

Mechanical Air| Concepts

Presentation For:

Bid # Bld2123540p1 Building Automation Services - County Facilities

6-9-2022

Presented To:

Initial And Final Evaluation Committee (EC)

Broward County, Florida

Prepared By:

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What Is A Building Automation System

- Computerized System To Centralize Building's Climate System Which May Include Lights, Emergency System Integration And Other Building Systems
- Equipment Control
- Equipment Monitoring
- Logical Sequencing Of Hvac Systems And Other Building Systems To Create Autonomous Operation
- Technology Investment And Part Of The Infrastructure Of A Building

Today's Problem With Building Automation Systems

- Owners Are Trapped By Vendor
- Owners Are Faced With Planned Obsolescence And Therefore Have Little Control Of This Part Of Their Financial Investment
- The Owner's Hvac Systems Are Not Presented And Modeled In A Simple Way To Maximize System Operation And Optimization
- Building Automation Systems Need To Be Maintained Properly In Order To Facilitate The Maintenance Of Other Building Systems Such As Hvac

Our Approach Untrapping The Owner

- Giving The Owner The Ability To Choose Vendors
- Providing A **Consistent And Documented Interface** Independent On Vendors
- Providing Ownership Of Every Single Tool To Be Able To Engineer, Service And Maintain The System For The Life Of The System And Training,
Independent Of Current Vendor
- Giving The Owner The Ability To Get **Completely Trained** And Immersed On Their System Or Choose A Vendor To Take Care Of It
- Separating The **Value Proposition** Of The Brand From The Value Proposition Of A Particular Vendor To Allow Healthy Competition
- Giving The End User The Ability To Get Training Directly With The Manufacturer
- Giving Complete Access To System Documentation By Having It Embedded In The User Interface

Our Approach To Maximizing The Owner's Financial Investment

- Giving Owners The Ability To Extend Their Financial Investment On Existing Building Automation Technologies
- Giving The Owners The Ability To Obtain Lower Life Cycle Costs On Their Building Automation System Investments
- Removing Planned Obsolescence From The Current Landscape And Using Products That Support Old Technologies And New Technologies Under The Same Interface
- Using Standardized Communications Protocols To Unify Different Vendors' Hardware Under The Same Platform.

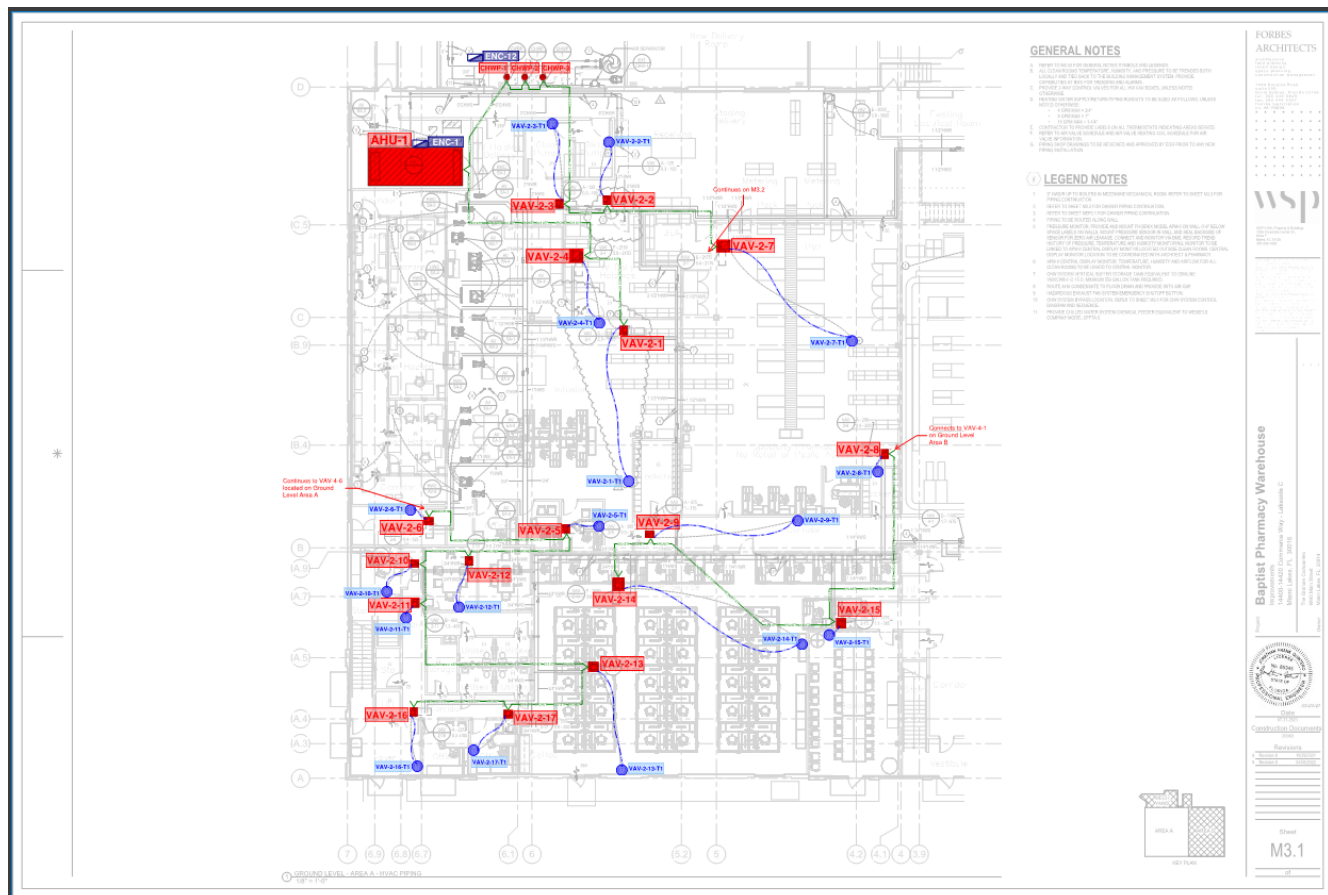
Our Approach To Empowering The Owner To Improve Their System Operation And Optimization

- Giving Owners Clear And Easy To Use Interface Built With A Standardized Approach And Graphical Representation
- Giving Owners The Ability To Identify System Deviations At A Glance Using Thermographic Floor Plans And Building Scores To Assess System Performance
- Giving The Owner The Ability To Replay The User Interface As A Movie And To Record All Events Graphically To Assist In Troubleshooting System Abnormalities
- Giving The Owner Alarming And Reporting Tools To Assess The Equipment Status And Performance Individually And Via The Use Of Dashboards
- Providing The Owner With A Robust And Documented Alarming And Reporting Interface Which Can Be Customized To The Owner's Particular Business Needs
- Providing Flexible Tools That Allow The Building Automation System To Adapt To The Owners Particular Business System Workflows
- Thermographic Floor Plans Indicate Deviations With A Glance In The System Instead Of Going Equipment By Equipment.

Our Approach To Maintaining The Building Automation System

- Creating A Working Model Of Each Building Using Building Mechanical Prints And Or As Builts
- Seeking To Understand The Design Philosophy Of Each Building
- Providing Active Documentation
- Performing Active Retrocommissioning
- **Markup Of Plans:** Mechanical Air Concepts Interprets And Marks Up All Project Plans To Understand Each Building. This

Practice Is Carried Out Throughout All Of Our Departments, Including Controls, Test And Balance And Mechanical Contracting Operations.



Work Orders: Example Work Order That Shows How We Handle Each Call:

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www.mechanicalairconcepts.com
19401 NW 28 Street Suite B191, Doral FL 33172

WORK ORDER

NEXT STEP	Needs Follow Up Visit	MAC JOB:	BSA0326
DISPATCHER	Joshua Lopez	Work Order #	1490-3383
REMOTE TECH	Juan Gonzalez	Work Order Status	Completed
ONSITE TECHNICIAN	Francisco Alonso	Accounting Status	Not Invoiced

Proposed Job: Replace Bad Controller For RTU-7

SERVICE CALL GENERAL INFORMATION			
Date:	5/24/2022	Area Affected:	Area Supplied By RTU-7
Requested By:	Lissette Linares	Operational Impact:	Loss Of Visibility
Email:	[REDACTED]	Service Requested:	Onsite
Phone:	[REDACTED]	Other People To Notify:	N/A
Site:	[REDACTED]	Emergency Rating:	7
Address:	[REDACTED]	Type Of Site:	CRITICAL
Onsite Contact:	[REDACTED]	Special Clearance:	N/A

SERVICE CALL TECHNICAL INFORMATION FROM CUSTOMER (TO BE FILLED BY DISPATCHER)	
How Was The Problem Detected?	Call From Customer To You
When Did The Problem Happen?	Last Onsite Visit 5/19/2022, Job Ref: 1490-3379 BSA0324
Is There Construction Going On In Nearby Areas?	Yes
Is There Another Contractor Working On The HVAC Equipment (If So, Who)?	[REDACTED]
Can You Provide A Visual Picture or Screenshot Of Physical Problem?	No
Can You Provide A Screenshot of The EMS Page?	No

SERVICE CALL INFORMATION FOUND REMOTELY (TO BE FILLED BY REMOTE TECH)			
Yes	Temperature Issue	No	Controller Offline
No	Humidity Issue	No	Site
No	Software Issue	No	Download Required
No	Inability To Adjust	No	Other

SERVICE CALL INFORMATION FOUND ONSITE (TO BE FILLED BY ONSITE TECH)			
No	Temperature Issue	Yes	Controller Offline
No	Humidity Issue	No	System Offline
No	Software Issue	No	Mechanical Issue
Yes	Inability To Adjust	No	Electrical Issue
No	Fire Alarm Issue	No	Other (E-explain)

[COVERED BY PROPOSAL] LABOR AND PARTS USED (TO BE FILLED BY ONSITE TECH AND REMOTE TECH)			
LABOR		PARTS	
3	Remote Hours Billable (Critical Sites)	1	ZN551
0	Remote Hours Billable Regular Hours	0	-
0	Remote Hours Billable After Hours	0	-
3	Onsite Hours Billable Regular Hours	0	-
0	Onsite Hours Billable After Hours	0	-

WORK EXPLANATION REMOTE (TO BE FILLED BY REMOTE TECH)	
<input checked="" type="checkbox"/>	1. The controller was damaged by water so it was replaced, then I Connected Remotely and downloaded all parameters to the new RTU-2 controller
<input checked="" type="checkbox"/>	2. Documented Controller ZN551/2220096Q/37
<input checked="" type="checkbox"/>	3. Had Conference Call With Francisco
<input checked="" type="checkbox"/>	4. Completed Writsup

WORK EXPLANATION ONSITE (TO BE FILLED OUT BY ONSITE TECH)	
<input checked="" type="checkbox"/>	1. Upon Arrival I Met With Ignacio
<input checked="" type="checkbox"/>	2. Proceeded To Document Existing Conditions And Model/Serial Of Affected Equipment
<input checked="" type="checkbox"/>	4. Replaced RTU Controller For RTU-7
<input checked="" type="checkbox"/>	5. Tested Operation Of RTU Controller For RTU-7
<input checked="" type="checkbox"/>	6. Documented Work With Pictures
<input checked="" type="checkbox"/>	8. Left System Operational (RTU-2 was found offline, Controller damaged)
<input checked="" type="checkbox"/>	10. Completed Writsup

FILL OUT IF RETURN VISIT IS REQUIRED, FILL OUT PARTS CARD	
<input checked="" type="checkbox"/>	Return Visit Is Required To Replace RTU-2 Controller

RECOMMENDATIONS	
<input checked="" type="checkbox"/>	None At This Time

ADDITIONAL NOTES

The controller of RTU-2 was found damaged, power is present but it does not turn on. The last time it was online was May 22 at 10:00 P.M.



The End Customer Sees A Complete Report Of What Was Found In The System And In The Site Along With Proof Of Repairs And Root Reasons Of The Issue.

Recommendations Are Stated As Well For Future Reference.

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WORK ORDER

Work Order # 1490-3383



Initial Conditions	
	
RTU-7 Controller Was Damaged By Water	RTU-7 Controller: Stopped Sending Data Around 10:10pm 5/22/22

Notes:

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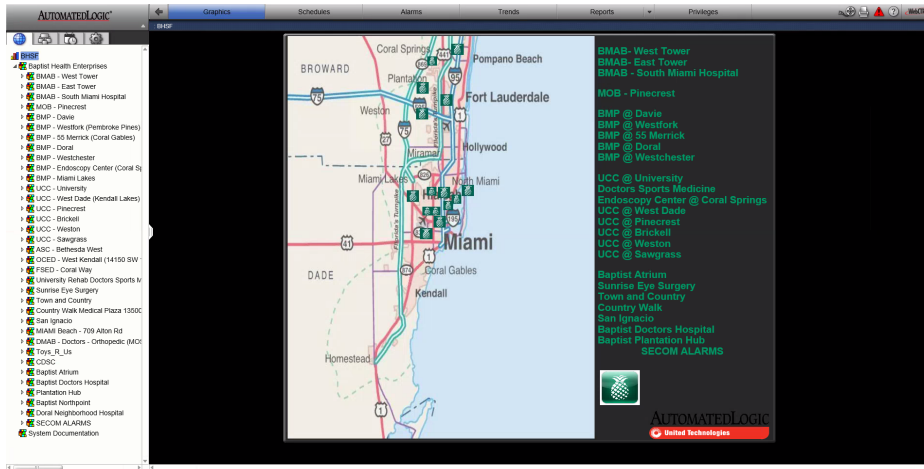
WORK ORDER

Work Order # 1490-3383

Final Conditions	
	
RTU-7 Replaced Controller	Controller of RTU-7 Online

Notes:

Case Study: Baptist Health - With Automated Logic Controls



Background: In 2020 The Owner Decided To Change Vendors. Since The Owner Retains The Rights To The Software And Is Not Locked To A Particular Vendor, They Made The Change Without Difficulty, Thus Preserving Their Building Automation System Investment.

Since The System Is Standardized We Continued To Support Them Without Any Learning Curve Or Additional Training

The System Consists Of 35 Buildings 17 Mission Critical Facilities Which Are Monitored 24/7 By Their Team And Our Oncall Engineers. The System Provides Consistency Amongst The Chaotic Nature Of The Health Care Properties. The System Is Running An Older Version Of Automated Logic And Continues To

Function With **Unlimited Multi User Access** All Through A Web Browser.

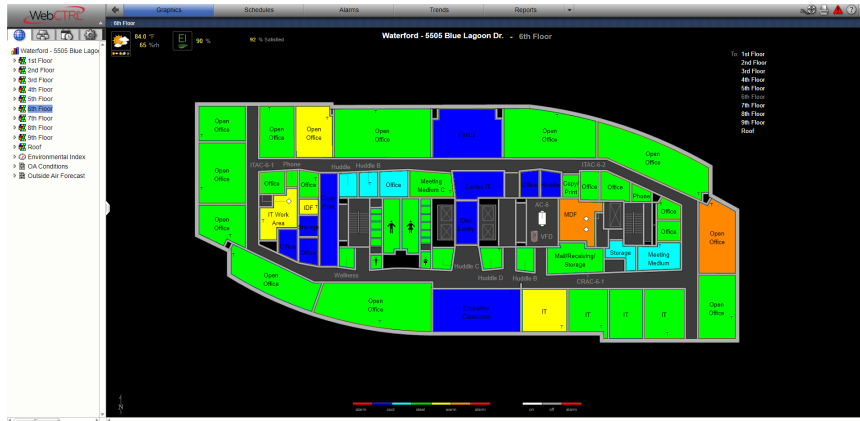


The Secum Page Monitors Critical Conditions Of The Space And Immediately Dispatches A Team To Take Action.

The System Running On An Old Version Of Webctrl Software With Controllers Ranging From 2006-2022 All Under Same User Interface

Case Study: 5505 Blue Lagoon Drive - Lennar Homes Headquarters With Trane And Pneumatic Controls

Background: This Building Had A Hybrid Trane Proprietary Controls With Smoke Evacuation And Pneumatic Vavs. A New Tenant Of The Building Required More **Modern Technology** For Their Spaces And The Ability To Control And Monitor Temperature In Their Own

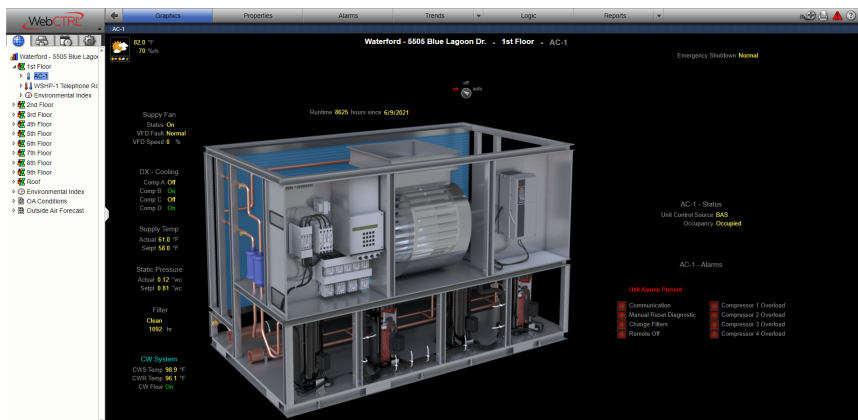


Spaces And Computer Room. The Owner Was Able To Preserve Their Existing Investments In Hardware And Replace Only A Portion Of The Pneumatic System. Units Remained With Their Proprietary Control Cards And Were Integrated Into The New Web Enabled System. Mechanical Air Concepts

Retro-Commissioned Their Pneumatic System And Replaced Defective Components. The System Currently Runs The Smoke Evacuation System On Pneumatics And The Hvac System On Modern Controls. The Trane Units, Once Replaced, Will Be

Integrated Via Bacnet Into The Building Automation System, Thus Giving The Owner The Option To Budget Their Upgrades At Their Own Pace. Since The System Is Backwards Compatible The Owner Is Assured The Building Automation System Will Have A **Lower Life Cycle Cost**.

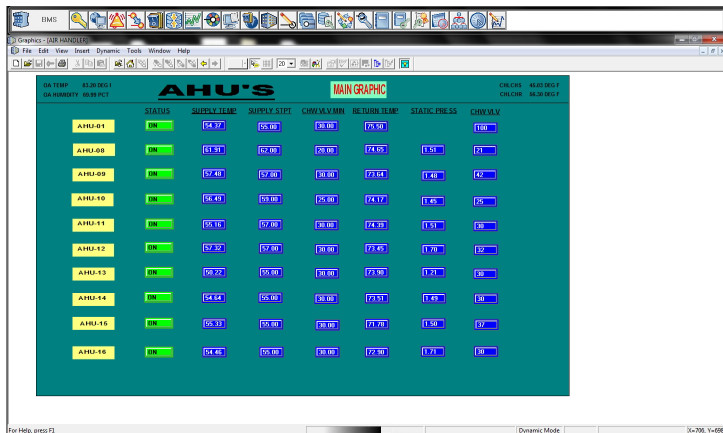
The Owner Also Has Freedom To Choose A Vendor Amongst The Dealer Network Or The Ability To Certify Their Own Building Engineers Directly With Automated Logic.



Case Study: 355 Alhambra Circle With Siemens Controls

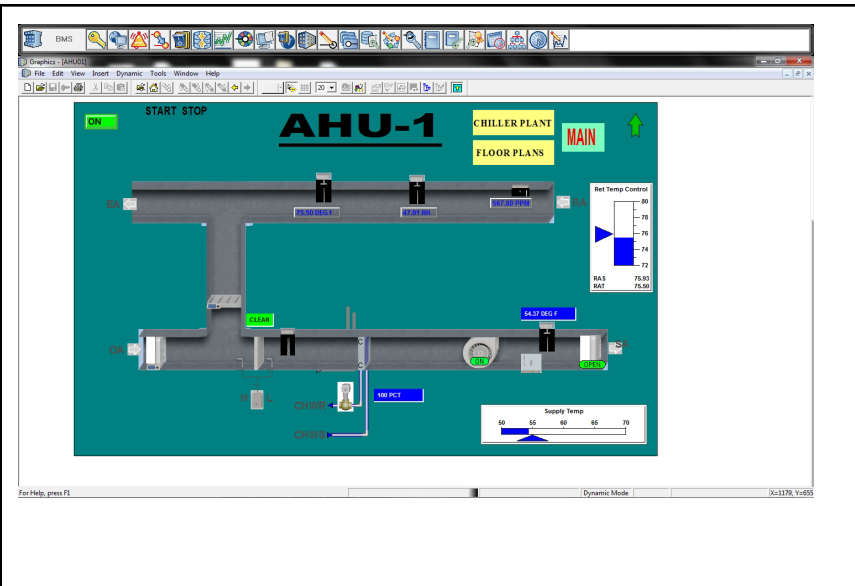
Background: Owner Was Under The Impression They Needed To Upgrade Their Whole System From Siemens Insight To Desigo. Mechanical Air Concepts Offered A Solution Where The Owner Could Transition Slowly From Siemens To Automated Logic And Thus **Preserved 95%** Of Their Investment. The Owner **Immediately Improved** Their Operation By Obtaining A Rich And Consistent Graphical User Interface As Well As Unlocking Themselves From A Proprietary System. This Change Now Allows The Owner To Seek New Value And To Hold Mechanical Air Concepts Accountable For Delivering That Value Without Being Tied To One Vendor.

Old Ahu Dashboard

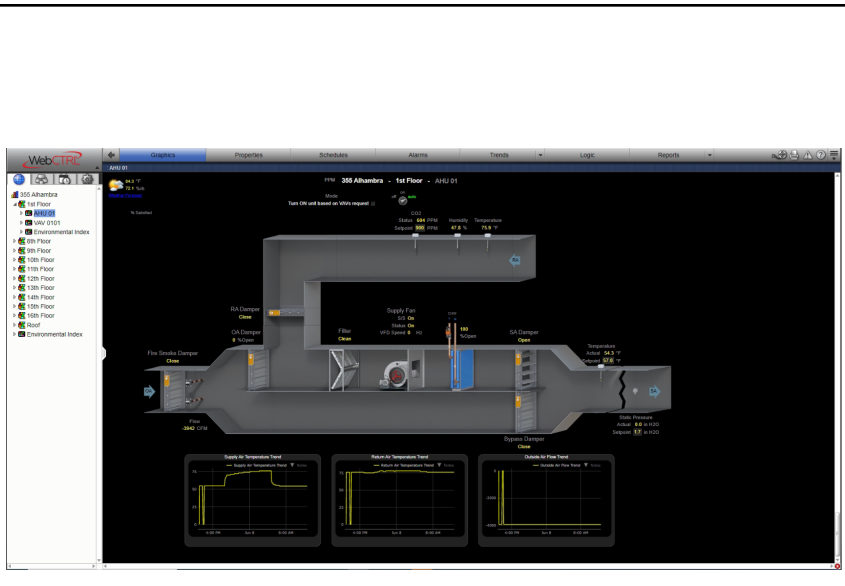
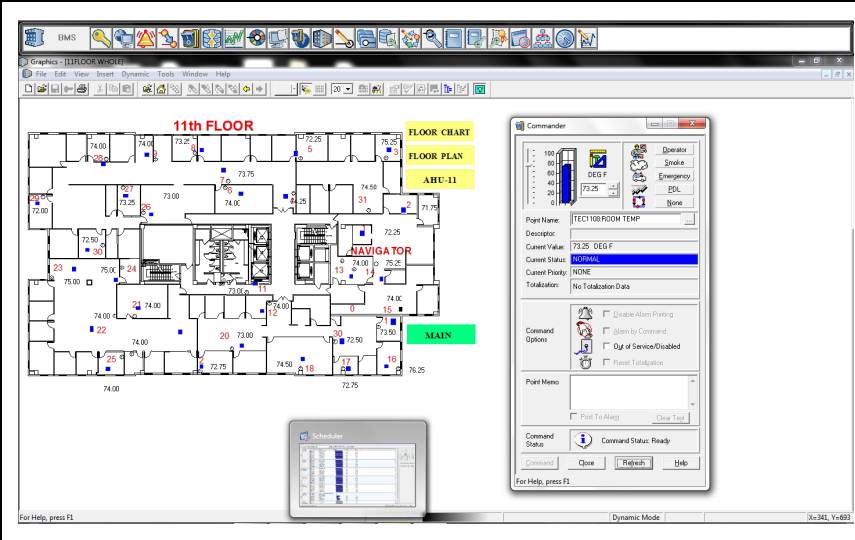


New Interface/Dashboard With Unit Performance Score

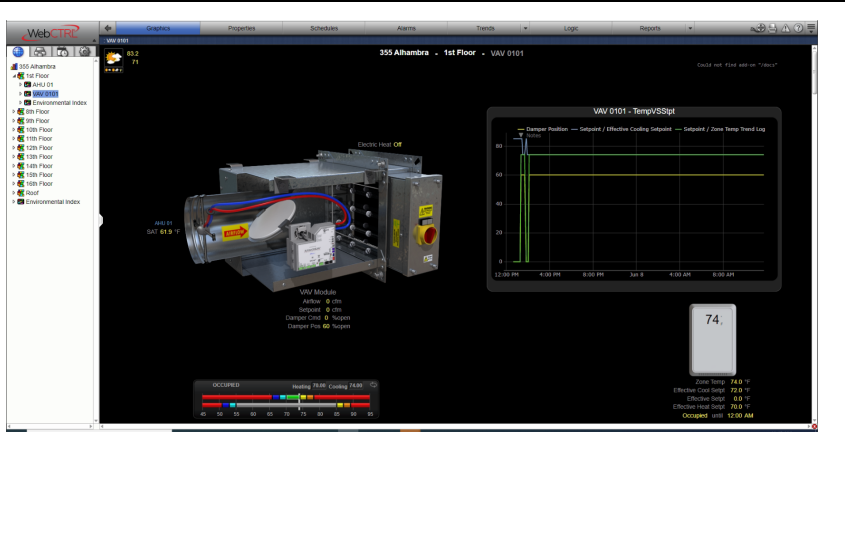




355 Alhambra Old Air Handler Graphic



New Dynamic And Fully Animated 3d Graphic



Case Study: Florida Memorial University With Siemens Controls

Background: Fmu Is A University Campus With 35 Buildings Which Had An Existing Siemens Apogee System. Mechanical Air Concepts Was Able To Help The Owner Retain Their Existing Infrastructure And Add New Buildings Into The New Webctrl Building Automation System. The Owner Is Enjoying **Multiple User Web Access Via Their Intranet**, Where Before Only One User Was Allowed To Be In The Computer Or Additional Licenses Would Need To Be Purchased. The Owner Now Has Visual Representation Of Their System



Campus Map Displaying Current Controlled Buildings Under The Webctrl Interface.

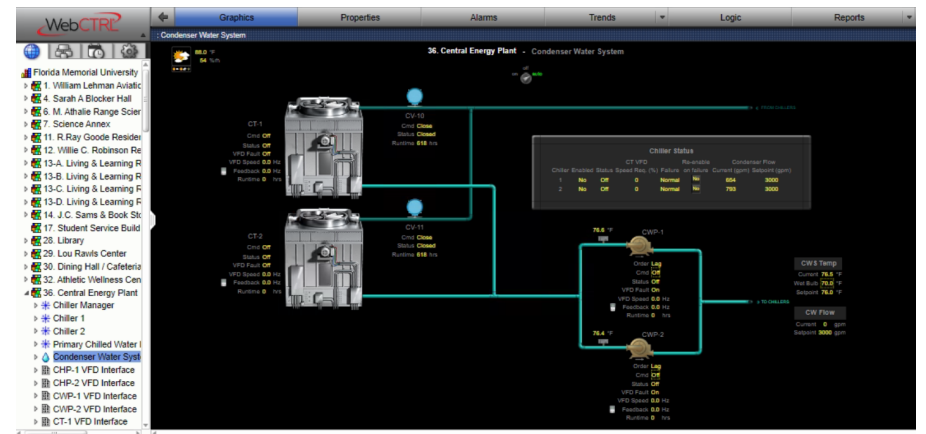
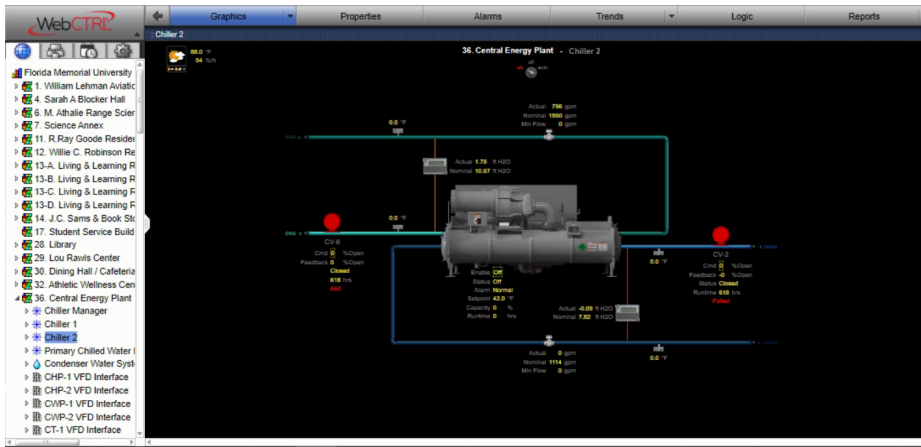
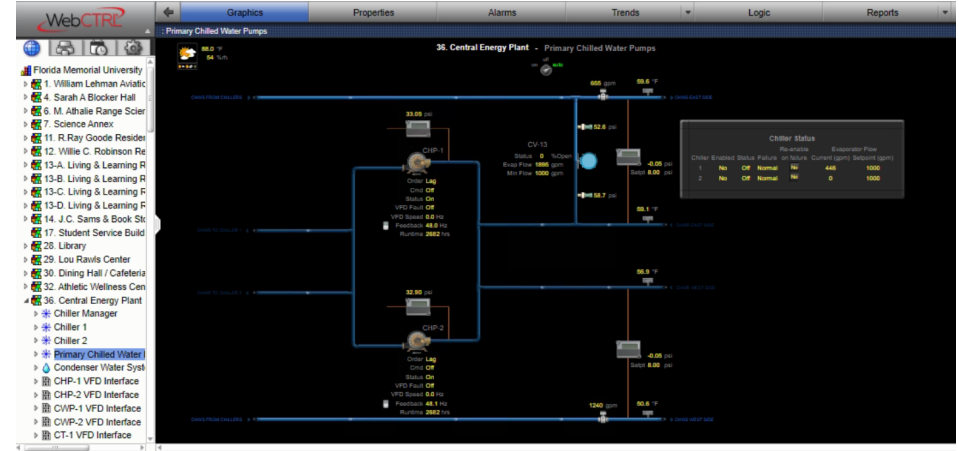
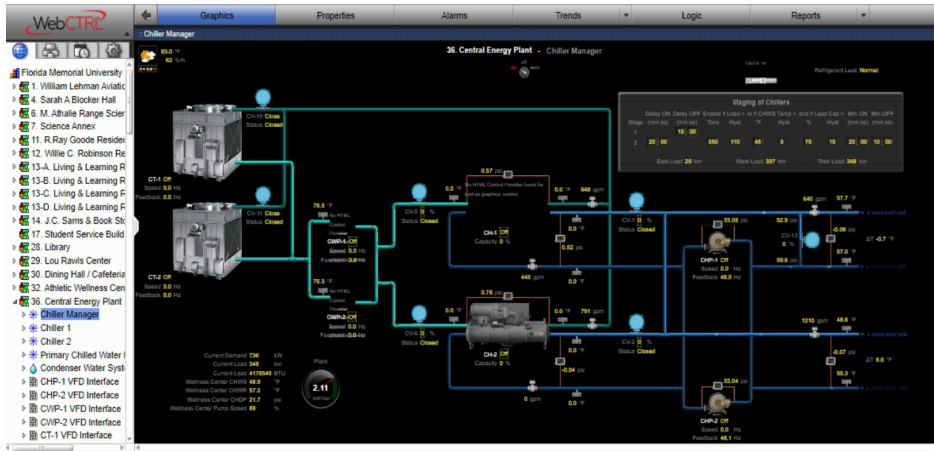
Dormitory Buildings Represented A Large Investment In Siemens Hardware And Were Integrated Into The New Building Automation System With Minimal Investment.

The Central Energy Plant Consisting Of Chillers, Flow Meters, Btu Meters, Pump Monitoring Was Integrated Into A Rich Comprehensive Graphic With Enhanced Reporting And Alarming..

Integrated Into Webctrl Interface And Enhanced

Graphics. The Transition Was Made Gradually Thus Allowing The Owner The Flexibility To Perform The Upgrade. Mechanical Air Concepts Retro-Commissioned Each Building Using Their Nebb Certified Technicians And Made Each Building Gradually Improve Its Operation And The Owner's Bottom Line.

Central Energy Plant For Florida Memorial University



Dorm Equipment: Integration To Siemens



Tecs Dorm Monitoring By Level



Case Study: 8600 Bldg With Johnson N2

Background: Owner Was Looking To Replace Their Existing Johnson N2 System. Mechanical Air Concepts Provided The Option To Preserve The **Johnson N2 Controllers** While Giving The Option To Upgrade Gradually.



Johnson Controls N2 Protocol System Integrated Into The Webctrl System. @8600 Nw Building. Consisting Of 63 Vavs, 4 Rtus And 3 Ac Units.

All Existing Hardware In Ac Equipment Was Maintained And A New Webctrl Interface Was Added Providing Webctrl Features Such As Color Thermographic, Time Lapse Tool (Video Replay Of System).



Case Study: 5707 Burger King Headquarters

Building With Alerton And Trane Controls



Alerton Controls And Trane Controls Were Part Of This Building. By Uniting Them Under A Common Platform Owner Was Able To Retain 90% Of Their Investment In Trane And Alerton Controls Investment Was Preserved Maintaining 90% Of Their Existing Hardware And Renewing The Graphic Interface Taking Advantage Of All The Automated Logic Webctrl Features.



The Environmental Index Dashboard Shows Each Floor's Score To Quickly See Problem Areas/Sections. The Operator Can Show The User The Building's Performance By Floor Or Total. Environmental Index Is An Automated Logic Webctrl Feature That Gathers The Current Zone Temperature And Compares It To The Temperature Setpoint During Occupied Schedule, Calculating The Deviation And Displaying It As A Percentage Scale 0-100% Of Performance.

Reasons To Consider Mechanical Air Concepts As Your Vendor For Building Automation Services

1. **The Impossible Is Always Possible:** We Understand Our Value Proposition And Always Strive To Solve Our Customer's Problems And Never Give Up.
2. We Have **Helped Customers That Were Trapped** Into Sole Source Agreements Free Themselves From Closed Systems And Empowered Them To Be In Control Of Their Building Automation System.
3. **Open Systems Approach:** Being A Systems Integrator Having Worked On Siemens, Johnson, Tridium, Trane, Reliable, Iworx, Carrier Ivu And Automated Logic, We Have Chosen A Platform Of Integration (Automated Logic) That Is Aligned With Providing The Most Value To The Customer And Flexibility. We Understand That By Giving This Flexibility To The Customer We Are No Longer A **Sole Source Provider** And Thus We Strive To Win The Customer Purely By Adding Value.
4. **Collaborative Workflows:** All Of Macs Business Processes Run In The Cloud In Collaborative Mode So That Multiple Technicians And Engineers Can Work On The Problem Simultaneously. This Allows Us To Provide The Best Possible Customer Service And Transparency.
5. **Commissioning And Tab Background Is In Our Dna:** Our Technicians Are Cross Trained In Test And Balance And Commissioning. This Allows Us To Better Understand Systems And To Avoid Finger Pointing.
6. Our Company Is Actively Involved Nationally With The Nebb **Commissioning** Board Always On Top Of New Emerging Technologies And Energy Efficiency Improvements For Buildings.