

TABLE OF CONTENTS

Part 1: General

Part 2: Technology

Part 3: Features

Part 4: All Pages

Part 5: Unit Pages

Part 6: Plant Pages

Part 7: Floorplan Pages

Part 8: Schedule Access

Part 9: Home Page

Part 10: Examples

Appendix A: Revision History

Appendix B: Suggested Edits

PART 1 GENERAL

1.1 DESCRIPTION

This specification is designed to standard the appearance and functionality of all UW seattle campus DDC systems, regardless of manufacturer, vendor, or technology.

1.2 DEFINITIONS

N/A

1.3 QUALIFICATIONS

Front End Graphics should be developed by a qualified programmer for the system installed, and must be overseen by the Lead Programmer as assigned by the Controls Contractor.

1.4 RELATED STANDARDS REQUIREMENTS

- A. University of Washington Facilities Design Specification (FDS)
- B. UW DDC Specifications
- C. UW DDC point naming standards
- D. UW DDC alarm and trend configuration standards
- E. UW metering and monitoring standards

1.5 REFERENCES

N/A

1.6 COORDINATION

No coordination is required

1.7 SUBMITTALS

Graphical displays for typical equipment and floorplans submitted for approval prior to installation

1.8 O&M (operations and maintenance) MANUALS

N/A

1.9 MEETINGS

N/A

PART 2 TECHNOLOGY

2.1 Web-Enabled

Graphical front end must be viewable with full functionality from a modern web browser.

2.2 Mobile -Ready

Graphical front end must be viewable with iOS or Android hand held devices such as smart phones and tablets.

2.3 Security

Graphical front end must require user logon and should use HTTPS technology. As of this publication, HTTP is also currently permitted.

PART 3 FEATURES

3.1. Accurate mechanical representation

Graphical front end for unit pages shall include all components shown on the mechanical and controls prints.

3.2. Setpoints

Graphical front end shall show all operator setpoints, with options for (a) default value, (b) current setpoint, and (c) timed and permanent override. Original design value will be represented adjacent to setpoint within parentheses, ex. "Setpoint :70 (68)".

3.3. Unit pages

With the exception of minor equipment such as exhaust fans, domestic hot water heaters, meters, and similar equipment, each piece of equipment shall have its own unit page. See below for unit page requirements.

3.4. Plant / Systems Pages

In designs where a number of components comprise a larger system, such as a single mechanical room, cooling system, or heating system, these designs shall be shown on a single page to the extent permitted by viewing space. If additional pages are needed, navigation between systems pages should be obvious, and available on each of the pages.

3.5. Collective Pages

Minor equipment such as exhaust fans and domestic hot water heaters may have multiple pieces of equipment on one page in order to minimize total page count. Meters also lend themselves to collection on a single page.

3.6. Summary pages

For AHU / VAV / FPT / VVT system, a summary page shall be provided that includes tabular data for the primary equipment (AHU) and all physically connected terminal equipment (VAV). Points designated for alarm shall have an appropriate color coding. Points in override shall have an appropriate color coding.

3.7. Alarm Annuciation and Review

All pages will have an alarm status point, indicating if any point in the DDC design is currently in alarm. All pages will have navigation link to the alarm database console for alarm review , acknowledgment and response.

3.8. Trend Log Access and Review

Any points with configured trend logs and displayed on the graphics front end will have quick navigation to the trend data for the given point. All pages will have navigation to trend log

database for the purpose of multi-series graphing and trend data exporting.

PART 4 ALL PAGES

4.1. Size

- a) Standard page size will be 1920 x 1200 pixels
- b) Page design shall include horizontal and vertical view sliders for smaller screens
- c) Pages shall be scalable

4.2. Header

- a) Will include current outside air temperature from DDC system
- b) Will include UW logo image from UW website
- c) Will include building name, code and facnum identifier
- d) Will include current date and time
- e) Will include supervisory alarm condition (any alarm shows indication)
- f) Will include 24/7 controls vendor support number , if applicable.
- g) Navigation link to Building home page
- h) Navigation link to Campus home page

4.3. Navigation

A set of page navigation buttons common to the entire DDC installation shall be included on each page. Position on page may vary as needed.

PART 5 UNIT PAGES

Unit pages (AHU, VAV, HRU, etc.) will include the following features

- 5.1. Mechanical Schematic
- 5.2. Values for all sensors and devices installed at equipment
- 5.3. Control setpoints, alarm setpoints, and calculation constant setpoints
- 5.4. Any distributed data point required for the SOO (ex. SAT from AHU)
- 5.5. Animation for fans, coils, filters, and alarm devices
- 5.6. Links to trend logs for all displayed data
- 5.7. Color coding for points in alarm
- 5.8. Color coding for points in override
- 5.9. Link to PDF document for SOO for specific equipment

PART 6 PLANT SYSTEM PAGES

Plant-level system pages (hydronic loops, boilers, chillers, etc.) will include these features:

- 6.1. Mechanical Schematic including accurate plumbing design
- 6.2. Control setpoints, alarm setpoints, and calculation constant setpoints
- 6.3. Any distributed data point required for the SOO (ex. Field demand values, OAT)
- 6.4. Animation for pumps, dampers, tower fans, and any alarm devices
- 6.5. Links to trend logs for all displayed data
- 6.6. Color coding for points in alarm
- 6.7. Color coding for points in override
- 6.8. Link to PDF document for SOO for mechanical system
- 6.9. Links to non-critical packaged controls data (ex. VFDs, chillers)
- 6.10. Bypass valves to indicate the equipment or loop being bypassed
- 6.11. Dp setpoints to indicate whether they are minimums or maximums

PART 7 FLOORPLAN PAGES

- 7.1. 3-D graphical presentation of walls
- 7.2. Envelope, walls, and doors accurately represented per Architecture prints
- 7.3. T-stat locations noted with sensor values nearby or noted with leader line
- 7.4. Equipment locations noted and related sensor connected by line
- 7.5. Device locations and tag ID (such as static pressure probes or dP sensors)
- 7.6. Hyperlinks from sensor values to trend data
- 7.7. Hyperlink from equipment tag to equipment unit page
- 7.8. Hyperlink to appropriate Sequence of Operations document
- 7.9. One-line diagram overlay showing path of network communications

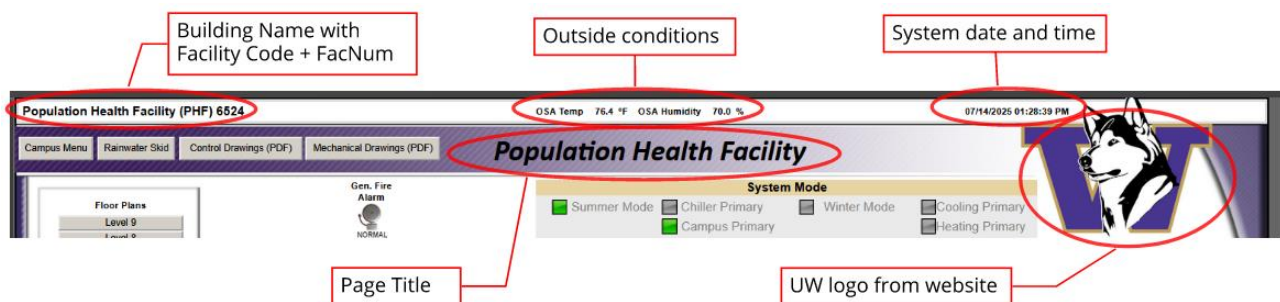
PART 8 SCHEDULE ACCESS

- 8.1 Must be included in page header or in common navigation scheme
- 8.2 All schedules used in programming must be obvious from the front end
- 8.3 Equipment using schedules must have specific schedule link on their unit page
- 8.4 Equipment using schedule must have schedule status object on their unit page
- 8.5

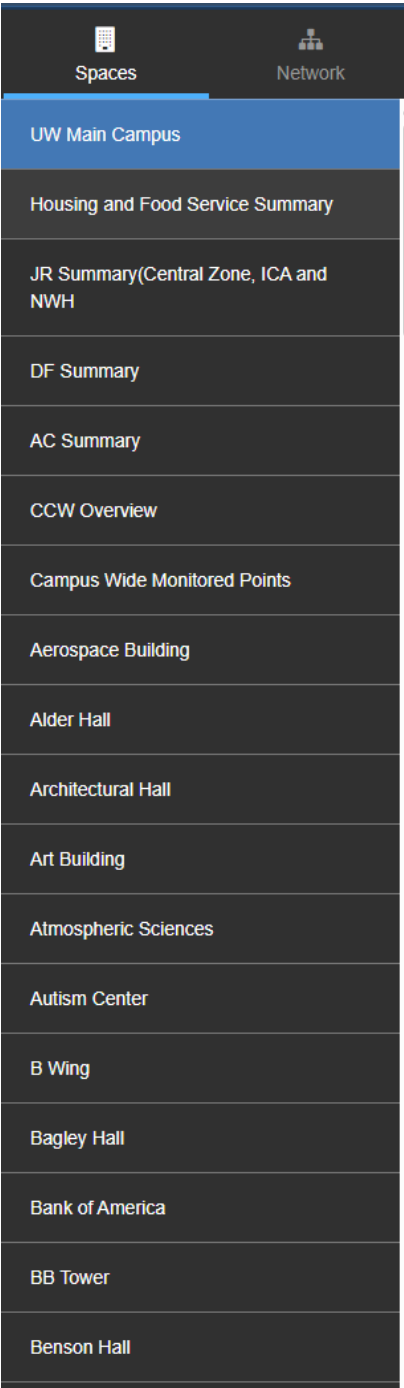
PART 9 HOME PAGE

- 9.1 Must have access to user rights administration
- 9.2 Must have image or picture of building not under construction
- 9.3 Must have link to complete set of submitted and approved as-built control drawings

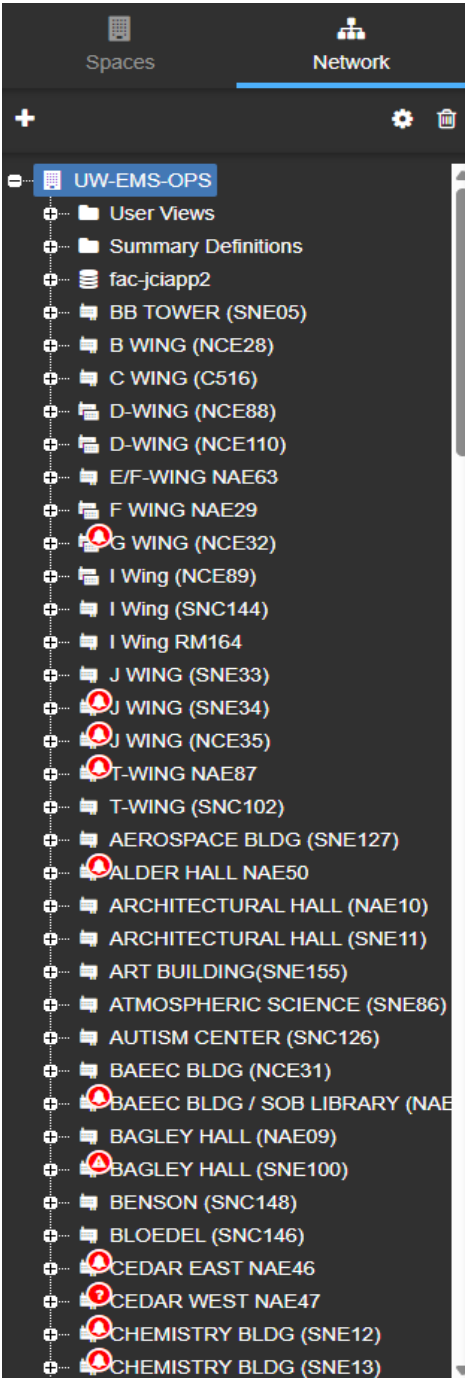
PART 10 EXAMPLES



COMMON PAGE HEADER



GRAPHICS NAVIGATION TREE



NETWORK TREE

Forward/Backword Navigation to additional pages as needed

Population Health Facility

OSA Temp 58.0 °F OSA Humidity 51.5 %

06/05/2025 08:19:39 AM

FCU Summary

Previous

More

Balancing

Area Served	Unit ID	Fan Status	Space Temperature	Space Set Point (°F)	Supply Air Temp (°F)	Heating Signal (%)	Cooling Signal (%)	Heating Setpoint	Cooling Setpoint	Unit Control	CO2 Level	Occupied Mode
Elec- B154B	FCU-B1-01		72.7 °F	68 °F	68.9	0.0 %	18.9 %	48 °F	78 °F	Occupied		
Elec- B140B	FCU-B1-02		73.2 °F	70 °F	69.6	0.0 %	15.1 %	68 °F	75 °F	Occupied		
Elec- B140A	FCU-B1-03		72.0 °F	70 °F	67.5	0.0 %	71.6 %	69 °F	72 °F	Occupied		
MDF- B160	FCU-B1-04		73.1 °F	70 °F	54.6	0.0 %	100.0 %	69 °F	72 °F	Occupied		
Water Entry- B156	FCU-B1-05		72.4 °F	70 °F	55.4	0.0 %	81.0 %	69 °F	72 °F	Occupied		
B108- Storage	FCU-B1-06		75.6 °F	68 °F	67.1	0.0 %	40.0 %	65 °F	88 °F	Occupied		
Elec- G138	FCU-G-01		72.0 °F	70 °F	64.6	0.0 %	47.1 %	69 °F	72 °F	Occupied		
Z-G-01	FCU-G-02		70.8 °F	70 °F	69.3	0.0 %	39.9 %	69 °F	72 °F	Occupied		
Z-G-01	FCU-G-03		70.8 °F	70 °F	69.9	0.0 %	35.1 %	69 °F	72 °F	Occupied		
L1- North Fire Pump Room	FCU-01-01		67.9 °F	70 °F	63.0	95.1 %	0.0 %	69 °F	72 °F	Occupied		
Z-01-14	FCU-01-05		70.6 °F	70 °F	70.2	0.0 %	32.3 %	69 °F	72 °F	Occupied		
Z-01-03	FCU-01-06		72.2 °F	70 °F	67.7	0.0 %	45.6 %	69 °F	72 °F	Occupied		
Z-01-18	FCU-01-07		70.8 °F	70 °F	68.7	0.0 %	27.1 %	69 °F	72 °F	Occupied	CO2 421 ppm	
Z-01-16	FCU-01-08		70.9 °F	70 °F	69.1	0.0 %	24.0 %	69 °F	72 °F	Occupied		
Cafe Area	FCU-01-09		72.2 °F	70 °F	71.6	0.0 %	47.6 %	69 °F	72 °F	Occupied		
Open Office- 204	FCU-02-02		70.5 °F	70 °F	68.8	37.4 %	0.0 %	69 °F	72 °F	Occupied	CO2 416 ppm	VFD

Temperature Key

Carbon Dioxide Key

On-page controls/setpoint entry

Hyperlink navigation to unit pages

SUMMARY PAGE



END OF DOCUMENT

APPENDIX A: REVISION HISTORY
(none)

APPENDIX B: SUGGESTED EDITS
(none)