

LABORATORY SUSTAINABILITY

*Six Low-Cost or No Cost Strategies to
Add Sustainability to Your Existing Lab*





Laboratories are one of the most expensive building types to construct and operate and can consume 5-10 times more energy per SF than an office building. According to I2SL, International Institute for Sustainable Laboratories, 40-60% of energy use on a campus can be attributed to research labs; therefore, implementing sustainable strategies within the laboratory is critical.

Unless you are building a new lab or renovating your existing facility, a holistic building sustainability strategy could be complicated. However, you can still make an impact by implementing these low-cost or no-cost strategies as your first step in approaching sustainability in your laboratory.



1 Go green, green, green!

Modify your SOPs to include “green chemistry” and green products for your cleaning procedures. This is not only environmentally responsible but can benefit occupant health greatly.

Green chemistry includes principles from minimizing hazardous chemical synthesis to minimizing toxicity by designing safer chemicals made from renewable sources, such as plant-based vs. petrochemical sources, and by designing chemicals that degrade quickly for easy disposal.

Multiple vendors offer cleaning products developed without toxic chemicals, such as wipes, glass cleaners, and industrial-strength cleaners and degreasers. Buy concentrates to minimize packaging waste.



2 Implement a reduce, reuse, & recycle program

Check with your vendors and suppliers about their recycling programs: pipettes and packaging, styrofoam send-back programs, and just-in-time ordering practices.

Evaluate your right balance between disposable lab plastics and lab glassware.



3 Power down!

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4 Evaluate your equipment leasing contracts

for possible replacement with more energy-efficient equipment. Check out incentives for replacing your less energy-efficient equipment and recycle broken or antiquated equipment appropriately.



6 Re-evaluate your work processes for operational sustainability

Ask your facilities group to provide a floor plan of your lab and create a spaghetti diagram of your workflow and equipment locations. This simple exercise will quickly bring to light operational inefficiencies and will allow you to relocate equipment and processes, saving you time and increasing efficiency within your lab.



5 Defrost your freezers for better efficiency!

Ultra-low temperature freezers (ULT) are one the largest energy hogs. Consolidate samples into fewer freezers and turn off unused freezers. Make sure your samples are still viable or needed; if not, discard to minimize storage space needs. Limit door openings.

Consider replacing with a new energy-efficient model. More recent models with advanced compressors and insulation can reduce energy consumption. According to a study performed by the US Department of Energy, a newer unit could realize a 66% energy savings resulting in an annualized savings of \$570 with a 2.8 year estimated payback.

If you are seeking to implement sustainable strategies in your lab and don't know where to begin, BSA can help.

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