INDOOR WEATHER REPORT

Energy & Budget Strategies For Commercial Real Estate

LIGHTING

BACKGROUND

Electricity is now the largest global energy investment ($718 billion) surpassing oil and gas ($649 billion).[1] The United States consumes 16% of the world's energy while comprising only 4% of the population. Commercial lighting in the U.S. accounts for 17% of all electricity consumed.[2]

There are government policies and private companies seeking to reduce energy waste and adopt more energy efficient practices in order to reduce utility costs. For instance, New York state has an energy plan to generate 50% of electricity from renewable energy sources by 2030.

Many companies are seeking energy efficient solutions and technologies to bolster their economic strategies.

"For the first time ever, the electricity sector edged ahead of the oil and gas sector in 2016 to become the largest recipient of energy investment."

— World Energy Investment 2017

SUMMARY

The **IWR Lighting Report** is utilized in this case study as an energy efficient, cost reducing, and minimally invasive electrical solution. The test site reports lighting usage of a 22,753 sq. ft. office located in a commercial building built in 1986 with a 2016 Energy Star Rating of 87.[3] In order to maximize usage and minimize waste, small wireless sensors were placed on the 4th floor of the office building which collected data for a week.

IWR commercial test site:
22,753 sq. ft. office on the 4th floor
Building built in 1986
2016 Energy Star Rating of 87

The reports depicted usage in lux using a range of average office hour use (10 hours). The excess was flagged as *opportunity per hour* to save each day. Totals at the end of the week illustrate a sample size to forecast the electrical savings opportunities for the month, year, and overall operating expenses.

The results reflect the amount of savings this location could achieve if operating at maximum efficiency.

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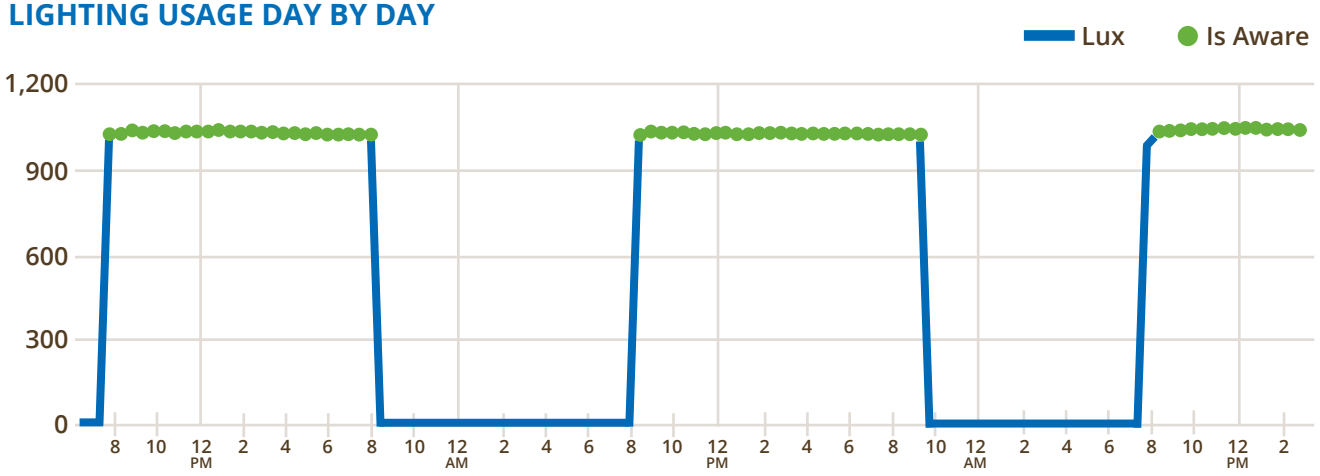
LIGHTING USAGE DAY BY DAY



USAGE

IWR collects data from wireless sensors and creates reports which can be delivered daily, weekly, or monthly to account for monthly utility bills. Each check-in is time-stamped for accuracy and is read in real-time.

average office time frame:

8am–6pm

A personalized monitoring system that humanizes infrastructure data

DATE	Mon 8/14	Tues 8/15	Wed 8/16	Thurs 8/17	Fri 8/18	Sat 8/19	Sun 8/20
ON	7:36am	8:04am	7:42am	6:50am	7:38am	Not Occupied	
OFF	8:05pm	9:22pm	7:31pm	9:28pm	8:36pm		
OPPORTUNITY	2.5 hours	3.5 hours	2 hours	4.5 hour	3 hours	0 hours	

RESULTS

The data accumulated over time reveals the total energy opportunity savings per hour. IWR translates this information into costs based on utility data.

Submetering data was cross reference with the reports to enable IWR to calculate an opportunity estimate per year.

NUMBERS BREAKDOWN

Total *opportunity hours* per week..... 15.5 hours

Average *opportunity hours* per day ..... 2.2 hours

Total office sq. ft. 22,753

Cost in lighting $10,231/yr

Total energy opportunity in dollars... $2,503/yr

CONCLUSION

Property Managers, Office Managers, Sustainability Managers, Owners, etc. may be unaware of general building information such as day-to-day lighting usage. This data can lead to thousands of dollars in operating expense savings each year. Buildings that currently operate under energy efficient practices and think they are efficient due to a high Energy Star Rating or other third party verification often don't have the means to prove the cost-to-savings correlation of their energy optimization strategies. The Indoor Weather Report system unlocks building information and highlights any areas that could undergo improvement in a building and calculates the 'before' and 'after' results in terms of usage costs.

IWR: Lighting Reports can also be utilized as a redundant meter to account for the electric variances in monthly utility bills. This small, simple, and minimally invasive technology offers any building an easy energy audit service for sustainability strategies. The Indoor Weather Report's efficiency solution assists in reporting thousands of dollars in opportunity energy savings while recognizing the optimization potential unique to each building.

20% Annual Savings

Based on these calculations, if the building were to operate under similar circumstances year-round they would have an opportunity to **save nearly ¼ of the entire electricity bill** for lighting per year[4]

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get YOUR estimated yearly savings now

To generate a building's savings report based on national averages please fill out the **IWR Energy Saving Calculator** at https://energysavingscalc.hscampaigns.com/.

For more information and product details please visit our website at http://ecc.energy/products/iwr-2/.

How can we help? To get answers regarding the Indoor Weather Report or other ECC products, to test your building for efficiency, or to install an IWR sensor please email info@ecc.energy or call 804.801.4185.

[1] https://www.iea.org/publications/wei2017/ Energy Investment By Sector 2016
[2] https://www.eia.gov/consumption/commercial/reports/2012/lighting/ U.S. Energy Information Administration (CBECS)
[3] https://www.energystar.gov/index.cfm?fuseaction=labeled_buildings.locator Energy Star Footnote
[4] Based on ECC TECC Buddy submeter monitoring system calculated $0.11 http://ecc.energy/submetering/

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