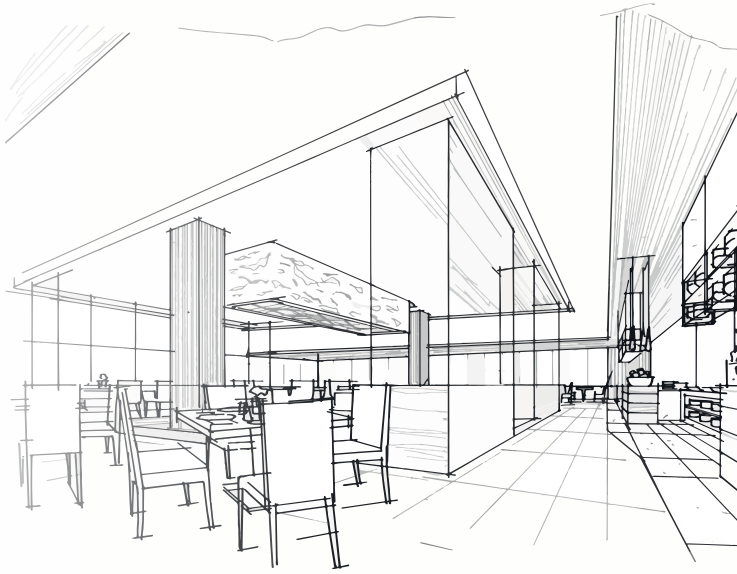


# When Green is More Than a Color

*A Foodservice Guide to Green Design*

## Why foodservice design is going green

**As the green movement makes its way toward the mainstream, more and more industries are taking a hard look at how their practices impact the health of both humans and the environment. The foodservice business is no exception — especially when it comes to the design, construction and remodeling of its facilities, stores, kitchens and dining spaces. In fact, the entire building sector is under more pressure than ever to reduce their footprint and embrace more sustainable design and construction conventions.**



And this makes sense. The building sector's environmental impact is notable. The sector alone utilizes 40% of the natural resources obtained in industrialized countries, 70% of the electricity, and 12% of the potable water. It also produces 45% to 65% of the waste disposed to landfills.[1]

This impact is further compounded when you consider its growth potential. As global populations increase, so does the strain on resources. In fact, mother earth gains tens of millions of people each year — all of whom need foodservice facilities, restaurants, stores and other structures to support their well-being and lifestyles.

1. Source: https://doi.org/10.1016/j.proeng.2011.11.2090

## What this means for foodservice design?

**Well, for starters, the foodservice industry and its design consultants, architects, in-house designers and builders will begin to embrace (or in some cases concede to) the fact that the future is green. Little by little, at varying intervals and speeds, different green practices and priorities will inch their way from the fringe to the forefront.**

The design community is already experiencing this changeover in certain areas. Building codes are starting to incorporate more eco-friendly requirements. LEED certifications are growing. And many designers and foodservice organizations are looking for ways — both big and small — to minimize their eco-impact and approach projects with a greener way of thinking.

> "I cannot pursue my architecture without considering the minimization of energy consumption, simple and direct technologies, a respect for site, climate, place and culture."
>
> — Glenn Murcutt,
> *renowned Australian architect*



# Green comes in many shades.

**In an ideal world, the goal of green design would be to "leave no trace." However, in modern-day, this concept of zero impact isn't realistic at scale. To some degree, there will always be an impact. No matter how "green" the materials being transported, the truck delivering them will generate carbon emissions. Regardless of how efficient a recycling facility is, it will consume some energy. The impact exists. It's just a matter of how severe.**

That's where the balance — or the different shades of green — come in. Design professionals must look at the big picture. They must factor in sustainability goals with other important pieces of the puzzle, such as function, safety, budget, access, aesthetic and operator expectations.

Creating greener designs doesn't have to be an all-or-nothing approach. Foodservice operators and their designers can start by incorporating a few "quick wins" and throttle their approach up or down based on project goals and comfort level.

Whatever the case, they can make strides toward a greener tomorrow by evaluating three important areas of a design:

1: Material Analysis

2: Spatial Planning

3: Equipment Selection



### A lightbulb moment

Using light-emitting diodes (LEDs) is a quick and easy way to infuse a little green into designs. LEDs not only conserve energy, but they pay for themselves over time in energy and replacement cost savings.

| | LED | Incandescent[2] | Halogen |
|---|---|---|---|
| Annual cost to operate[3] | $1.79 | $20.44 | $30.66 |
| Life expectancy (hours) | 25,000[4] | 3,000 | 1,500 |

2. Based on 3,650 hours per year at 14 cents per kilowatt-hour (kWh)
3. With 167 °F (75 °C) ambient air temperature
4. Appliance bulb

# 1: Material Analysis

**While there's no one-size-fits-all formula to determine the ideal eco-friendly material for a specific application, looking at the whole life-cycle environmental impact of building materials can help. This "cradle to grave" approach involves evaluating how a building material contributes to greenhouse gas production, air quality, water consumption and the depletion of resources. However, it delves deeper, considering the energy consumption implications at each and every touchpoint.**

Renewable energy sources, such as a solar-powered manufacturing facility, can help offset the energy load a particular material carries. Even so, it's difficult for a material to net a zero-energy impact. Typically there will be energy-use implications to consider across each of these areas:

**Embodied energy (EE):** the energy used to extract, produce, manufacture and deliver materials.

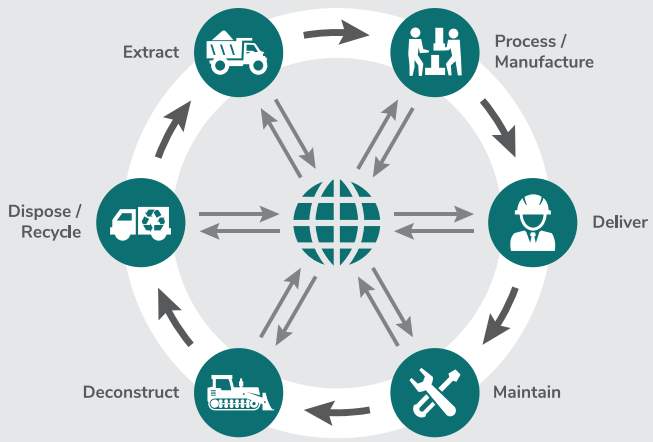
**Recurrent embodied energy (REE):** the energy consumed in the maintenance, refurbishing, replacement or retrofitting of materials.

**Demolition energy:** the energy used in the deconstruction of building and disposing of materials.

**Analysis technique**

**Life-cycle assessments (LCAs)** are a methodology that's been used since the 1960s to assess and critique the environmental impacts associated across all life stages of a material, product or practice.

## What's the impact?



# What materials are green?

**The above considerations beg the question of which materials are more eco-friendly than others. Of course, no material is perfect. However, some will score higher on the sustainability and conservation scale than others. Knowing what to look for can help design professionals and foodservice organizations gauge the potential impact of the materials they prioritize.**

**Considerations for the evaluation and selection of materials:**

- Durable enough to stand the test of time
- Recyclable
- Renewable (e.g., wood, stone, clay, bamboo)
- Available locally to eliminate long-haul transport
- Responsibly harvested
- Sourced from an eco-conscious supplier
- Recycled or repurposed from architectural salvage
- Non-toxic
- Non-synthetic
- Free of volatile organic compounds (VOCs)

Many green-minded professionals are even beginning to think outside of the box when it comes to material selection and sourcing. For example, it's not uncommon for designers to incorporate salvaged scrap metal and glass in their plans. Some are even repurposing non-traditional materials like cardboard or fabric in visual installations that double as insulation. These same savvy designers are also making strides to reduce the production of concrete — a leading source of carbon dioxide emissions — by using urbanite, or unwanted chunks of concrete leftover from demolition projects.

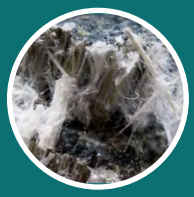
**These solutions aren't only more environmentally friendly, but they can equate to tremendous cost savings.** Often, if people are willing to haul the material away from a construction site or warehouse, it's theirs for the taking. Better yet, many are even using materials that they can recover from their own project sites.



### Be wary of misleading claims

Just like with food, the term "natural" is often used by suppliers and distributors to sell or market a material as healthier for people and the environment. But, just because a material is natural doesn't make it green.

Naturally occurring materials with health concerns



Asbestos is from minerals



Radon is emitted from stone



Turpentine is from tree resin

# 2: Spatial Planning

**Come time for the schematic and design development phases of a project, design professionals must consider how their use of space impacts the efficiency and sustainability of a room, a group of rooms or an entire building. Luckily, most designers are already doing this. In efforts to drive long-term cost savings for clients or their own companies, they are also — intentionally or unintentionally — designing foodservice spaces that use less energy.**

Part of these efforts involve implementing an efficient heating, ventilation and air conditioning (HVAC) strategy. Since cost and energy savings are largely dependent on how well a room can circulate air and maintain comfortable and safe temperatures, design professionals need to stay up to speed on the latest approaches for meeting their HVAC goals.

One tried-and-true method is daylighting, where designers strategically position reflective surfaces, windows, skylights and other openings to maximize natural light and temperature control.

In addition to windows, designers should consider other natural ventilation techniques, such as open-air dining areas with garage doors that operators can open and close depending on the weather.



### Inspiration from Google

Google may be best known for their employee-centric campuses with everything from slides to free dining facilities, fun work stations and more. But, over the years, the company has also worked to make their offices more eco-friendly — and in ways that are actually obtainable!

**Designers can encourage greener behavior by incorporating designated areas for:**

- Bike share or commuter bike stations
- Rooftop gardens and bee colonies
- Compost and recycling stations
- Indoor and outdoor plants
- Outdoor communal areas

**The layout of a design will also directly impact the efficiency of any equipment in the space.** Designers need to plan for this, especially in commercial foodservice spaces that utilize multiple appliances and must accommodate different employee or customer workflows. They can't just pop a piece of equipment anywhere. They need to think through how people will use it, access it and service it — as well as where within the foodservice space it will create the most energy efficiencies.

At the most basic level, designers should position equipment so it doesn't have to work harder and consume more energy than necessary. They also need to think about how equipment positioning can impact ambient temperatures in a room. For example, if equipment lets off unnecessary hot or cold air, more energy via air conditioning or heating is required to bring the room back to a comfortable and safe temperature.

**When evaluating where to position equipment, designers should keep these best practices in mind:**

- Distance heat-producing equipment from refrigerated equipment and drafty doors.
- Position self-service equipment, such as beverage cases and heated display cases, so operators and customers can easily access them without leaving doors open for extended periods of time.
- Leave ventilation room for equipment like refrigeration units to expel hot air as part of its natural cooling process.
- Position equipment so it's conveniently located, but not exposed to excess wear and tear that could lead to premature servicing or replacement.
- Have a lighting strategy, so lights are positioned and timed to minimize heat production and energy use.
- Situate equipment where staff and technicians can easily clean or service unit components because well-maintained equipment will always run more efficiently.



# 3: Equipment Selection

**Aside from determining where equipment will live within a plan, design professionals need to think about what equipment to recommend for the job. Not all equipment is created equal. Some will use more resources like energy, fuel and water. Others will tread much lighter on the earth — helping operators conserve resources and create healthier environments for all.**

Eco-friendly equipment is an easy way for foodservice facilities to make strides toward greener operations, as there's a lot of affordable, accessible and high-quality equipment on the market. When evaluating equipment options, buyers should educate themselves on the features and capabilities that will best help them achieve their operational, budget and green goals.

**Here are a few characteristics and qualifiers that can elevate the green factor for equipment purchases:**

- Energy Star® rating or equivalent
- LED bulbs and fixtures instead of incandescent or halogen
- Auto on/off or power-saving modes
- Water-saving devices like low-flow spray valves
- Features that recycle energy or water
- Low operating temperatures
- Chemical-free
- Thick insulation that's efficient at preserving temperatures
- Sourced locally
- Efficient zone heating or cooling
- Quality materials and construction
- Renewable power sources (e.g., solar panels)
- Induction technologies to cut energy use in half
- Versatile, multi-purpose capabilities



**A word to the wise.** In some circles, green practices, products and solutions carry a bit of a stigma. Often, people hear the word "green" and automatically think money. It is true. Purchasing greener equipment (or implementing greener practices) can require more of an upfront investment. It's not always the most inexpensive option, at least initially. However, what people often fail to consider is the long-term payoff, or lifetime return on investment, of earth-friendly solutions. While the upfront cost might be steeper, the savings generated over time pays off — big.

### Small equipment with big savings potential

A recent study from the **Food Service Technology Center (FSTC)**, the nation's leading resource for commercial foodservice energy efficiency information, found that seemingly small appliances like conveyor toasters have big savings potential.

### Study results for Hatco conveyor toaster[5]

Replacing or upgrading standard 120-volt toasters with **Hatco's Toast Qwik® Conveyor Toaster** is good for the environment (and the wallet).

- **19%** daily energy savings
- **$98** annual utility savings
- **4.5** years to recoup upgrade costs

5. Source: **FSTC Report # 50138-R0**




## Green is the new black

Creating more sustainable and environmentally friendly designs doesn't have to be a huge undertaking. Start small, focusing on little ways to drive big efficiencies.

**To learn more about Hatco's commitment to sustainability and all of the ways we can help designers reduce waste, conserve energy, minimize their carbon footprint, and save money, talk to your Hatco contact or find a local rep near you!**

**FIND A HATCO REP**

Hatco Corporation
P.O. Box 340500
Milwaukee, WI 53234-0500 USA
414-671-6350
support@hatcocorp.com