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BUILDING A BETTER, GREENER WORKSPACE

Designing and building a sustainable workspace can help reduce your organization's environmental impact and energy use as well as improve staff productivity. As you start planning how to create a sustainable workplace, take into account your organization's sustainability goals, budget, and the state of the building you will occupy.

As part of your sustainable workspace plan, you may consider pursuing Leadership in Energy and Environmental Design (LEED) certification for Commercial Interiors. The United States Green Building Council's (USGBC) certification programs are the nation's preeminent programs for the design, construction and operation of high performance buildings. LEED certification is a highly recognized industry benchmark. However, on occasion factors such as mechanical or plumbing systems that cannot accommodate LEED criteria, may impede LEED certification. When LEED certification is not an option, an organization can still positively impact the environment and its staff by incorporating sustainability into its build-out.

This guide outlines the many ways sustainability can be incorporated into interior build-out as well as some helpful tips for saving time and money.

FIRST STEPS FOR A SUCCESSFUL SUSTAINABLE WORKSPACE

Involve the entire team from the very beginning

Ideally, the pursuit of a sustainable workspace begins in the lease transaction phase. When planners and designers are involved early, they can perform the necessary due diligence and provide direction before a final space is committed to and a lease is signed. Sustainability requirements and specifications can be clearly outlined as part of the drawings before they go out to bid.

Consider an expert

If you decide to pursue LEED certification, engaging a LEED consultant, LEED accredited design professional or LEED accredited project manager will provide needed oversight and accountability. This individual will help navigate the LEED documentation and submittals for certification as well as keep the LEED design and construction team on track.

Evaluate your building

Consider how your building matches up with the LEED rating system. Once any gaps have been identified, prioritize and target action items toward meeting LEED certification criteria.

Obtain stakeholder input and buy-in

Consider holding a collaborative meeting on how to best approach the building holistically. The meeting should include the owner, architect and on-site engineers. At this meeting you should address building design or renovation decisions that affect water and energy efficiency, material selection and the overall quality of the space – especially how it affects the occupants and the environment.

WHAT TO CONSIDER WHEN BUILDING OUT A SUSTAINABLE WORKSPACE

Commissioning

Commissioning is a best practice intended to verify that energy-related systems are calibrated to perform at the highest efficiency. Optimizing energy use through commissioning can produce significant energy savings and reduce operating costs. Commissioning also identifies areas for improvement and sets long-term energy goals for the building. Lastly, training of operations and maintenance personnel also helps to ensure that proper operations and maintenance are utilized to best preserve owner and tenant assets. At a minimum, the commissioning process will ensure the following:

- Light sensors are working as specified
- Daylighting controls, and nighttime and unoccupied energy set-backs are in place
- HVAC equipment is not oversized, it is using variable speed controls and has appropriate zoning
- Standards of ASHRAE 90.1 and ASHRAE 62.1 are being met

Mechanical

- Comfort can be measured against ASHRAE Standard 55. This standard addresses indoor temperature and humidity, among other items.
- Utilize ASHRAE 62 standards for ventilation. The standard's goal is to provide building occupants with adequate outside air and ventilation rates for various types of building spaces.

Electrical - Lighting

- Poor lighting design and inefficient fixtures waste energy and increase the loads on cooling systems. In addition, glare and reflections from poor workspace lighting can lead to eye strain, fatigue, reduced productivity and increased errors in visual tasks.
- Advances in ballasts, luminaries and control technology make it possible to obtain higher quality lighting with significant reductions in energy usage. In many cases a lighting retrofit project can pay for itself with the generated energy savings in less than one year.
- Lighting alone can account for 20% to 40% of commercial space energy costs. Installed lighting should have good color rendering and utilize energy saving technologies such as occupancy sensors, photo sensors, day-lighting sensors and timers.

Electrical - Plug Loads

- Purchase ENERGY STAR equipment and appliances when upgrading existing equipment. ENERGY STAR-certified office and imaging products use up to 60% less electricity than standard equipment, which keeps utility usage and costs down.

Plumbing

- Install low-flow fixtures whenever tenant improvements include restroom and kitchen facilities. Currently, approximately 25% of the cost of water is the cost to pump, filter, purify, treat and dispose of it.
- If the landlord is not already using low-flow water closets, urinals, and lavatory and kitchen faucets, ask them to consider doing so – even if it winds up being a phased change-out.
- Purchase low-flow dishwashers and other water-conserving fixtures to obtain an innovation credit if pursuing LEED-CI.

Furniture and Flooring

Systems furniture and seating

- Low-toxicity furniture and seating options are available. Specify furniture that is Cradle to Cradle certified, or that has high levels of recycled content and can also be recycled at the end of its useful life.
- Avoid vinyl and virgin polyester textiles.
- Re-use existing furniture to the greatest extent possible.
- Donate old furniture to charity or sell it to a furniture refurbishing company.

These traits may contribute to achieving LEED credits as well as your overall sustainability goals.

Built-in cabinets and shelving

Specify cabinets made from composite wood products that contain no added urea-formaldehyde for built-in cabinets and shelving. Specify wheatboard, formaldehyde-free mdf (medium density fiberboard) or plywood for cabinets, storage systems and shelving.

Flooring

Carpets and carpet padding

- Specify carpet with the Carpet and Rug Institute's (CRI) Green Label Plus program. Because many major carpet manufacturers are members of CRI, a

Green Label Plus certified product may be available with little or no cost premium.

- Specify carpet that has achieved NSF-140 Sustainable Carpet Assessment Standard level Gold or higher certification.
- Choose natural fibers for your carpets, such as wool and jute, if applicable.
- Choose carpet and backings with recycled content
- Use low-toxicity adhesives (see the Adhesives and Sealants section).

Carpet tile vs. broadloom

Carpet tiles also provide an easy strategy to replace individual tiles when spots are damaged as opposed to large runs of broadloom carpet. Tiles can also be rotated out of heavy traffic areas. They can be put back to work instead of in a landfill.

Non-carpet flooring

- Specify low-VOC or rapidly renewable alternatives to vinyl composition flooring, including the following:
 - Linoleum made from natural materials including cork, linseed oil, wood flour and jute backing
 - Hardwood flooring with Forest Steward Council (FSC) certified wood
 - Reclaimed Wood flooring
 - Rapidly Renewable woods such as Bamboo or Eucalyptus which are farmed using socially responsible farming and manufacturing practices
 - Cork Flooring
 - Engineered flooring systems with no added urea-formaldehyde in their glue or resins

Local and Recycled Materials

Using local materials (those manufactured within a 500 mile radius) supports the regional economy and reduces the environmental impacts of transportation. The design and planning team can research both materials and manufacturers that use local resources and recommend those products to the tenant.

Look for materials that are made with recycled products and that can be recycled upon end of useful life.

Low-VOC Materials and Products

The intent of low-VOC materials and products is to enhance indoor environmental quality by reducing the quantity of contaminants that are odorous and potentially irritating and harmful to construction workers and occupants. To achieve this, it is important for the architect and designer to specify the right products. It is particularly important that the GC is fully engaged in monitoring and verifying that the subcontractors are using low-emitting paints, sealants and adhesives as specified and approved. LEED credits related to this include:

Paints and primers

Specify paints and primers that meet the emission and chemical component requirements of Green Seal Standard GS-11 and South Coast Air Quality Management District (SCAQMD) volatile organic compound (VOC) limits.

- Use low or zero-VOC paints and primers.

Adhesives and Sealants

The VOCs released from adhesives and sealants may redeposit in carpet, fabrics or unpainted drywall. To keep VOCs at a minimum:

- Use low-toxicity adhesives, which are available for installing all building materials, including ceramic tile, linoleum, vinyl flooring, carpet base, wall coverings and countertops.
- Specify only adhesives that meet the VOC limits of SCAQMD for carpet, seam sealer, tile, flooring, cove base, countertop, framing and panel adhesives
- Use low-toxicity, water-based, siliconized acrylic caulk (painter's caulk) for interior moisture and air sealing.
- Use low-toxicity mastic for sealing HVAC ductwork
- Use low-VOC waterproofing sealants for any applications within the building's vapor barrier system

Sustainable Construction Standards

Construction inevitably takes a toll on the environment by consuming new materials, tearing down the old and generating a lot of dust and debris in the process. Following are some cost-neutral practices to include in the build-out RFP that can help offset the negatives inherent in constructing tenant improvements.

Construction waste management

The GC will work to divert a minimum 70% of construction waste from landfills by contracting with a local dumpster company that can provide a print confirmation

of what waste has been sorted and recycled at the waste management facility and hence diverted from the landfill.

Filtration

When using the HVAC system during construction, the GC will provide temporary filtration media with a minimum efficiency reporting value of MERV 8 at each return air grille. The GC will also coordinate with their mechanical installer to seal with plastic the openings of ducts during installation so as to not accumulate construction dust in the new ductwork.

Salvage and re-use

The GC will make every effort to re-use, salvage and/or donate demolition material from the job site whenever it is cost-effective. The GC will provide a list of materials it was able to salvage or re-use from the site, to the owner.

Local sourcing

When cost-effective, the GC will source materials that are extracted or produced regionally within a 500 mile radius.

Sealants and coatings

During construction the GC will ensure that the sealants, adhesives, paints and other coatings adhere strictly to the aforementioned low-emission standards.

No-smoking

All jobsites are designated as no-smoking.

Cleaning products

When completing the final cleaning of the space, the GC will coordinate with the cleaning service to use non-toxic, low-VOC, Green Seal-certified cleaning products. Green Seal is a non-profit organization that certifies and maintains environmental sustainability standards.

Innovation

Innovative strategies and exemplary performance in any sustainable initiative are rewarded by LEED. One popular and common-sense initiative is to provide an educational program for employees, on sustainable aspects of their space and to educate them on how they can contribute to keeping their office space green. LEED consultants are also a great resource in finding other innovative strategies that fit a particular project.