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working world

# Smart buildings

## The energy component of smart buildings

It should come as no surprise that commercial buildings represent some of the globe's most prolific users of energy. These assets account for 30% to 40% of energy consumption,<sup>1</sup> and that figure is set to increase to 50% by 2030.<sup>2</sup>

In the US alone, a 20% reduction in commercial building energy usage could result in savings of US\$80 billion annually on energy bills and reduced greenhouse gas emissions as well as the creation of thousands of jobs.<sup>3</sup>

These are sobering statistics that underscore the importance of strict and forward-thinking policies on the real estate

1 "2106 Intelligent Buildings Survey," *Navigant Research website*, <https://www.navigantresearch.com/research/2016-intelligent-buildings-survey>, accessed 1 May 2017.

2 "How analytics can save energy," *World Economic Forum website*, <https://www.weforum.org/agenda/2015/05/how-analytics-can-save-energy/>, accessed 1 May 2017.

3 "About the Better Buildings Alliance," *U.S. Department of Energy website*, <https://betterbuildingsolutioncenter.energy.gov/alliance/about>, accessed 1 May 2017.

industry's rate of consumption. Indeed, energy management at the asset level is about future sustainability and capacity management, not only of those assets, but also of our macro environment. As resources become increasingly strained, usage strategies are likely to grow as important initiatives, not only for governments of both developed and developing countries, but equally for the investors, developers and owners of individual assets.

Data suggest the importance of a long-term view when choosing energy efficiency investments. According to a 2014 study from the United Nations Environment Programme (using CoStar US statistics), "LEED certified and Energy Star-rated buildings versus non-rated buildings had 8% higher effective rents (a function of both rent amount and occupancy rate) and a 13% sales price premium."<sup>4</sup>

And yet, a properly managed smart building ecosystem can achieve those premiums and

still afford tenants savings. According to Morgan Stanley's Institute for Sustainable Investing (MSISI), in a hypothetical 250,000-square-foot building in San Francisco, those savings could be as high as 27%. This can certainly be meaningful to an occupant.<sup>5</sup>

EY has provided/recommended similar savings to its clients worldwide. In just one example, EY worked with a global manufacturer struggling with energy costs that were more than 10% of total manufacturing outlays. Our teams approached the issue with an eight-pronged strategy that included a corporate-wide energy and water sustainability program; site energy representatives and inter-site collaboration; and technology leveraged as a tool for visibility and awareness.

4 "UNEP FI Investor Briefing," *United Nations Environment Programme Finance Initiative website*, [http://www.unepfi.org/fileadmin/documents/Commercial\\_Real\\_Estate.pdf](http://www.unepfi.org/fileadmin/documents/Commercial_Real_Estate.pdf), accessed 1 May 2017.

5 "Bricks, Mortar and Carbon," *Morgan Stanley website*, <http://www.morganstanley.com/content/dam/msdotcom/en/assets/pdfs/8497233GSFBricksMortarResSheetm4.pdf?v=11>, accessed 1 May 2017.

Not only did the client exceed its five-year, energy reduction targets, but it was also honored by the Canada Energy Conservation Leadership program for those improvements as well as for its reduction of greenhouse gases.<sup>6</sup> There will be more on this in the next installment in this series.

This paper has mentioned the long-range importance of a solid energy management system delivered via smart building technologies. The emphasis on such systems can only grow, particularly as the newer generations assume roles in management positions. Another study conducted by MSIS found that 84% of millennials were interested in sustainable investing, and they are twice as likely to invest if there is a sustainability component as part of that value proposition. That number increases further when the focus is specifically on women.

Energy management is a good-sense initiative, not only for business, but also for cultural and environmental reasons. In that way, energy management should be seen as an important part of any smart building ecosystem.

**Next in the EY focus series on smart buildings: part VI: Sustainability.**

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<sup>6</sup> EY Method: Digital Energy Transformation  
<https://drive.google.com/drive/u/0/folders/0B-sgGg9TQeTVWlwbmJDNmNXUHC>