

Kilroy Innovation Lab

At Kilroy Realty Corporation we are actively seeking emerging technologies and ideas that measurably improve the environmental performance of our real estate assets. The Kilroy Innovation Lab will pilot these innovations in order to improve our portfolio's performance and rapidly transform the larger commercial real estate market.

BACKGROUND

Kilroy Realty Corporation has been on the forefront of sustainability in commercial real estate for over seven decades, and has been recognized as the North American Leader on sustainability in the office sector for the last four straight years by GRESB. We are one of only three American real estate companies to be listed on the Dow Jones Sustainability World Index. One of the major drivers of our continued sustainability performance is our willingness to embrace emerging technologies that improve the environmental performance of our existing and new assets. Launched in 2017, the Kilroy Innovation lab formalizes the process for the implementation of sustainability pilots to provide credibility for successful technologies.





333 Brannan // Past Pilot: Biomimicry Based Materials



2211 Michelson // Past Pilot: Reducing Cooling Loads

AREAS OF INTEREST

Kilroy Innovation Labs is particularly interested in the following types of projects:

- a. **Energy** // Reducing our energy consumption is the primary objective of our existing building environmental programs, and we design our new development projects with energy efficiency as a primary goal. We are focused on emerging technologies whose primary impact is on the base building and whose efficacy is not dependent on tenant behavior change. Lighting, window film, HVAC upgrades, and controls have all been areas in which we have previously piloted new solutions and in which we expect to pilot more.
- b. **Water** // Water is another main focus of our sustainability programs, especially in California, which has experienced severe droughts in recent years. We have implemented and are interested in additional domestic water projects, typically via extremely low flow and flush plumbing fixtures. Reducing exterior water use, often through smart irrigation controllers, drip irrigation and high efficiency nozzles, is also an area in which we have done several pilots. We also have interest in cooling tower projects.
- c. **Waste** // Reducing the amount of waste we send to landfills is another important component of our programs. We have aggressively rolled out composting programs in over 60% of our portfolio, and have piloted recycling other waste streams. We are interested in projects that allow us to reduce our waste to landfill performance that do not burden our tenants or janitors.
- d. **Health** // We have placed an increasing importance on health because we believe that the wellbeing of the people that interact with our buildings is critical, and that our buildings have the ability to either promote or diminish human health and productivity. In 2017, we received both WELL and Fitwel certifications, and are interested in technologies to help us monitor the health performance of our assets. We are particularly interested in technologies that have a positive impact on both health and energy.
- e. **Biodiversity** // Recognizing increased external interest in biodiversity, we launched our biodiversity programs in 2016. All new landscapes in both the existing and development portfolios are required to include at least two plant types, which otherwise meet our reduced water requirements, that are considered pollinators by The Pollinator Partnership (www.pollinator.org). Also, any beehives discovered in undesirable locations are to be relocated either on or offsite in partnership with local beekeeping organizations rather than destroyed. Finally, we have begun installing beehives on the roofs of our buildings. We are interested in ideas to boost and measure the biodiversity impact of our properties.
- f. **Financial Structures** // Sometimes, the barrier to adoption of an efficiency technology in the commercial real estate industry is not the technology. Therefore, we have piloted unique financial structures to make the implementation of certain technologies more attractive. For example, we are one of the first Real Estate Investment Trusts (REITs) to use an innovative financial structure for solar and battery installations and hope that our structure will serve as a model for other REITs to follow to spur solar and battery adoption in our industry. Please note that this area does not extend to financing structures.
- g. **Sustainability Reporting** // In 2017, we became the first publicly traded company to align our 10-K with SASB and we are always interested in learning additional best practices regarding sustainability disclosure.
- h. **Supply Chain** // We launched our Supply Chain program in 2017 with the implementation of a code of conduct that extends to vendors and other third parties, and an analysis of our critical vendors. We are interested in learning about best practices related to ensuring environmental stewardship in our supply chain.

REPRESENTATIVE PAST PROJECTS



ENERGY

- AspenAir
- Blue Box
- Carbon Lighthouse
- Cypress Envirosystems
- Enovity Retrocommissioning
- Gridium
- IceCold
- LOBOS
- MACH
- Permafrost
- Protecall
- Rainforest Automation Eagle
- SmartCool Controls
- BuildingIQ



BIODIVERSITY

- Beehive Installation



WATER

- 1.1 gpf toilets
- GoMeter
- Hybrid waterless urinals
- ZeroBleed



HEALTH

- Fitwel
- Green Janitor Education Program
- WELL



FINANCIAL REPORTING

- SASB

MEASUREMENT & VERIFICATION

For projects whose purpose is generating financial savings, the Kilroy Innovation Lab places a strong emphasis on a robust Measurement & Verification process to confirm that savings have been realized. While we prefer a full IPMVP Option C protocol be implemented, we are also comfortable with trending consumption patterns via data loggers for 30 days prior to an intervention, 30 days during an intervention, and 30 days after an intervention. We can also use our load profile analytics to do Measurement & Verification work depending on the project.

PARTNERS



We partner with organizations that also want to accelerate the adoption of clean technology in the built environment.

The Kilroy Innovation Lab is excited that the Los Angeles Cleantech Incubator

(LACI) has come onboard as our first partner. LACI will be identifying efficiency projects in its pipeline that are appropriate for our asset types, and we will be working together to ensure smooth deployments and verifiable results. This will allow for rapid scale both in the Kilroy Realty Corporation portfolio and the larger commercial real estate community.

UTILITY COLLABORATION

We have a long history of collaborating with our utilities on emerging technology pilots. Technologies that are appropriate for our asset type (office, life science and multifamily) that are part of a utility emerging technology program are particularly welcome. We are also favorable towards technologies that have been vetted by our utilities and, for example, receive rebates for their implementation.

FUTURE ENGAGEMENT

We recognize that our square footage has been and will continue to be fertile ground for testing out the technologies that have the potential to transform commercial real estate. The Kilroy Innovation Lab is always looking for new emerging technologies to pilot.

Our ideal pilots have the following features:

1. No upfront cost
2. Minimally invasive
3. Meets our insurance requirements
4. UL listed if a hardware component is involved
5. Robust Measurement & Verification process
6. Primarily within a base building scope
7. Simple payback of 3 years or less for projects that generate savings
8. Focused on one of the following areas:

a. Energy	f. Financial
b. Water	Structures
c. Waste	g. Sustainability
d. Health	Reporting
e. Biodiversity	h. Supply Chain

CONTACT

Companies interested in partnering on a Kilroy Innovation Lab pilot should contact Sarah King (sking@kilroyrealty.com) with a description of how their technology meets the criteria outlined here.