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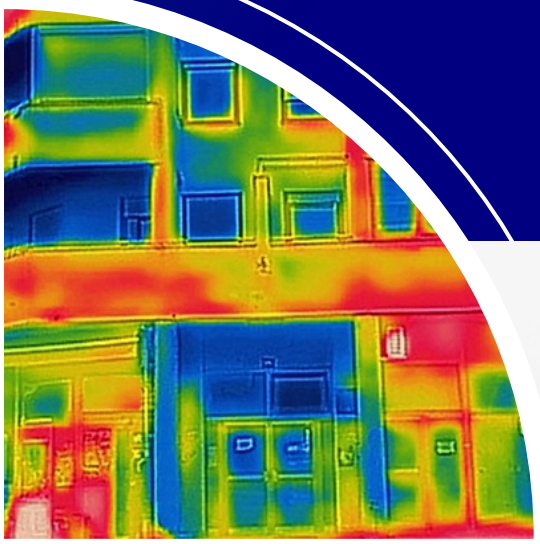
BUILDING SOLUTIONS

THE STATE OF U.S. COMMERICAL BUILDINGS

A GENERATIONAL OPPORTUNITY FOR ENERGY CONSERVATION

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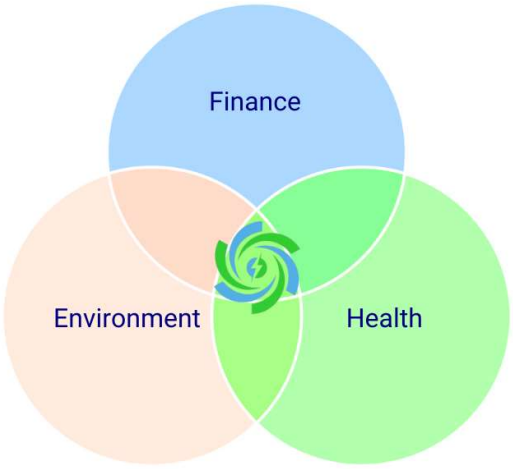
Executive Summary

In the United States, commercial buildings are among the largest consumers of energy. As of 2023, the commercial sector alone accounted for 17.2% of the nation's total energy consumption, according to the Energy Information Administration (EIA). This stark figure highlights a substantial opportunity to reduce costs and environmental impacts.

The Challenge of Energy Inefficiency

Energy inefficiency in commercial buildings presents a range of challenges. Economically, inefficient energy use leads to higher utility bills and increased maintenance costs. Aging systems and outdated technologies often require frequent repairs and replacements, which drive up capital expenditures and diminish the financial performance of the building.



Environmentally, increased energy consumption results in higher emissions of pollutants into the air and water. This pollution affects human health, communities, and wildlife, contributing to broader environmental degradation.

Operationally, buildings with inefficient systems can create uncomfortable working conditions for occupants, impacting their satisfaction and productivity. Thus, a poorly performing building impacts businesses' bottom-line at multiple levels.

Underlying Causes of Energy Inefficiency

The primary factor contributing to energy inefficiency in many commercial buildings is age. The average commercial property in the U.S. is around 50 years old, which means that most buildings were built with technologies and energy codes that are now outdated. Consequently, these older structures often lack the efficiency improvements common in modern constructions.

Outdated technology is another significant issue. Many older buildings are equipped with antiquated HVAC systems, lighting fixtures, and other technologies. These systems generally perform less efficiently than modern alternatives, which have seen significant advancements in energy efficiency.

Deferred maintenance exacerbates these problems. Property owners sometimes postpone necessary repairs due to budget constraints or a lack of awareness regarding the benefits of timely maintenance. This neglect can lead to increased waste, resulting in higher operational costs.

A Strategic Solution: Organization-Wide Benefits

To address building inefficiencies, a structured energy auditing approach is essential for analyzing current energy consumption patterns, revealing inefficiencies, and providing recommendations for targeted upgrades and repairs.

Down the line, adopting modern technologies can lead to substantial energy savings. For example, switching from incandescent and fluorescent lighting to LED technology can reduce energy costs by up to 70%. LEDs also offer a longer lifespan, and better illumination. Similarly, replacing outdated HVAC systems with energy-efficient, automated systems can cut energy costs by approximately 30%. Plus, modern HVAC systems provide improved temperature control and reduce operational expenses.

Investing in energy-efficient upgrades also has significant benefits for employee satisfaction and productivity. A study of over 500 financial institutions found that banks with upgraded HVAC systems saved $675 per employee annually due to reportedly higher levels of employee engagement and subsequently increased productivity. Further research indicates that employees working in “green” buildings are 16% more productive compared to those in non-certified buildings.

Conclusion

The issue of energy inefficiency in U.S. commercial buildings presents a significant opportunity for cost savings, environmental benefits, and improved building performance. As commercial buildings account for a large portion of national energy consumption, addressing these inefficiencies through strategic investments is essential for minimizing waste and environmental impacts. Working in partnership with an energy engineer/consultant, building owners can realize substantial financial savings while enhancing operational efficiency and employee satisfaction. Everyone wins, even the environment.