

## Thrive Buildings case study

# Top 10 Life Sciences Company

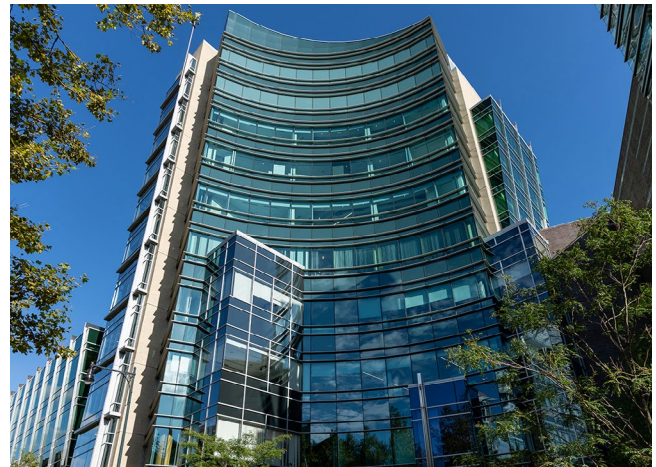
## Company Partners With Thrive to Decarbonize Their Lab Buildings

THE goal of a top, global life sciences company is to eliminate GHG emissions by 2040 which requires moving away from fossil fuels (Scope 1) and procuring 100% renewable electricity. As part of addressing this goal, 17,000 MTCDE had already been eliminated through a reduction in their real estate portfolio and energy conservation, however another 1,000 MTCDE reduction was still required to meet the 2025 goal in the US region. Additionally, to make electric heating possible and reduce costs, the company knew they must first reduce the buildings' heating loads via optimized ventilation and energy recovery. To help meet these goals, turnkey lab efficiency solution provider, Thrive Buildings, proposed implementing Aircuity along with additional airflow optimization measures within six lab buildings in their greater Boston real estate portfolio.

### ENVIRONMENTAL HEALTH & SAFETY AND AIRCUITY COLLABORATE

Thrive Buildings worked closely with the company's facilities, EH&S, and IH teams to evaluate each lab building for airflow optimization.

The objective was to not only decarbonize the buildings, but Aircuity also allowed them to enhance health and safety through MyAircuity's real time monitoring and airflow optimization platform which dynamically changes ventilation rates, delivering the right amount of air where and when it is needed.



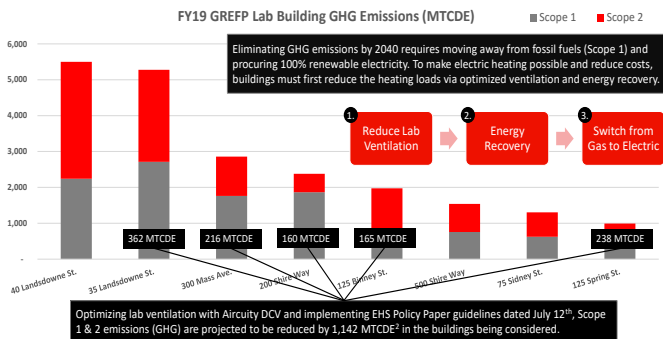
Research Building - Boston, MA

With some guidance from Aircuity, the EH&S team created a General Ventilation requirements for their Laboratories Position Paper and defined a tiered approach to baseline ACH based on a risk assessment:

- **Higher risk labs:** 8-6 ACH in an occupied space (8-6 OCC) and 6-4 ACH in an unoccupied space (6-4 UNOCC) with DCV
- **Lower risk labs:** 4 ACH in an occupied space and 2 ACH in an unoccupied space with DCV

The published framework on lab efficiency can be [found here](#).

Why should the US Region implement the Aircuity System at other locations?



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<sup>1</sup> US Region is working with ARUP to develop a detailed Sustainability Master Plan for carbon neutrality by 2040

<sup>2</sup> Metric Tons Carbon Dioxide Equivalent

## EFFICIENCY MAXIMIZED WITH ADDITIONAL AIRFLOW OPTIMIZATION MEASURES

In order to maximize carbon reduction, Thrive Buildings proposed additional airflow optimization measures within 4 of the six buildings. This included fume hood variable air volume retrofits in 3 buildings, a lab variable air volume retrofit in another, along with a proposed implementation of exhaust fan control.

The projects qualified for a total utility rebate from Eversource of approximately \$1.15 million which helped reduce the already short payback period to an average of less than 2.5 years.

## Energy and Carbon Reduction

Buildings	# Aircuity Labs	# Aircuity Test Areas	Annual Savings	Payback Period (years)	GHG Reduction (tons)	kWh Savings	Therm Savings
Boston Building 1	21	32	\$ 146,387.29	1.83	266	684,825	101,729
Boston Building 2	39	46	\$ 232,207.88	1.41	384	1,217,210	100,507
Boston Building 3	36	48	\$ 169,108.00	2.20	409	820,733	37,920
Boston Building 4	41	49	\$ 118,298.00	3.39	291	567,556	27,619
Boston Building 5	44	63	\$ 130,999.00	3.89	440	930,180	38,983
Boston Building 6	11	16	\$ 80,091.00	1.19	238	356,409	26,730
<b>Total</b>	<b>192</b>	<b>254</b>	<b>\$ 877,091.17</b>	<b>2.32</b>	<b>2,028</b>	<b>4,576,913</b>	<b>333,488</b>

## IMPLEMENTATION—LESS THAN 12 MONTHS TO DEEP ENERGY AND CARBON REDUCTION

Aircuity was initially installed in one lab building, followed by an extensive evaluation of the project, internal research, and ultimately the validation of airflow optimization. Soon after Aircuity and the additional optimization measures were implemented. From start to finish the entire process was completed in less than one year and buildings started to see reductions in energy use and carbon immediately after coming online. The company is now receiving approximately \$877,000 in annual energy savings and a 2,028 ton reduction in GHG emissions. The airside optimization projects also qualified for a utility rebate from Eversource of approximately \$1.15 million which helped reduce the already short payback period to an average of less than 2.5 years.

## ABOUT THRIVE BUILDINGS

Thrive Buildings provides clients with a frictionless and turnkey contracting solution for decarbonizing the most challenging and energy intensive buildings. The unique solution combines innovative funding, leveraging of rebate incentives, and carbon penalty avoidance with best in class technology for maximized efficiency gains. Headquartered in Philadelphia, PA, Thrive Buildings customers include Merck & Co., Columbia University and Takeda Pharmaceuticals. For more information on the company please visit: [thrivebuildings.com](https://thrivebuildings.com).

