

Leveraging Real Estate for Lab Sustainability

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Laboratories worldwide are increasingly turning their focus towards sustainability, integrating green practices that significantly reduce their environmental impact without compromising research integrity.

Landlords and tenants recognize the mutual benefits of embracing sustainable practices. This coincides with global environmental goals and represents a commitment to efficient and responsible science. The Savills Lab and Facility Planning team delves into the innovation and real estate strategies that create sustainable lab practices today.

Pioneering Waste Reduction through Reuse and Recycling

Academic institutions are leading the way in waste reduction with on-campus recycling initiatives. MIT's "Freecycle" initiative and Rheaply Program redistribute unused equipment and consumables. Such programs not only declutter lab space but also extend the lifecycle of scientific resources. Lab Ops Unite's message board is a resource for lab managers and operations staff to offload overstock or underutilized items. Some organizations will also donate unused consumables to school STEM programs.

[Eppendorf's Bio-based](#) consumables target the challenges posed by single-use plastics in labs. [Polycarbin](#) offers a mail-back program for pipette tip boxes, and Kimberly Clark's [Right Cycle](#) program diverts non-contaminated gloves from the waste stream. Additional recycling programs are also available from suppliers like Fisher Scientific, VWR, and [Innovive Closed-Loop](#) recycling services that are specific to animal husbandry and cages.

Leading Regions in Laboratory Recycling and Waste Management Initiatives

Across the United States, various regions are demonstrating a heightened awareness and pioneering efforts in lab recycling services and waste reduction. Notably, urban centers with strong academic and research industries like Cambridge, Boston, San Francisco, San Diego, and Raleigh-Durham have been actively enhancing lab-specific recycling and waste reduction initiatives. For example, regional organizations like Cambridge Sustainable Labs (CSL) encourage sharing best practices amongst real estate and lab operations stakeholders in an open forum at monthly events, some including lab tours.

The Role of Reporting and Data Access

Transparency in environmental impact reporting is becoming a key factor for tenants when choosing a life science landlord. Access to detailed reports on waste management and building efficiency allows tenants to track their sustainability progress and align it with broader corporate goals. By understanding how waste is handled and separated, tenants can make informed decisions about their practices.



The Emergence of Green Leases

“Green lease” language in contracts commits both parties to ongoing, long-term implementation of sustainable practices. Organizations like Takeda and AstraZeneca mandate landlords to include provisions that show a commitment to sustainability. Green leases are a testament to the recognition that sustainable lab operations extend beyond the lab and encompass the entire ecosystem of real estate management and operations.

LEED-Certified Laboratory Buildings

Laboratory buildings designed to meet [LEED](#) (Leadership in Energy and Environmental Design) standards reflect a commitment to sustainability and efficiency. LEED certified buildings are typically equipped with energy-efficient systems, sustainable materials, and technologies aimed at reducing water and energy consumption. This approach aligns with the broader goals of promoting environmental stewardship while advancing cutting-edge research within laboratories.

Strategic Equipment Consolidation and Energy Efficiency

The concept of equipment consolidation, such as creating a centralized “freezer farm,” not only enhances HVAC (Heating, Ventilation, and Air Conditioning) efficiency but also prevents the issue of compensating for heat generated by freezers. By consolidating ultra-low temperature (ULT) freezers and investing in energy-efficient models, labs can significantly reduce their energy consumption and yield major savings.

Strategies such as adjusting a temperature setting to -70°C may cut energy usage by up to 30%. To further optimize energy use, labs are encouraged to:

- Purchase [energy-efficient lab-grade refrigerators and freezers](#). Right-size your equipment purchases; bigger does not always equal better.
- Decrease onsite ULT storage by sending samples off-site to a biorepository.
- Monitor temperature settings to prevent unnecessary energy consumption and identify ‘bad behaviors.’ For temperature monitoring and asset utilization, including software and hardware, consider those provided by: [Minus80](#), [Elemental Machines](#), [Rees Scientific](#), [Traceable](#) and [SonicU](#).





Fostering Collaborative Networks for Sustainability

Labs are increasingly partnering with organizations specializing in recycling and waste management, such as [Greenlab Recycling](#) and [Conigliaro Industries](#). Resources and organizations like the [International Institute for Sustainable Laboratories \(I2SL\)](#), [Labconscious](#), [The Lab Project](#), and [My Green Lab](#) are crucial in raising awareness about sustainable lab practices.

Conclusion

The journey towards sustainable lab practices is characterized by a blend of innovative equipment management, waste reduction strategies, and the collaborative efforts of landlords and occupiers to foster a culture of sustainability within the scientific community. By embracing these practices, labs are not only contributing to a greener planet but are also setting new standards for responsible and efficient scientific research.



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