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A Road Map to Energy Savings & New Technology for your Comprehensive Energy Program

Presented by
Murtaza Kapadia, CEM, CEA

Why Energy Efficiency?

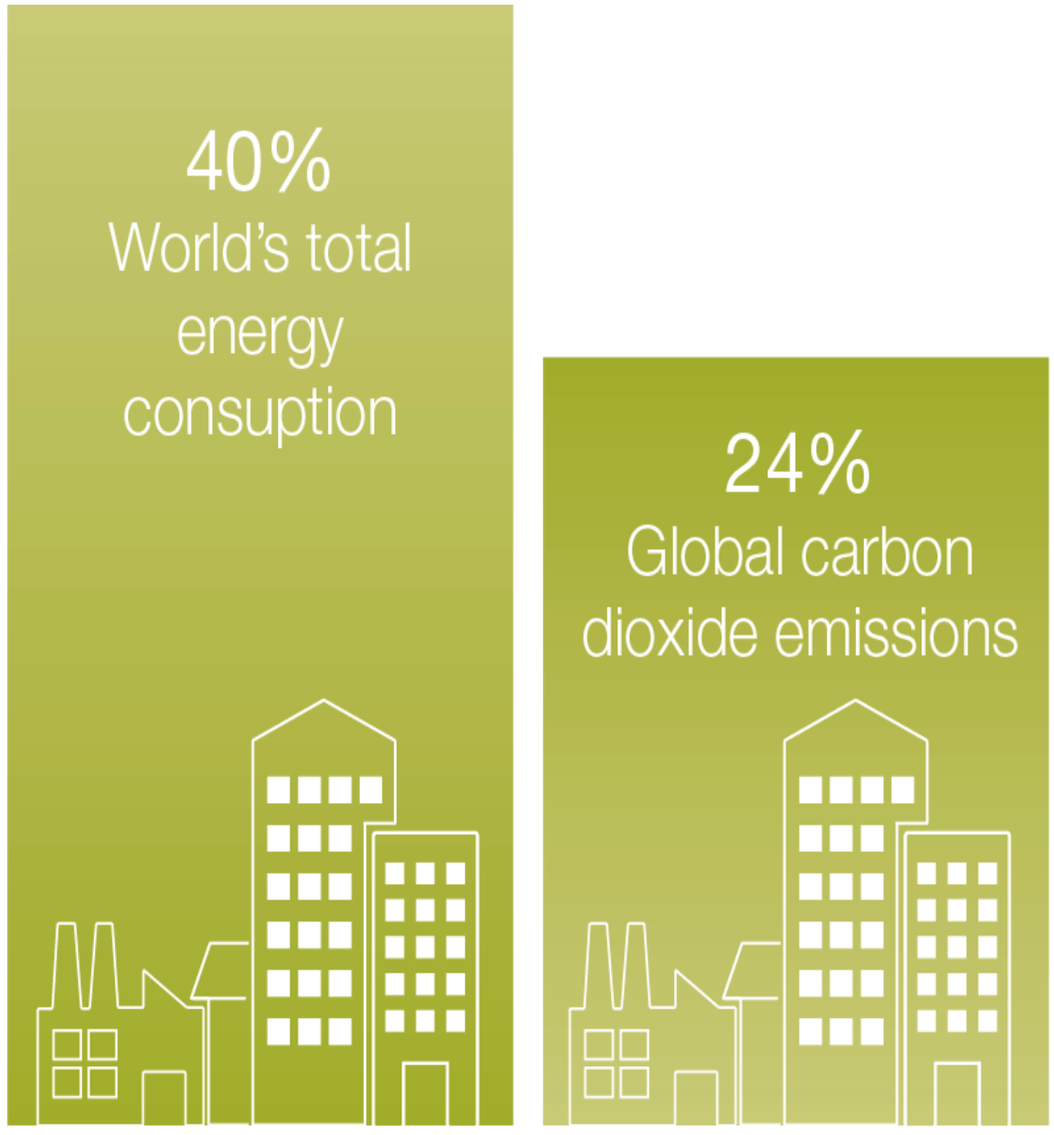
Energy Consumption from Existing Buildings are responsible for an estimated $100 Billion spent on energy annually

Intelligent Control Systems, Energy Efficient Operations, and Upgrades can reduce cost between $20 - $25 Billion each year

---

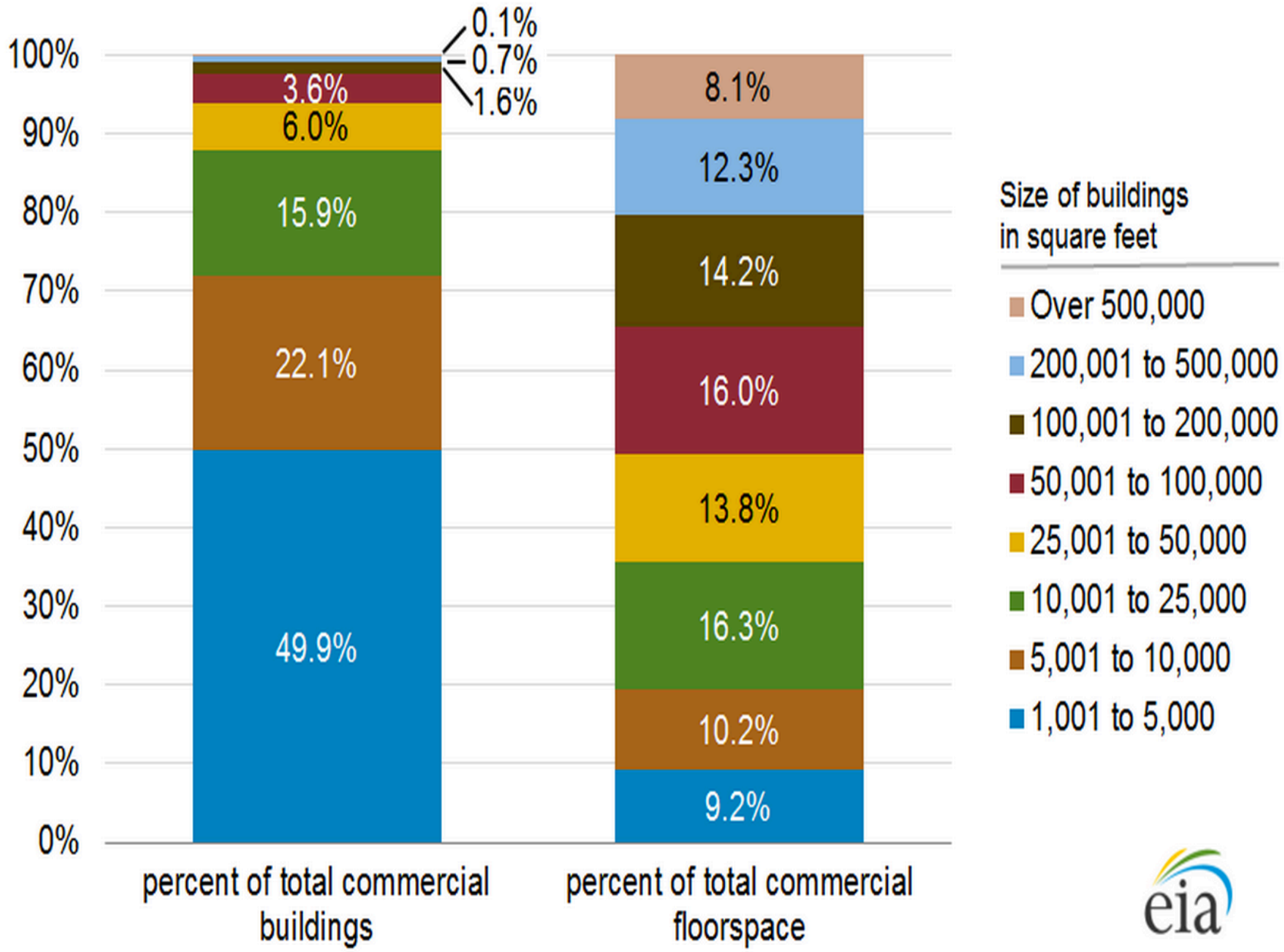
Passaic County spends an estimated $175 Million annually

Intelligent Control Systems, Energy Efficient Operations, and Upgrades can save $40 Million or more each year



Commercial Market Challenges

Figure 5. About half of all commercial buildings make up less than 10% of total floorspace



80% of the buildings in commercial markets are less than 200,000 square feet.

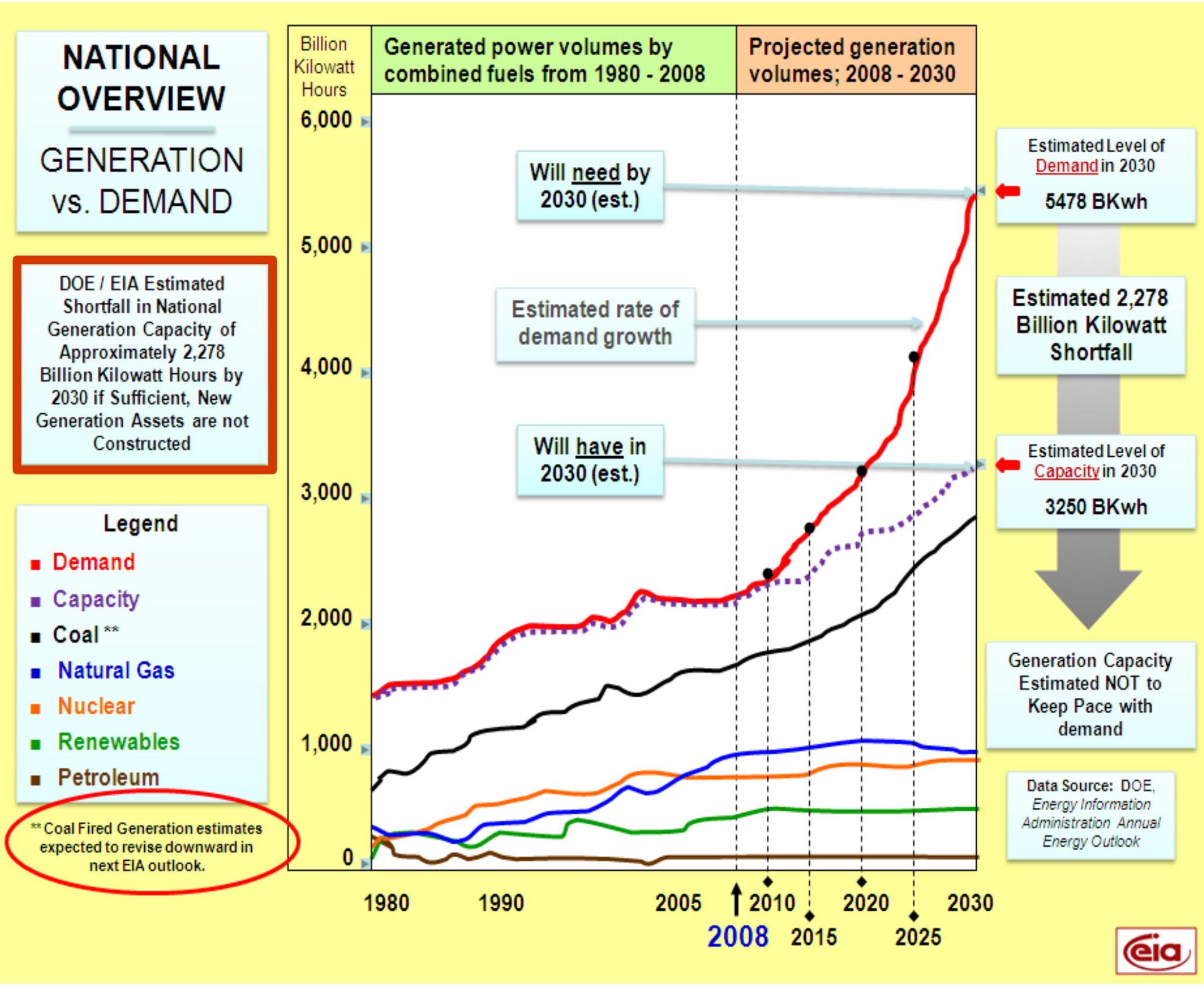
Energy Demand Is Rising Faster Then Ever!

Demand increasing by 2.5 Times the Consumption

NATIONAL OVERVIEW

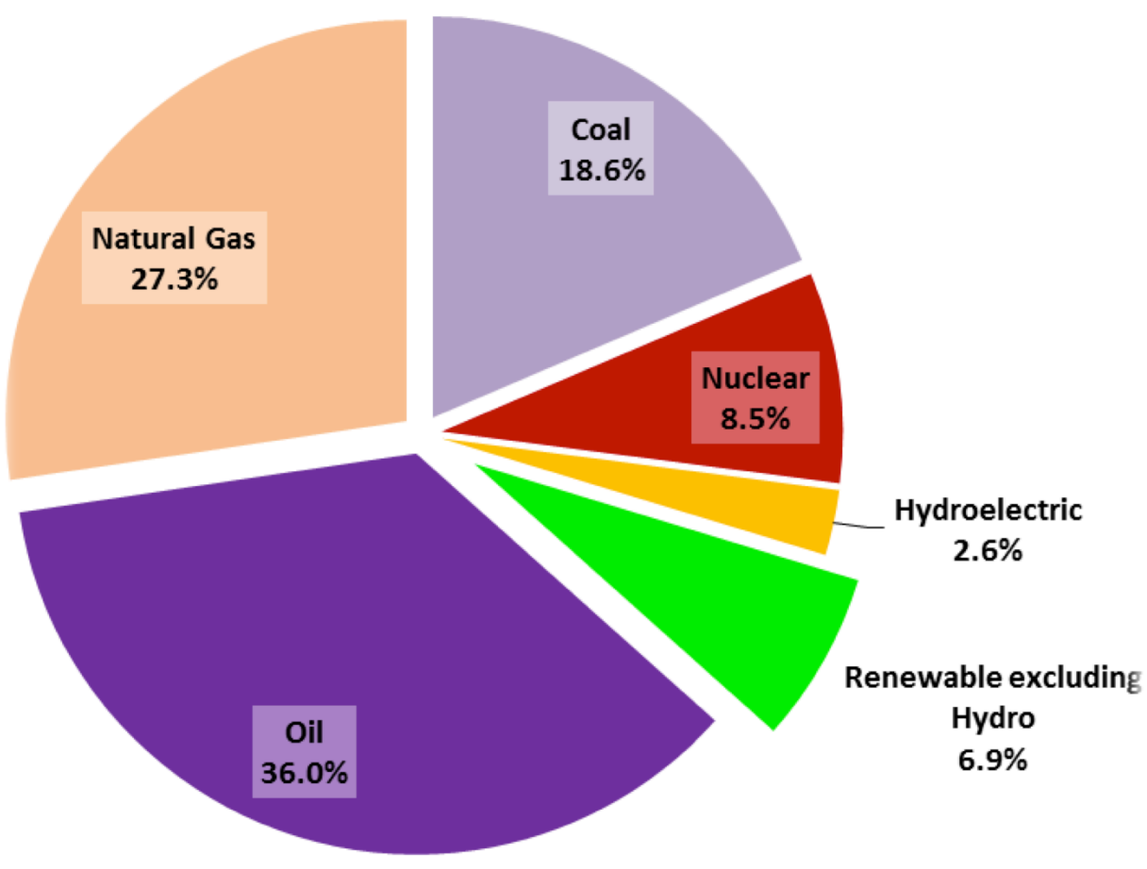
GENERATION vs. DEMAND

DOE / EIA Estimated Shortfall in National Generation Capacity of Approximately 2,278 Billion Kilowatt Hours by 2030 if Sufficient, New Generation Assets are not Constructed

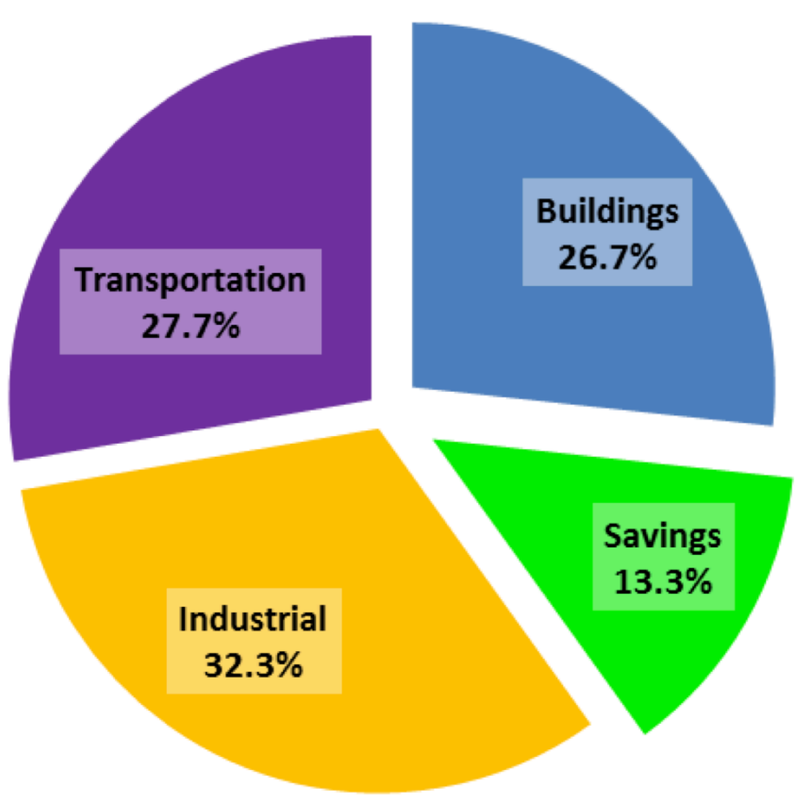


The Cheapest, Cleanest and Greenest Way to Extend The Worlds Energy Supply and provide 2.5 times the environmental impact of renewable energy.

2013 US Energy Sources



2013 Energy Consumption

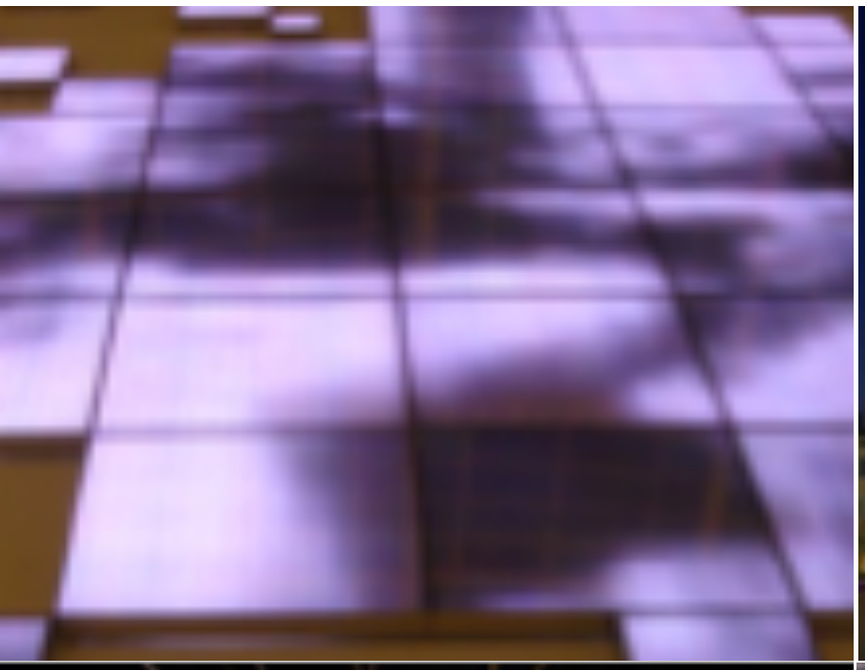


Buildings use 40% (includes residential)

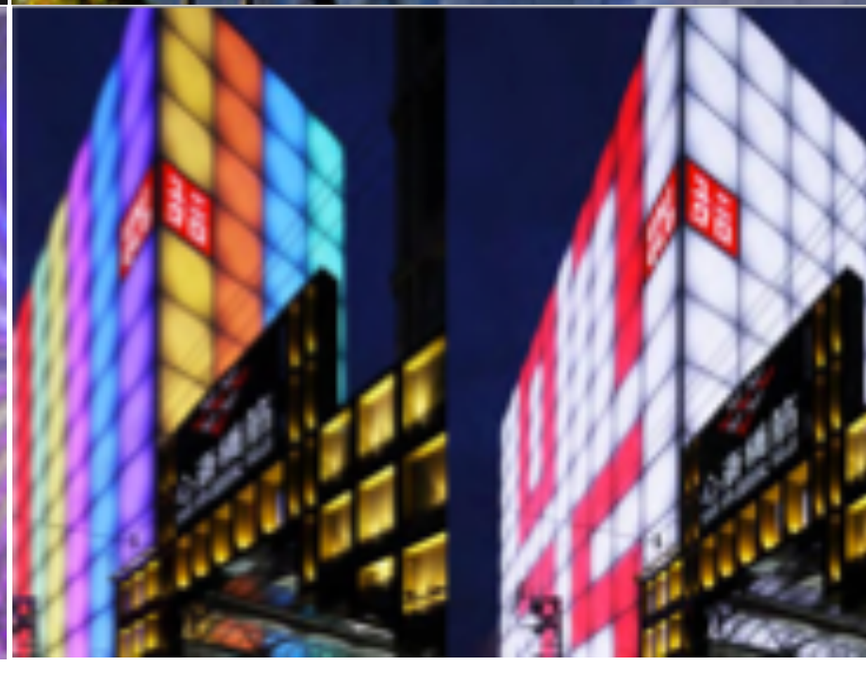
We can save one third

This is 13% of U.S. total!!

Who we are





Timeline

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traxon e:cue

traxon e:cue
AN OSRAM BUSINESS

OWNERSHIP | JOINT VENTURE | FUTURE

1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 >>>

ACQUISITION

OSRAM SIEMENS

Introduction

Positioning

Presence in **3** continents

Positioning

USA

- Headquarters in Morristown, NJ
- Energy Management, and Monitoring solutions for Hospitality, Educational, Commercial, Municipal, Convenience and Quick Serve markets.
- Support for North, Central and South America

What We Do

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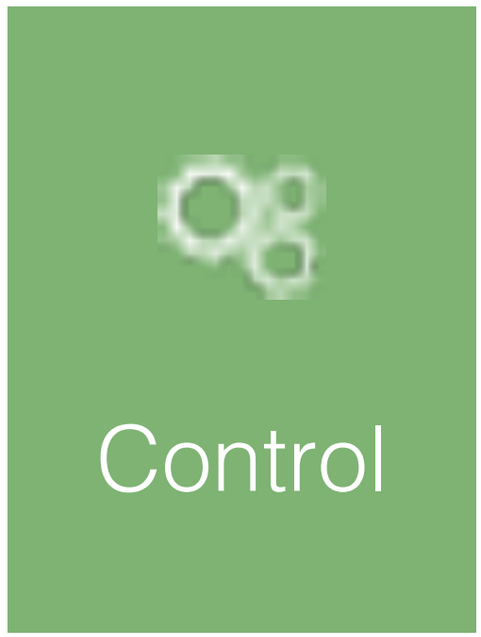
What We Do



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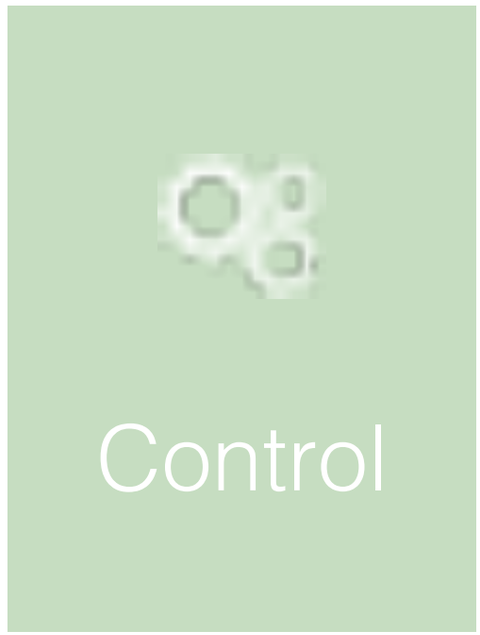
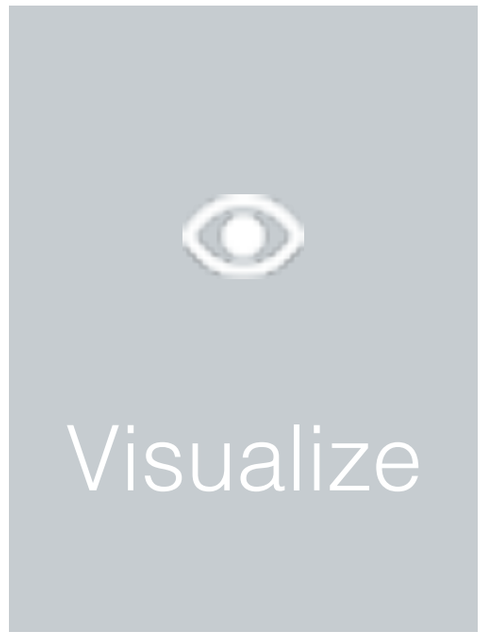
What We Do





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G-HUB Platform

G-HUB intelligent energy management platform to monitor and optimize key system performance in your facility

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G-HUB Platform

Live monitoring of systems, by facility, area, or portfolio on any smart device

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G-HUB Platform

G-HUB's algorithms will compile and analyze real time information, triggering critical actions and alerts

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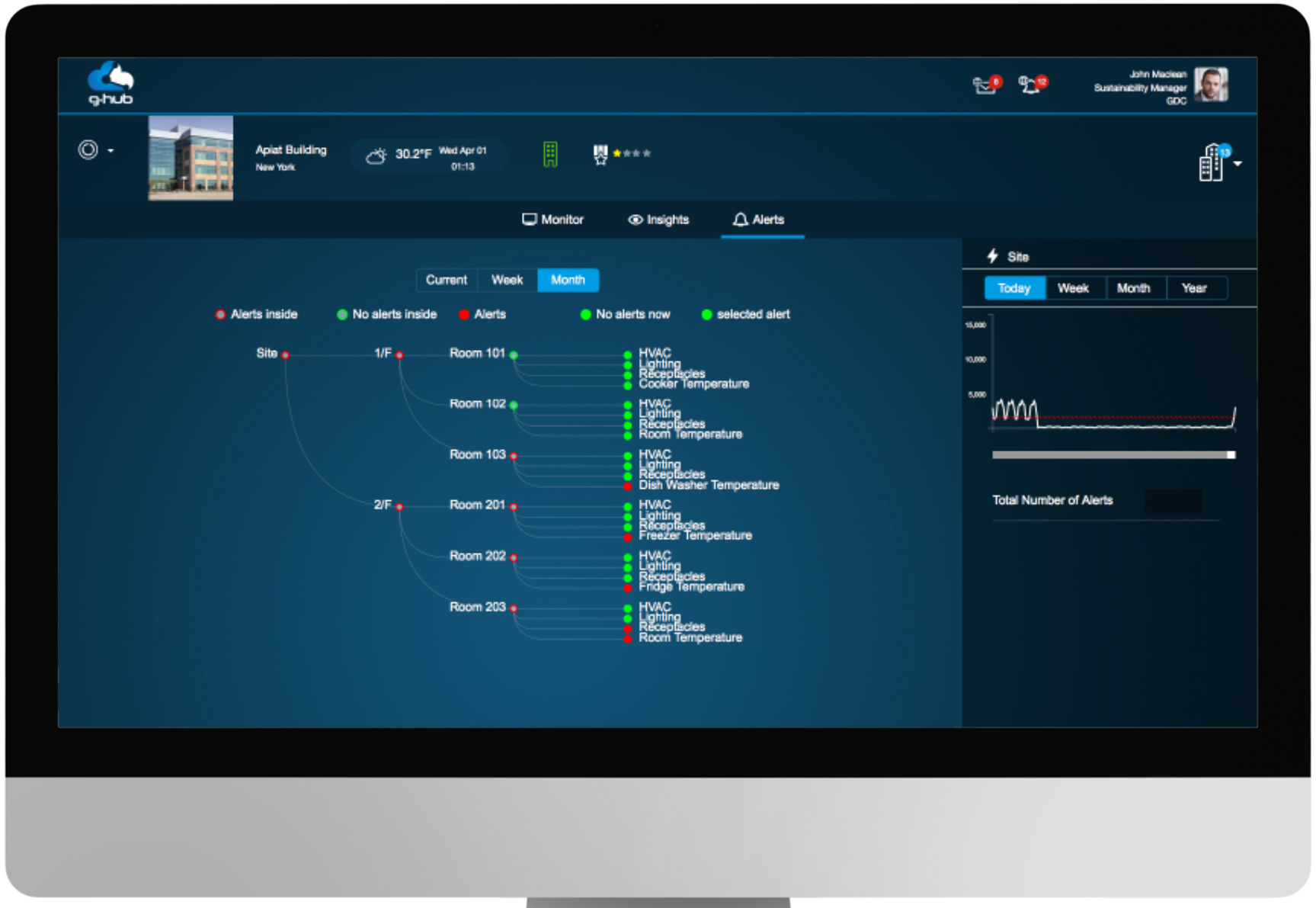
G-HUB Platform



Sophisticated analysis and modeling of data to provide targeted guidance to improve financial, and operational efficiencies

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G-HUB Platform Benefits

- Intelligent Benchmarking
- Analytics
- Perfomance Tracking
- Reports
- Global Portfolio
- Transparency
- Data Exchange
- Proactive Solutions
- Insight Page
- Continuous Savings
- CO2 Emissions Calculation
- Multiple Solution Connectivity
- Preventive Actions
- Security
- Scalability

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What We Do

Platform

Monitor

Control

Analyze

Visualize

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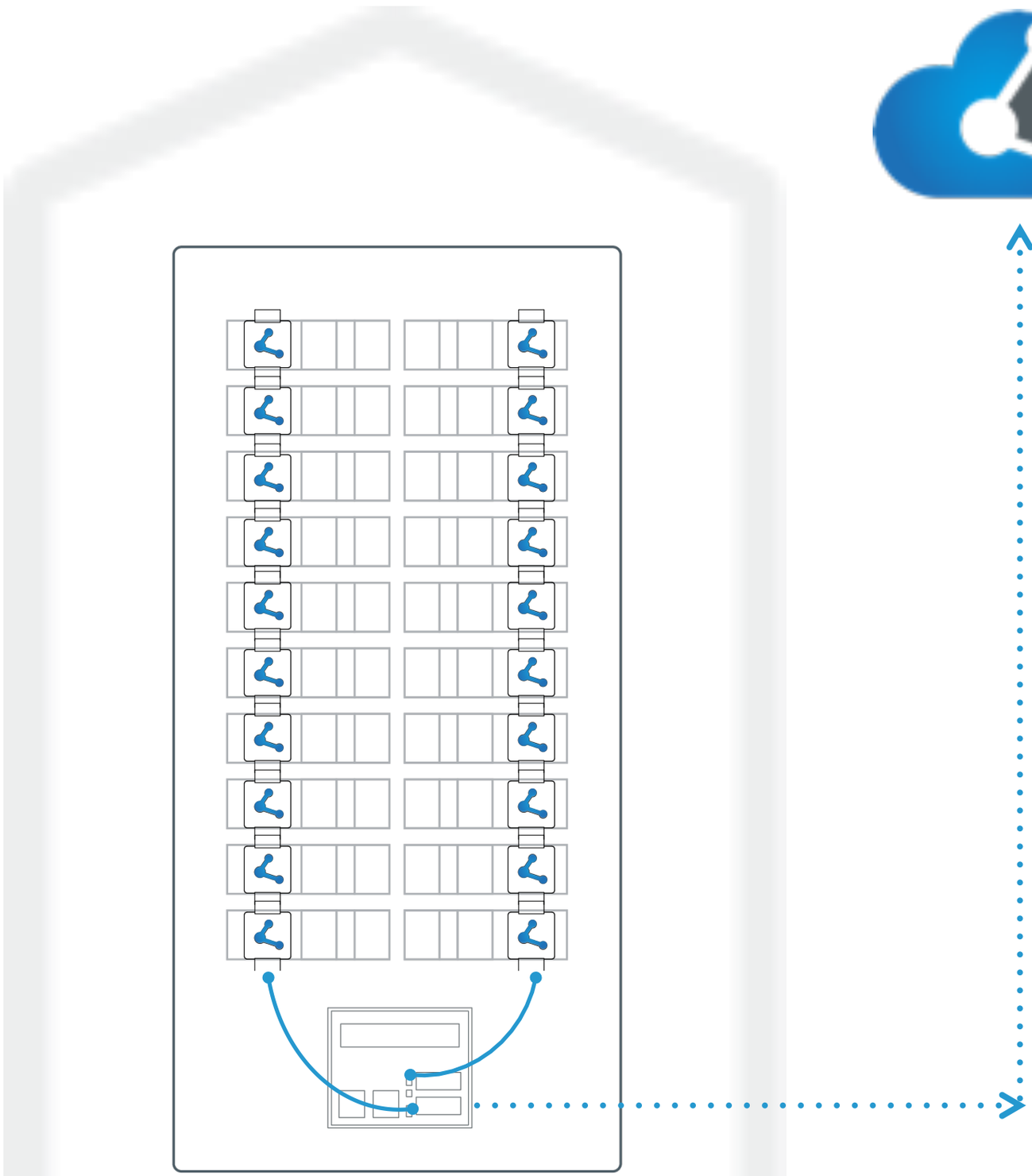
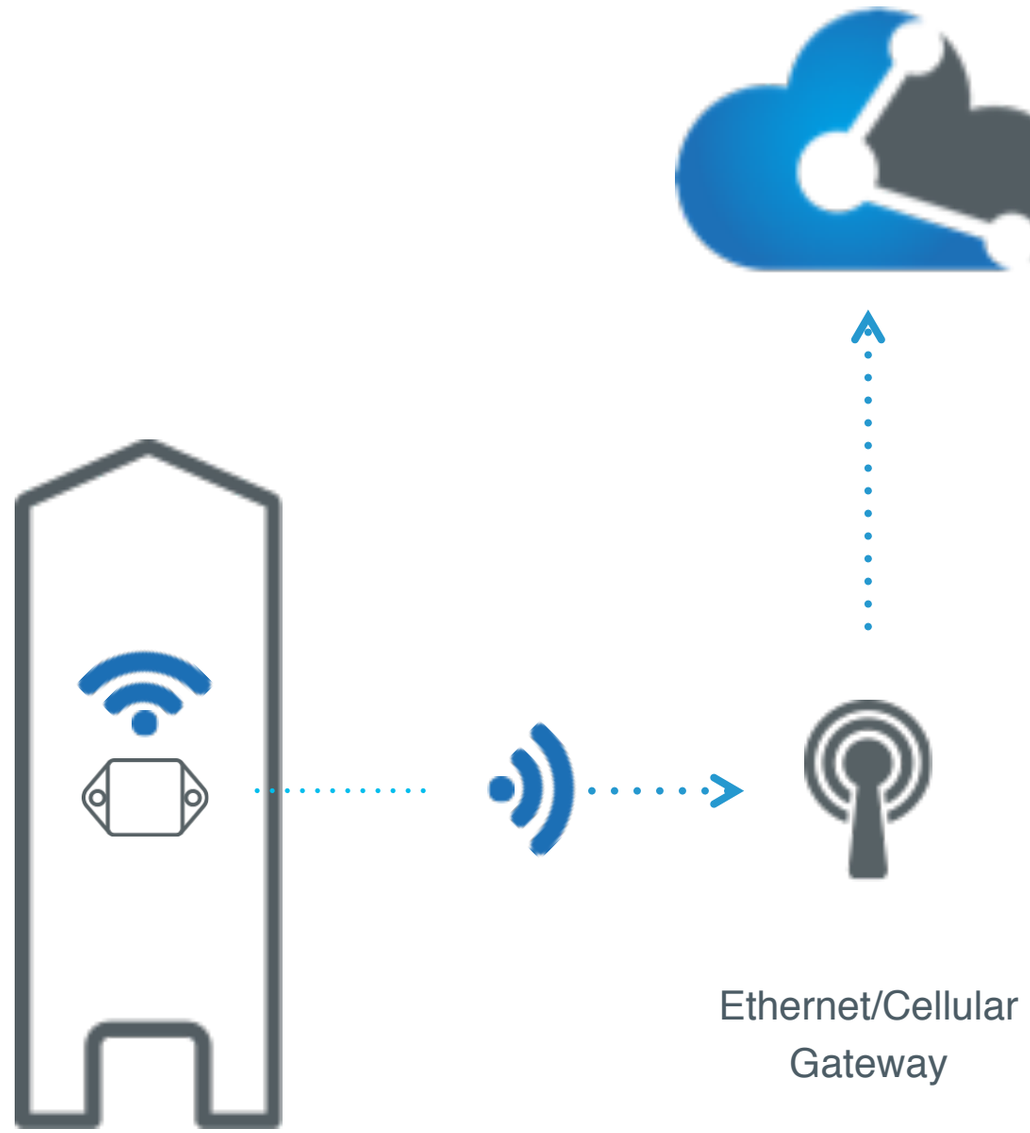
Monitor

Patented technology replacing CT clamps on breakers



(Future development)

GDC offers a wide ray of sensors to visualize what is happening inside one or multiple buildings



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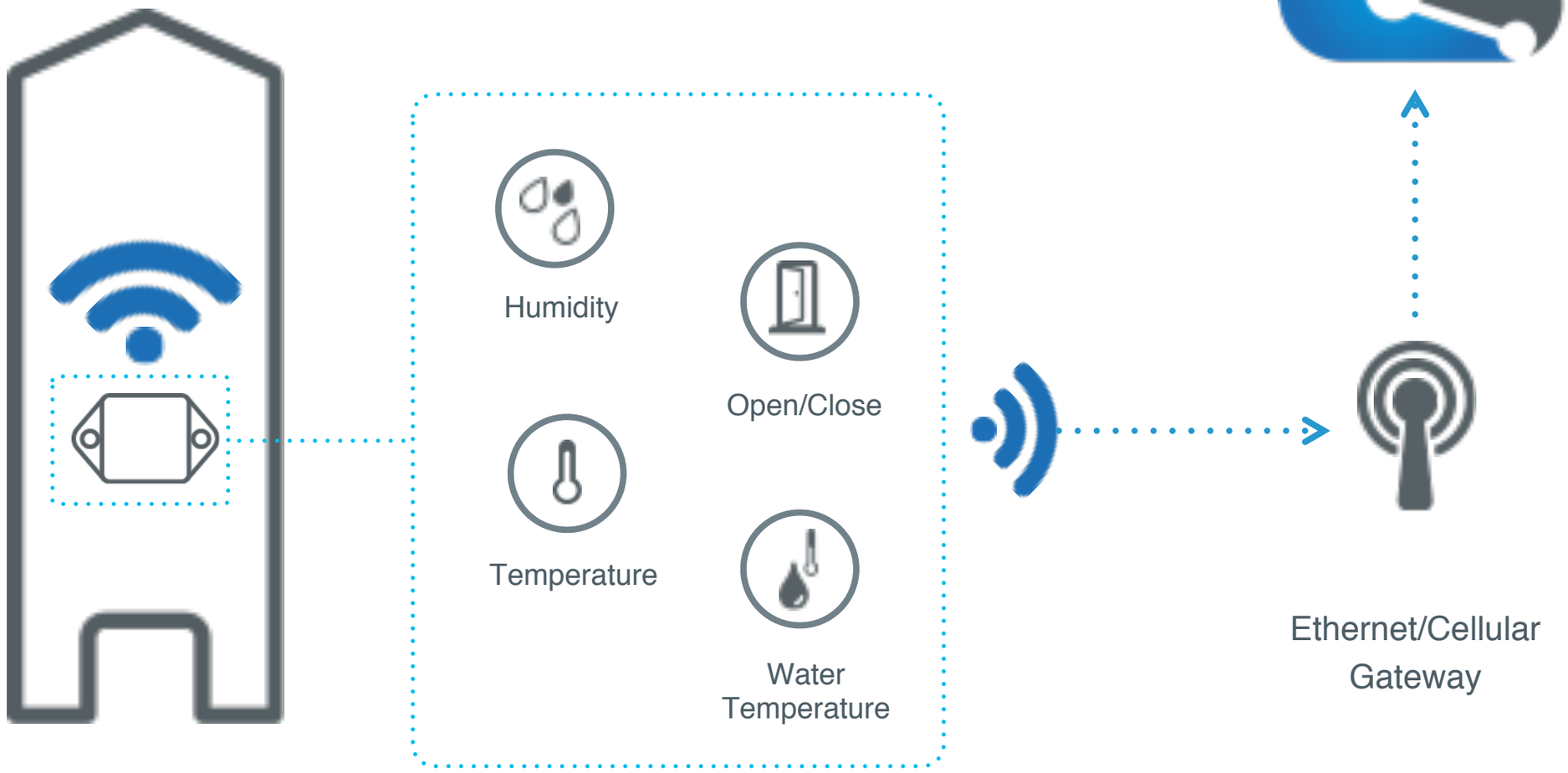
Monitor



These wireless sensors can be combined or used stand-alone adapting to customer needs

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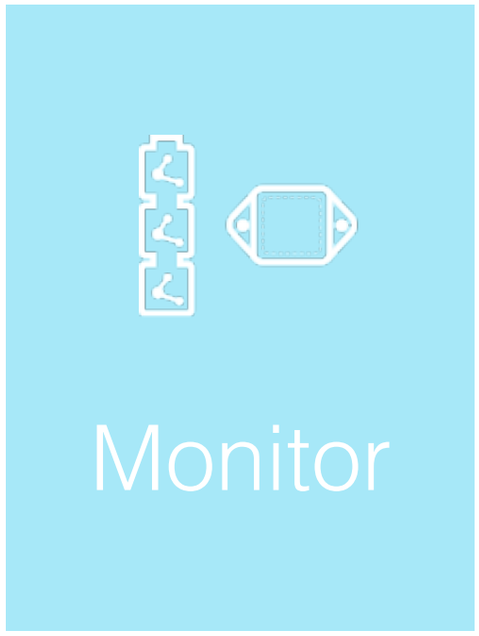

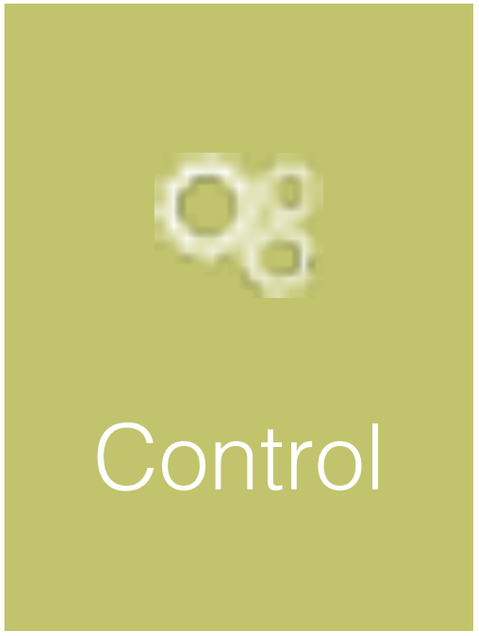

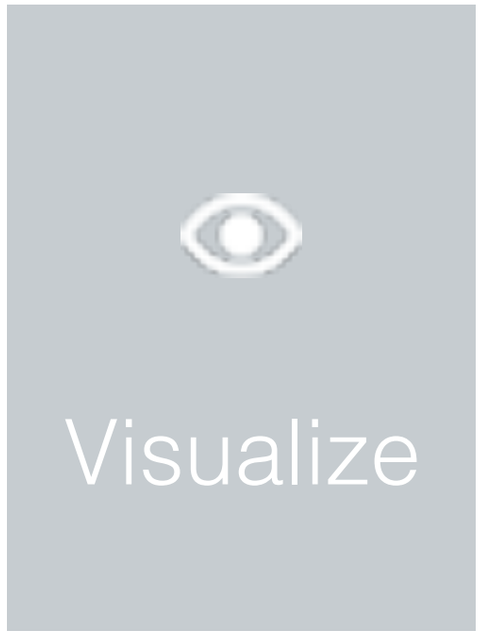

1. Lighting Controls

Increase profitability and flexibility with our energy saving lighting control

LIGHTFOX®
Performance Funded

Powered By g·hub


LIGHTFOX
Performance Funded

LIGHTFOX
Performance Funded

Features

Versatile Control Capability

- Dimming control for a variety of lighting ballast /drivers with 0-10V and PWM dimming
- Provide On/Off control with relay
- Each LFX Connect can control up to 10 fixtures or drivers

Easy Installation and Commissioning

- LFX Connect Control boxes are designed to fit and snap on standard junction box
- Integrated sensors for single point installation
- Easy set up and commissioning of the system via mobile or PC app

Secured and Scalable Network

- Based on IEEE802.15.4(PHY) wireless protocol
- Connect up to 65 K+ control boxes in one installation
- Unique ID & AES 128 bit encryption provides high level of security

LIGHTFOX
Performance Funded

Save more

Simplified Four Step GDC Approach with LightFox Control technology

Present Scenario:

Lighting contributes between 20% to 35% of a facility electric load for Commercial & Industrial Customers

Step One

- Retrofit / Replace existing inefficient lighting with energy efficient LED and other energy efficient lighting technologies saving 30% to 60% of lighting energy depending on existing

Step Two

- Install secure, simple, cost effective cloud based intelligent LFX wireless controls based on
- Advanced microwave motion occupancy sensing
- Daylight harvesting
- Intelligent scheduling
- Participate in demand response programs
- To save upwards of 70% of base system while improving light environment

Step Three

- Maximize state and utility incentive/ rebates
- Maximize on applicable federal energy incentives 179 D programs
- Earn potential revenue through demand response program participation
- Earn revenue from electric grid based energy efficiency program

Step Four

- Measure and verify energy savings through built in power sensing in LFX controls
- Turnkey funded installed lighting solutions through LFX performance financing
- Integrate with g-hub energy management platform for comprehensive visualization and reporting

Result

- Attractive Return on Investment and enhanced lighting controlled environment

LIGHTFOX
Performance Funded

How it Works

LFX Connect Control Box

LFX Connect wired to regular lighting fixture

LFX Gateway

The link between the LFX Connect Control Boxes, the mobile terminal and the Internet. Provide local data storage of energy data

Mobile Terminal / APP

LFX Control and Setup App

G-HUB Cloud Service

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Data analysis. Off site control and other services

LIGHTFOX
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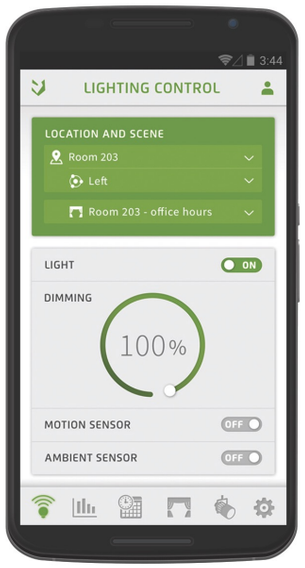
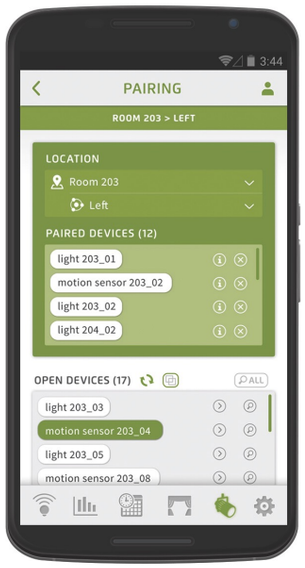
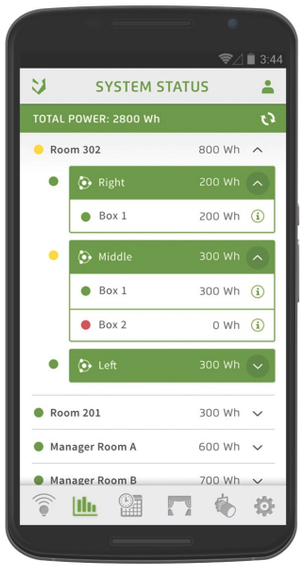
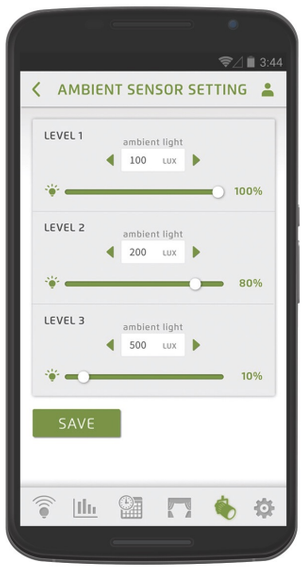
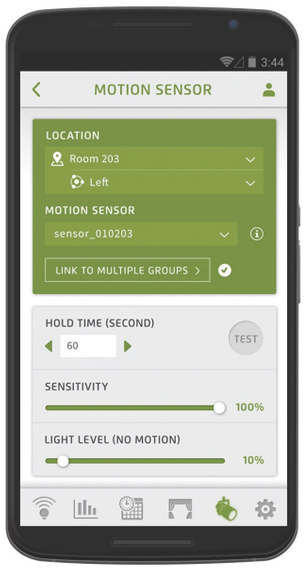
LFX Lighting Control App

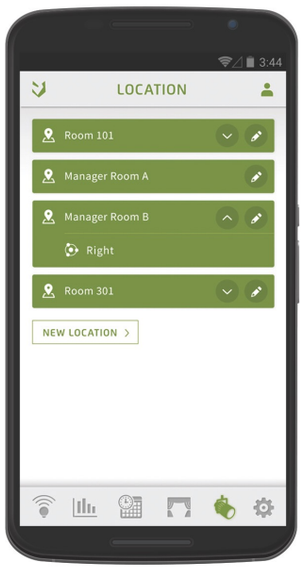












2. HVAC Automation

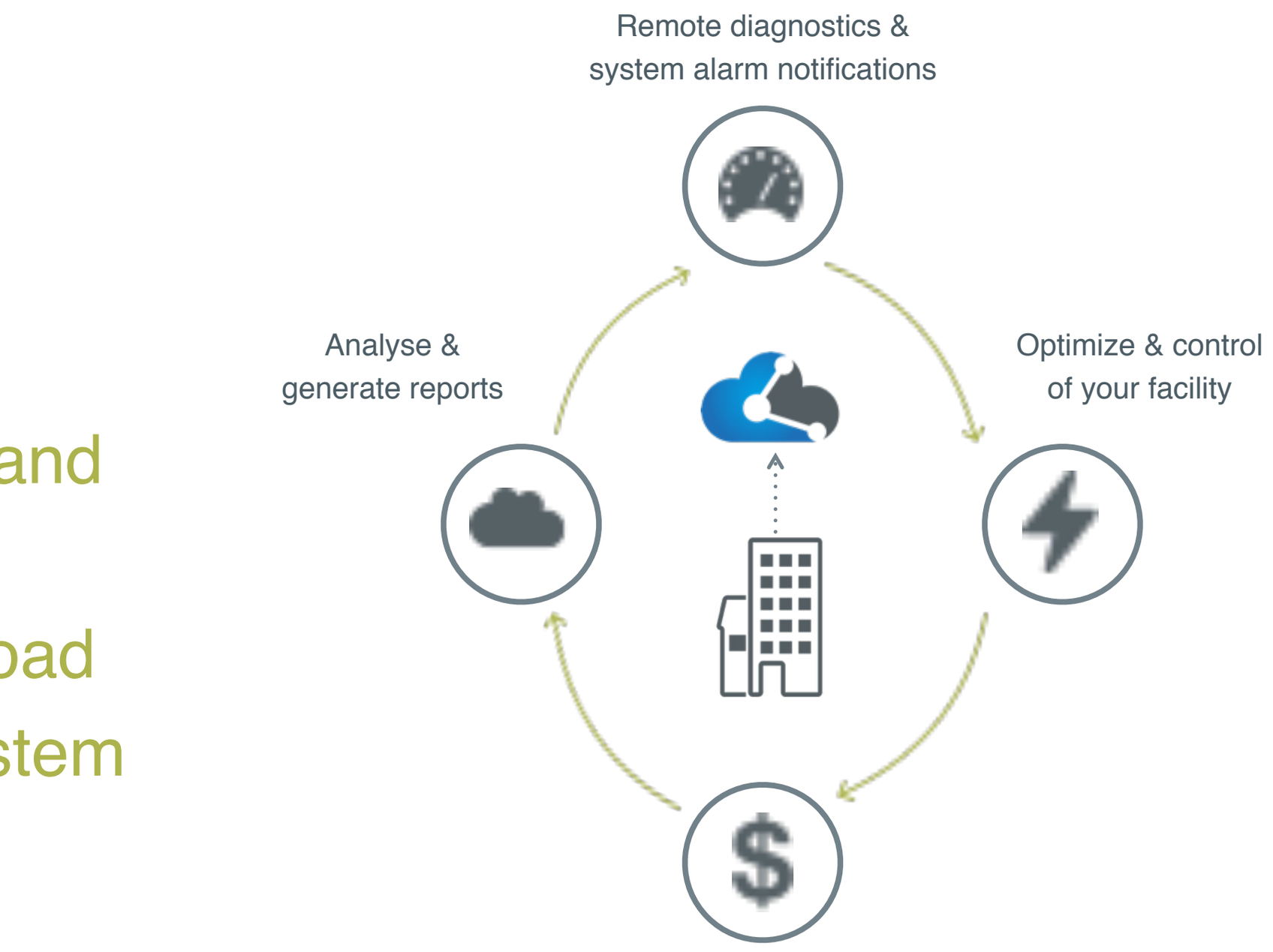
Increase profitability and enhanced comfort with our intelligent & cost effective HVAC energy management system

Pelican Wireless Systems
Powered By g·hub

3. Peak Load Management

Protect margins and profits with our intelligent peak load management system

Dencor
Energy Control Systems
Powered By g·hub



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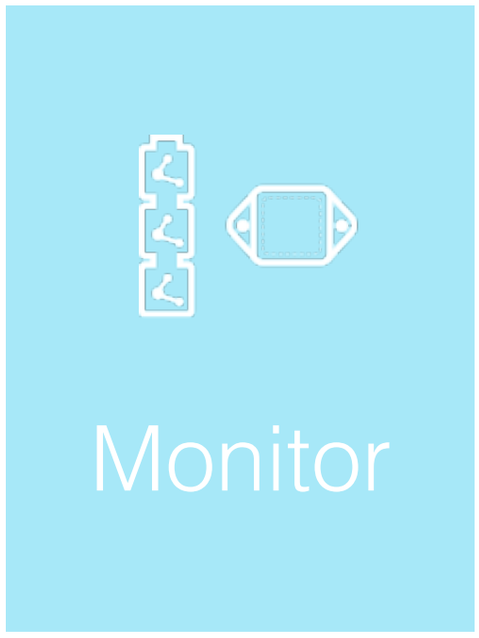
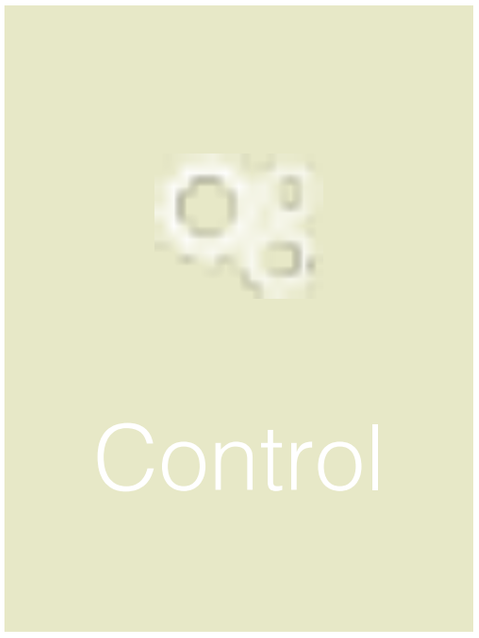
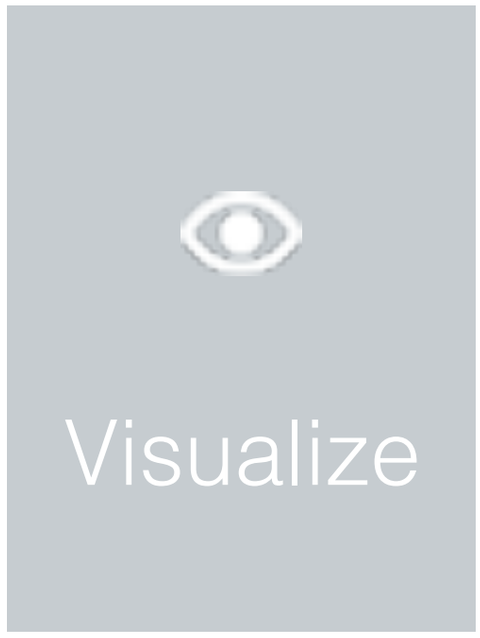
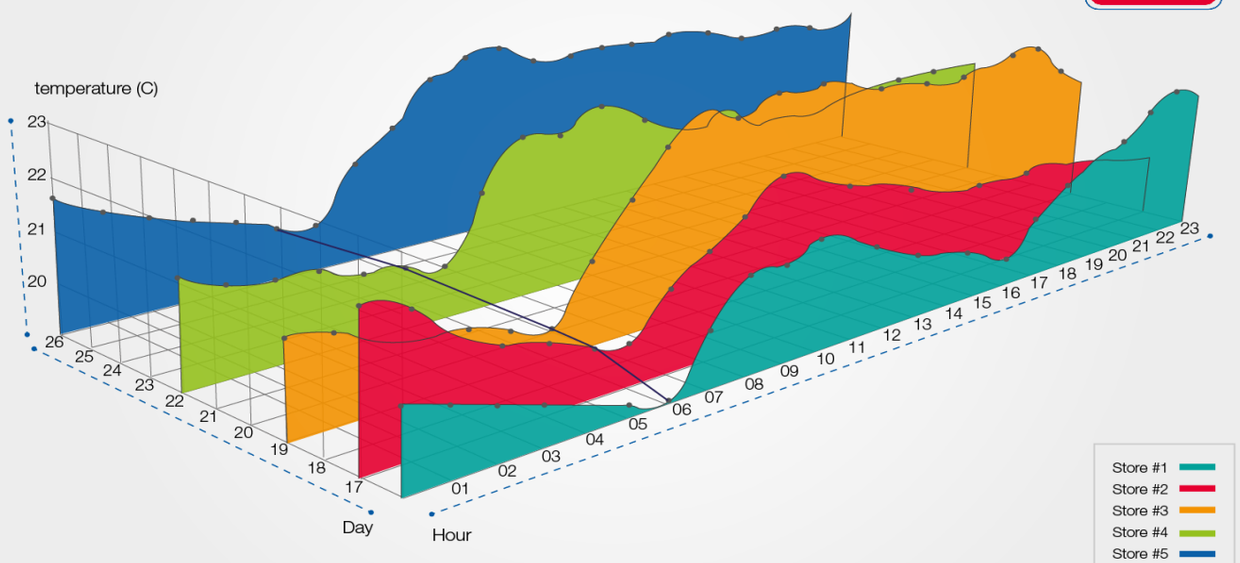






Walk in Cooler Temperature Benchmark
(5 Locations)

Holiday



Report generated by GDC June 2015

Which STORE has the most EFFICIENT cooling

Holiday

Monthly analisys of cooling system temperature
- Historic Lowest
- Average Daily Low
- Average Daily High
- Historic Highest

Locations	5°F -15°C	-14°F -10°C	23°F -5°C	**32°F 0°C**	41°F 5°C	50°F 10°C	59°F 15°C
Annandale, MN	●				●	●	●
Duluth, MN		●		●	●	●	
Walker, MN	●			●	●	●	
Gilbert, MN			●	●	●	●	●
Baudette, MN		●		●	●	●	
Detroit Lakes, MN			●	●	●	●	
Rochester, MN			●	●	●	●	
International Falls, MN	●			●	●	●	●
Bloomington, MN				●	●	●	●
Columbia Heights MN				●	●	●	●

Report generated by GDC June 2015

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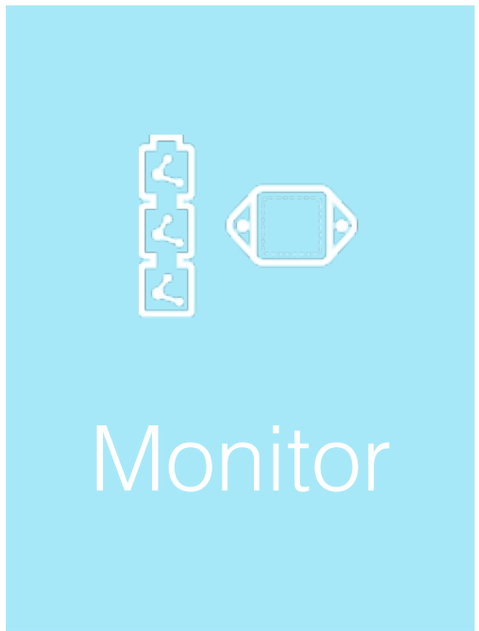

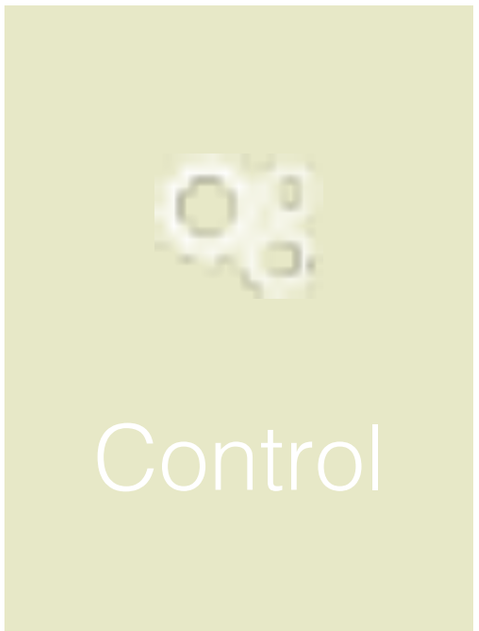

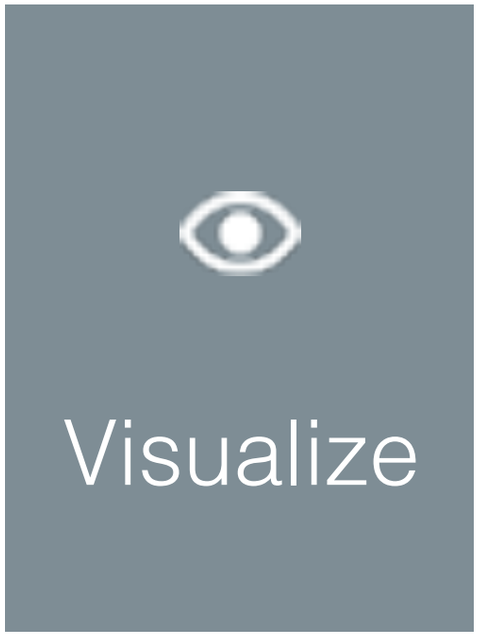

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Visualize

Click on the link below to view our Interactive Video

[Interactive Video]

Applications

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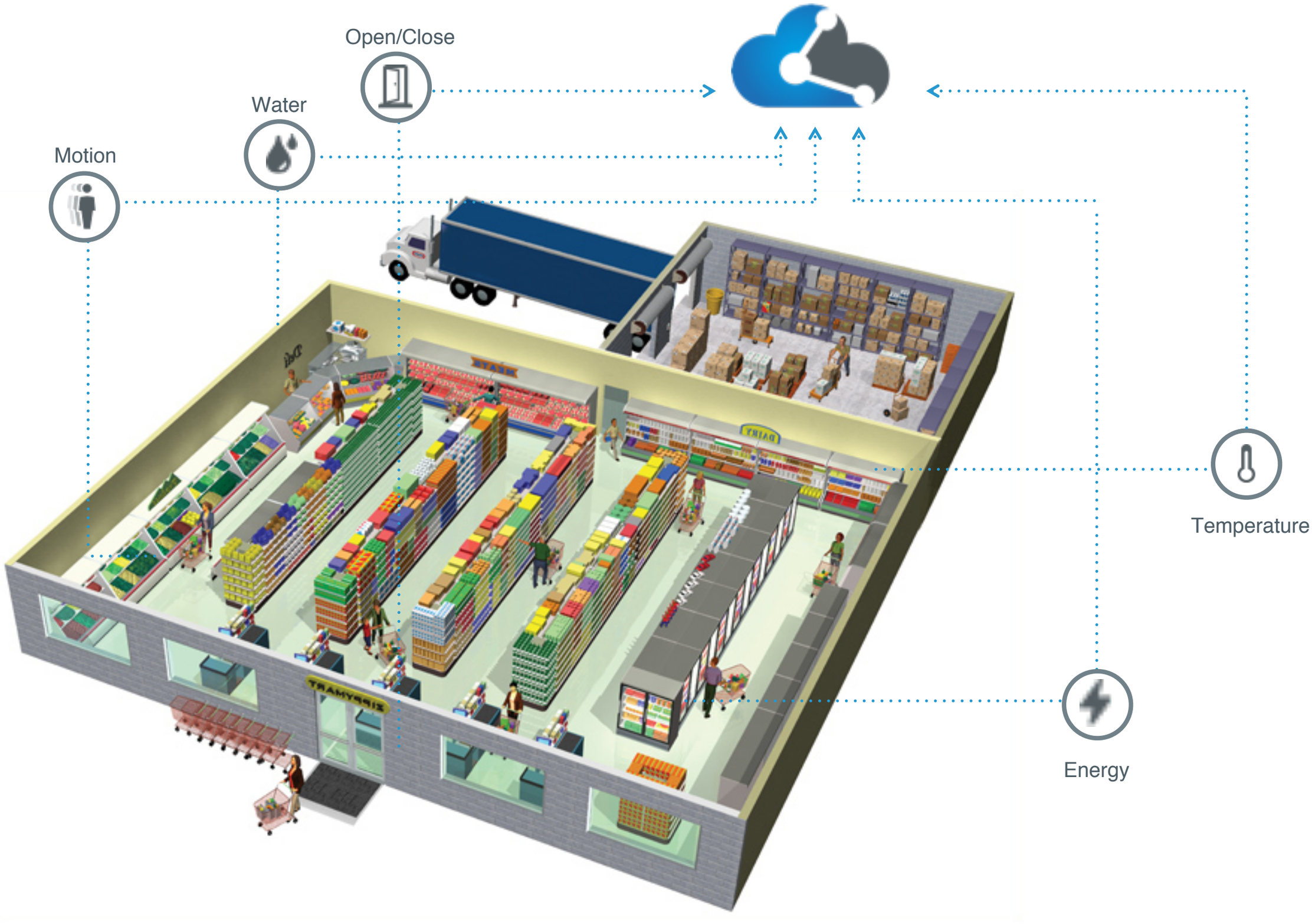
Restaurants & Convenience Stores



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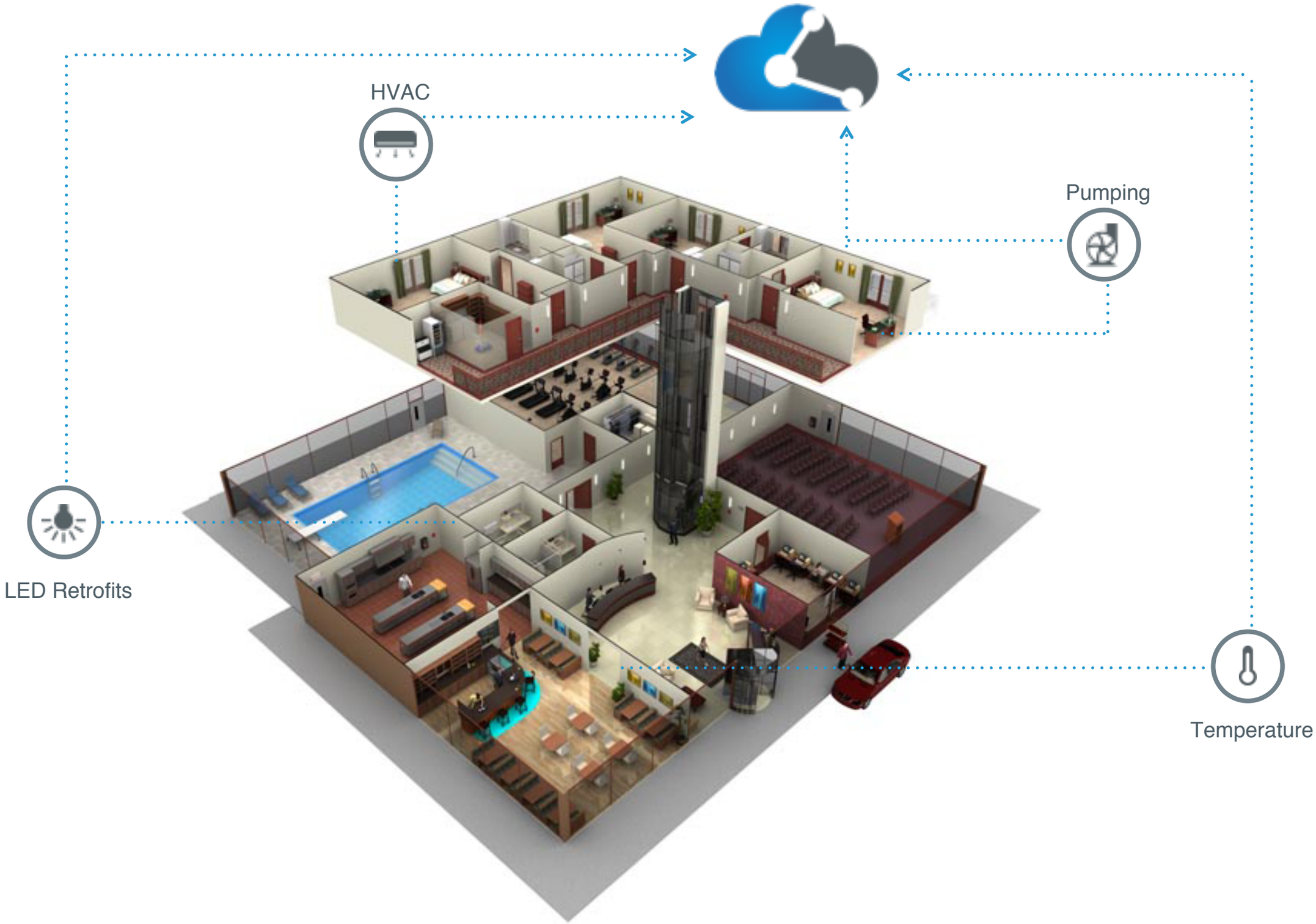
Hospitality and Commercial Properties



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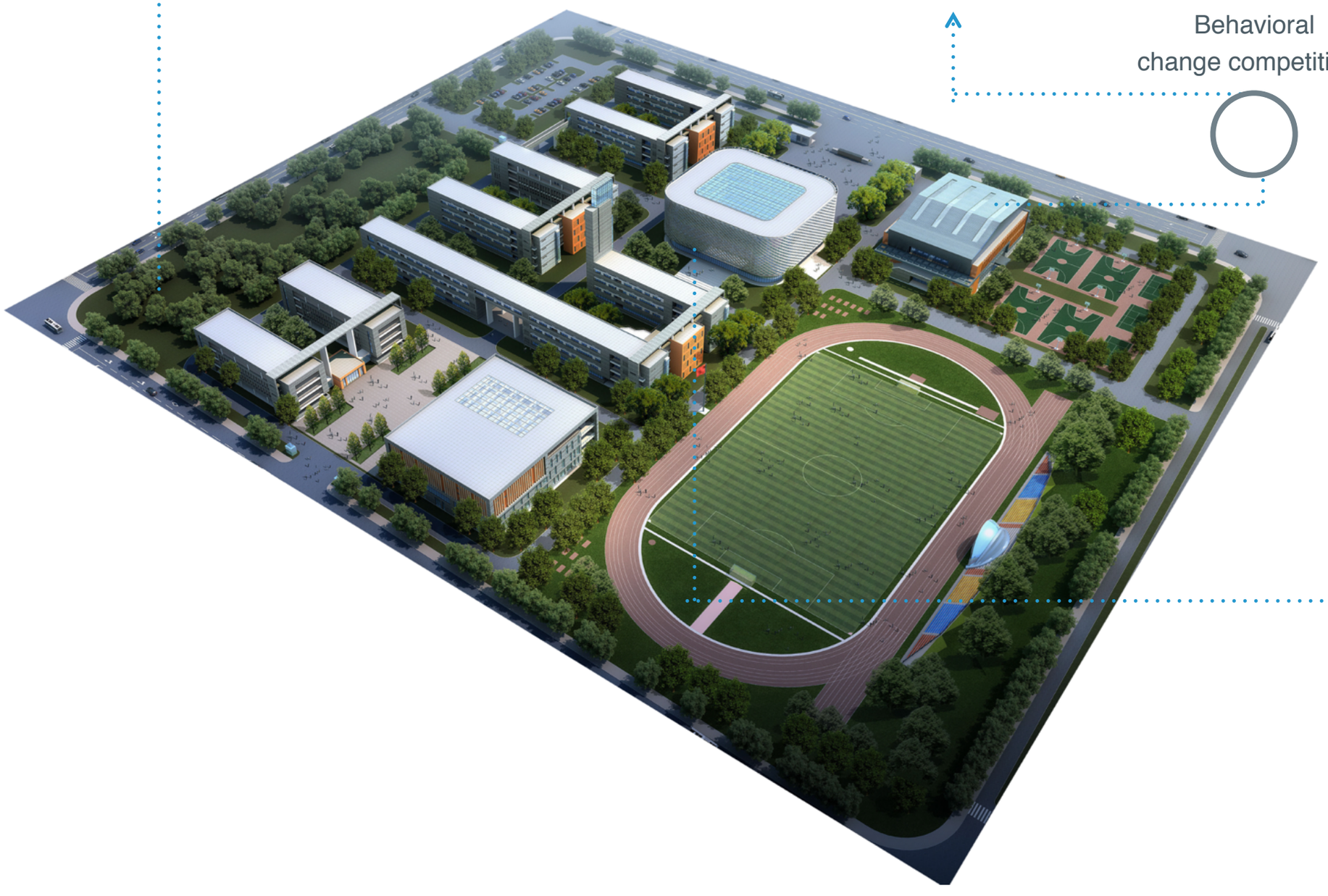
Education and Office Building Campus

CO2 emissions monitoring

Behavioral change competitions



Energy generation tracking

Thank You

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