



# NIAGARA SUMMIT 2026

SEAMLESS CONNECTIVITY,  
POWERFUL INTELLIGENCE

**NS**<sup>2</sup><sub>6</sub>  
TECH TRENDS

**TRIDIUM**

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10:30AM – 11:20AM | THURSDAY

# EXCELLENCE WITH NIAGARA DEPLOYMENT: SCALING WITH DISCIPLINE



TRIDIUM

# SPEAKERS



Ben Volkmann  
Tridium



Matthew Hagemann  
Kander



Tino Zander  
Phoenix Contact



David Witherspoon  
Honeywell

# Matthew Hagemann

Owner, Kander



# Scaling Retrofits with Discipline

JCI → Niagara migrations at scale

Matthew Hagemann  
Owner, Kander



# Conversions Don't Scale

- Manual
- Inconsistent
- Engineering bottleneck

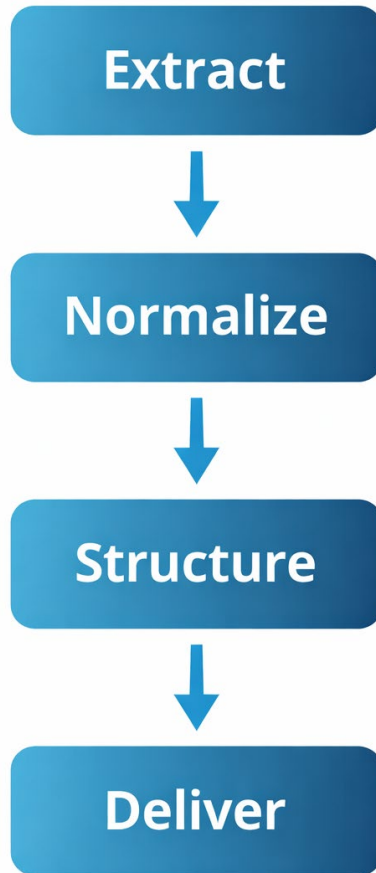


# Projects ≠ Systems

**Reinvented  
Every  
Time**

- No standardization
- No repeatability
- No leverage

# Systematize the Conversion Layer



- Same process - every project
- Consistent structure
- Repeatable outcomes

# Kander Handles the Hard Part

## Kander

- Point mapping
- Alarms/Histories
- Control logic
- Schedules
- Graphics (optional)

## Systems Integrator

- Optimization/tuning
  - Final validation
  - Customer delivery
- Integrator owns the system

# Proven at Scale

- 2500 supervisors converted
- 50K field devices migrated
- 1M points defined
  
- Up to 95% less engineering effort



# This Changes the Business Model

- More projects without more engineers
- Faster delivery
- Lower project risk
- More consistent and predictable margins

Kander = Conversion leverage



# Tino Zander

Head of **International Business Development**  
Global Industry Management **Building Technologies**



LinkedIn



# PHOENIX CONTACT

- Why “Scaling with Discipline” matters
- The Hidden Cost of Niagara Deployment
- Saving Engineering Time through **Smart Niagara Tools**
- Saving Energy through **Data-Driven Optimization**
- Excellence Through Discipline



# Why „Scaling with Discipline“ matters

Scaling Niagara successfully is not about doing more – it's about doing it with discipline.



- Saving TIME  
standardizing and  
automating  
**engineering workflows**
- Saving ENERGY  
continuously optimize  
**building performance**

# The Hidden Cost of Niagara Deployment

Niagara scales technically with ease – but operationally, many **projects struggle to scale efficiently**



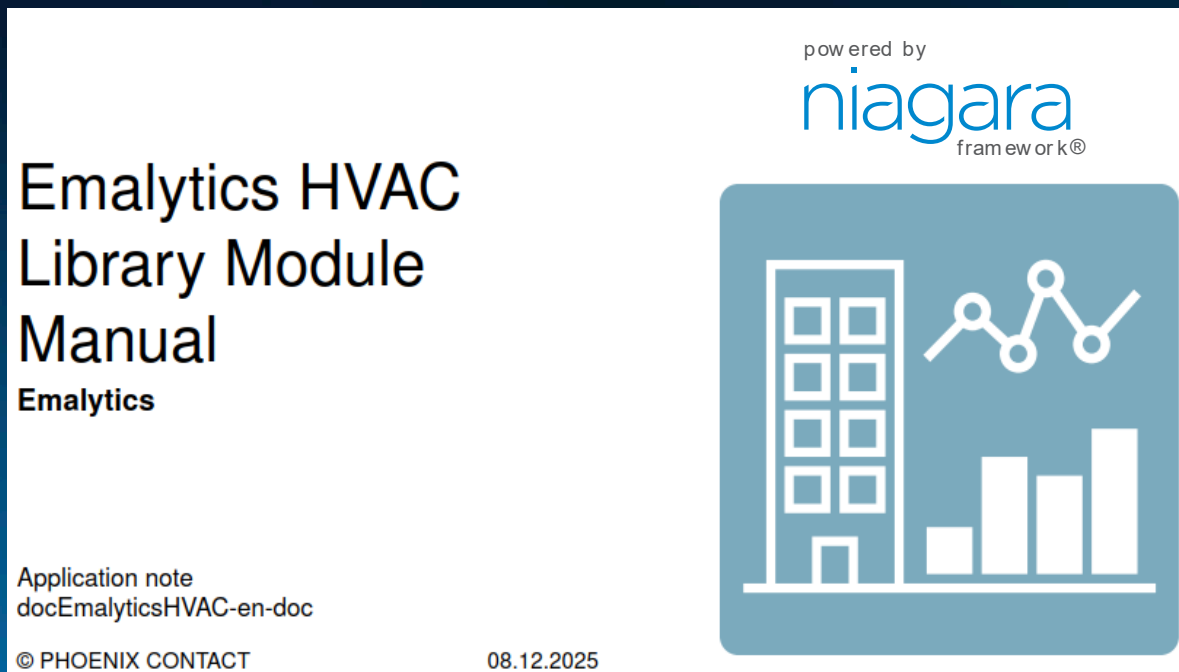
- Rising complexity
- High manual effort
- Templates that don't scale

# Saving Engineering Time

- HVAC Engineering Tools
- Room Automation Tools
- Engineering for everyone

# HVAC Engineering Tools

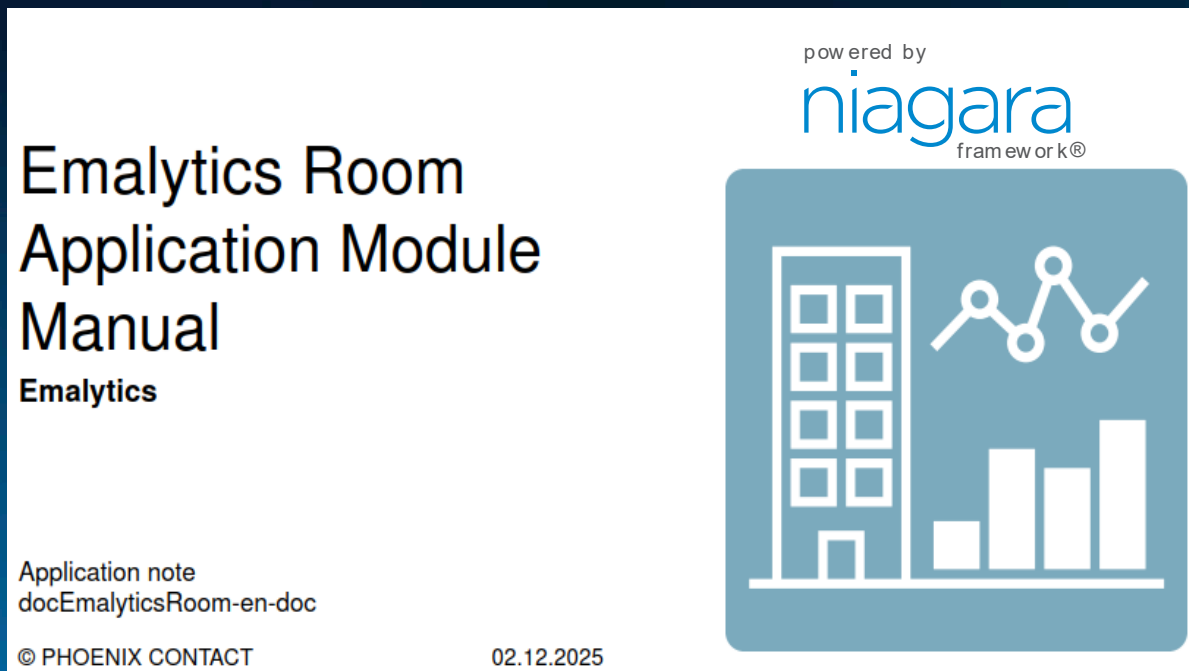
**emalyticsHVAC** is a fully integrated Niagara function library that structures, standardizes and automates the engineering process.



- Standardized HVAC function blocks
- Structured sequence logic
- Mass tools to make work easier
- Commissioning & Quality Assurance

# Room Automation Tools

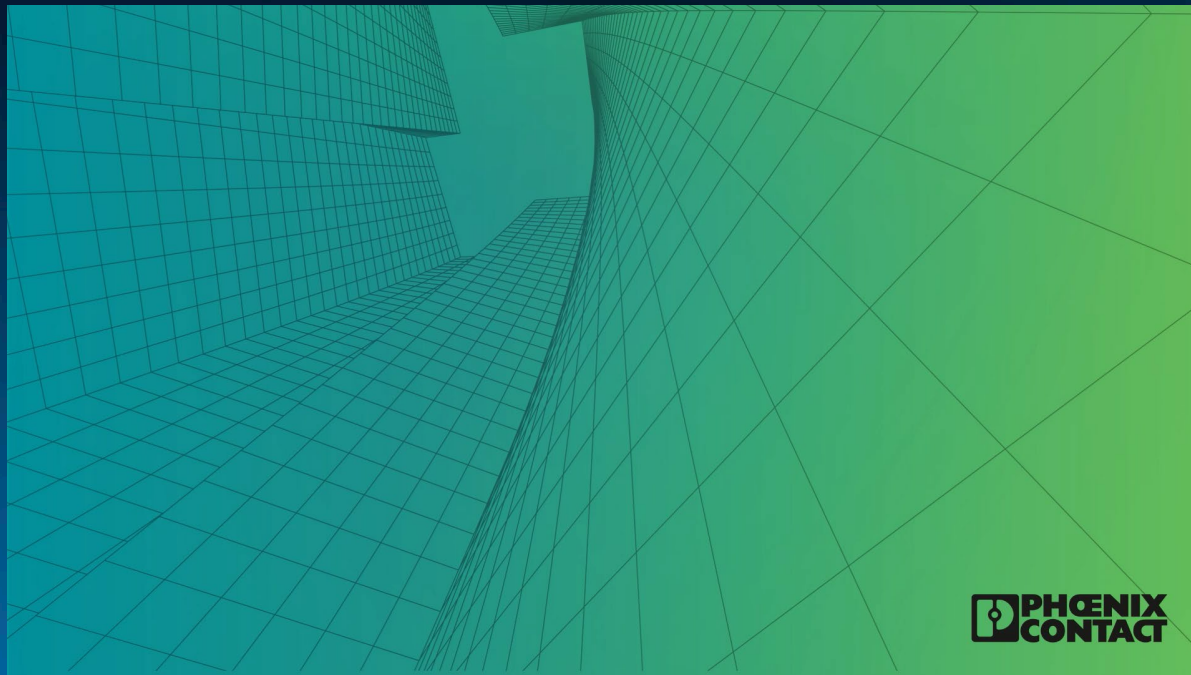
**emalyticsROOM** takes a radically different approach to classic automation: One room = generic function blocks instead of dozens of individual moduls.



- Generic Room Controller
- Preconfigured logic instead of custom engineering
- Simple integration of external systems
- Scalability through reuse

# Engineering for everyone

**eBuilder** as a Niagara service  
that revolutionizes the engineering workflow



- Automatic controllers and IO discovery
- Configuration of the IO channels and override options
- Building design via floor plans and room localizations
- Automation functions via drag-and-drop on the floor plan

# Time savings

Phoenix Contact's Tools do not just speed up engineering – they introduce discipline.

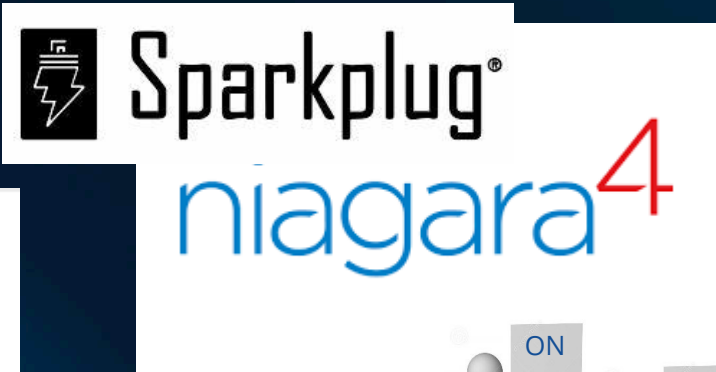
Engineering Area	Classic	with Phoenix Contact	Savings
HVAC	100 %	~ 50 %	~ 50 %
Room	100 %	~ 40 %	~ 60 %
Building	100 %	~ 45 %	~ 55 %

# Saving Energy

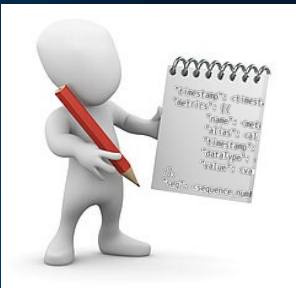
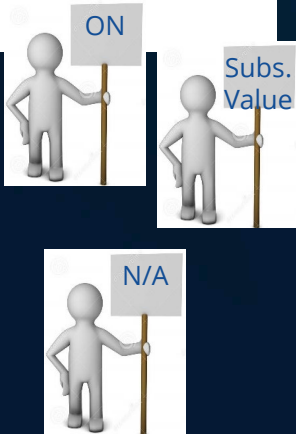
- Structured energy data
- Continuous energy analysis
- Closed optimization loops
- Scaling Niagara projects at portfolio level

# Structured energy data

Energy analyses are based on Niagara intelligence – not on isolated sensor data.



Sparkplug®  
niagara<sup>4</sup>



```
▼ Sparkplug Messages
  ▼ spBv1.0
    ▼ phoen_conta_px_c_gimbt_vd
      ▼ DCMD
        ▼ ilc116
          Device1
      ▼ DDATA
        ▼ ilc116
          Device1
        ▼ sv_loT
          IoT_SpB_Fan_G4_01
      ▼ NDATA
        sv_loT
        ilc116
```

- Niagara as Single Source of Truth
- Standardized Data Models
- Semantics already in Niagara

# Continuous energy analysis

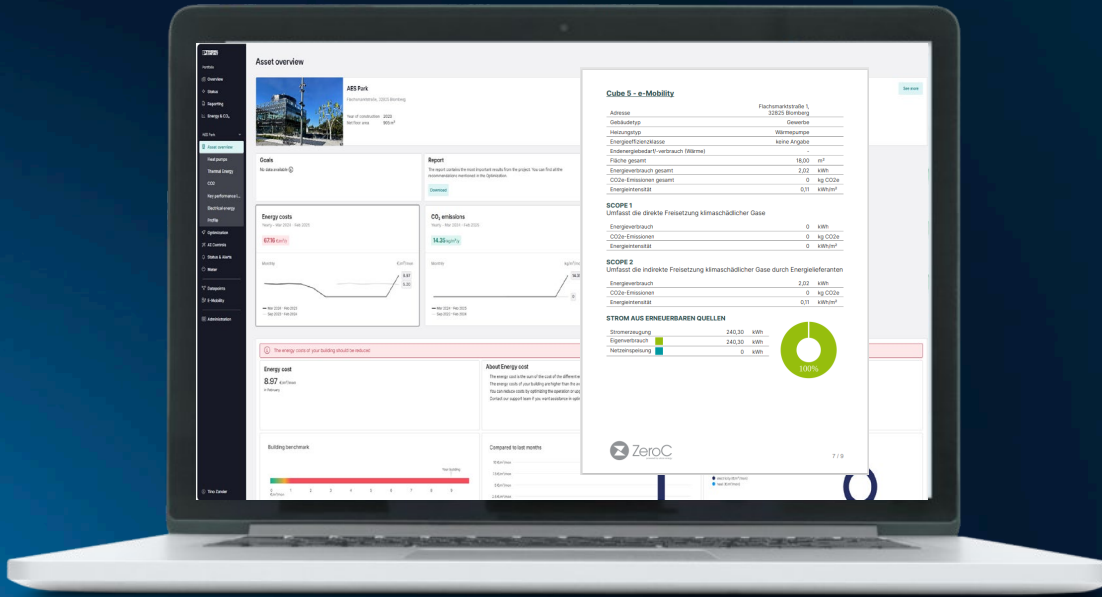
Niagara provides the context –  
Emalytics Cloud provides the scaling.



- No duplicate modeling or cloud-specific data preparation
- Detection of efficiency losses
- Information on improvements

# Closed optimization loops

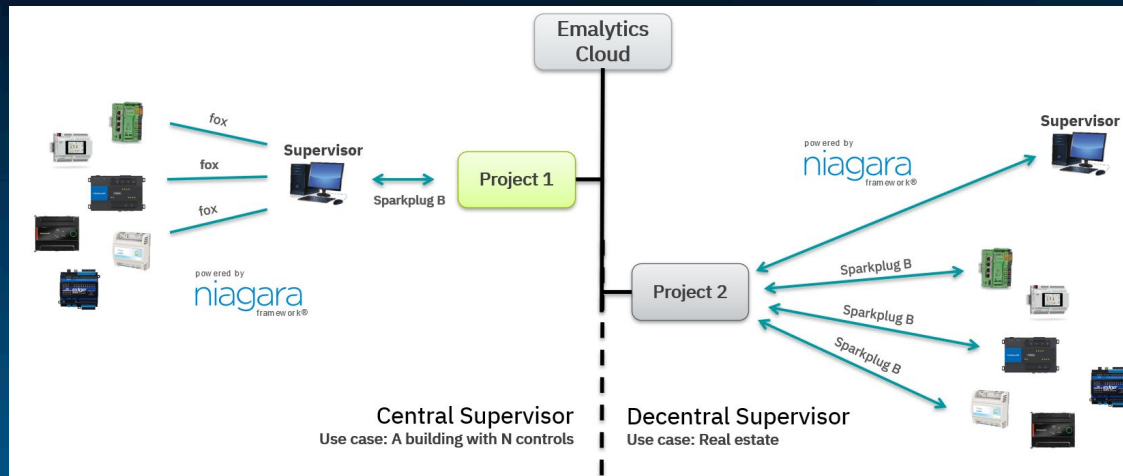
Operational control always remains in the Niagara Framework - Emalytics Cloud merely extends it.



- Feedback of optimization proposals
- No loss of control for the operator
- Optimizations remain completely transparent, traceable and reversible

# Scaling Niagara projects at portfolio level

Niagara scales technically - Emalytics Cloud scales economically. Energy efficiency becomes a native capability of Niagara.



- Each building remains an independent Niagara station
- Standardized service architecture across locations
- Central analysis without centralization of automation

niagara  
marketplace

# Energy savings

**With Phoenix Contact, Niagara as the operational backbone and Emalytics Cloud as the analytical extension.**

**Energy optimization becomes a scalable Niagara service – safe, structured and controllable.**

Possible savings	Causes
Energy costs 10 - 25 %	Runtime optimization, setpoint corrections, simultaneous H/C, load management
Lifecycle extension 10 - 20 %	Protection of fans, pumps, valves, compressors and drives

A platform like the Niagara Framework could only be invented in the US.

**“Let’s build a platform that can do everything ... and let the world figure it out.”**

Niagara gives us freedom.  
Phoenix Contact adds discipline.  
And Excellence at Scale only happens when you combine both.



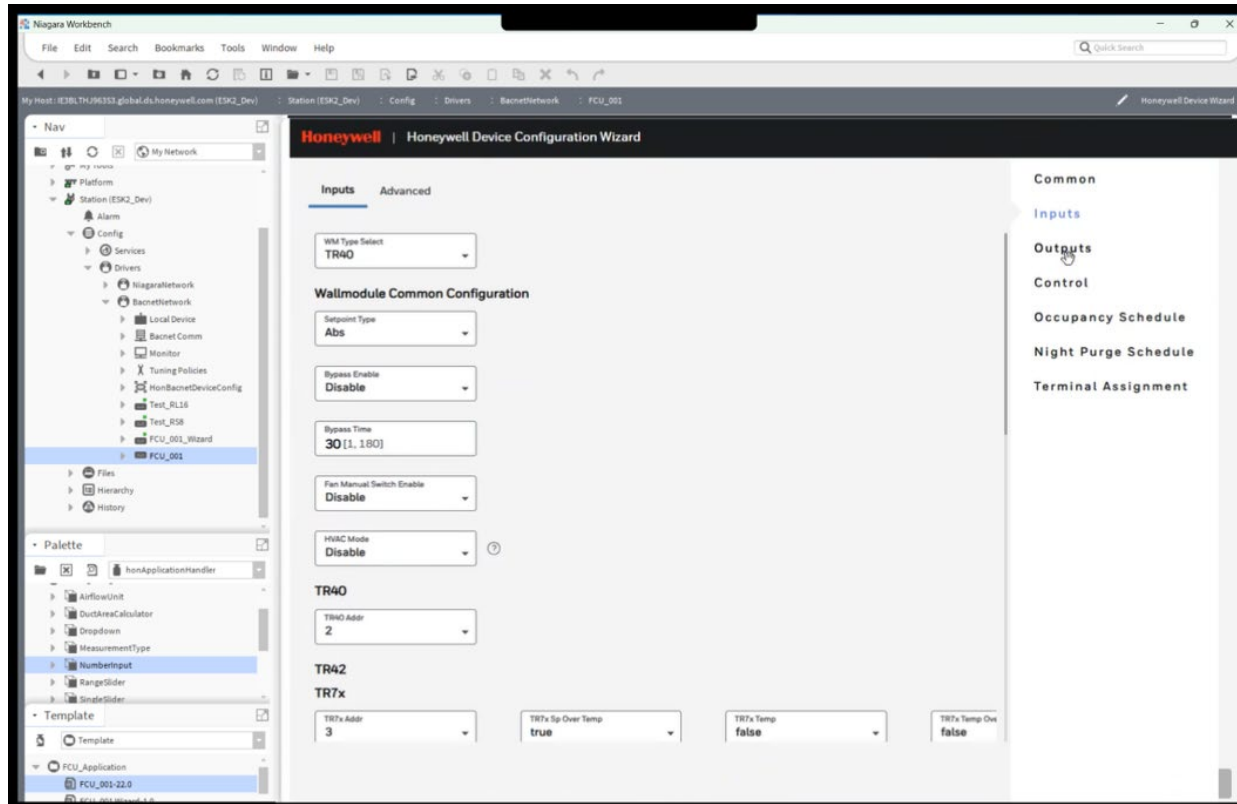
# David Witherspoon

Sr Director - Automation Portfolio Leader

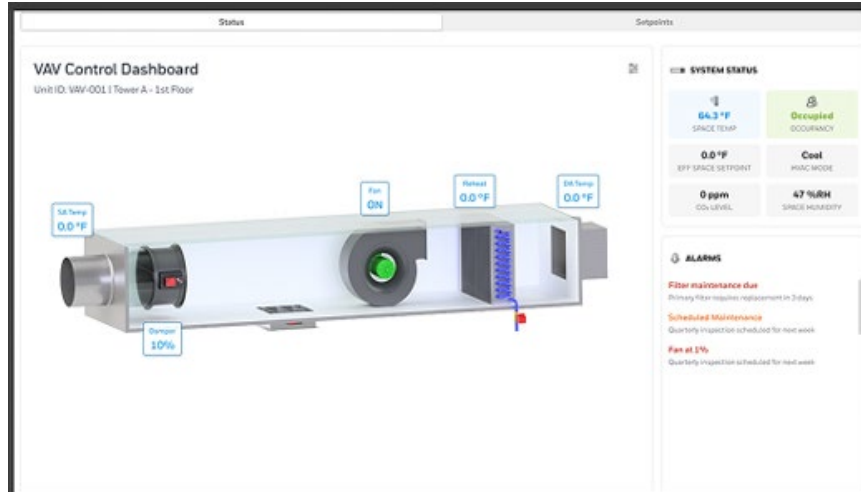
Honeywell



# Engineering Starter Kit Labor Savings



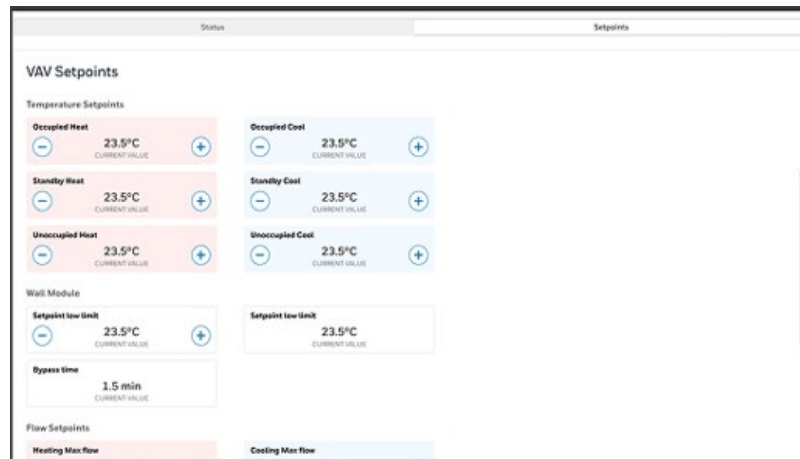
# Fixing Complexity



- Faster Application Development

- Faster Graphics

- Faster Configuration & Download



# Labor Savings



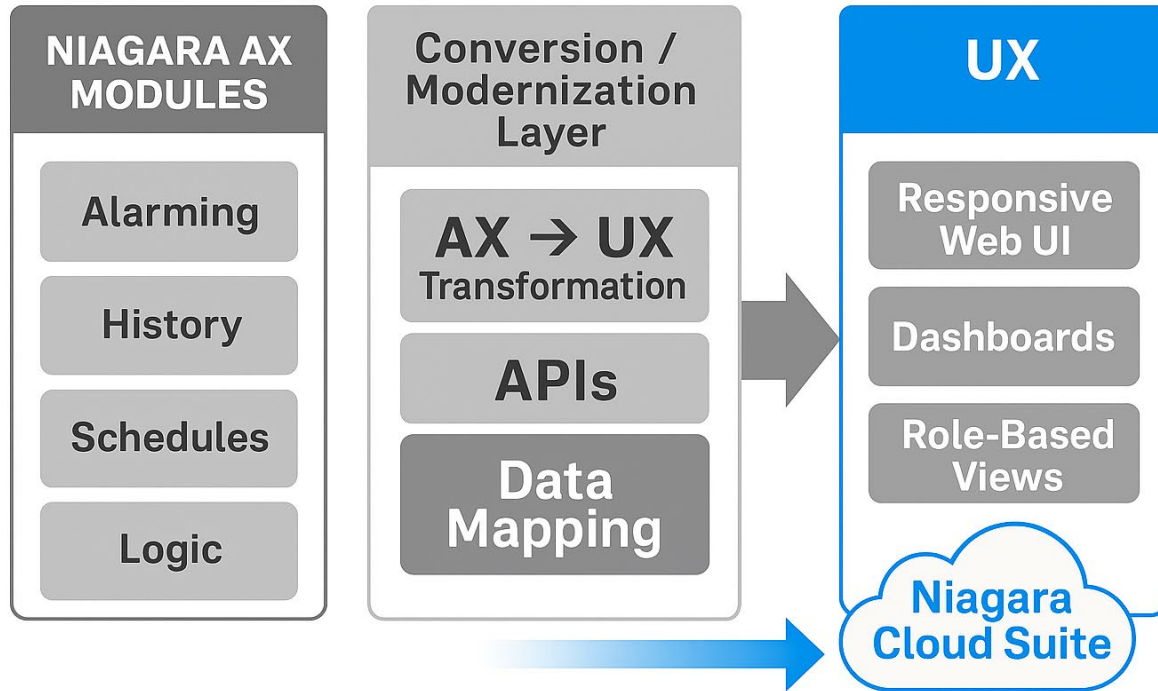
- *“Faster, not error prone, no back and forth to the documentation”*
- 48% Faster than current Honeywell IRM tool\*

## Teaching Time

- ESK – MSTP ~1Minute
- ESK – IP/T1L ~15seconds

\* - Timed Teach by John Hutchey for IRM and ESK

# AX to UX Modules



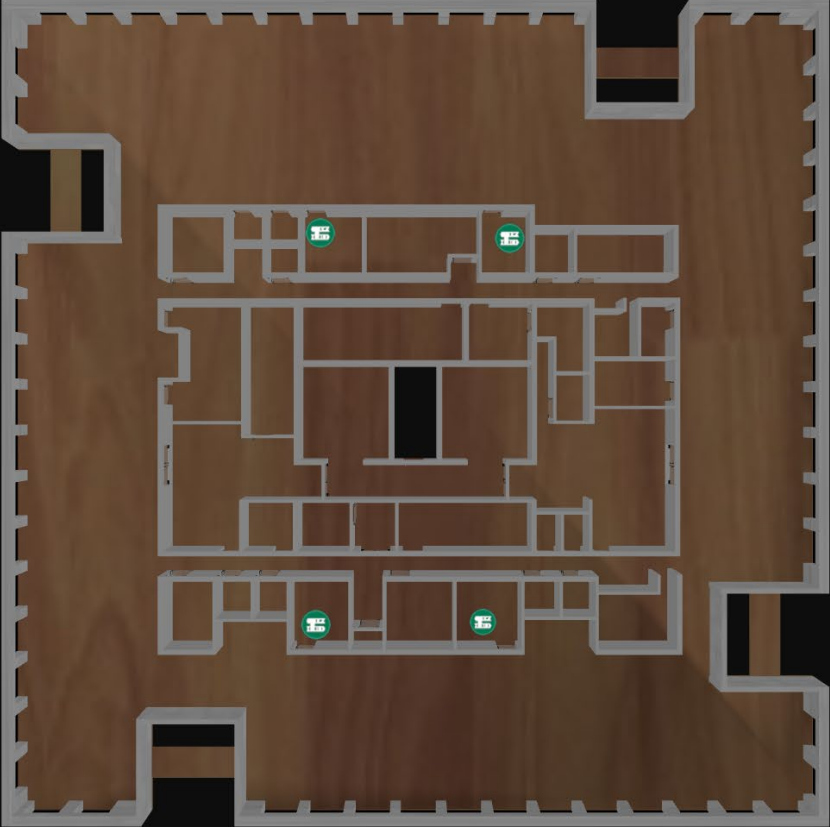
# Agentic AI Agent

Honeywell  
**FORGE**



# Weekday Pattern Optimization

Autonomy in Action  
Campus-II - Floor 8



Show AHU status

### Dynamic Set Point Optimization

Friday Conservation & Reclassification

**ACTION**  
Created an adaptive Friday conservation profile based on historical trend

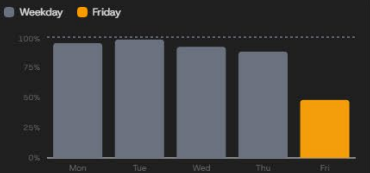
Cooling Setpoints **+1.5°C**    AHU Airflow **-12%**

**KPI IMPACT (PROJECTED)**

Friday HVAC Reduction	Annualized Savings
<b>18%</b>	<b>\$5,120</b>

**OBSERVATIONS (HISTORICAL)**

Historical data analyzed **9 Weeks**    Weekday baseline **52% Below**



Friday: 52% below baseline    By 11 AM: 46% below

**NEW SIGNAL**

**NEW PROBLEM STATEMENT**  
**Pattern Deviation Detected**  
High-occupancy Friday event concentrated on the 8th floor  
January 23

**RECOVERY ACTIONS**

- 1:15 PM **CO2 alert triggered**
- 1:28 PM **Reverted to weekday profile**
- 1:37 PM **All zones stabilized**

### Honeywell Forge

**Action**

**KPI Impact**

- Energy Agent**
  - Projected: 18% reduction in Friday HVAC energy consumption
  - Projected: \$5,120 in annualized savings

**Observations**

- Historical Trend Agent**
  - 9 weeks of historical data showed Friday afternoons averaged 52% below weekday baseline
  - Early occupancy readings averaged 46% below weekday levels by 11:00 AM
  - Occupancy typically declined through the day
- Energy Agent**
  - Weekday cooling and airflow schedules remained active on Fridays

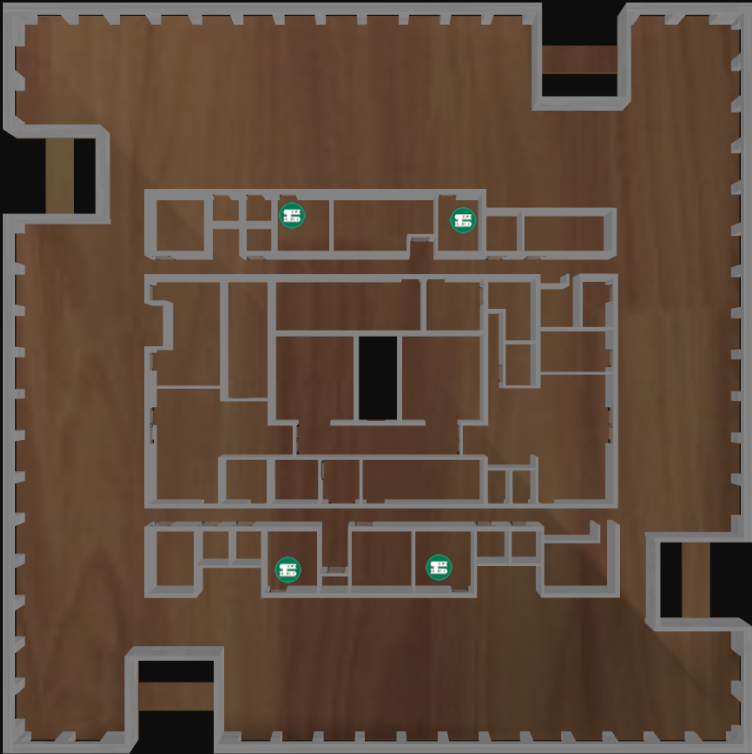
**Reasoning**

- Energy Agent**
  - Identified systematic energy waste: weekday output applied to low-occupancy conditions
- Historical Trend Agent**
  - Ontology classified Fridays as a distinct operational pattern (between weekday and weekend)
- Comfort Agent**
  - Adaptive weekly scheduling justified because the comfort requirement was consistently lower
- Coordinator Agent**
  - Conservation strategy selected: mild setpoint relaxation + airflow reduction within comfort bounds

Ask Forge

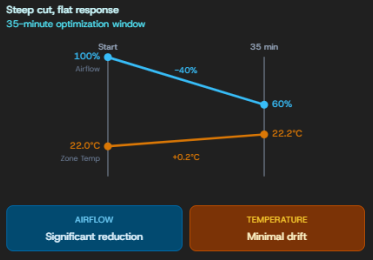
# Daily Pattern Optimization

Autonomy in Action  
Campus-II - Floor 8
Admin



Show AHU status
Energy Optimization  
Lunch-Time Adaptive Cooling

**Steep cut, flat response**  
35-minute optimization window



AIRFLOW  
Significant reduction

TEMPERATURE  
Minimal drift

**ACTION - EXTENDED OPTIMIZATION**

Outside Air Intake  
+22%

Chilled-Water Valve  
-34%

Extended the lunch-time optimized cooling profile beyond the scheduled lunch window

**KPI IMPACT (OBSERVED)**

HVAC Reduction  
**29.6%**

Daily Savings  
**158 kWh**

Annual Savings  
**\$6,700**

Compressor Runtime  
**-44%**

Comfort Compliance  
**100%**

**Dynamic Set Point Optimization**  
Lunch-time adaptive cooling with outside-air economizer strategy successfully applied.

**\$6,700** projected annual savings

**OBSERVATIONS (REAL-TIME)**

Temperature rise  
**+0.2°C**  
Over 35 minutes

Occupancy  
**59%**  
Of workday average

**Honeywell Forge**

> Action

> KPI Impact (Projected)

> Observations (Historical)

NEW SIGNAL OBSERVED

**Unexpected efficiency response detected:** After airflow reduction, zone temperatures increased only +0.2°C over 35 minutes, indicating the optimization was outperforming predicted behavior.

> Action - Extended Optimization

> KPI Impact (Observed)

**Optimization Complete**  
Lunch-time adaptive cooling with outside-air economizer strategy successfully applied.  
Projected annual savings: \$6,700.

> Observations (Real-time)

**Secondary Process - Reasoning**

- ✔ **Comfort Agent**
  - Thermal mass reduced temperature sensitivity to airflow reduction
- ⚡ **Energy Agent**
  - Outdoor air temperature closely matched AHU discharge temperature requirements
  - Outside air intake could displace mechanical chilled-water demand at lower cost
- 🧠 **Coordinator Agent**
  - Ontology + retrieved operational expertise ranked economizer bias as the lowest-cost safe extension strategy

Ask Forge

# Comfort & Air Quality Agent

Autonomy in Action  
Campus-II - Floor 8

**Dynamic Set Point Optimization**  
Temperature & Capacity Issue

Analyzing alternative interventions...  
Evaluating lowest-cost, least-disruptive resolution

**NEW PROBLEM STATEMENT**  
**Mechanical intervention failing**  
Maximum airflow deployed. Comfort still degrading.  
Root cause: Overcrowding

**ACTION - BEHAVIORAL INTERVENTION**  
Identified Room 828 as available and suitable alternative

<b>Room 812</b> <span>Over-capacity</span> Capacity: 13/8 Temp: 24.8°C ↑ CO <sub>2</sub> : 1250 ppm ↑ Airflow: 95%	<b>Room 828</b> <span>Available</span> Capacity: 20/0 Temp: 22°C ✓ CO <sub>2</sub> : 450 ppm ✓ Airflow: 45%
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MESSAGE SENT TO TEAMS CHAT

Forge  
[Meeting Room Recommendation]  
Room 828 is available and pre-conditioned for your meeting. Please relocate for improved comfort.

**KPI IMPACT (OBSERVED)**

Comfort Restored <b>3 min</b>	Additional HVAC Load <b>0 kW</b>
High-Cost Interventions <b>Zero</b>	Occupant Complaints <b>None</b>

**OBSERVATIONS (POST-RELOCATION)**

**Relocation Successful**

HVAC 100% Sufficient	8 minutes Normalization
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**Honeywell Forge**

Observations

Reasoning

NEW SIGNAL OBSERVED

**Standard comfort-recovery response ineffective:**  
Comfort conditions not improving despite automated BMS intervention. Occupancy density exceeds HVAC capacity for this zone.

Action - Behavioral Intervention

KPI Impact (Observed)

**Behavioral Intervention Successful**  
Comfort issue resolved through room relocation. Behavioral intervention required less energy and achieved faster comfort restoration than mechanical escalation.

Observations (Post-Relocation)

Reasoning

- Energy Agent:** Behavioral intervention required less energy than increasing HVAC output
- Comfort Agent:** Pre-conditioning ensured immediate comfort upon relocation
- Coordinator Agent:** Changing occupant location resolved the comfort issue faster than mechanical escalation
- System prioritized lowest-cost, least-disruptive resolution
- HVAC system expanded from environmental control to **human coordination**

END OF THE ACTIONS TAKEN

Ask Forge

Thank you!

Questions

