

ZETRO: Zero over time building retrofit solutions

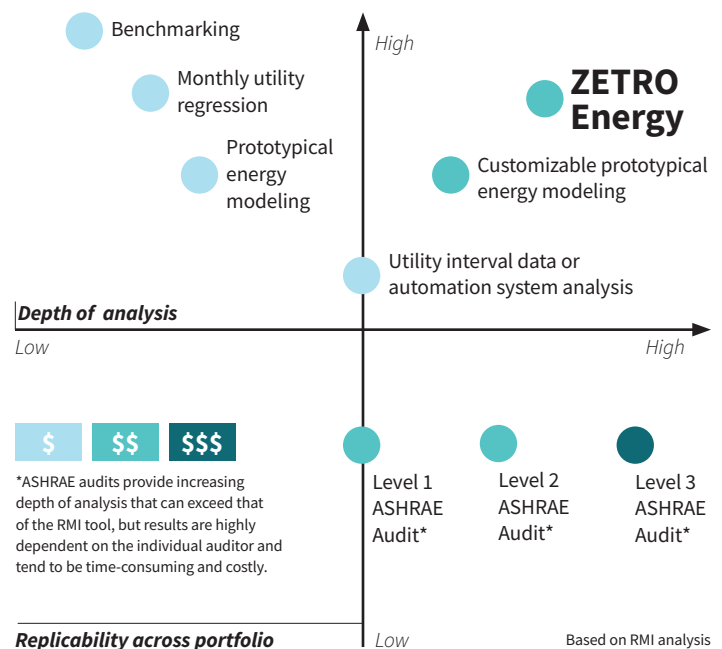
In a warming world, the spotlight is turning toward buildings, which are responsible for nearly 40 percent of global carbon emissions. With ever increasing stringency of building codes and the pull of lighthouse projects, our new buildings are moving closer to the long-term goal of decarbonization.

Pressure to act and transition our existing building stock is mounting, and measurement, disclosure, planning, and goal setting, while foundational, will not be sufficient. As nations, states, and cities work toward ambitious sustainability targets to mitigate climate change, each is getting more serious about upgrading and regulating aging building stock. They are moving first with their own building stock, and in anticipation investors are increasingly looking at the sustainability risk of their investments and voting with their capital.

For all building owners, balancing this pressure to act with capital and operating constraints, all without compromising building performance, would seem to be an unattainable goal, until now.

Inspired by the energy retrofit of the Empire State Building, RMI (formerly Rocky Mountain Institute), a leading nonprofit market-oriented consultancy, set out in 2016 to solve this evolving dilemma to enable forward-thinking building owners and investors to get ahead of the growing market and regulatory pressures.

Following six years of research, demonstration projects, and product development, ZETRO Energy — an operating arm of RMI — is commencing full commercial operation.



ZETRO Energy in the Market

A large and active building analytics market has existed for many years, yet a gap continues to exist in providing building owners with portfolio-wide strategies that can remaining specific enough to be actionable at the building level. ZETRO Energy fills this gap by leveraging mass customization

techniques to build affordable energy models rooted in the industry standard Energy Plus simulation tool for each building in a portfolio. This energy model is applied to a broad and deep library of performance measures screened by RMI's building experts and sufficiently pre-engineered for applicability.

Client criteria on decarbonization, capital availability, and financial outcomes provide the guard rails for the thousands of integrative measure combinations that are processed to find the optimum pathway — a pathway that stages measure implementation with building event and asset replacement cycles to minimize capital flows and maximize financial outcomes.

This is not a one-time study as the developed energy model stays with the building, creating a digital energy twin. This allows for the pathway to be updated as building level assets are renewed and replaced and the library of developed performance measures grows in line with technology commercialization. While focused on the individual building level, these recommendations can be rolled into a portfolio-level investment plan aligned to client criteria on decarbonization, capital availability, and financial outcomes.

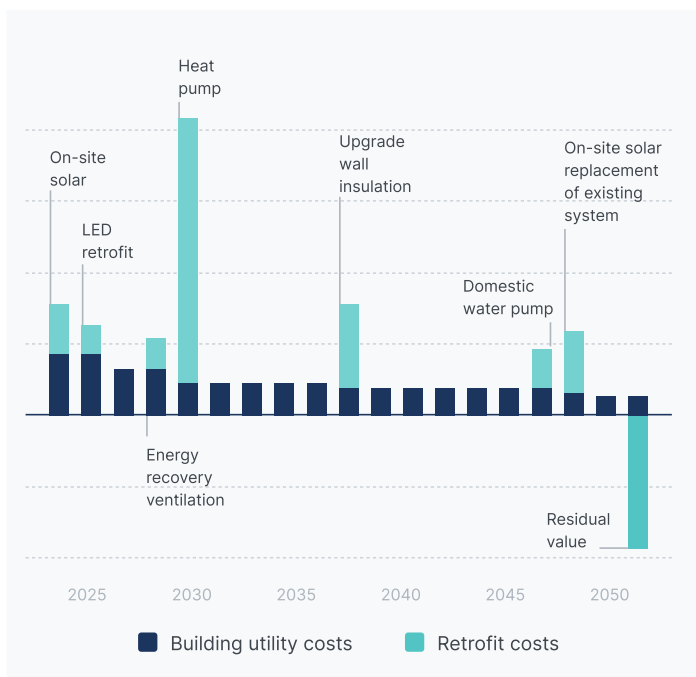
Through the generation of a building digital energy twin at the individual building level it also provides the information necessary for building energy monitoring, optimization, and maintenance further enhancing building service relationships.

ZETRO Energy Approach

Over 50 million square feet of space have already been through the Zetro Energy process covering multiple end-uses and building typologies. At a market-leading price point for in-depth retrofit analysis, ZETRO Energy incorporates a diverse set of existing conditions such as HVAC systems, tenant leases, investment hold periods, utility tariffs, and location-specific pricing.

The ZETRO Energy platform has been built to address these complexities holistically by analyzing whole system dynamics

The cost of utilities over time



and can model single buildings or portfolios of hundreds of buildings at a time, all while accounting for the heterogeneous nature of individual buildings.

Zetro Energy is very different to benchmarking and prototypical modelling and does require the engagement of building managers and engineers to capture building level data and asset history that is not available in the public domain. This engagement further helps ensure actionability of results.

ZETRO Energy outcomes can be configured to align with capital availability allowing outcomes to be presented as planned investments over time or accelerated bundles of measures constrained only by the combined savings that they deliver.

The capability that ZETRO Energy brings is available to a limited number of building owners as a curated service.

To learn more or undertake a "test drive," please reach out to us, and we can help you get started.



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