How Vision AI Cuts Building Energy Costs by 35%

Discover how EDGIRA's on-premise Vision AI platform transforms existing camera infrastructure into a powerful system for vision AI energy management. By continuously analyzing real occupancy patterns, EDGIRA enables occupancy-based energy control that dynamically adjusts HVAC and lighting in real time delivering measurable smart building energy savings of up to 35%.

Unlike traditional sensor-heavy approaches, this edge AI building automation solution works without installing new hardware or sending video to the public cloud, eliminating privacy and security risks. Through advanced AI HVAC optimization, EDGIRA helps organizations reduce building energy costs, improve comfort, and operate more sustainably using a fully private, intelligent, and scalable on-premise vision AI platform.

How Vision AI Turns Buildings into Energy-Saving Machines

Up to 35% Less HVAC & Lighting Cost Without New Sensors

Every year, modern buildings waste millions in unnecessary energy consumption—not because their infrastructure is outdated, but because it is **blind to real human presence**.

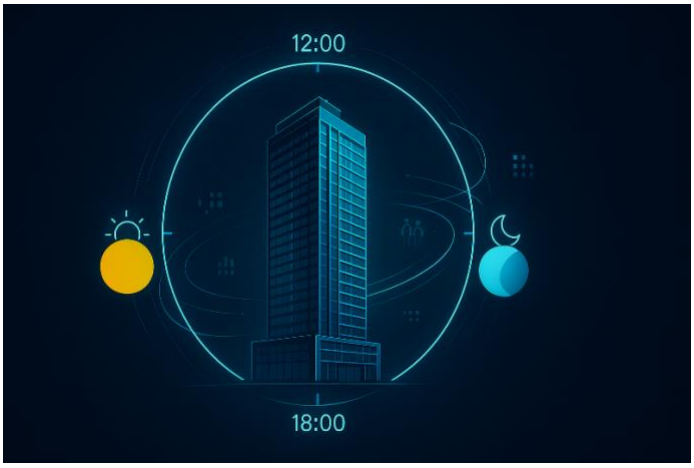
- HVAC systems run on fixed schedules, not real occupancy
- Lights stay on "just in case," even in empty spaces
- Ventilation operates whether rooms are full or completely unused

At the same time, hospitals, offices, schools, and shopping centers are already filled with cameras capturing every space. The challenge isn't a lack of data.
The challenge is the lack of intelligence at the edge.

This is where **EDGIRA**, an edge-first Vision AI platform, changes the equation—transforming existing cameras into real-time, privacy-safe intelligence that understands how spaces are actually used and optimizes energy accordingly.

The Silent Energy Killer, Time-Based Buildings in a Real-Time World

Most buildings still rely on rigid, time-based assumptions about how spaces are used, assuming people arrive at fixed hours, floors shut down at set times, and weekends remain quiet. In reality, modern usage patterns are far more dynamic. Hybrid work has disrupted office schedules, hospitals and clinics experience unpredictable peaks, campuses fluctuate with



exams and events, and emergency situations can instantly alter traffic patterns. When buildings fail to adapt to this reality, the outcome is predictable: empty floors are fully cooled, unused corridors stay lit, ventilation systems run in silent rooms, and inefficiencies only become visible when the energy bill arrives. This is not merely an operational flaw; it is **structural blindness** embedded in how today's buildings are designed and managed.

Most buildings still operate on simple assumptions:	**Reality is very different:**
• "People arrive at 8." • "Floors close at 7." • "Weekends are quiet."	• Hybrid work breaks office schedules. • Clinics and hospitals peak at unpredictable hours. • Campuses fluctuate with exam periods and events. • Emergency situations suddenly change traffic patterns.

The result is predictable:

- Cooling empty floors
- Lighting unused corridors
- Ventilating silent rooms
- Discovering waste only when the bill arrives

This isn't just inefficiency.
Its **structural blindness** built into how today's buildings are run.

What Is EDGIRA?

Vision-Based Energy Intelligence at the Edge

EDGIRA is a **fully on-premise Vision AI energy management platform** that connects directly to your existing IP cameras.

Instead of sending video to the public cloud, EDGIRA runs on secure **edge servers or AI boxes inside your building**. It continuously understands:

- How many people are in each zone?
- How long they stay
- How traffic flows change throughout the day
- Which spaces are truly active – and which are not

No public cloud dependency.
No personal identification.
No biometric profiling.

Only **behavioral intelligence** that feeds your HVAC, lighting, and building management systems with **real occupancy data in real time**.

From Schedules to Intelligence – A Day in an EDGIRA-Powered Building

Morning – Predictive Comfort, Not Blind Pre-Cooling

Instead of turning everything on at 6 a.m., EDGIRA:

- Uses historical patterns plus live entry data
- Pre-cools **only the floors and zones that are about to fill**
- Keeps other areas in efficient standby mode

Clinics, offices and retail zones come online **as people actually arrive**, not hours earlier.

Midday – Live Optimization of HVAC & Lighting

During busy hours, EDGIRA turns cameras into a **dynamic occupancy sensor network**:

- Crowded areas receive more precise cooling and fresh air

- Quiet rooms automatically move into eco-mode
- Corridor and common-area lighting adjusts to real traffic

The outcome: **higher comfort with lower total energy use.**

Evening – Zone-by-Zone Smart Shutdown

As people start to leave:

- Empty floors power down automatically
- Small clusters of late-working staff stay fully supported
- Parking and lobby lighting is scaled to actual movement, not fixed hours

No more “all on or all off” logic – just **fine-grained, occupancy-based control**.

Night – Intelligent Deep Save

Overnight, EDGIRA understands:

- Security patrol routes
- Cleaning team paths
- Restricted and closed zones

Only those active areas remain lit and conditioned above minimum levels.
The rest of the building enters **behavior-driven deep energy-saving mode** while maintaining equipment-safe temperature thresholds.

Measurable Impact – Up to 35% Energy Savings

Across pilot projects and modeled scenarios, EDGIRA typically delivers:

- **Up to 35% reduction** in HVAC and lighting energy consumption
- Lower peak-demand charges through smarter load distribution
- Longer HVAC and equipment lifespan
- Reduced maintenance and overtime for facility teams
- Fewer hot/cold complaints from occupants
- Stronger ESG and sustainability reporting with real behavioral data

All this is achieved **without**:

- Replacing existing HVAC systems
- Installing new cameras or sensor networks
- Ripping out your building management system

EDGIRA simply **sits on top of what you already own** and makes it intelligent.

Built for Sensitive Environments Privacy-First by Design

Many of the highest-value buildings are also the most sensitive:

- **Hospitals & care centers**
- **Schools & daycare**
- **Corporate offices & R&D labs**
- **Government & public infrastructure**

EDGIRA is engineered for these environments:

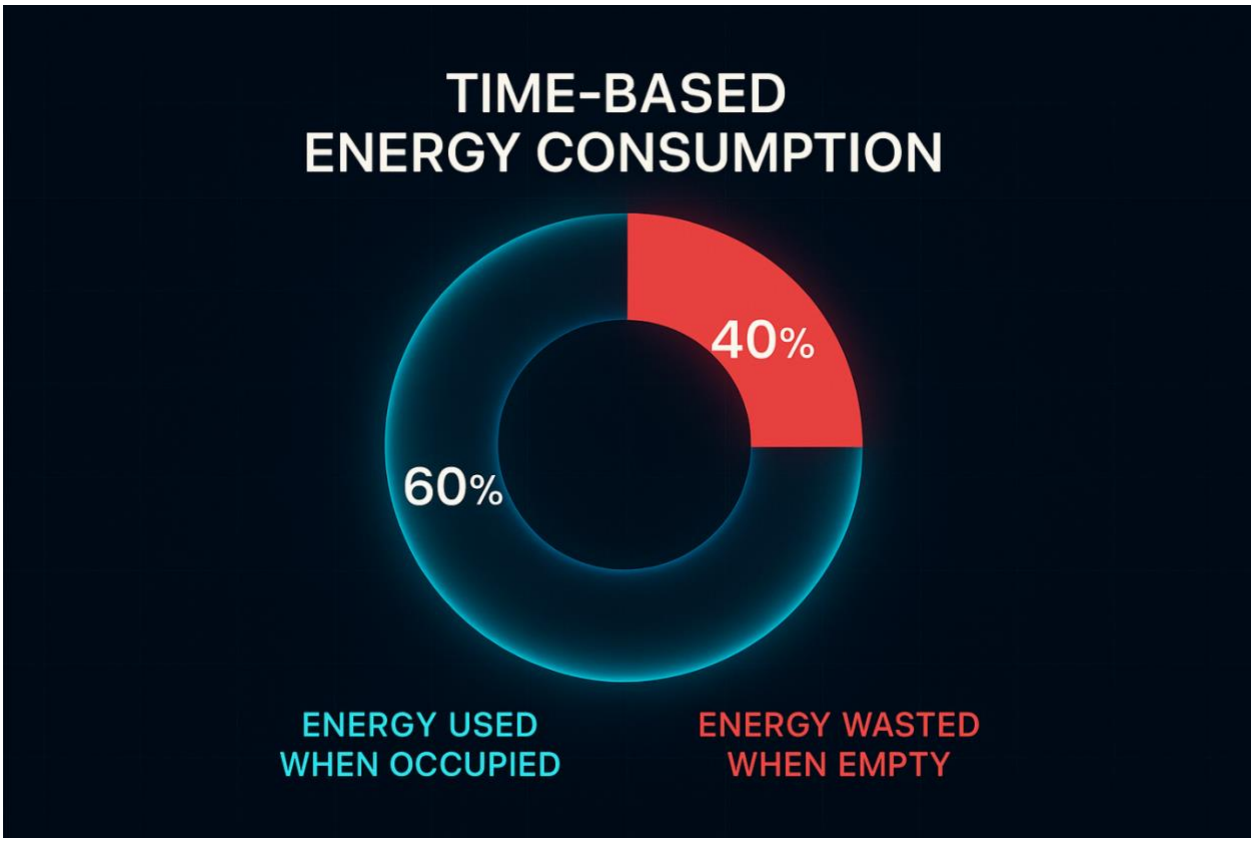
- 100% **on-premise video processing**
- **Real-time facial blurring**, where required
- No biometric storage or identity tracking
- Role-based access control and full audit logs

You gain **energy and operational intelligence without surveillance risk**.

Where EDGIRA Delivers the Most Value

EDGIRA's Vision AI energy optimization applies wherever people and spaces interact:

- **Smart buildings & office towers** – hybrid work, fluctuating occupancy
- **Hospitals & clinics** – variable patient flows, 24/7 operations
- **Universities & schools** – distinct class schedules, exam periods, dorms
- **Retail & mixed-use complexes** – dynamic customer traffic and opening hours



Anywhere people move, EDGIRA can **optimize HVAC, lighting and ventilation in real time**.

Getting Started – Turn Your Cameras into an Energy-Saving Brain

Deploying EDGIRA is straightforward:

1. **Connect** existing IP cameras to an EDGIRA edge box or server
2. **Integrate** with your BMS / HVAC / lighting controllers
3. **Configure** industry-specific automation templates (e.g., “Office Hybrid Work,” “Hospital Night Optimization,” “Campus Weekend Mode”)
4. **Monitor & refine**: track savings, comfort, and performance in the EDGIRA dashboard

In weeks, not years, your building can move from **static schedules** to **live, behavior-driven energy intelligence**.