that uses 10-50% less energy and water. Check out the Energy Star website to see what gets the seal of approval.)

Make Sure Plants and Gardens are Low-Water

Make Sure the Water Leaving Your Facility is Clean

- Make sure whatever water leaves your facility is not harmful to people or the environment, and does not put undue stress on stormwater and drainage infrastructure.

Can You Filter and Recycle Your Own Water?

- This is most relevant to factories and wet-processing facilities that tend to use large volumes of water.

2. Use less energy

Turn off the Lights and Use Natural Light

- You'll save money on energy and maybe even feel better – exposure to natural light at work has been linked to better sleep, more physical activity and even a better mood.

Turn Everything Off When You're Not Using It

- Shut down computers and turn off all lights, printers, copiers, electric heaters, ac, and any other office electronics.
- Using smart power strips can stop the drain and save you money. Power strips also make it easy because you could shut everything off with one switch.

Make Sure You're Using Low-Energy Use Electronics

- Switch to LED light bulbs. In addition to reducing your monthly electric bill by up to 75%, they last 25 times as long as traditional incandescent bulbs and don't contain any potentially harmful toxins like mercury, according to GreeNYC.
- The ENERGY STAR® seal means you're buying an appliance that uses 10-50% less energy and water. Check out the Energy Star website to see what gets the seal of approval.

3. Use better energy

Use Renewable and Low-Carbon Energy

- Install solar energy.
- Talk to your utility company. Many offer businesses the option to use more renewable energy out of the mix of energy that they purchase.

Measure Your Carbon Footprint!

- You can use an existing carbon calculator, or make your own! Here are a few free ones: Carbon Fund's Business Carbon Calculator, California Small Business Carbon Calculator. Measure your personal carbon footprint with this WWF Calculator
- DO AN ENERGY AUDIT!
  - Talk to your city to see if they'll do this for free.

WORKSHEET

Sustainable buildings & offices cont'd

4. Don't use toxic chemicals

Use non-toxic cleaning products:

- A great resource to learn more about which products are safe and non-toxic is the Environmental Working Group (EWG).
  - For cleaning products, see their Guide to Healthy Cleaning.
  - For personal care products (like hand soap), see their Skin Deep Database.

5. Reduce waste

The Goal = Zero Waste!

- Ideally, whatever (minimal) waste you make would be recyclable or biodegradable.

Use Less Paper - Or Go Paperless!

- Use digital tools to share files.
- When you have to use paper, make sure to copy and print on both sides. You can also stock your office with recycled and chlorine-free paper.
- Recycle paper in recycling bins, scrap paper, shred it for packing material, or even compost it (learn more about composting to see which papers apply).

Use and Wash Real Dishes, Silverware and Water Bottles

- The environmental impact of making, re-using and washing is far less than disposable plates, utensils, water bottles, etc. Remember to only run the dishwasher when it's full and choose the air-dry setting or open the door after the final rinse.
- Encourage your employees to use reusable coffee mugs, water bottles, takeout containers, and bags in general. Perhaps you'll even provide them with these items and tell them how to use them?

Drink Tap Water

- Avoid single-use plastic bottles. Consider an office water filter.
- You can learn about the quality of your tap water here.

Compost

- Some stuff shouldn't go to landfills – food scraps, napkins, grass clippings, leaves and many other items can be composted. (If all New Yorkers composted, they'd cut down on waste by 31%!)
- Learn how to compost in NYC and LA.

6. Have indoor plants

Plants Make Offices Healthier and More Enjoyable

- They can absorb indoor pollution and increasing the flow of oxygen.

7. Shop local

- Benefits including reduced environmental impact, job creation, better service, and community benefit, among other things. We've listed them in the People section.
- You can read more about it and create a Local Purchasing Policy with this B Lab Resource Guide.

WORKSHEET

Sustainable buildings & offices cont'd

8. Reduce impact from travel

Prioritize public transportation

- Take the train, bus, or subway instead of renting a car for business travel. Recommend employees do the same for their commute, in addition to carpooling and bike options.

If You Can, Choose Train or Bus over Airplane

- Air travel is a major source of human-induced climate change – traveling by train or bus produces 85% less pollution than a plane flight.

Use Technology

- Encourage your office to invest in videoconferencing and other technological solutions that can reduce employee travel.

9. Measure & Track Your Improvement

Measure, Track and Work on Improving the Above Areas

- Start with specific goals for your workplace sustainability initiatives and work to continually improve.

10. Get Your Entire Company Involved!

To achieve meaningful change, employee engagement makes a big difference so consider building a "green" team and providing training (and budget) for sustainability initiatives.

TOOLS & RESOURCES

City & government programs

City programs for New York City and Los Angeles:

LA Green Business Program

The City of Los Angeles Green Business Program (LAGBP) has two simple goals: to provide resources that help businesses become greener and more sustainable in everything they do, and to receive recognition for their achievements with an official certification. This free and voluntary assistance program, launched in 2014, is aimed at increasing energy and water efficiency, generating cost-savings, reducing waste, and creating a healthier environment for Angelenos.

GreeNYC

GreeNYC is dedicated to educating, engaging and mobilizing New Yorkers to help New York City meet its ambitious sustainability goals of generating zero waste and reducing greenhouse gas emissions 80 percent by the year 2050. GreeNYC helps New Yorkers take easy actions with big impacts – both for themselves and for the city as a whole. The message: by reducing energy use, eliminating waste and choosing a more sustainable lifestyle, New Yorkers will make their lives better for themselves and their families, save money AND make NYC the most sustainable big city in the world! (This is part of the larger initiative NYC Built to Last, you can read an in-depth report about the program here.)

TOOLS & RESOURCES

Tools

These organizations provide thorough resources and tools to make buildings more sustainable:

ENERGY STAR Resources

ENERGY STAR provides tons of great tools and suggestions to improve sustainability in buildings, including:

- Low- and no-cost energy-efficiency measures
- Invest in energy-efficiency measures that have a rapid payback - A list of ideas to get started with saving energy that often have a rapid payback. Complete these before you invest in capital equipment to make sure you install only the equipment you need. The best part? These upgrades continue to save you money long after the initial project cost is paid off.
- Locate energy programs in your area - find local energy efficiency programs that have partnered with ENERGY STAR in your state using the Directory of Energy Efficiency Programs.

U.S. Environmental Protection Agency (EPA)

The EPA provides tools to help you learn and understand the issues, as well as help you reduce your environmental footprint. Visit the EPA Greener Living website to learn more. Examples include:

- Environmental Management System (EMS) - An EMS is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. This page provides information and resources related to EMS for small businesses and private industry, as well as local, state and federal agencies.
- WasteWise - EPA's WasteWise encourages organizations and businesses to achieve sustainability in their practices and reduce select industrial wastes.
- Watersense - WaterSense provides facility managers, building owners, and other stakeholders with a variety of resources and initiatives to help them save water, energy, and operating costs.

WHOLE BUILDING DESIGN GUIDE® (WBDG)

A web-based portal providing access to up-to-date information on a wide range of building-related guidance, criteria and technology from a 'whole buildings' perspective. Development of the WBDG is a collaborative effort among federal agencies (from the US Department of Defense to NASA), private sector companies, non-profit organizations and educational institutions.

World Green Building Council

A global network of Green Building Councils which works to transform the places we live, work, play, heal and learn. They provide a lot of great resources on their website.

TOOLS & RESOURCES

Standards & certifications

Green building & facilities certications:

BREEAM

BREEAM is a leading sustainability assessment method for master planning projects, infrastructure and buildings. It recognizes and reflects the value in higher performing assets across the built environment lifecycle, from new construction to in-use and refurbishment.

Green Globes®

Overseen by the Green Building Initiative® (GBI), The Green Globes® certification program provides customized guidance in the design, construction and operation of high-performance interiors and buildings. Buildings are rated on a 1,000 point scale spread across seven categories: Energy, Indoor Environment, Site, Water, Resources, Emissions, and Project/Environmental Management. Users can indicate that certain credits may not be applicable to a project, a feature unique to Green Globes.

Leadership in Energy and Environmental Design (LEED)

Developed by the U.S. Green Building Council (USGBC), LEED is available for virtually all building, community and home project types. LEED provides a framework to create healthy, highly efficient and cost-saving green buildings.

The Living Building Challenge

The Living Building Challenge is a green building certification program and sustainable design framework that visualizes the ideal for the built environment. The idea is that Living Buildings give more than they take, creating a positive impact on the human and natural systems that interact with them. With the Living Building Challenge, you can create buildings that are:

- Regenerative spaces that connect occupants to light, air, food, nature, and community.
- Self-sufficient and remain within the resource limits of their site. Living Buildings produce more energy than they use and collect and treat all water on site.
- Healthy and beautiful.

TOOLS & RESOURCES

Standards & certifications

Green building & facilities certications cont'd:

TRUE Zero Waste

The TRUE Zero Waste certification system enables facilities to define, pursue and achieve their zero waste goals, cutting their carbon footprint and supporting public health. TRUE is a whole systems approach aimed at changing how materials flow through society, resulting in no waste. TRUE encourages the redesign of resource life cycles so that all products are reused and promotes processes that consider the entire lifecycle of products used within a facility.

ENERGY STAR certification for your building

Did you know that your building can earn ENERGY STAR certification just like a refrigerator or light bulb? To be certified as ENERGY STAR, a building must meet strict energy performance standards set by EPA. Specifically, to be eligible for ENERGY STAR certification, a building must earn an ENERGY STAR score of 75 or higher, indicating that it performs better than at least 75 percent of similar buildings nationwide. Through Portfolio Manager, EPA delivers 1 – 100 ENERGY STAR scores for many types of buildings. The ENERGY STAR score accounts for differences in operating conditions, regional weather data, and other important considerations. Learn more about how the 1 – 100 ENERGY STAR score is calculated.

SITES

Administered by Green Business Certification Inc. (GBCI), SITES offers a comprehensive rating system designed to distinguish sustainable landscapes, measure their performance and elevate their value. SITES certification is for development projects located on sites with or without buildings—ranging from national parks to corporate campuses, streetscapes to homes, and more.

WELL Building Standard

The WELL Building Standard explores how design, operations and behaviors within the places where we live, work, learn and play can be optimized to advance human health and well-being. It is a performance-based system for measuring, certifying, and monitoring features of the built environment by looking at seven factors including air, water, nourishment, light, fitness, comfort, and mind.

Standards for apparel manufacturing facilities:

See the Materials Processing & Manufacturing section of this guide for standards specific to apparel manufacturing facilities.

EXAMPLE

Eileen Fisher

As stated on the Eileen Fisher website, where you can read all about the green initiatives at their headquarters, stores and New Jersey distribution center.

Our Headquarters: Sunlight in Irvington

Built at the edge of the Hudson River, our award-winning corporate headquarters in Irvington, New York, blurs the lines between architecture and nature. The soaring, skylight-lit space offers employees sweeping river views; the loft- like plan is punctuated by glassed-in meeting areas, gathering spots furnished with sofas and a spacious cafe for eating.

"For most of us, breathing fresh air or sitting by the water or being in a sunlit room is relaxing," says Shona Quinn, EILEEN FISHER Sustainability Leader. "Eileen had these values in mind when we renovated our offices." From 1912 to 1988, the brick structure was home to Lord & Burnham, a greenhouse manufacturer whose notable projects included the glass conservatory at the New York Botanical Garden. In 1992 EILEEN FISHER took up tenancy; in 2007 we asked architect Earl Everett Ferguson to help us expand and transform the space. The project, along with our Creative Center at 111 Fifth Avenue in New York City, won a Good Design Is Good Business Award from Architectural Record in 2011. The renovation took a holistic look at not just energy efficiency but the ways in which design fosters creativity, collaboration and community. By choosing an open plan, lighting costs were reduced and employee satisfaction increased— river views could be accessed by everyone.

For privacy, glass-walled conference rooms were situated in the middle of the workspace and along the non-window sides of the building. Multiple kitchens, stocked with china and silverware, encourage employees to prepare healthy food. They can eat at the indoor cafe or gather at picnic tables at the river's edge.

What no one anticipated, of course, was Hurricane Sandy. Even though our headquarters are located 20 miles north of the mouth of the Hudson River, rising sea levels caused the Hudson River to rise four feet and flood our headquarters. Muddied and waterlogged, we launched a second renovation. Now, even on calm sunny days, we have new respect for the strength of the river—and the urgency of addressing climate change.

Design with Nature in Mind

Energy
- Natural light and open floor plan saves energy
- CFLs, halogen bulbs and automatic light sensors
- 29 internal climate zones, efficient HVA

Materials
- Reclaimed wood floors, natural fibers, recycled rugs
- Sustainable maple veneer on desks with recycled wood
- Locally sourced materials and labor
- Low-flow bathroom fixtures

Air Quality
- Paints, stains and sealants: low/no VOCs
- Green Guard certified filing cabinets
- Contained spaces for copy machines

Location
- Close to train/ restaurants, limiting need for car travel

Cultural Connection
- Open spaces promote collaborative work
- Kitchens with china/ silverware eliminate waste
- Informal gathering spaces with living room-like furnishing
- Loft-like space for eating; outdoor picnic tables at the water's edge
- Quiet Room, Yoga Room, Lactation Room

EXAMPLE

Ikea

From the IKEA 2017 Sustainability Report

"Environmental performance is important, but sustainability is about more than just the building. We want all of our stores and shopping centres to contribute to healthy and sustainable living, and promote fairness and inclusiveness for the people working there, visitors, and the communities around them. Our approach is underpinned by the IKEA Group Sustainable Store guidelines which we update to reflect new learnings and best practice from each new store we build."

Key factors that IKEA mentions:

Energy and Resources

- Natural light: Large windows and skylights feed the store with daylight, creating a pleasant and enjoyable shopping experience.
- Building certification- BREEAM Excellent (LEED in the US)
- Natural light- Large windows and skylights feed the store with daylight, creating a pleasant and enjoyable shopping experience.
- Lighting- Motion and daylight sensors control the lighting, which is all LED.
- Heating and cooling- Heat pumps, solar thermal collectors and a combined heat and power plant that uses biogas to heat and cool the store.
- Renewable energy- Solar photovoltaic panels (or purchasing renewable energy from the local utility when possible)
- Water Collected rainwater provides enough water to flush the toilets in the store.
- Building materials All building materials selected for their low impact and recyclability, and to create a pleasant indoor environment.
- Accessibility Shuttle bus connects the store to surrounding areas, and the site links seamlessly into the cycle network.
- Transport Six electric vehicle charging stations powered by 100 percent renewable electricity.
- Recycling Customers can recycle a range of household items at the recycling hub.
- Better air quality The use of heat pumps reduces emissions from the store.