TRIDIUM
NS2024
APRIL 15 - 17 | ANAHEIM, CA
Advanced Visualization
Tools To Elevate Niagara User Experience

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NS2024

ANAHEIM, CA | APRIL 15–17

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Evolving Expectations

Building owners have key expectations for their systems

- State of the art controls engineering and system integration
- Secure integration with IT infrastructure
- White-glove customer care and technical support

As consumer technology pushes forward, these expectations are evolving.

- Cross-device compatibility
- Modern, consistent user experience and interface

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Evolving Expectations

System integrators are left to wear many hats on projects

- Equipment and mechanical expert
- Controls engineer
- Energy manager
- IT professional
- Network admin
- Customer service representative
- Salesperson
- Web developer
- Graphic designer
- User experience architect

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Current Scenario
Niagara4

N4 IS AWESOME

The leading open platform and talks to everything. Comprehensive, fully featured engineering tool

ENGINEERING PLATFORM

N4 is an engineering platform first and foremost it's not a design tool

PX EDITOR

Ablank canvas approach doesn't cut it when creating modern experiences. You need HTML, JavaScript, and CSS

CONTROLS TEAM

Web developers, graphic designers, and UXarchitects are not on staff. SIs can't be expected to become experts

Current Scenario

Niagara4

The system may be a modern marvel of engineering, but a user's first impression often looks like this

DOESN'T WORK ON MOBILE

OUTDATED DESIGN

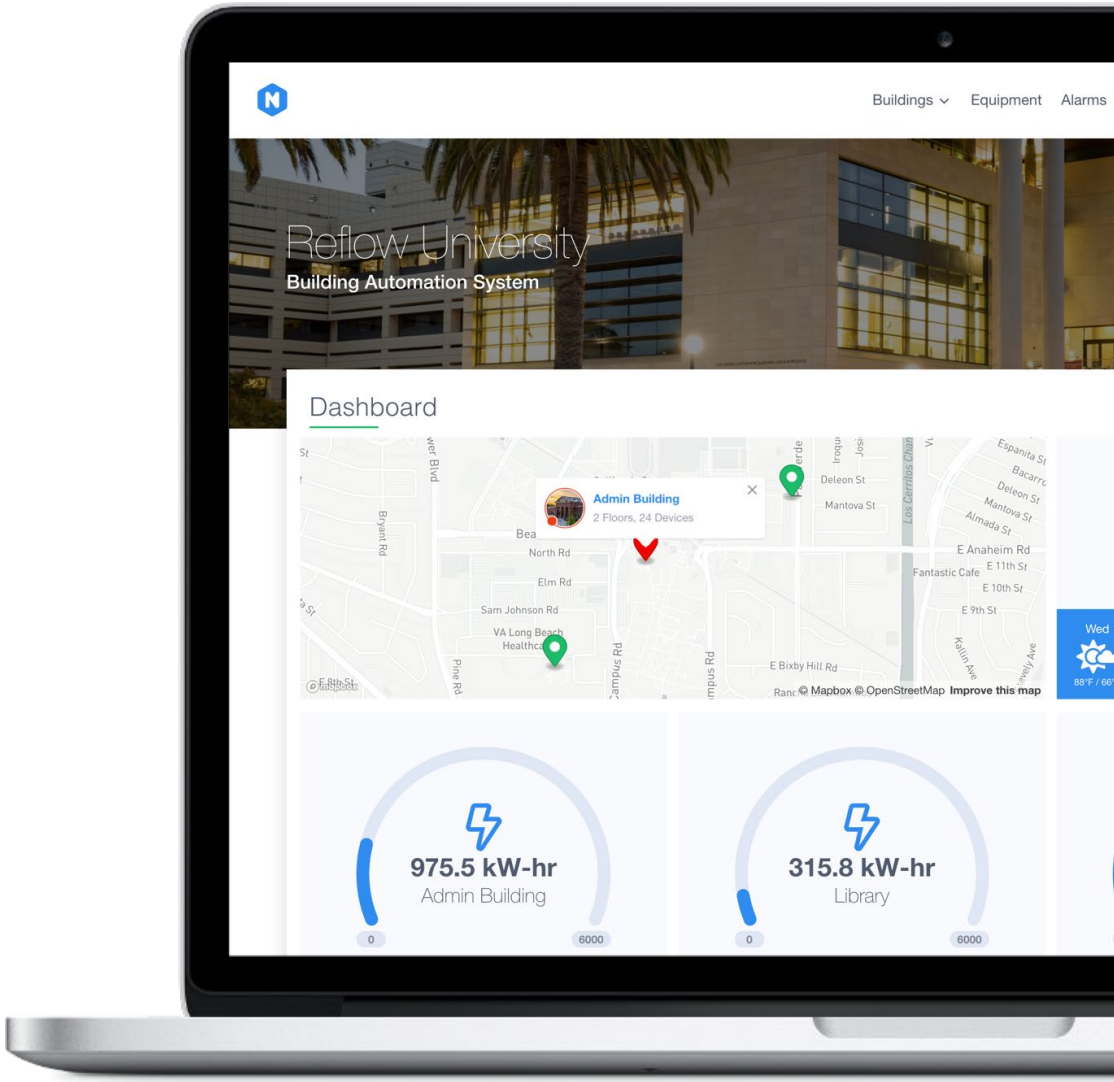
COMPLEX TO SETUP

Reflow

Product Design & Philosophy

The modern web is built on standards and common user interface conventions – not blank canvases.

Reflow provides a set of design frameworks, page layouts, and components that bring Niagara 4 data into a modern web application structure that adhere to standards and common conventions.

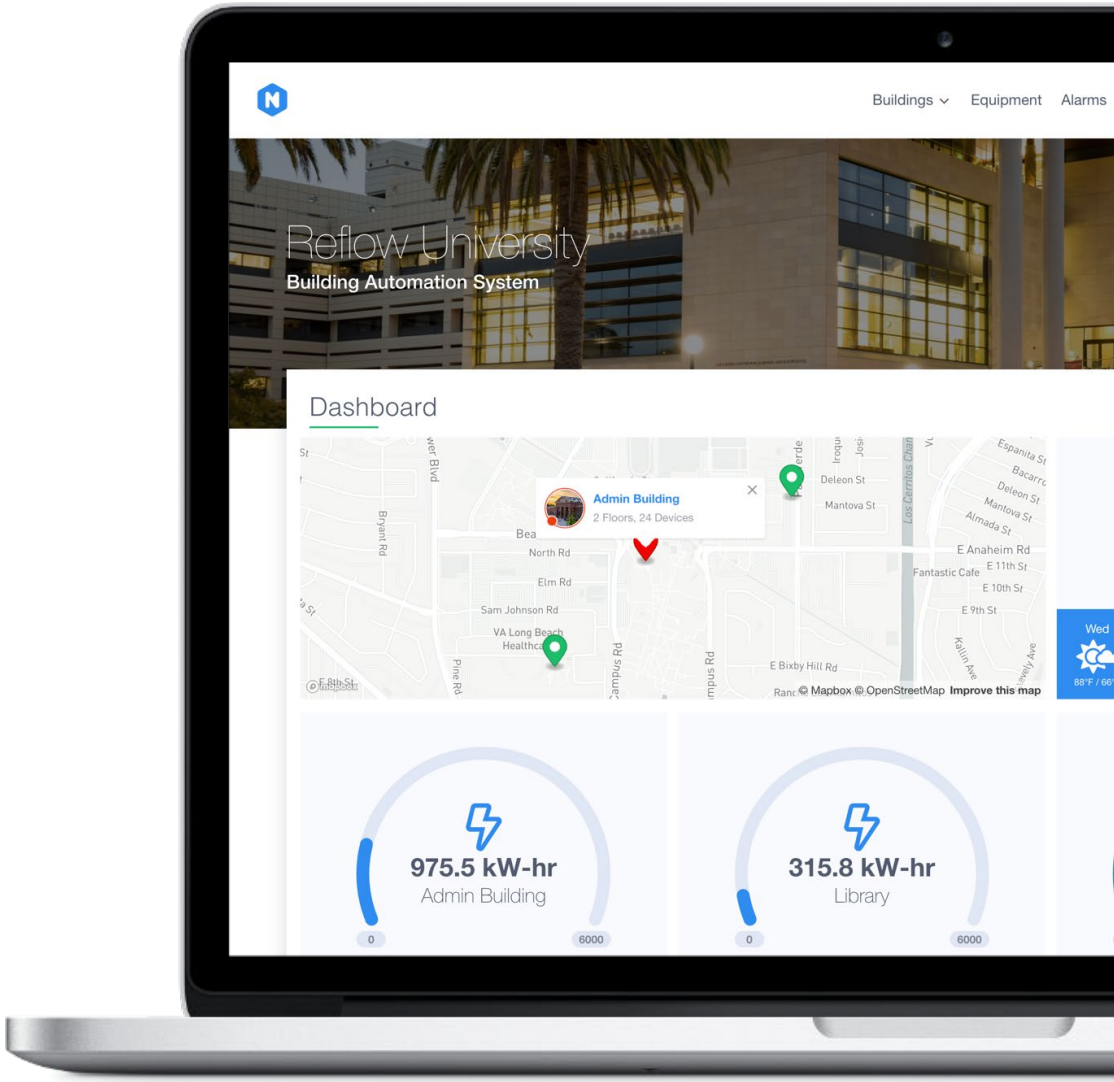


Reflow

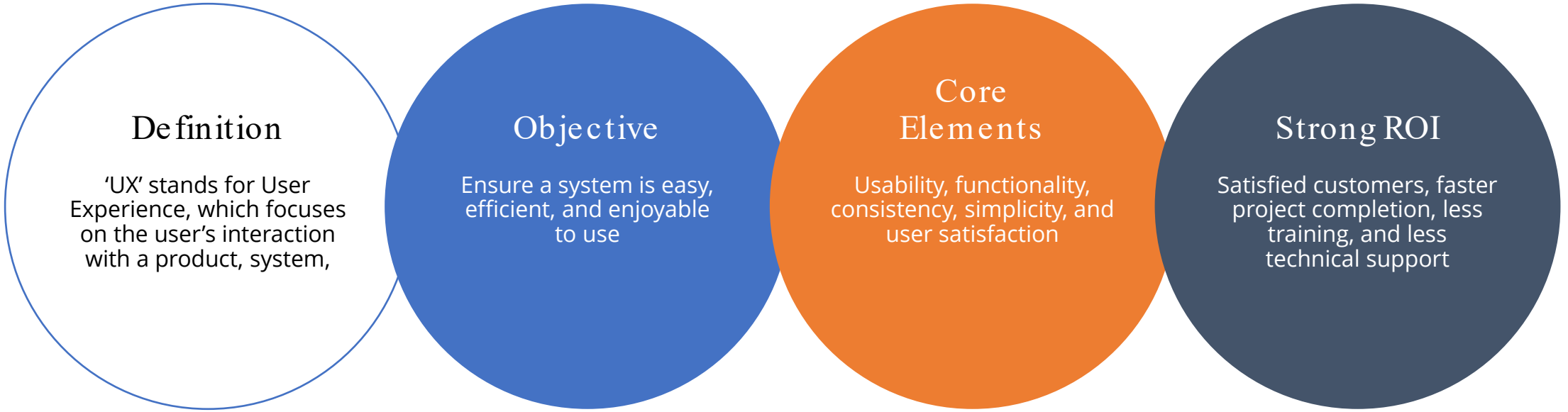
Product Design & Philosophy

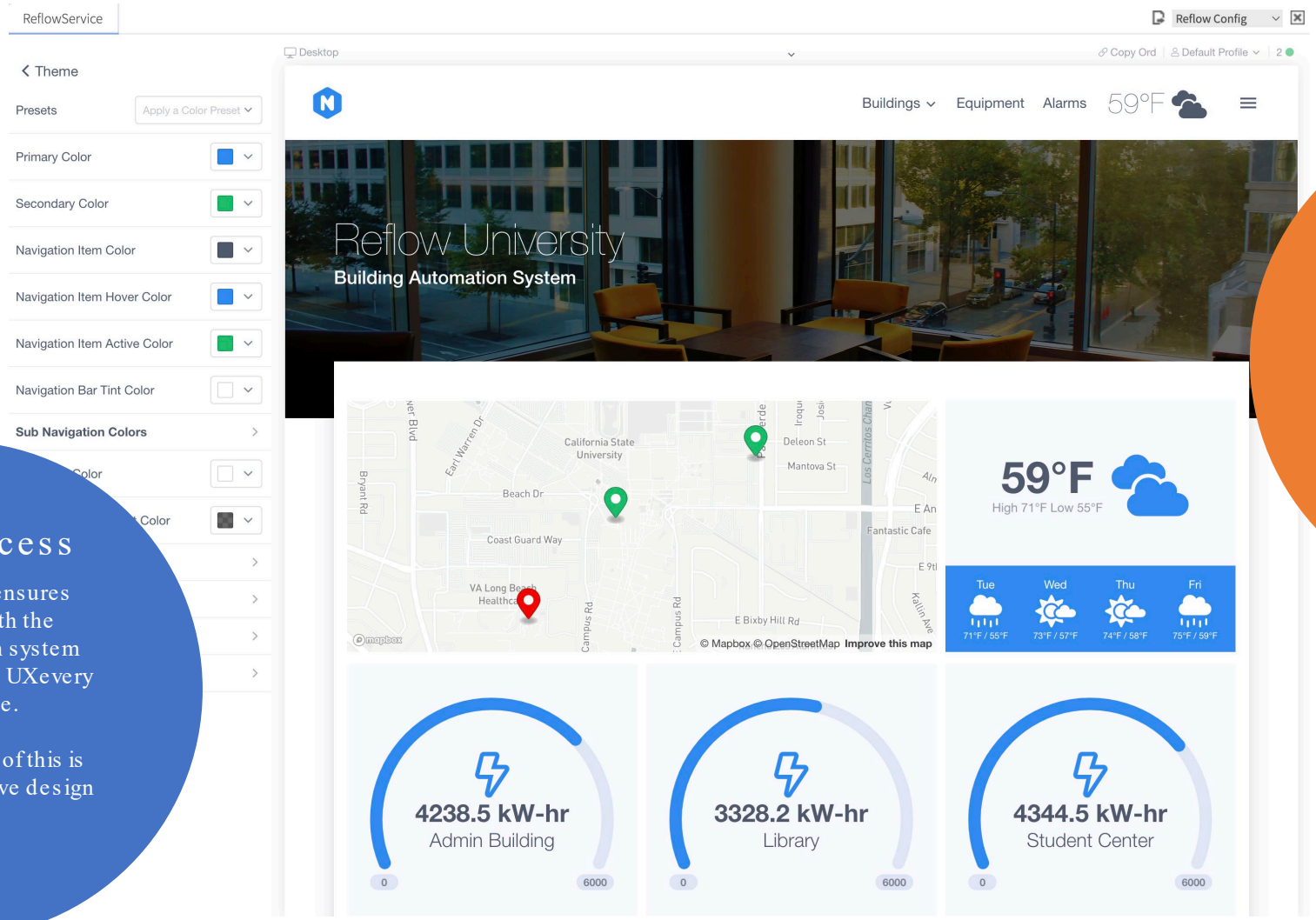
The modern web is built on standards and common user interface conventions – not blank canvases.

Reflow provides **well designed UX**



What is UX?


Definition
'UX' stands for User Experience, which focuses on the user's interaction with a product, system,
Objective
Ensure a system is easy, efficient, and enjoyable to use
Core Elements
Usability, functionality, consistency, simplicity, and user satisfaction
Strong ROI
Satisfied customers, faster project completion, less training, and less technical support



Design Process

Strict process that ensures users interacting with the building automation system enjoy well-designed UX every time, on every device.

The key component of this is the use of responsive design

UX for SIs

The same process is applied to Reflow's configuration system, ensuring good UX for SIs while they're building projects.

Responsive Design

An approach to web design where interfaces dynamically adapt to provide the optimal viewing experience across various devices & screen sizes

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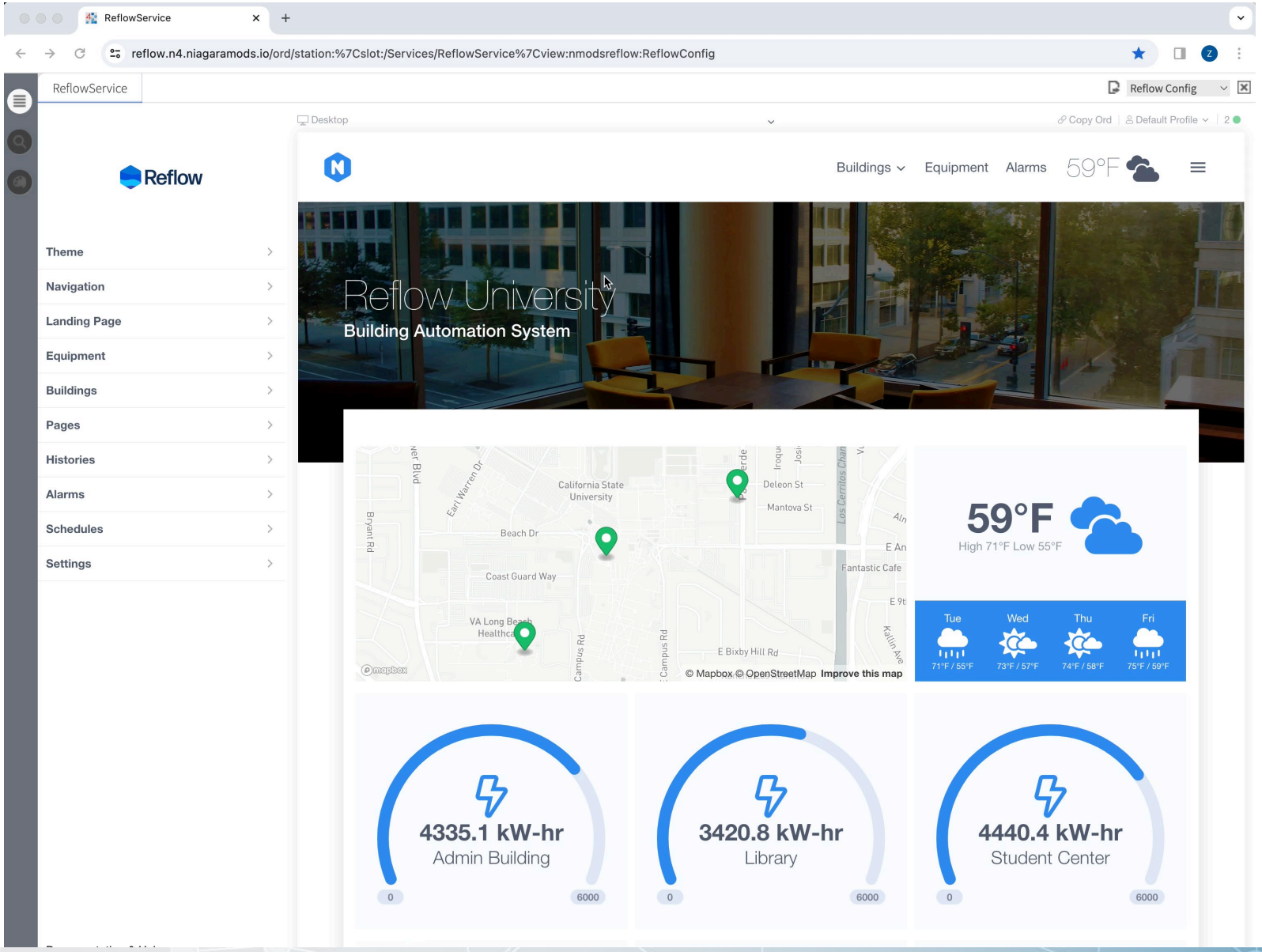
Capability

- Mobile/Tablet friendly (Responsive)
- System Health Report

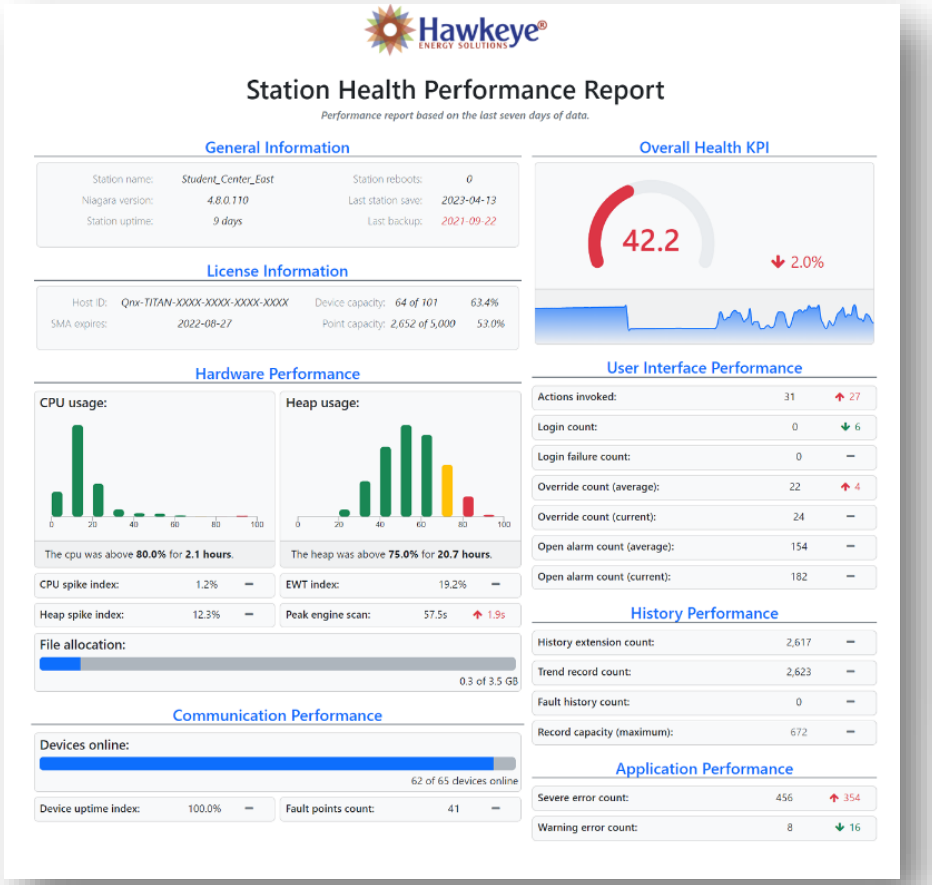


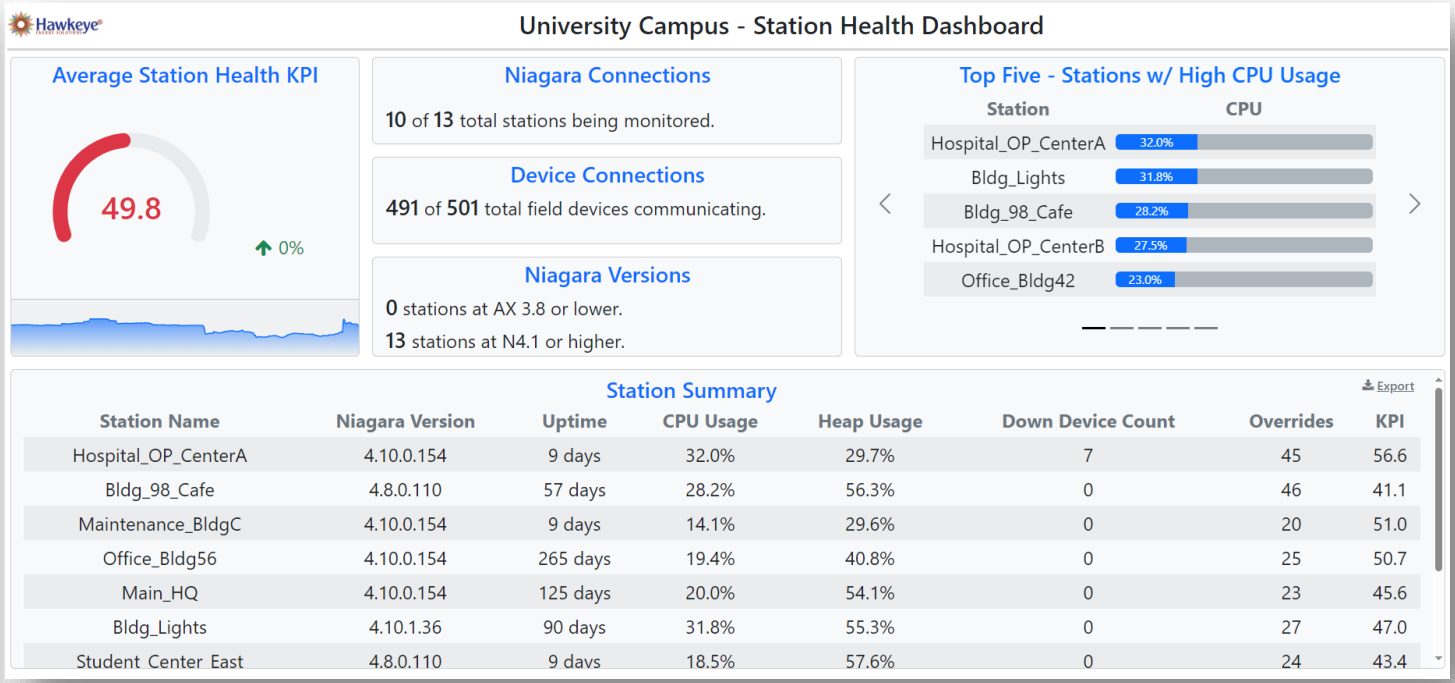
How can we quickly assess and track the health of our overall Niagara Network?

- Online?
  Reboots?
  Devices down?
- Points in Fault?
  Orphaned Histories?
- CPU Performance?
  Watch Dog Issues?

Station Health®

Drag and drop service to track the core health of your network





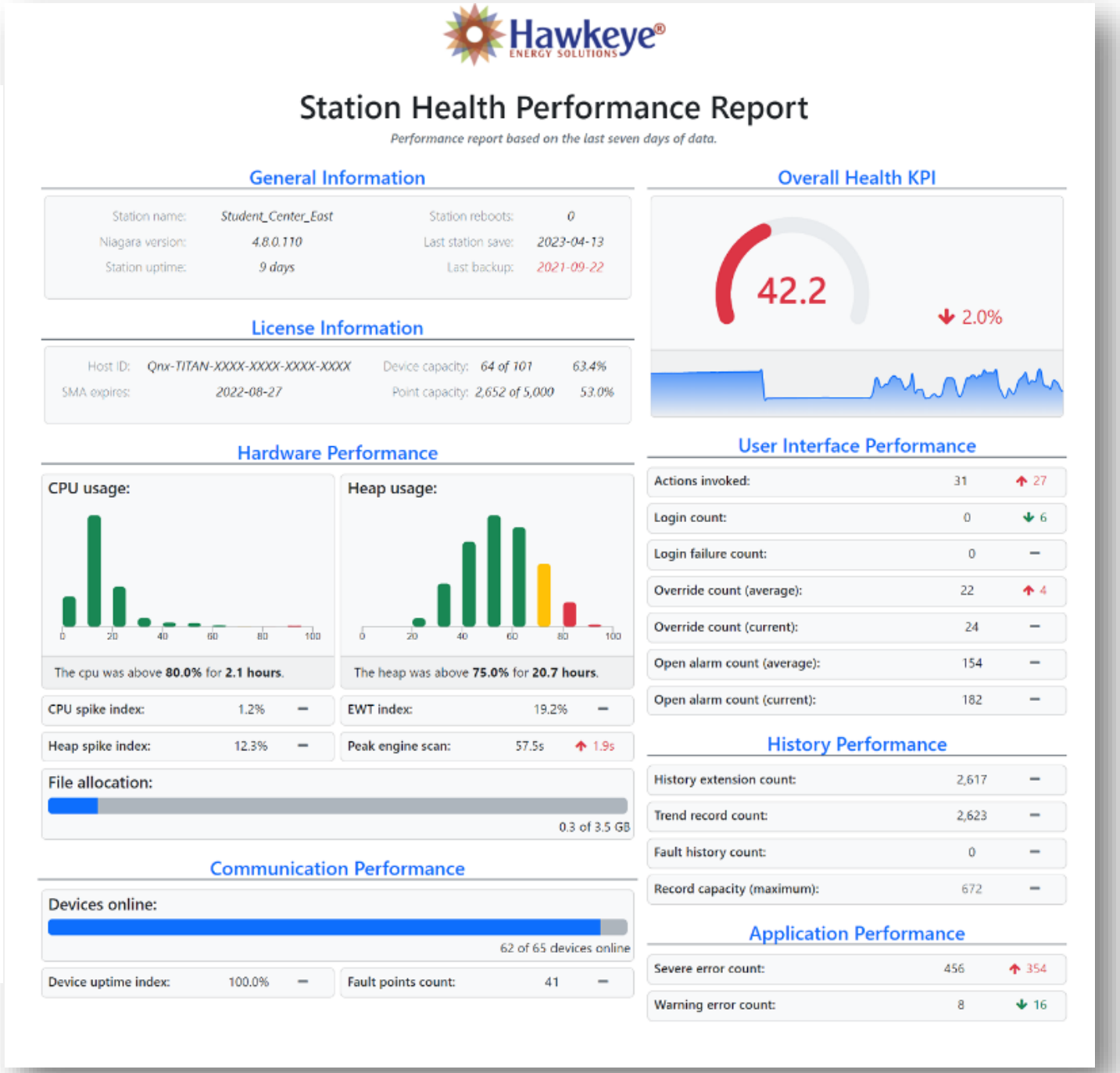
Report View

User Interface Performance

Actions invoked:	98	↑ 52
Login count:	3	–
Login failure count:	0	–
Override count (average):	32	↓ 2
Override count (current):	25	–
Open alarm count (average):	370	↑ 203
Open alarm count (current):	500	–

History Performance

History extension count:	578	–
Trend record count:	578	–
Fault history count:	0	–
Record capacity (maximum):	43,000	–



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Station Health Performance Report

Performance report based on the last seven days of data.

General Information

Station name:	Student_Center_East	Station reboots:	0
Niagara version:	4.8.0.110	Last station save:	2023-04-13
Station uptime:	9 days	Last backup:	2021-09-22

License Information

Host ID:	Qnx-TITAN-XXXX-XXXX-XXXX-XXXX	Device capacity:	64 of 101	63.4%
SMA expires:	2022-08-27	Point capacity:	2,652 of 5,000	53.0%

Hardware Performance

CPU usage:

The cpu was above **80.0%** for **2.1 hours**.

Heap usage:

The heap was above **75.0%** for **20.7 hours**.

CPU spike index:	1.2%	–	EWT index:	19.2%	–
Heap spike index:	12.3%	–	Peak engine scan:	57.5s	↑ 1.9s

File allocation: 0.3 of 3.5 GB

Communication Performance

Devices online: 62 of 65 devices online

Device uptime index:	100.0%	–	Fault points count:	41	–

Overall Health KPI

42.2 ↓ 2.0%

User Interface Performance

Actions invoked:	31	↑ 27
Login count:	0	↓ 6
Login failure count:	0	–
Override count (average):	22	↑ 4
Override count (current):	24	–
Open alarm count (average):	154	–
Open alarm count (current):	182	–

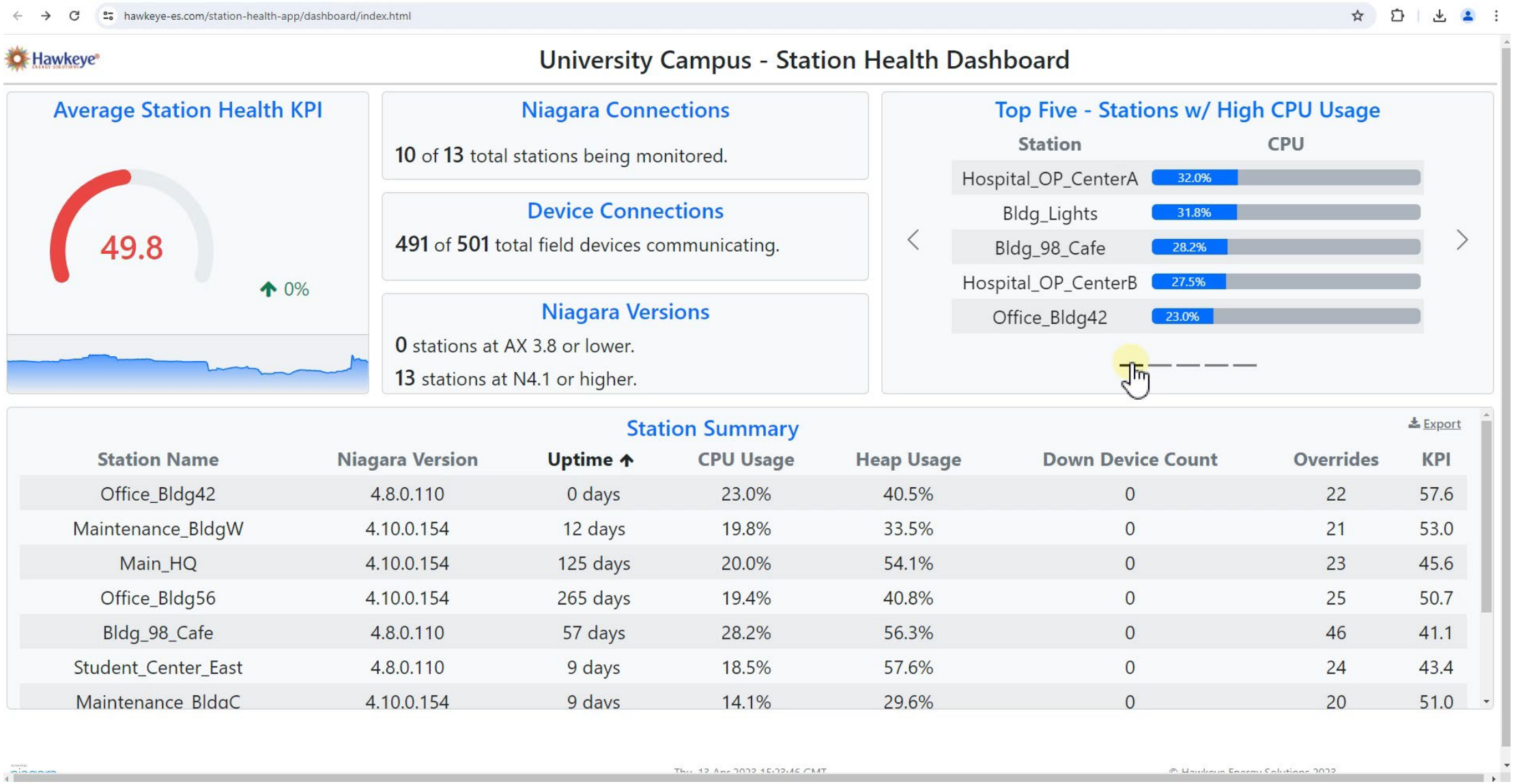
History Performance

History extension count:	2,617	–
Trend record count:	2,623	–
Fault history count:	0	–
Record capacity (maximum):	672	–

Application Performance

Severe error count:	456	↑ 354
Warning error count:	8	↓ 16

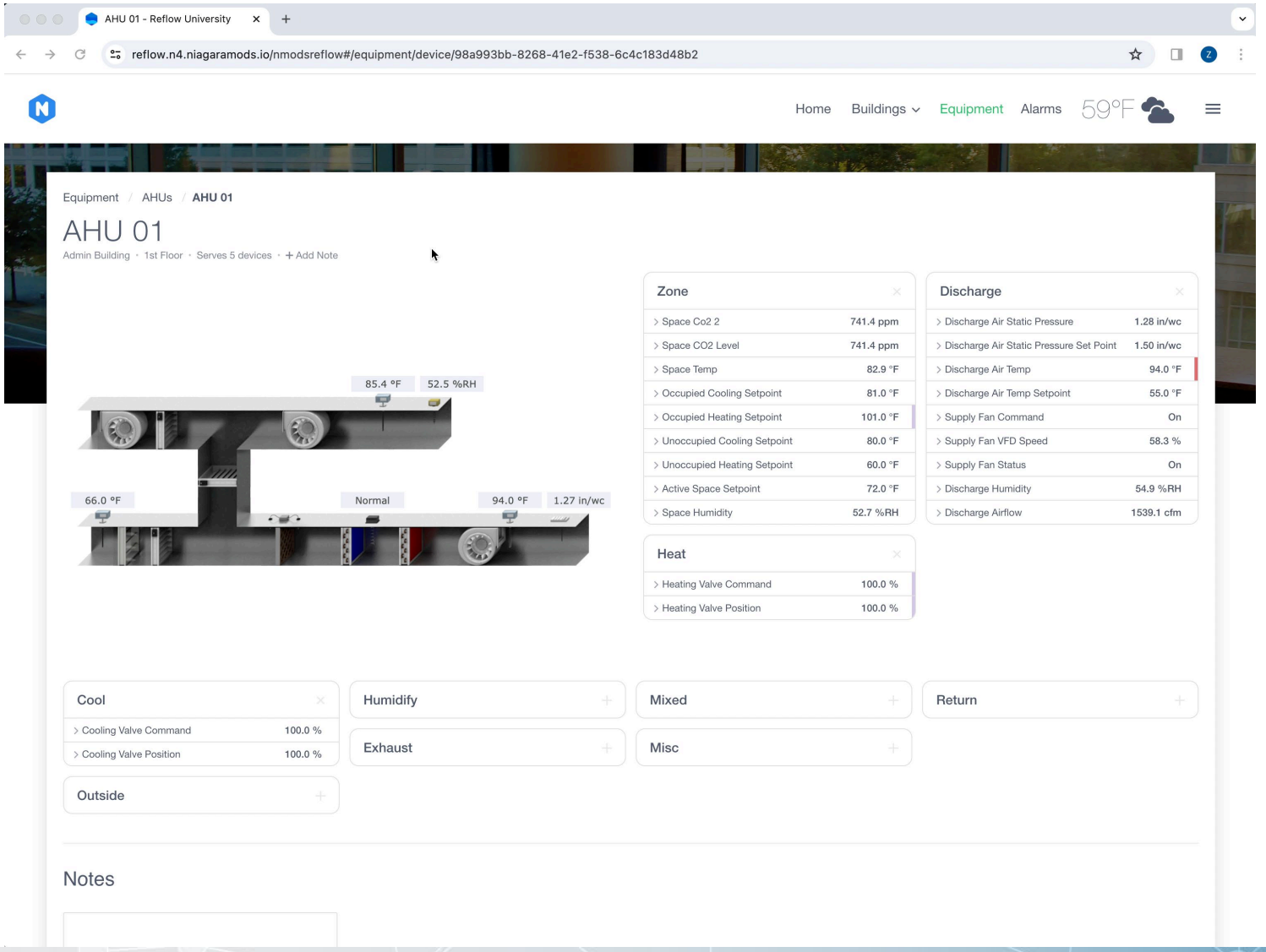
Supervisor Dashboard



Reflow

Communication

- Niagara Notes
- Point Status Badges

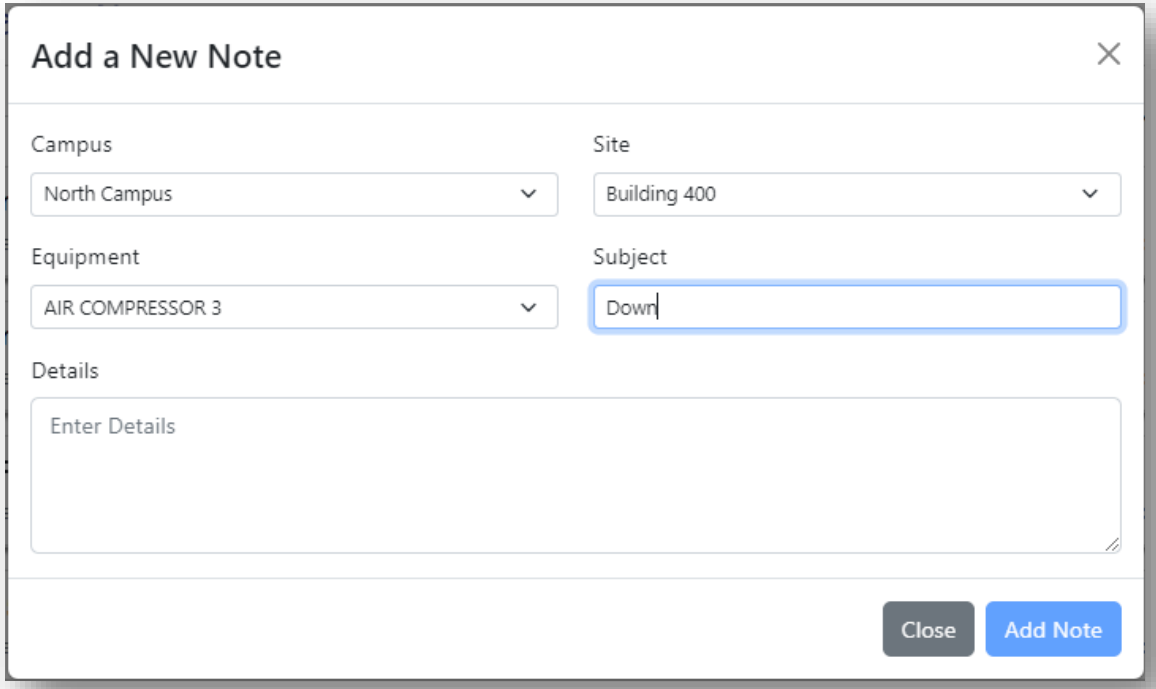


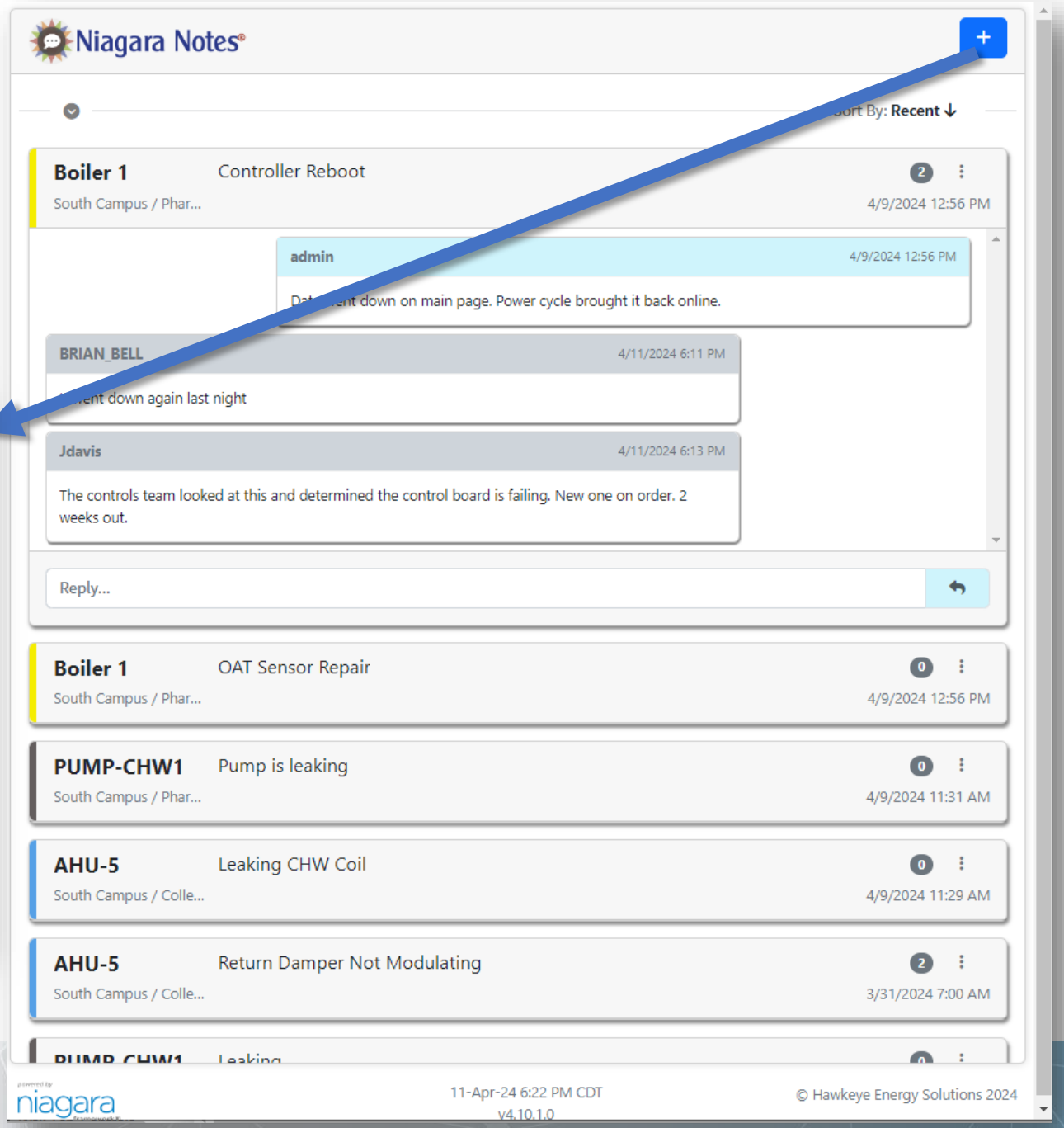
How can Niagara help us track and stay on top operational issues?

- Why is that valve overridden?
  Why is that disconnect off?
  Did the sensor get ordered?
- When did this programming change?
- What happened over the weekend?
  Did the midnight shift have any problems?

Niagara Notes®

Responsive messaging and notes application built right into the Niagara Framework.





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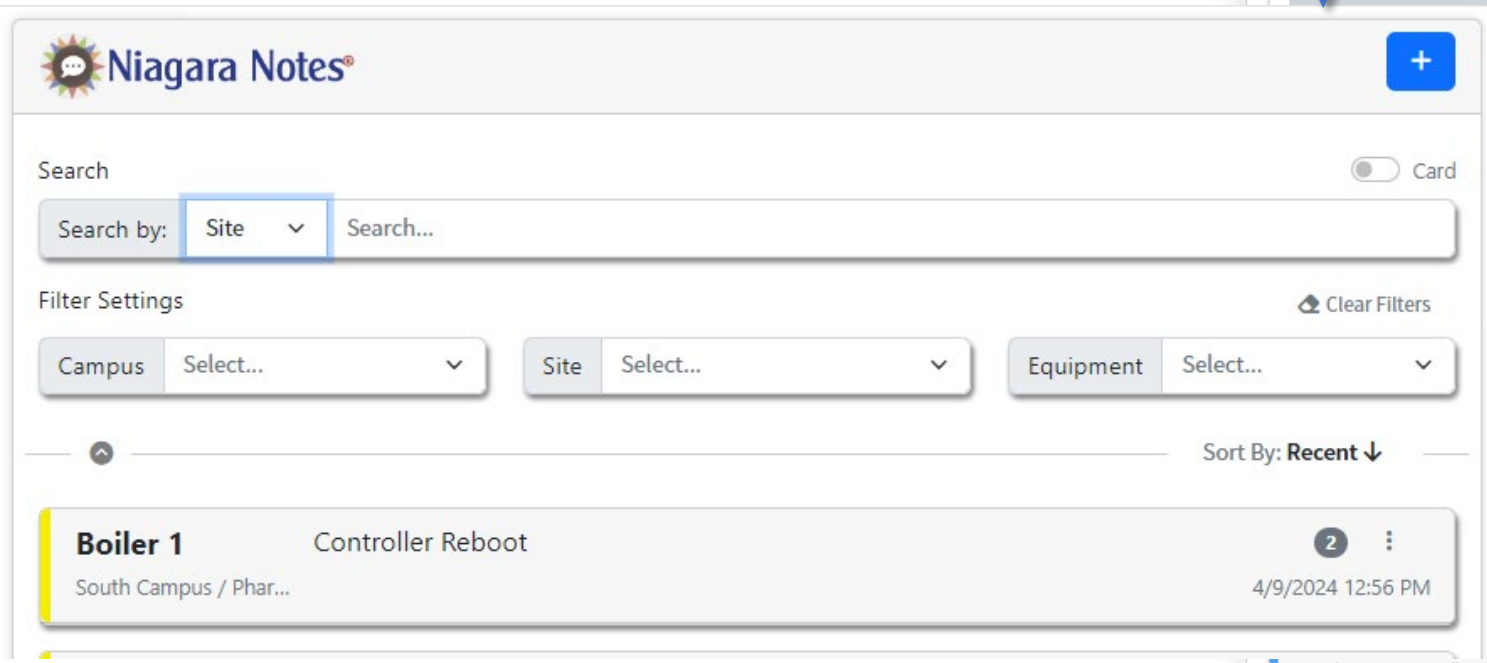

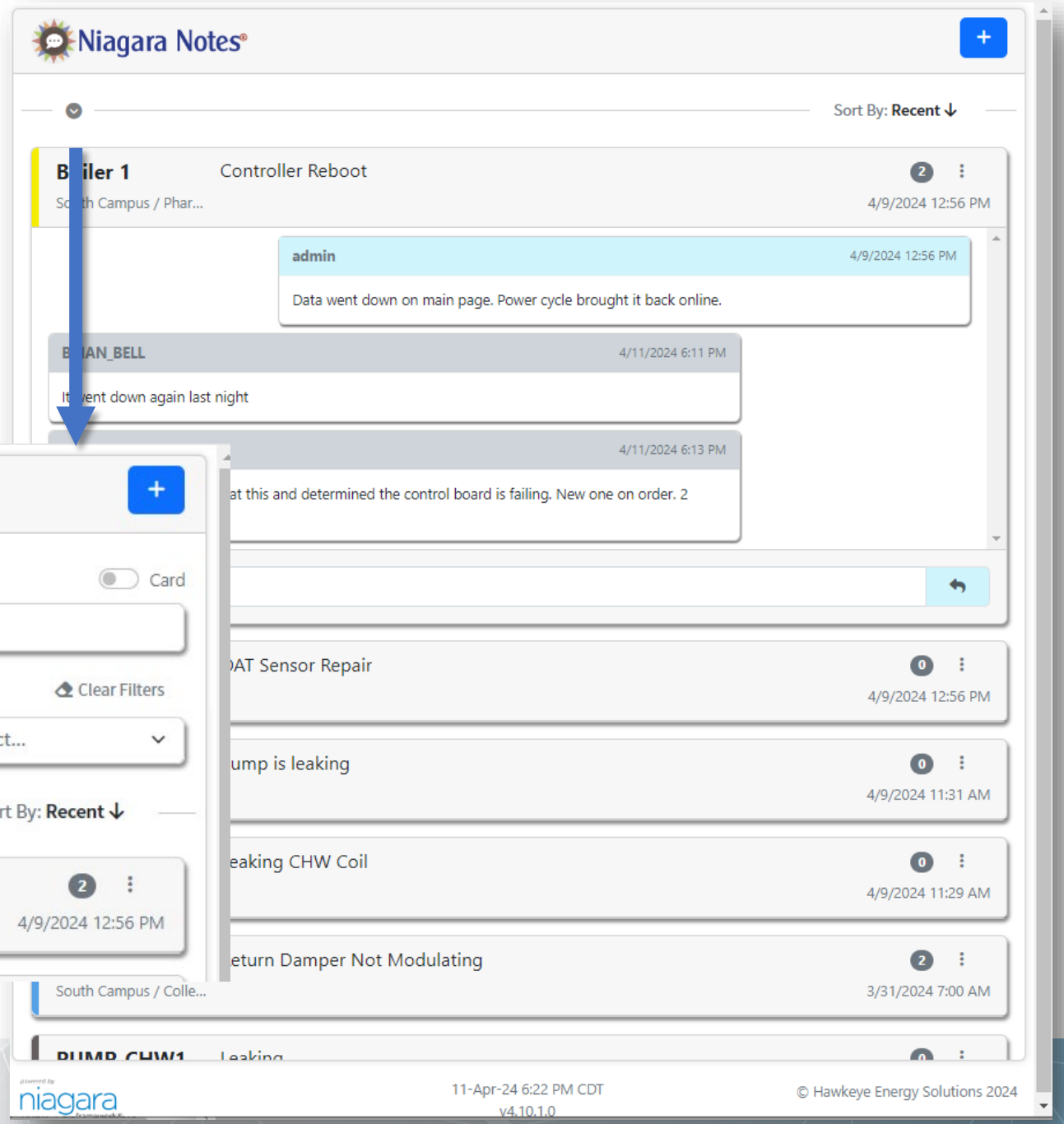

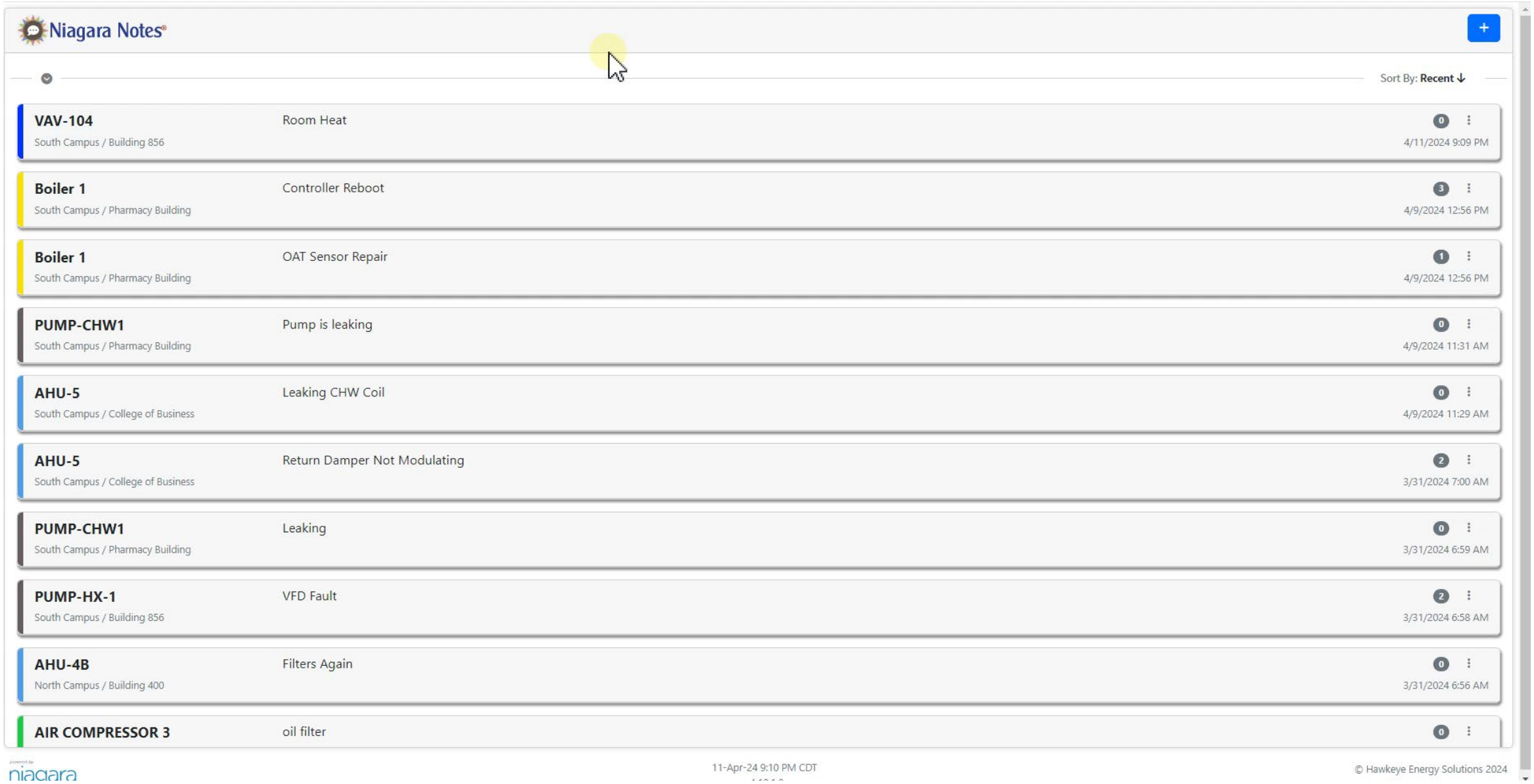
Niagara Notes®
+
Sort By: Recent ↓
VAV-104
South Campus / Building 856
Room Heat
0
4/11/2024 9:09 PM
Boiler 1
South Campus / Pharmacy Building
Controller Reboot
3
4/9/2024 12:56 PM
Boiler 1
South Campus / Pharmacy Building
OAT Sensor Repair
1
4/9/2024 12:56 PM
PUMP-CHW1
South Campus / Pharmacy Building
Pump is leaking
0
4/9/2024 11:31 AM
AHU-5
South Campus / College of Business
Leaking CHW Coil
0
4/9/2024 11:29 AM
AHU-5
South Campus / College of Business
Return Damper Not Modulating
2
3/31/2024 7:00 AM
PUMP-CHW1
South Campus / Pharmacy Building
Leaking
0
3/31/2024 6:59 AM
PUMP-HX-1
South Campus / Building 856
VFD Fault
2
3/31/2024 6:58 AM
AHU-4B
North Campus / Building 400
Filters Again
0
3/31/2024 6:56 AM
AIR COMPRESSOR 3
oil filter
0
niagara
11-Apr-24 9:10 PM CDT
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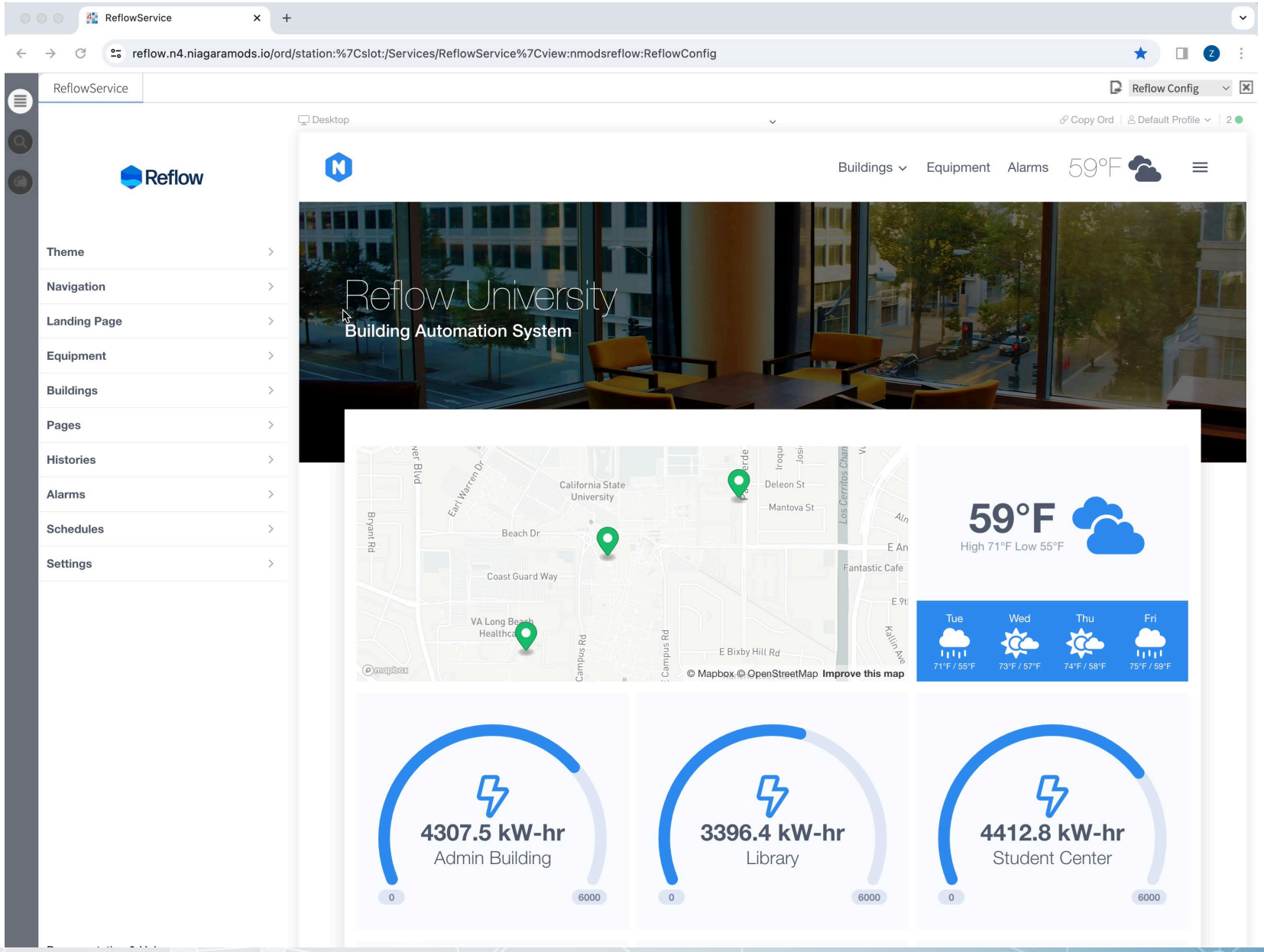
Reflow

Context

- Visual HVAC
- Point Info Markers

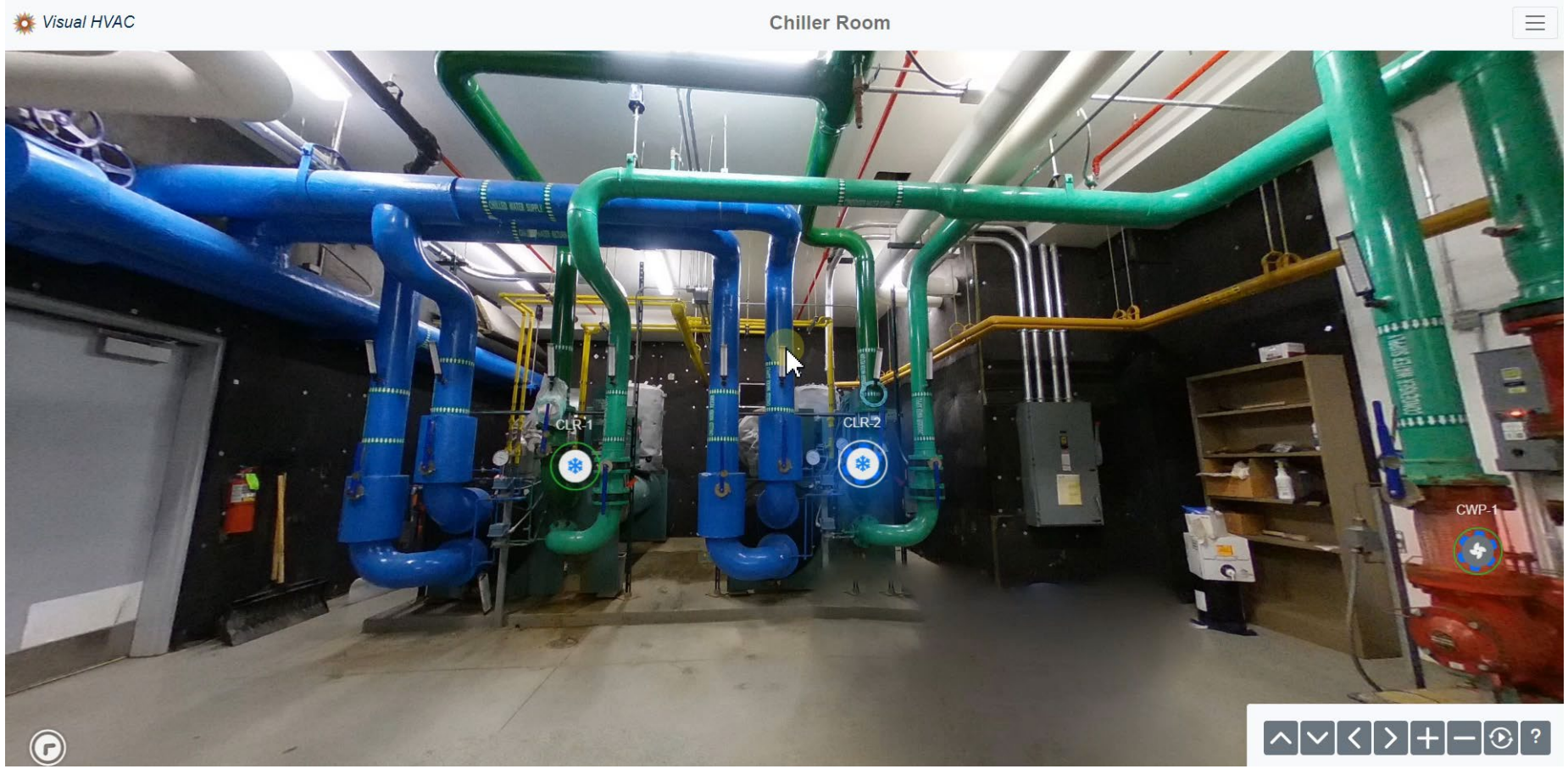


How can we leverage Niagara to add more context to save time and inform decision making?

- What does AHU-1 really look like?
  Where is the IOM located?
- Where is the return valve for the heat exchanger located?
- Where is the VAV box located in conference room 105?

Visual HVAC For Niagara

- **Pan 360 Deg**
- Info Hot Spots
- Card Hot Spots
- Downloads
- Hyperlinks
- Navigation



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Visual HVAC For Niagara

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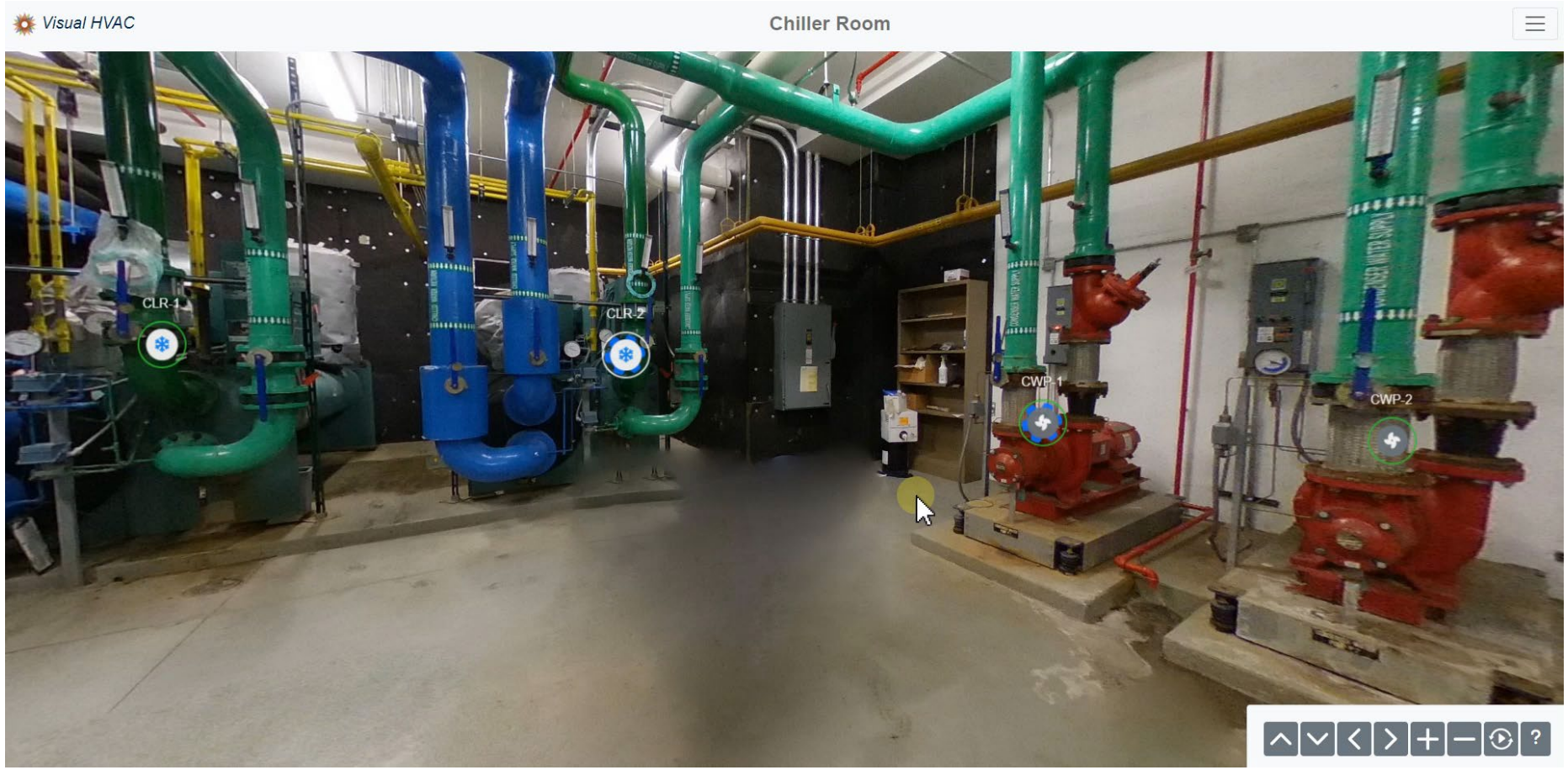

Hawkeye® ENERGY SOLUTIONS

Visual HVAC For Niagara

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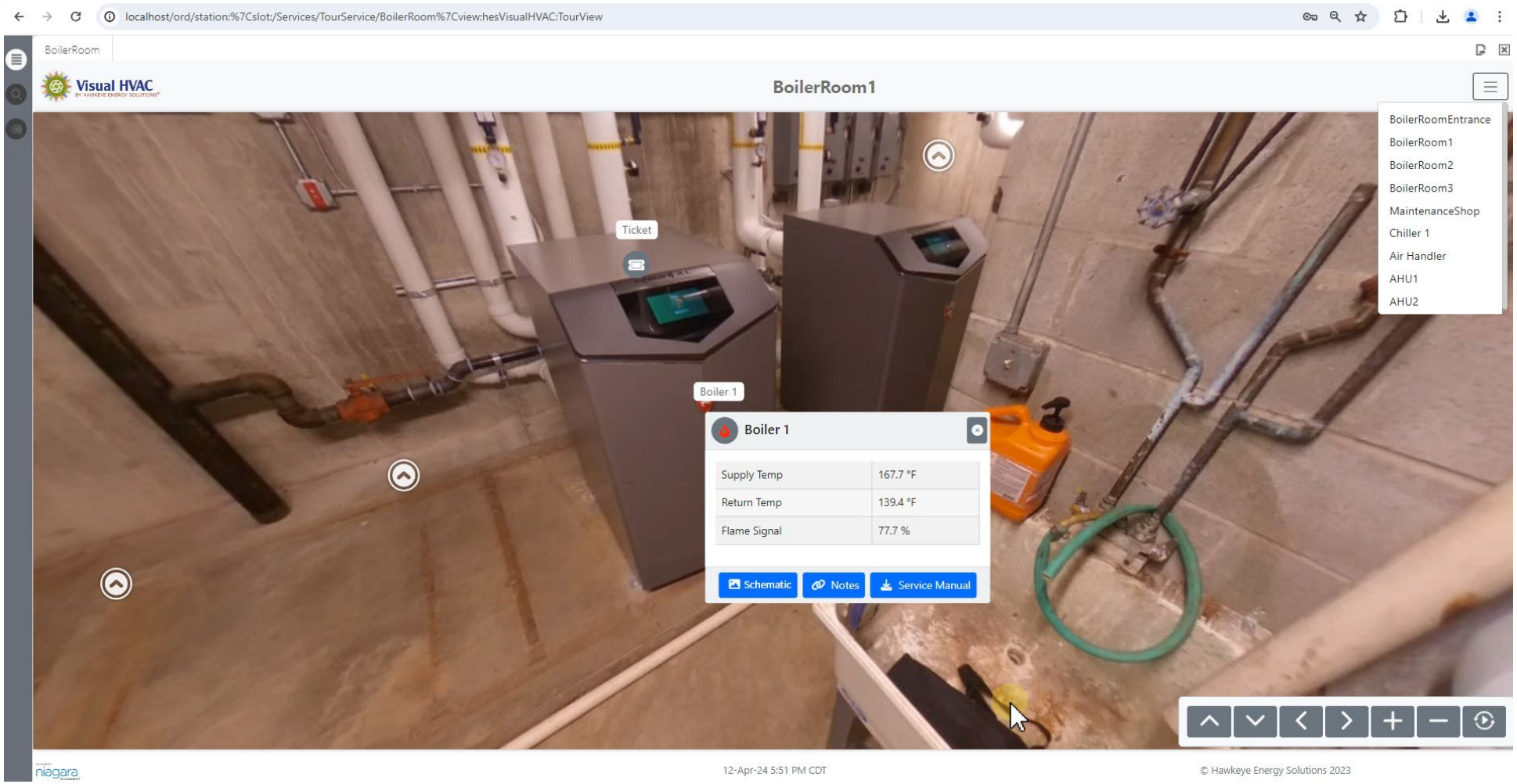

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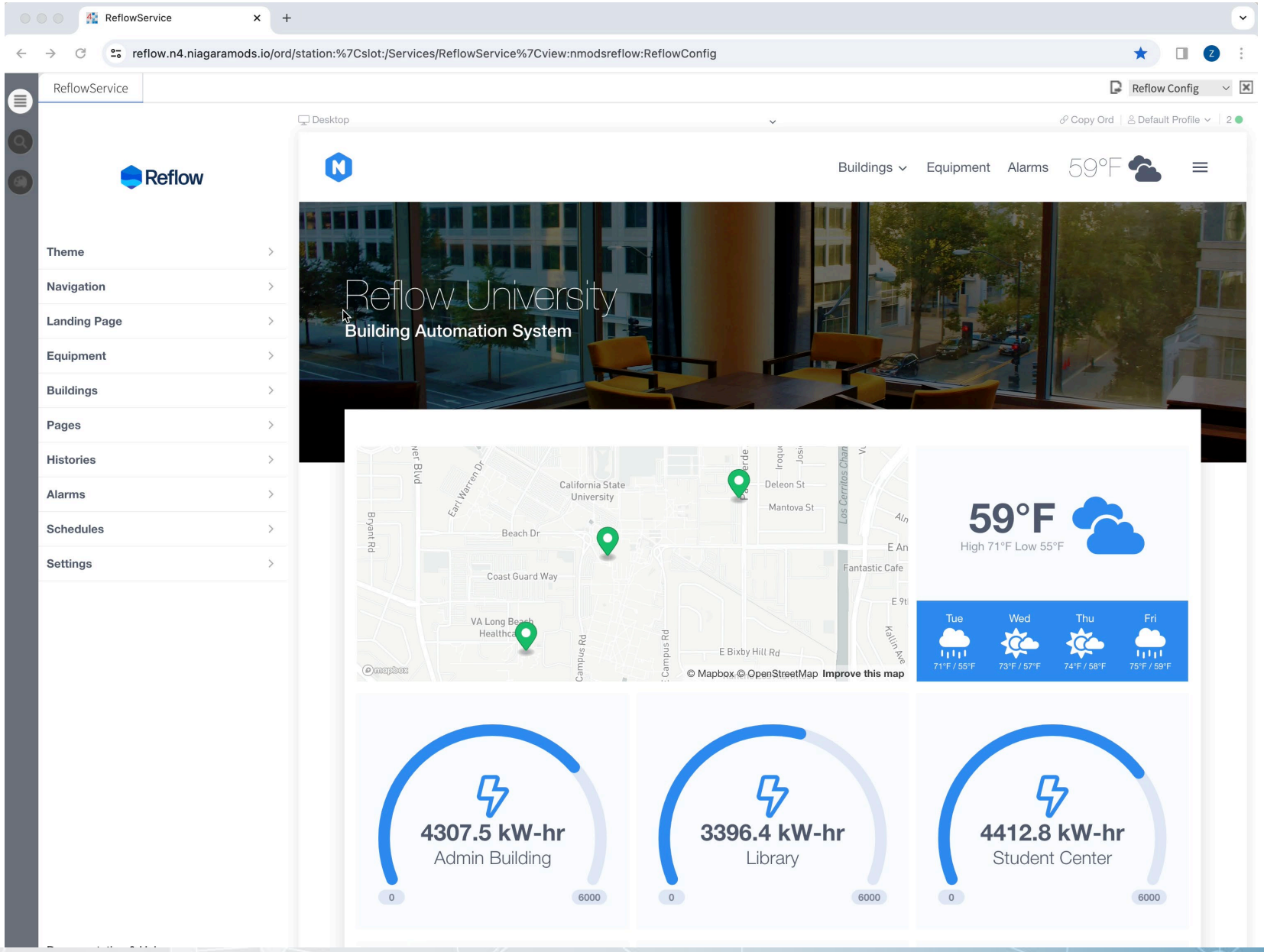
Reflow

Consistency

- Equipment Templates
- Dashboard Elements
- Navigation



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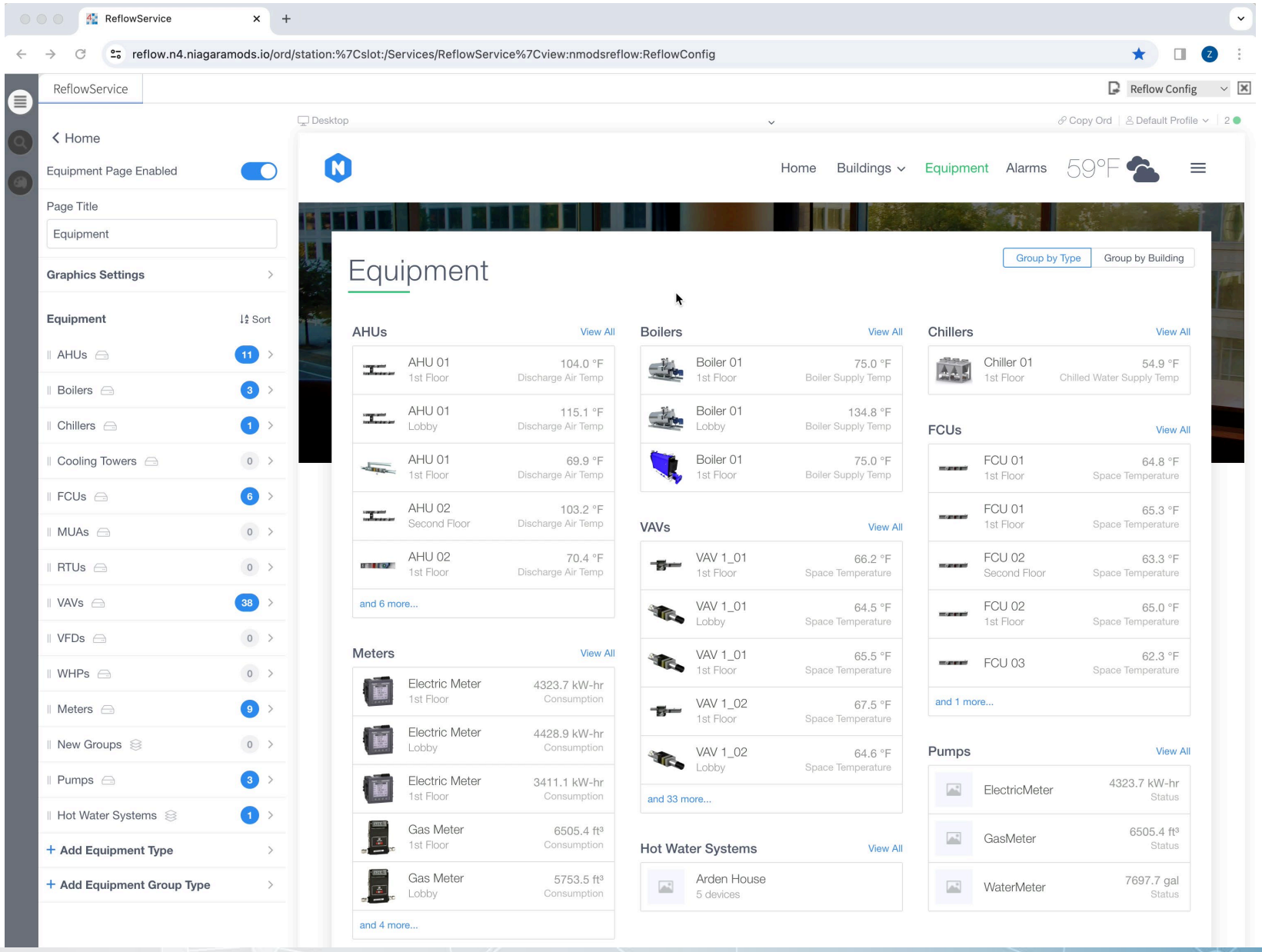
Collaboration

- Reporting
- Reflow Ord Scheme
- External Hyperlinks
- Embedding 3rd Party Web Content