# Guide to Improving Construction Site Sustainability



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## Introduction

Sustainability is often focused on the design and construction team for the end building, but it can be overlooked for a project team and jobsite.

While back at the home office, employees benefit from LED light, air monitoring, healthy snacks, and EV charging. **It often is very different at the jobsite trailer - where teams may be spending the next 24-36 months of their lives!** That's where this guide comes in to laser focus efforts on creating a greener, more sustainable, healthier and safer jobsite where the majority of employees spend their day.



### **Plan Early for Success**

To improve sustainability on a project site, it is essential to start planning as early as possible. Teams need to determine what is feasible on the project site that aligns with the organization's sustainability goals while balancing any site constraints.



# **About This Guide**

For each section of this guide, we have provided a list of ideas for improving sustainability on the jobsite. Each list is divided into three tiers. Tier 1 includes strategies that are relatively to implement, and/or are no or low cost. Tiers 2 and 3 can be slightly more challenging and may require extra effort from the project team to successfully implement.

The team should choose the strategies from the lists below that will work best for their project site, team composition and project type.

Regardless of what is implemented, a best practice for achieving a green job site is to make sure there is a designated sustainability champion who is responsible for the implementation and execution of ongoing initiatives.

Need help getting started or tracking your ESG initiatives? <u>Green Badger</u> is well equipped to show you the way!

# General Contractor Workspace and Office



### **ENERGY & CARBON**

Reducing energy use and carbon emissions is one of the best ways to make the construction site more sustainable and save money on utilities and fuel.

#### Tier 1

- Utilize natural light when possible by opening window blinds. This reduces energy by needing to turn on fewer (if any) lights.
- Upgrade/replace lightbulbs in the office trailer to LED, which are more efficient.
- Use power strips that can be turned off for appliances/equipment that might not be in use all the time, like a printer, fan, etc to avoid <u>vampire energy loads</u>.
- Make sure any new appliances purchased are <u>Energy Star</u>-rated, which are more energy efficient than non-rated products.
- Track utility data throughout the project so the team can tell if these energy saving measures are working. Learn how to do this with <u>Green Badger</u>.

#### Tier 2

• Install a smart thermostat that can automatically adjust heating and cooling when the space is unoccupied (nights, weekends, holidays). When the space is unoccupied, it changing the temperature by a few degrees can make a big difference on energy demand and savings on the bill.



- Opt for a trailer that is well-insulated, and does not have any holes or gaps in the frame. This will save on heating and cooling costs by preventing the conditioned air from escaping.
- Install light occupancy sensors so the lights will automatically turn off when people are not in the space.
- Sourcing electricity from the grid is cleaner than relying on diesel generators; tie into the grid if possible.



### **HEALTH & WELLNESS**

There are many ways that project teams can improve the health and wellness of employees by making a few simple changes in the workspace.

#### Tier 1

- Post signage with reminders to stay hydrated which encourages people to drink more water.
- Provide SPF and signage about the health impacts of sun exposure.
- Provide tinted eye protection options for observing exterior work.
- Provide hand sanitizer in every room or space within the jobsite office.
- Encourage activity-based team events. These can help with team building in addition to promoting physical activity.
- Remind employees about gym/wellness benefits and encourage physical activity outside of work.

#### Tier 2

- When providing snacks or meals for employees, provide options that include fresh fruits and vegetables, high protein, and low added sugars.
- Lead a daily stretch break to help avoid injuries.
- Survey jobsite personnel on ways to improve health & wellness on the site.



- Provide a designated space for employees to take breaks which is important for mental health and cognitive function.
- Provide a standing workstation, which has <u>multiple benefits.</u>

## **AIR QUALITY**

Air Quality has a direct impact on each person's health and wellbeing. Many activies on construction sites contribute to poor air quality which can cause a variety of health issues. Taking steps to improve air quality can make employees feel better, use take less sick days, and improve performance.



#### Tier 1

- Place a walk-off mat and boot dusters near the entrance to prevent dust and dirt from getting inside.
- Add indoor potted plants can improve air quality and brighten up the space and provide <u>biophilic benefits</u>.
- Open windows on nice weather days to get fresh air (be cognizant of activities on site that may cause an increase of air contaminants).
- Maintain a schedule and elect a POC to replace air filters as recommended by the manufacturer to ensure air pollutants are minimized.

#### Tier 2

- Use an air purifier in crowded spaces like conference rooms, or open office areas.
- Use MERV 8 filters (or higher) in trailer or office. These filters can capture pollen, dust mites, and mold spores among other air pollutants.

#### Tier 3

• Use an air quality monitor to track air quality and alert the team when air quality ispoor. This allows team members to understand what actions can cause poor air quality and if the strategies implemented are effective.



### WASTE

Thousands of tons of waste are produced on construction sites each day. Minimizing the amount of waste coming out of the job trailer over the course of a project can add up and make a huge difference.

#### Tier 1

- Provide all employees with a reusable water bottle and a place where it can be refilled filter on the kitchen sink, water cooler, etc. to avoid waste from single use bottles.
- Choose refillable items soap dispensers, cleaning products, hand sanitizer dispensers, etc to avoid single use plastic containers.
- Provide a reusable K cup for coffee, or get a classic coffee maker instead of the models that make one cup at a time. This produces less waste than K cups.
- Avoid single-serve packages for coffee creamer, sugar, salt, pepper, condiments, salad dressing, etc. which is a bunch of unnecessary plastic. Opt for a normal size and allow everyone to use it.
- Encourage employees to bring their own reusable utensils with their lunch instead of keeping plastic utensils in the kitchen.



### Tier 2

- Be a paperless job site by utilizing electronic drawings
- Use OneNote, Rocketbook, or other apps for digital note-keeping
- Provide designated, clearly labeled recycling bins. Designate a recycling champion to ensure proper separation and disposal practices. Provide educational resources about what can be recycled in the project's jurisdiction area.
- Countertop composter for food waste Green Badger loves Lomi! Compost can be donated to schools or community centers with gardens. Make sure to have signage nearby about what can and cannot be composted.

### Tier 3

• At the end of the project, donate any excess furniture, equipment, office supplies, etc. that can't be reused within your own company to a local nonprofit instead of throwing it out.

### WATER

Fresh water is a valuable resource, especially in the dryer parts of the country. There are several strategies to try when trying to reduce water consumption.

#### Tier 1

- Add signage near sinks and other water sources to remind users to turn off faucets when not in use.
- Place a brick in the toilet tank to reduce the amount of water that fills the tank.



#### Tier 2

• Repair leaks as quickly as possible to avoid wasted clean water and high water bills.

#### Tier 3

• Upgrade/install water fixtures to include sensors or have a WaterSense rating, which use water more efficiently than non rated fixtures.





### **ENERGY & CARBON**

Many heavy machines, equipment, and vehicles used in construction produces a large amount of carbon that adds to the project's emissions footprint.



#### Tier 1

- Create and distribute an anti-idling plan and post signage around the jobsite. Running vehicle engines while not inuse contributes to carbon emissions.
- Right-size equipment and generators. Bigger equipment produces more carbon emissions.

#### Tier 2

• Provide preferred parking for carpools / EV (electric vehicles)to reduce emissions from commuting.

- Hire local trade partners to reduce commute emissions.
- If the jobsite is near public transportation, incentivize employees and subcontractors to use this over cars.
- Install EV charging stations when possible to encourage the use of electric vehicles.
- Sourcing electricity from the grid is cleaner than relying on diesel generators; tie into the grid if possible.
- Utilize solar-powered equipment when feasible to reduce gas, diesel, and other fossil fuels used on site.
- Utilize electric construction equipment when feasible. Charing electric equipment produces fewer emissions than gas and diesel engines.



## **AIR QUALITY**

Air Quality has a direct impact on each person's health and wellbeing. Many activities on construction sites contribute to poor air quality which can cause a variety of health issues. Taking steps to improve air quality can make employees feel better, use take less sick days, and improve performance.



#### Tier 1

- Do not allow smoking or vaping on the project site.
- Create an IAQ management plan to determine the IAQ practices on the project. Use <u>Green</u> <u>Badger's template.</u>
- Follow SMACNA IAQ measures for HVAC protection, source control, pathway interruption, housekeeping, scheduling. This will reduce the amount of air contaminants in the building.

#### Tier 2

- Use an air quality monitor to track air quality and alert the team when air quality ispoor. This allows team members to understand what actions can cause poor air quality and if the strategies implemented are effective.
- Isolate or block off space for trades that interfere with air quality.
- Ensure all air ventilation requirements per the manufacturer are followed.

- Use equipment with tier 4 engines which have the highest standards for redulating emissions and air particulates from diesel engines.
- Schedule activities that interfere with air quality during off hours or limit on-site personnel during those times (painting, paving, etc.).



### WASTE

Thousands of tons of waste are produced on construction sites each day from discarded construction materials. Minimizing the amount of waste coming off the project site and increasing material reuse and recycling rates has a major impact on resource depletion and landfill use.



#### Tier 1

- Develop a waste management plan, even if the project is not pursuing LEED to help brainstorm how waste can be reduced and diverted from the landfill. Use <u>Green Badger's template.</u>
- Add clear signage to recycling areas so materials are separated correctly.

#### Tier 2

- Incentivize trade partners to utilize manufacturer takeback programs, donate to organizations lime Habitat for Humanity, or find other creative ways to use excess materials
- Set up recycling bins and dumpsters and monitor them.
- Research recycling incentives in the project's jurisdiction to see if there are cost savings available.

#### Tier 3

• Look for opportunities to use prefabrication or offsite construction, which has been proven to produce less waste than typical construction practices.



### WATER

Fresh water is a valuable resource, especially in the dryer parts of the country. There are several strategies to try when trying to reduce water consumption.



#### Tier 1

- Regularly inspect water sources for leaks and make any necessary repairs immediately to reduce water bills and prevent flooding and mold.
- Provide signage about water conservation near water sources which can reminder users to not waste water.

#### Tier 2

• Install sensors for water leak detection to avoid water damage.

#### Tier 3

- Use rainwater or other nonpotable water sources for dust suppression when possible
- Use recycled water for concrete production instead of clean water
- Treat concrete washout on-site which can reduce costs and save water



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#### EBOOK

#### **ESG Metrics Worksheet**

Benchmarking is a critical part of implementing ESG in your organization, because you need to know where you are before you can determine where you need to go.

**CLICK HERE TO DOWNLOAD**