

Product & Services

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About us

Transforming Buildings Into Intelligent Ecosystems

Growave Solutions is a pioneering technology company specializing in AI-driven, occupancy-aware automation systems designed specifically for educational institutions, commercial buildings, and industrial facilities. Our mission is to eliminate energy waste while maintaining optimal comfort and operational efficiency.

Unlike traditional Building Management Systems (BMS), our solutions are retrofit-ready, privacy-safe, and edge-intelligent. We leverage advanced FMCW radar technology, environmental sensing, and adaptive AI algorithms to deliver real-time, context-aware control of electrical loads, HVAC systems, and water infrastructure.

Our systems operate both online and offline, ensuring reliability and security. With proven energy savings of 20–40% and ROI periods of 18–24 months, Growave Solutions delivers measurable sustainability impact without compromising user comfort or operational convenience.

Our Core Values

- Sustainability-first design
- Privacy-safe technology
- Retrofit compatibility
- Edge intelligence
- Measurable ROI

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Smart Space Controller

Integrated Smart Lab & Office Automation Platform

OVERVIEW

Growave Sustainability Intelligence 2.0™ is a premium, AI-assisted, occupancy-aware building automation platform designed to intelligently control entire labs, offices, classrooms, and large commercial spaces. The system integrates occupancy detection, environmental sensing, outdoor intelligence, and adaptive AI algorithms to optimize lights, fans, AC/HVAC systems, PCs, exhaust systems, and other electrical appliances — zone-wise and behavior-wise.



Advanced FMCW Radar Detection

Detects both static and dynamic occupants up to 30–50m range with zone-wise presence clustering for large spaces.



Multi-Sensor Intelligence

Monitors temperature, humidity, CO₂ levels, light intensity, outdoor weather & AQI for comprehensive environmental awareness.



AI-Powered Adaptive Control

Machine learning algorithms continuously optimize performance based on behavior patterns and seasonal variations.



Centralized Dashboard

Local + Cloud monitoring with real-time analytics, energy usage graphs, and remote override control.



Key Features & Benefits

- Centralized control of lighting, fans, HVAC & power across all floors
- Occupancy-based automation using AI, FMCW technology & sustainability intelligence
- Zone-wise intelligent control for classrooms, labs, offices & warehouses
- Real-time monitoring of CO₂, temperature, usage & energy
- Auto ON/OFF based on presence & demand.
- Reduces energy wastage by 60–80%
- Up to 20–40% potential reduction in energy consumption depending on building type and usage pattern.

Technical Specifications

Parameter	Specification
Occupancy Sensor	FMCW mmWave Radar (30–50m)
Environmental Sensors	Temperature, Humidity, CO ₂ , Light
Controller	ESP32 – Secondary Unit
Coverage	Up to 2000 sq.m.
Deployment	Retrofit Compatible

Presence-Aware Power Control System

Smart Automatic Load Controller

OVERVIEW

The Growave Presence-Aware Power Control System is an intelligent space-level automation solution that controls electrical power based on real-time human presence.

Designed to reduce unnecessary electricity consumption and improve operational efficiency, the system automatically turns ON power when occupants are detected and turns OFF when the space is vacant.

Available in Cloud-Connected Version (remote monitoring & reporting) and Offline Edge Version (fully autonomous operation). Ideal for classrooms, offices, meeting rooms, labs, warehouses, and commercial spaces.

Key Features & Benefits

- **FMCW Radar-Based Detection** – Accurate presence detection, including static occupants
- **Manual Override Mode** – Safety button for manual override
- **Cloud Reporting (Optional)** – Real-time status, logging & monitoring
- **Reduces electricity wastage** – Eliminates manual switching dependency
- **Retrofit Compatible** – Suitable for existing installations
- **Up to 20–40% potential reduction in energy consumption depending on building type and usage pattern.**





Presence-Aware Power Control System

Smart Automatic Load Controller

Technical Specifications

Sensing Technology	FMCW Radar
Detection Range	12–20 meters (configurable)
Detection Delay	~2 seconds
Auto-OFF Delay	15–30 seconds (configurable)
Controller	ESP32-S3
Power Supply	5V DC, 1A
Relay Capacity	30A
Protection	MCB integrated

System Operation

Detect occupancy → Activate loads → Monitor presence → Initiate delay timer if vacant → Auto-OFF after configured time

Smart AC Controller

AI-Powered HVAC Optimization System

OVERVIEW

The Growave Smart AC Controller is an occupancy- and environment-aware HVAC optimization system designed to reduce energy consumption and carbon emissions while maintaining indoor comfort as per **ASHRAE standards**. Conventional air conditioners operate using fixed setpoints without considering real-time occupancy or environmental conditions, leading to over-cooling, unnecessary runtime, and energy wastage.

Our solution integrates real-time occupancy counting, indoor and outdoor environmental sensing, and intelligent edge-based control to deliver demand-driven, context-aware AC operation. Designed specifically for Air Conditioners (not chillers) and suitable for retrofit deployment in existing buildings.

Key Features & Benefits

- **Real-Time Occupancy Detection** – mmWave Radar for accurate presence & count estimation
- **Indoor Temperature & Humidity Monitoring** – Maintains ASHRAE thermal comfort zone
- **Outdoor Environmental Sensing** – Enables accurate thermal load estimation
- **Dynamic Setpoint Optimization** – Automatically adjusts based on Comfort Index
- **Adaptive Compressor Control** – Reduces unnecessary cooling/heating runtime
- **Potential 20-40% improvement in HVAC energy efficiency** – Improved COP and extended compressor life





Smart AC Controller

AI-Powered HVAC Optimization System

Technical Specifications

Occupancy Sensor	FMCW / mmWave Radar
Indoor Sensors	Temperature & RH
Outdoor Sensors	Temperature & RH
Controller	ESP32 Platform
Control Strategy	Dynamic Setpoint + Adaptive Control
Standards	ASHRAE Standard 55
Installation	Retrofit Compatible
Operation Mode	Cloud / Offline

System Operation

Detect occupancy → Monitor indoor/outdoor conditions → Compute Comfort Index → Estimate thermal load → Optimize setpoint → Control compressor & blower

FloorSync™ Cloud Control System

Centralized Floor-Wise Time-Based Power Management

OVERVIEW

FloorSync™ is a centralized, cloud-based floor-level energy control system designed to manage and synchronize electrical loads across entire floors or zones within a building. Unlike room-level automation, this system operates at the distribution panel level, controlling high-capacity circuits using industrial-grade contactors and safety mechanisms.

The system enables time-based scheduling, centralized monitoring, and secure remote control of lighting circuits, plug loads, HVAC panels, and floor-level distribution boards. Designed for multi-storey educational institutions, corporate office buildings, commercial complexes, and industrial workspaces.

Key Features & Benefits

- **Cloud-Based Centralized Control** – Remote ON/OFF scheduling with real-time monitoring
- **Reduces energy wastage**
- **Industrial-Grade Contactor Switching** – Heavy-duty contactors for lighting, plug circuits, HVAC feeders
- **Load-Based Electrical Design** – Contactor rating selected per connected load (32A, 63A, 100A etc.)
- **Power Supply Safety Architecture** – MCB/MCCB integration with surge protection compatibility
- **Time-Synchronized Automation** – Predefined schedules with holiday & weekend logic
- **Scalable Architecture** – Multiple floors linked via secure cloud interface



FloorSync™ Cloud Control System

Centralized Floor-Wise Time-Based Power Management

Technical Specification

Control Type	Cloud-Based Centralized Control
Switching Device	Industrial Contactor (Load-Specific Rated)
Protection	MCB / MCCB Compatible
Control Voltage	Low-Voltage Isolated Control Circuit
Load Capacity	Customizable (Based on Floor Load Calculation)
Communication	Secure Cloud Interface
Override Mode	Manual Bypass Switch

Operation

Admin configures schedule → Cloud command transmitted → Controller activates contactors → Power distributed → Real-time monitoring → Manual override available

Smart Water Monitoring System

Solar-Powered Intelligent Tank Monitoring & Automation

OVERVIEW

AquaSense™ is Growave's intelligent, solar-powered water tank monitoring and automation system designed for institutions, commercial buildings, and industrial facilities. The system provides real-time water level tracking, smart alerts, predictive analytics, and optional automatic pump control — all accessible via a secure cloud dashboard.

With zero electricity cost operation and built-in battery backup, AquaSense™ ensures reliable and sustainable water management. Available in Monitoring Only Version and Monitoring + Automatic Pump Control (Recommended).



Key Features & Benefits

- **Solar-Powered Operation** – Zero electricity cost with 48–96 hours battery backup
- **Industrial Ultrasonic Level Sensors** – High-precision, real-time water level monitoring
- **Cloud Dashboard & Mobile Access** – Live visualization, pump status, consumption trends
- **Smart Alerts & Notifications** – Low-level warnings, overflow alerts, leak detection
- **Predictive Intelligence** – Real-time fill rate calculation and estimated time-to-full
- **Optional Automatic Pump Control** – Auto ON/OFF with overflow and dry-run protection

Smart Water Monitoring System

Solar-Powered Intelligent Tank Monitoring & Automation

Technical Specification	
Parameter	Specification
Power Source	Solar-Powered
Battery Backup	48-96 hours
Sensors	Industrial Ultrasonic
Monitoring	24/7 Real-Time
Communication	Cloud-Based (WiFi / Cellular)
Dashboard Access	Mobile & Web
Automation Option	Pump ON/OFF Control
Protection	Overflow & Dry-Run

Comparative Advantages

Why Choose Growave Solutions

Growave Solutions stands apart from traditional Building Management Systems (BMS) and conventional automation providers through our unique combination of advanced technology, practical deployment approach, and measurable results. Our systems are designed specifically for the challenges of modern institutional and commercial buildings.

AI-Driven Intelligence

Unlike reactive PIR-based systems, FMCW radar detects stationary occupants and uses adaptive AI algorithms to predict energy demand based on behavior patterns and seasonal variations. Edge-based processing ensures fast, reliable decision-making without cloud dependency.

Industrial-Grade Reliability

Built with commercial-grade components and electrical safety standards. Includes MCB/MCCB protection, manual override capabilities, and dual-controller architecture for mission-critical applications. Designed for continuous 24/7 operation in demanding environments.

Privacy-Safe Technology

Radar-based occupancy detection eliminates privacy concerns associated with camera-based systems. Sensors detect presence and count occupants without capturing identifiable information, ensuring compliance with data protection regulations.

Proven Energy Optimization

Delivers documented energy savings of 20–40% across lighting, HVAC, and plug loads. Maintains ASHRAE comfort standards while reducing wastage, achieving measurable ROI within 18–24 months through lower electricity consumption and extended equipment life.

Scalable & Modular

Scales from single-room automation to campus-wide deployment. Supports both cloud and offline modes, with centralized dashboards providing unified monitoring across multiple buildings and zones.

Retrofit-Ready Design

Integrates seamlessly with existing infrastructure without expensive renovations or replacements. Modular architecture enables phased deployment, starting with high-impact areas and scaling gradually across the facility.

Partner With Growave Solutions

Building a Sustainable Future Together

Transform your facility into an intelligent, energy-efficient ecosystem with Growave Solutions. Our comprehensive portfolio of AI-driven automation systems delivers measurable sustainability impact while maintaining operational excellence and user comfort.

Whether you're managing a single building or a multi-campus institution, our retrofit-ready solutions integrate seamlessly with your existing infrastructure. Start with high-impact areas and scale at your pace – our modular architecture grows with your needs.

Ready to Get Started ?

Contact

Our team for a customized assessment of your facility's energy optimization potential. We'll design a solution tailored to your specific requirements, operational patterns, and sustainability goals.

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Transforming buildings into intelligent, sustainable ecosystems through AI-driven automation technology.