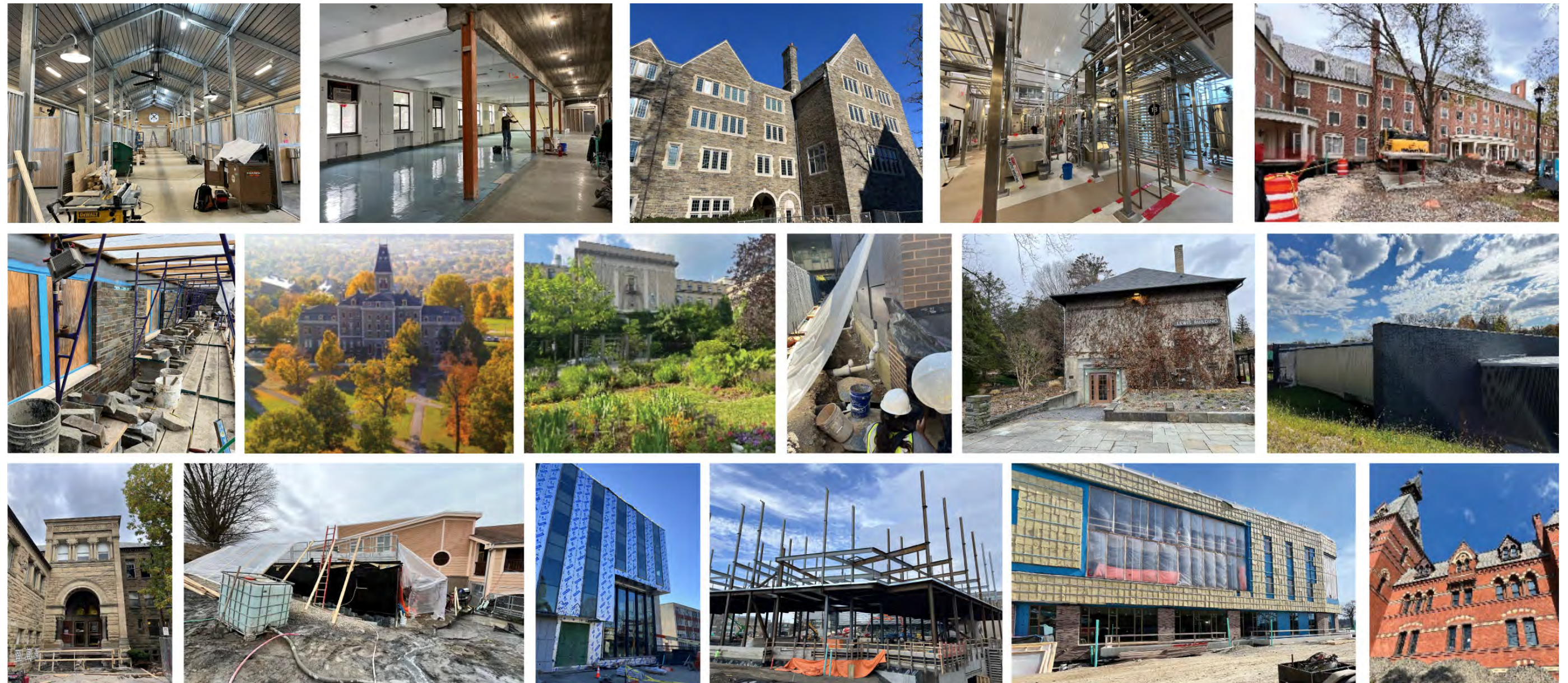


Quality Assurance Program

February 2024

2023 QA Review

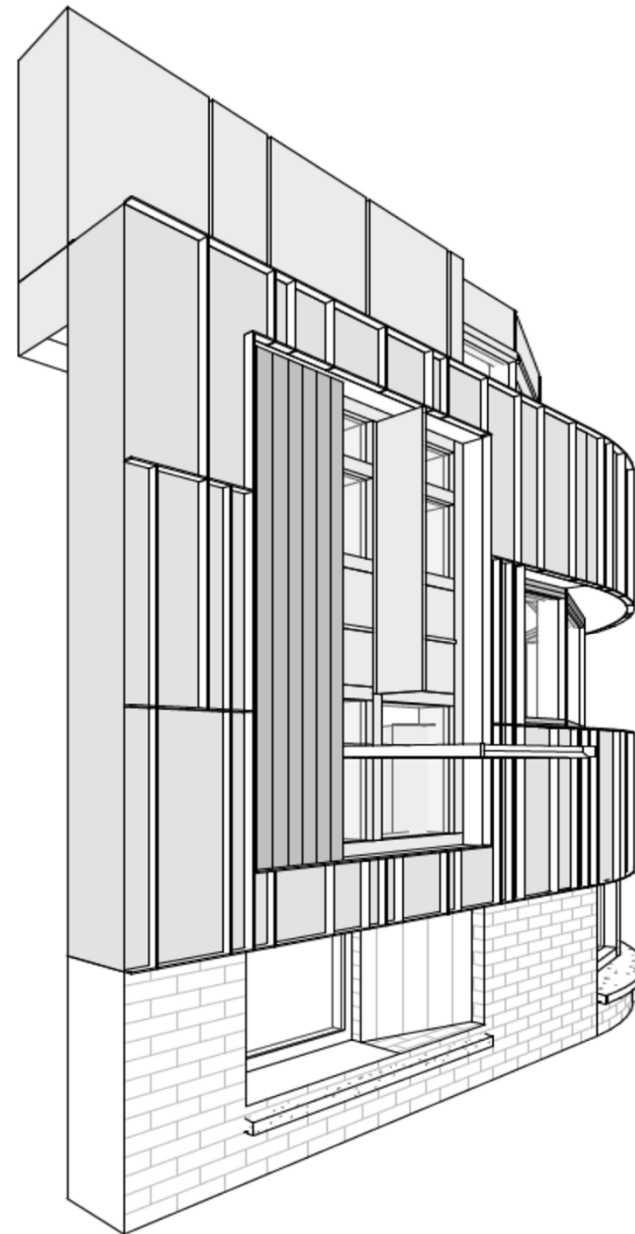


Cornell Quality Assurance

- Supplements our Project & Construction Managers
- Engages Subject Matter Experts in FE, working towards engagement across FCS
- Interfaces with designers of record, commissioning agents, and third-party testing in concert with PM/CMs
- A job-specific approach for each Cornell project

A Case for Quality Assurance

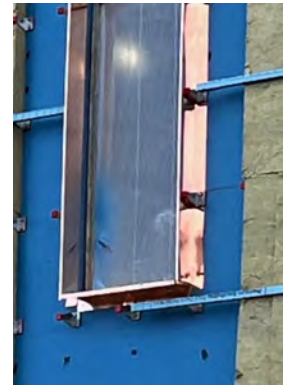
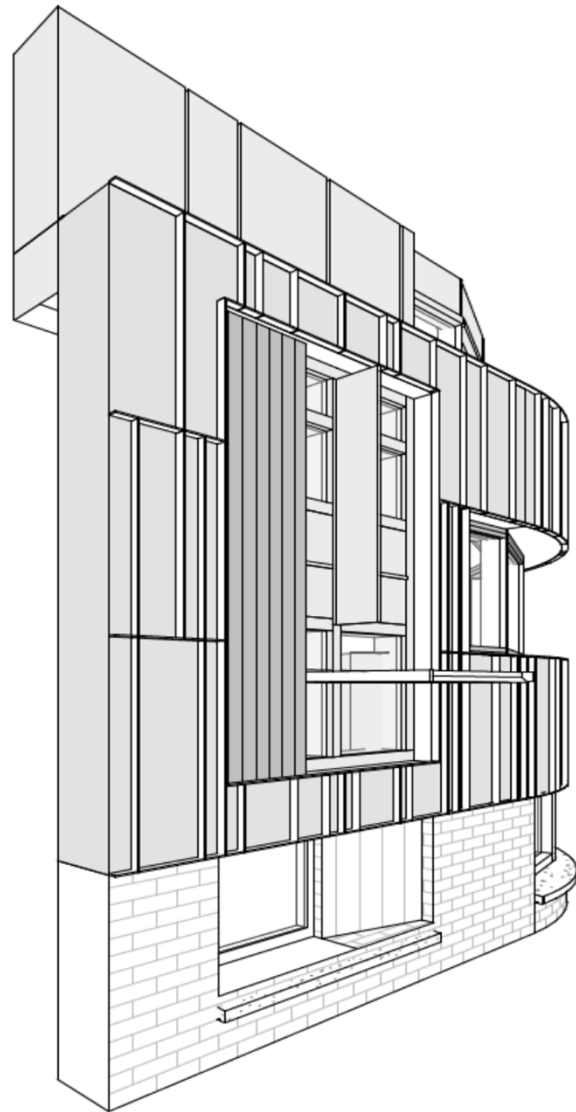
- Cornell buildings & renovations are complex
- Construction schedules are aggressive
- Architect/Engineer team variability



1930s.
84 architectural,
7 electrical,
3 mech,
10 site drawings



A Case for Quality Assurance

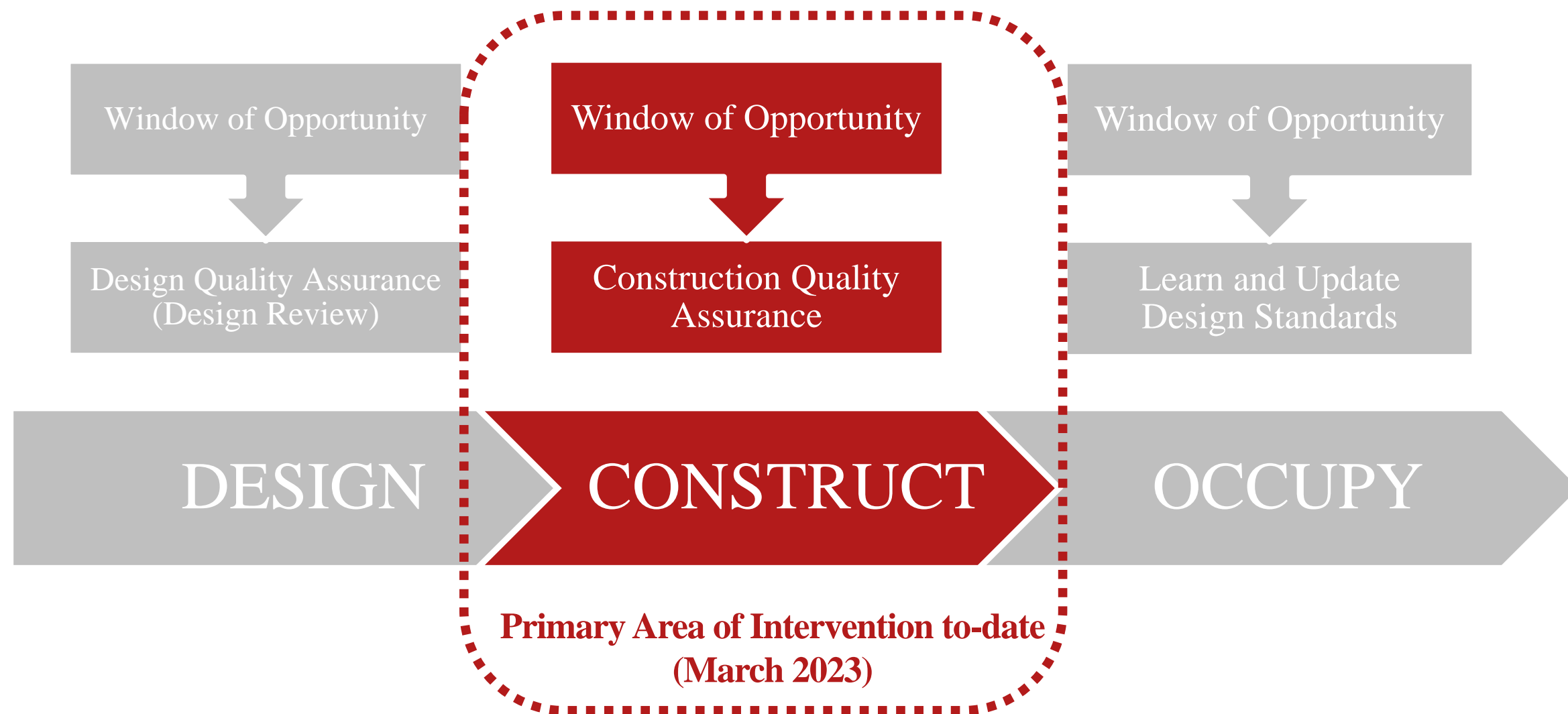


Quality Assurance Outcomes

1. Increased connectivity across Cornell project teams, within Central Facilities, and across campus
2. Focused Cornell and design team attention on critical project components to ensure success
3. Strengthened feedback loop to inform future projects via design & construction standards

Integrated Quality Management

Project Managers, Construction Managers, Facilities Engineering, and Facilities Management collaborate to infuse quality management throughout the life cycle of a project.



Observation of Work

- QA Manager scheduling of subject matter experts as work is installed
- Allows Cornell eyes on work
- Opportunity for influence as materials are installed
- Especially important for elements that will become concealed or buried



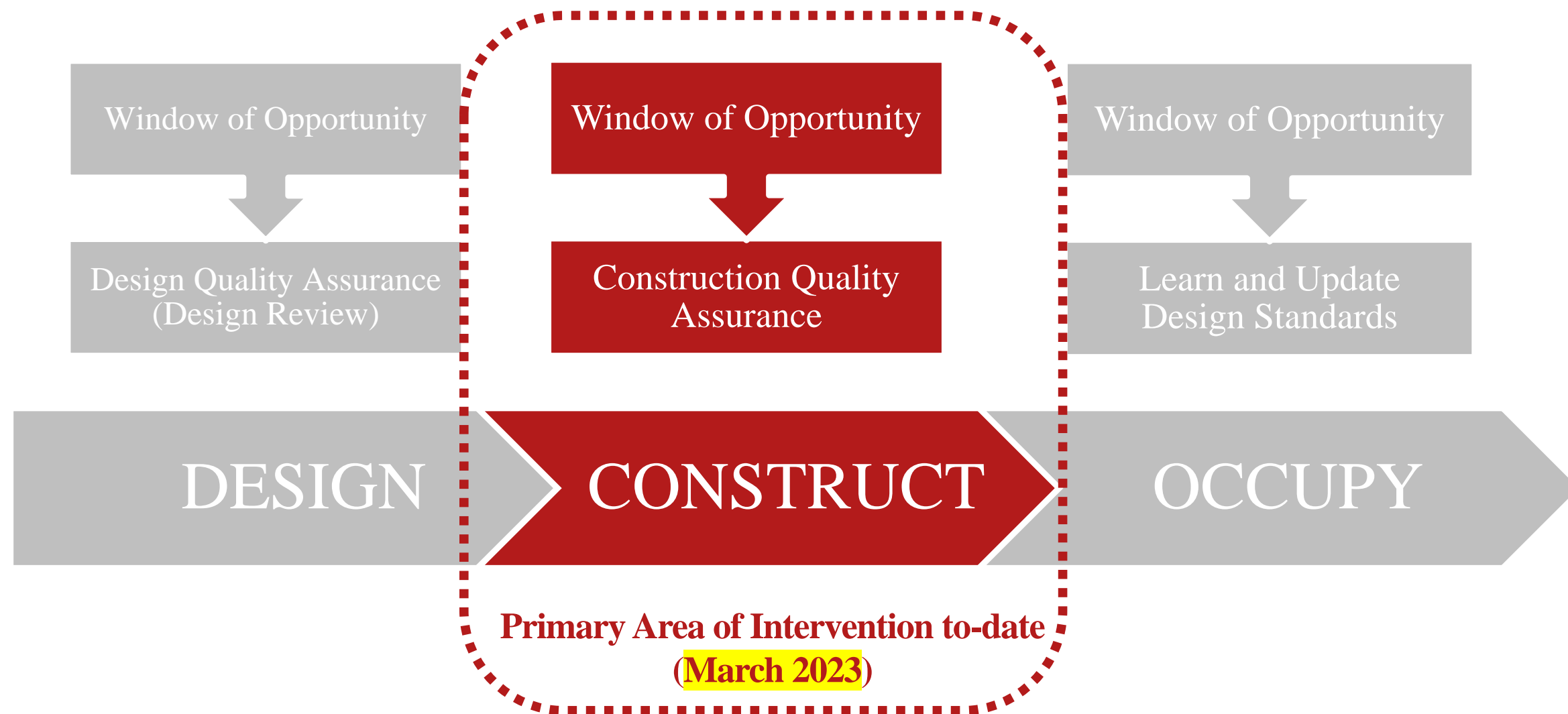
Shops Walks

- Regular walks of project site by Facilities Management
- QA Manager support to schedule overlap with Subject Matter Experts
- Opportunity to hear concerns and relay as needed

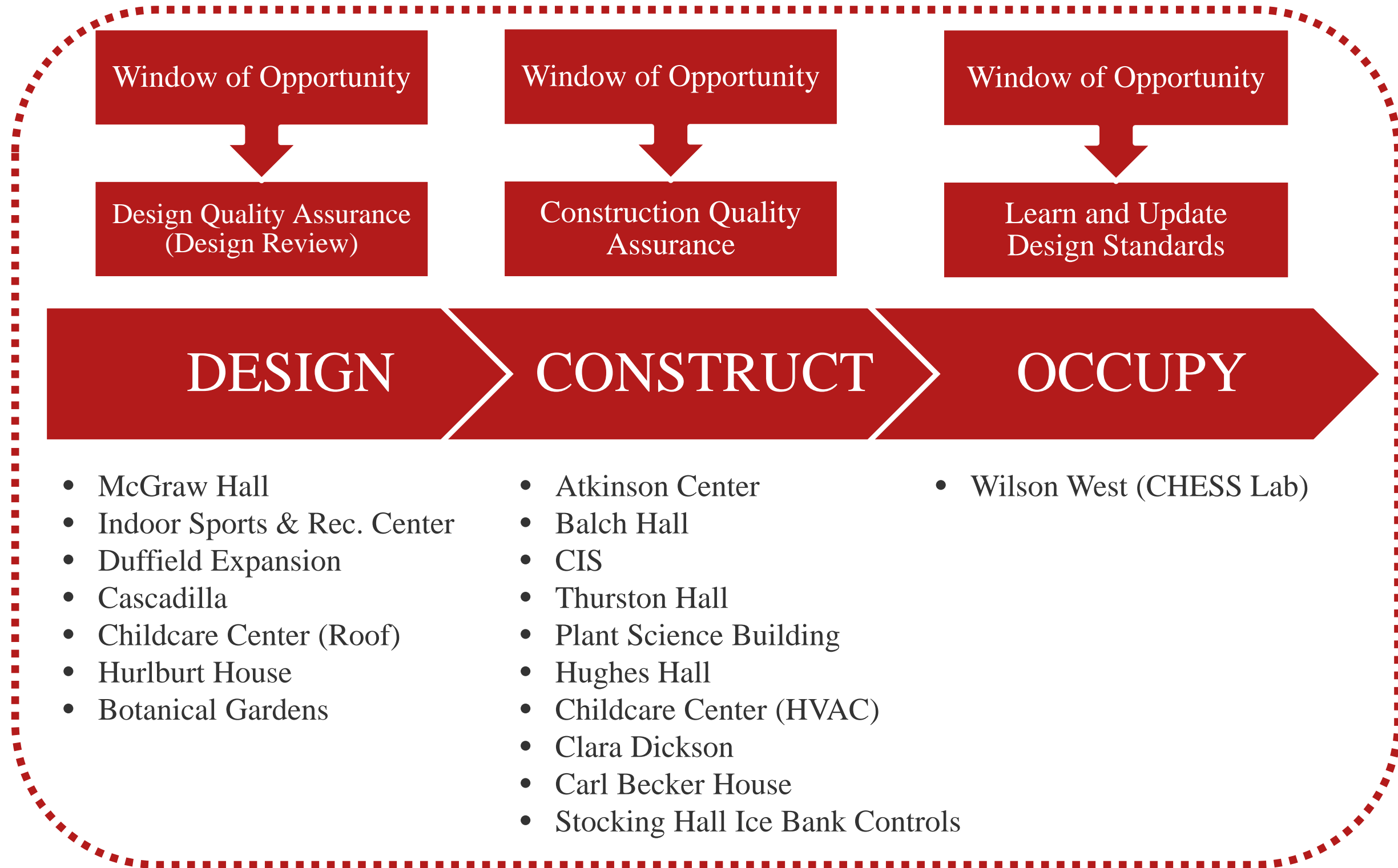


Integrated Quality Management

Project Managers, Construction Managers, Facilities Engineering, and Facilities Management collaborate to infuse quality management throughout the life cycle of a project.



Integrated Quality Management - 2024



Project Documentation – SMEQA Reports

e-Builder

My Home Dashboard Projects Planning Forms Processes Documents

CORNELL UNIVERSITY
FOUNDED A.D. 1865

Project Documents 11031 - Atkinson Hall - Active

Expand All | Collapse All | Refresh All

08.10 Pending Change Orders[77]
08.11 Field Change Authorizations[1]
08.12 Quality Assurance - Quality Control[916]
08.12.01 Laboratory Test Reports[333]
08.12.02 Inspection Reports[32]
08.12.03 AE Site Reports[50]
08.12.04 EH&S Safety Inspections[57]
08.12.05 Shop Inspections[0]
08.12.06 CM Agent Reports[1]
08.12.07 Non-Conformance Notices[39]
08.12.08 Contractor Daily Logs[296]
08.12.09 Contractor MEP and Other Reports[0]
08.12.10 Cornell QA Inspections[95]
08.12.11 SME Observation Reports-Internal[13]
08.14 Commissioning[16]
08.15 Punch List[0]
08.17 Progress Photos[4]
09 Special Subjects[9]
10 Warranty Period[0]

Project Menu

- Details
- Planning
- Forms
- Issues
- Processes
- Documents
- Sent Items
- Schedule
- Cost
- Contacts
- Calendar
- Bidding
- Submittals



Cornell University

Atkinson Hall

eBuilder Project # 11031

Construction Observation Report Quality Assurance Program

Date of Observation: 2/13/2024

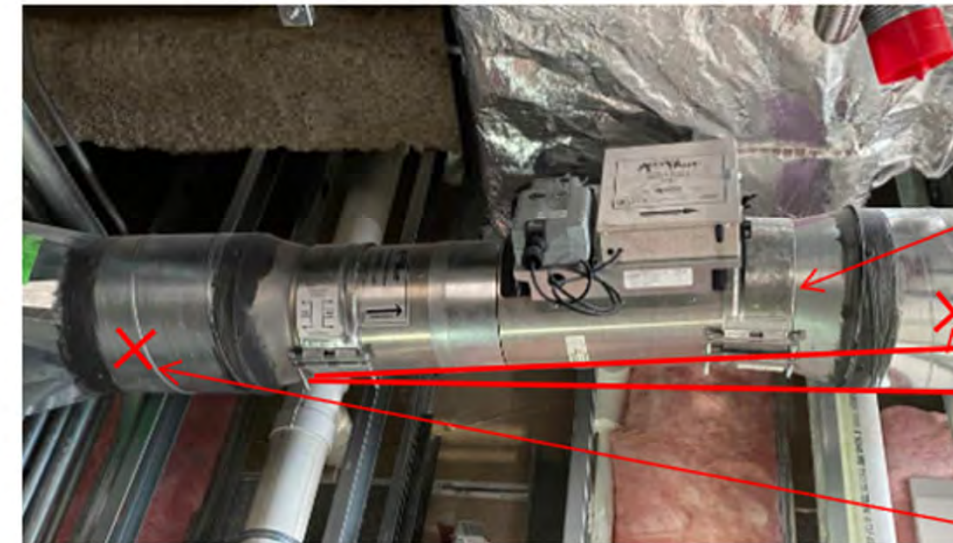
Prepared By: Eric LePore, P.E.

Date of Report: 2/16/2024

Mechanical and Plumbing Notes

NEW ITEMS:

1. General exhaust valve GEX-202A: Re-hang or adjust installed exhaust duct to maintain the valve straight and in-line with connected duct. Maintain duct support within 12" of each end of the air valves. Provide UL 181 compliant foil tape over valve/duct seams and re-install band clamps.



GEX-202A

Provide straight duct at band-clamp connections. Seal joints with UL 181 tape prior to installing band clamps

Re-hang duct to eliminate this angle between duct and air valve

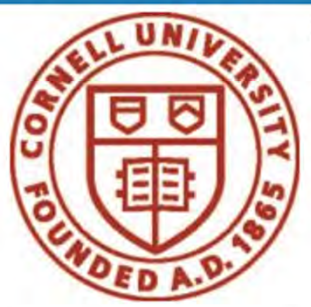
Provide duct support within 12" of valve per manufacturer's installation instructions

Project Documentation – CQA Process

e-Builder

 ? LM

My Home Dashboard Projects Planning Forms **Processes** Documents Calendar Contacts Bidding Cost Schedule Reports Setup ...



Unfinished Drafts

Filters 1

PROCESSES REPORTS
Log Download ...

<input type="checkbox"/>	Instance	State	Subject	Step	In Step Since	Status	Responsible Actors	Requested Comment
<input type="checkbox"/>	CQA - 40	Closed	Plumbing: Replace steel pipe at shower valve outle	Finish	Jan 19, 2024	Approved		
<input type="checkbox"/>	CQA - 41	Open	HVAC: Relocate FP hanger rod currently blockin	PM/CM Approve Response	Feb 20, 2024	Pending	Ben Alexander, Art Fives	
<input type="checkbox"/>	CQA - 42	Open	Plumbing: Replace installed 1/2" domestic water in	General Contractor Respond	Jan 9, 2024	Pending	Chris Andersen, Ethan Blinn, Thomas Cook, Jason Edsall, Katie Watkins	
<input type="checkbox"/>	CQA - 43	Closed	Plumbing: PCWS/R Pipe Support Provide additional	Finish	Feb 20, 2024	Approved		
<input type="checkbox"/>	CQA - 44	Closed	Plumbing: Install Cleanout Fitting on Storm Piping	Finish	Jan 23, 2024	Approved		
<input type="checkbox"/>	CQA - 45	Closed	Plumbing: Install Cleanout Fitting on Storm Piping	Finish	Feb 20, 2024	Approved		
<input type="checkbox"/>	CQA - 46	Closed	HVAC: Relocate Fire Alarm Conduit installed di	Finish	Feb 20, 2024	Approved		
<input type="checkbox"/>	CQA - 47	Closed	Plumbing: Install isolation valves at baseboard he	Finish	Feb 9, 2024	Approved		
<input type="checkbox"/>	CQA - 48	Closed	Plumbing: Install isolation valves at baseboard he	Finish	Feb 9, 2024	Approved		
<input type="checkbox"/>	CQA - 49	Open	HVAC: Install duct access doors upstream of re	General Contractor Respond	Jan 30, 2024	Pending	Chris Andersen, Ethan Blinn, Thomas Cook	

Page View 100
Showing result 1 - 59 of 59 1

Recent Pages...

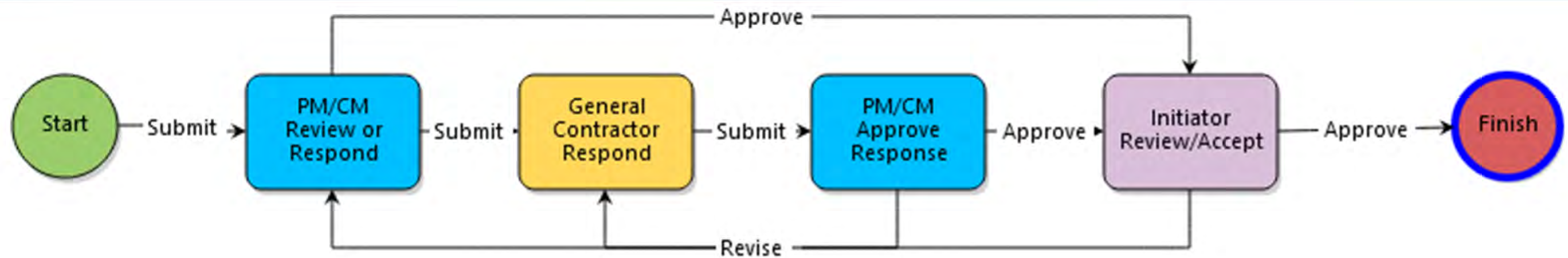
- > Details
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- Processes
- > Documents
- > Schedule
- > Cost
- > Contacts
- > Calendar
- > Bidding
- > Submittals

Project Documentation – CQA Process



CQA - 43

Graphical View



Submittals

- The earlier we catch it, the more savings we see
- PMs already get input on certain items (elevators, door hardware, IT, etc.)
- QA is focusing on essential/big impact items
- Coordinating with our Cx and BECx agents

SUBMITTAL COVER SHEET		
238219-001.4 23 82 19 - FAN COIL UNITS	PROJECT INFORMATION	GENERAL CONTRACTOR
	Cornell University CIS Building 127 Hoy Road Ithaca, NY 14853 P: 607.255.8033 E-Builder No. 11618	LeChase Construction LLC 33 Lewis St. - Suite 303 Binghamton, NY 13901 P: 607.772.2500 Project No. 2376005
	ARCHITECT/ENGINEER	Lees, Weinzapfel Associates 75 Kneeland Street Boston, Massachusetts 02111 P: 617.423.5711 Project No. 2101
DOCUMENT TYPE		
<input checked="" type="checkbox"/> Product Data <input type="checkbox"/> Sample <input type="checkbox"/> Schedule <input type="checkbox"/> Record Document <input type="checkbox"/> Shop Drawing <input type="checkbox"/> Test Report <input type="checkbox"/> As-Built <input type="checkbox"/> <input type="checkbox"/> Certification <input type="checkbox"/> O&M Manual <input type="checkbox"/> Warranty <input type="checkbox"/>		
SUBMITTAL INFORMATION		
Submittal No. Including Rev. No. 238219-001.4		
Submittal Page(s) No. 1377		
Spec Section & Title 23 82 19 - FAN COIL UNITS		
Sub Section Drawing Number 1 3A 2 2 3 2 4		
Installing Subcontractor KIMBLE INC		
Manufacturer/Supplier ENGINEERED COMFORT		
LECHASE CONSTRUCTION REVIEW CERTIFICATION		
LeChase hereby certifies that we have reviewed this submittal, verified the products, verified the field measurements where appropriate and have coordinated the information within the submittal with the requirements of the Contract Documents. The submittal items comply in every respect with the requirements of the Contract Documents and Specifications.		
LECHASE CONSTRUCTION REVIEW COMMENTS		
<input type="checkbox"/> URGENT: Time is of the Essence <input checked="" type="checkbox"/> This Product is Basis of Design <input type="checkbox"/> This Product is a Proposed Equal <input checked="" type="checkbox"/> This Submittal Contains a Revision		
Reviewed By:	Quinn Vallety	1/9/24
Processed By:	Quinn Vallety	1/9/24
ARCHITECT REVIEW STAMP	CONSULTANT REVIEW STAMP	
APPROVED <input type="checkbox"/> APPROVED AS CORRECTED <input type="checkbox"/> RESUBMIT FOR RECORD <input type="checkbox"/> <small>If checked above, notification MAY be undertaken. Approval does not authorize changes to Contract Documents or specifications or change Order.</small> If checked below, notification MAY NOT be undertaken. Resubmit corrected copies for final approval. Resubmit corrected copies for final approval. Correction shall be marked to items marked.	RECEIVED 01/09/2024 MEP GEOTHERMAL ENGINEERING, PLLC SUBMITTAL REVIEW Amend Per Comments RETURNED 01/29/2024	
REVIEW AND RESUBMIT <input type="checkbox"/> NOT APPROVED <input type="checkbox"/> <small>If checked below, use consultant's review and stamp for approval only.</small> REVIEWED FOR INFORMATION ONLY <input type="checkbox"/> TRANSMITTED <input type="checkbox"/> <small>Transmittal is only for contractor and the design team. The design team shall be responsible for reviewing and approving all submittals, including field verification. It is the contractor's responsibility to verify that the submittal complies with the contract documents and specifications. The contractor shall be responsible for providing all necessary information to the design team. The design team shall be responsible for providing all necessary information to the contractor. The design team shall be responsible for providing all necessary information to the contractor. The design team shall be responsible for providing all necessary information to the contractor.</small>	<small>MEPG: 1. Contractor to provide and install all FCUs in strict accordance to specifications and details. All valves and accessories to be per approved submittal. Combination valves are not acceptable. 2. Contractor to coordinate FCU connection sizes with Duct Sound attenuator sizes where directly connecting to FCU. 3. Contractor to furnish all FCU's with one additional spare filter per specifications 4. Contractor to provide BRD Hush core sound reduction enclosures per previous submittal and contract drawings.</small>	
LEES WEINZAPFEL ASSOCIATES 75 Kneeland Street, Boston, MA 02111 P: 617.423.5711 F: 617.423.5712	By: W. STOPPS Date: 01/29/2023	

MEPG:

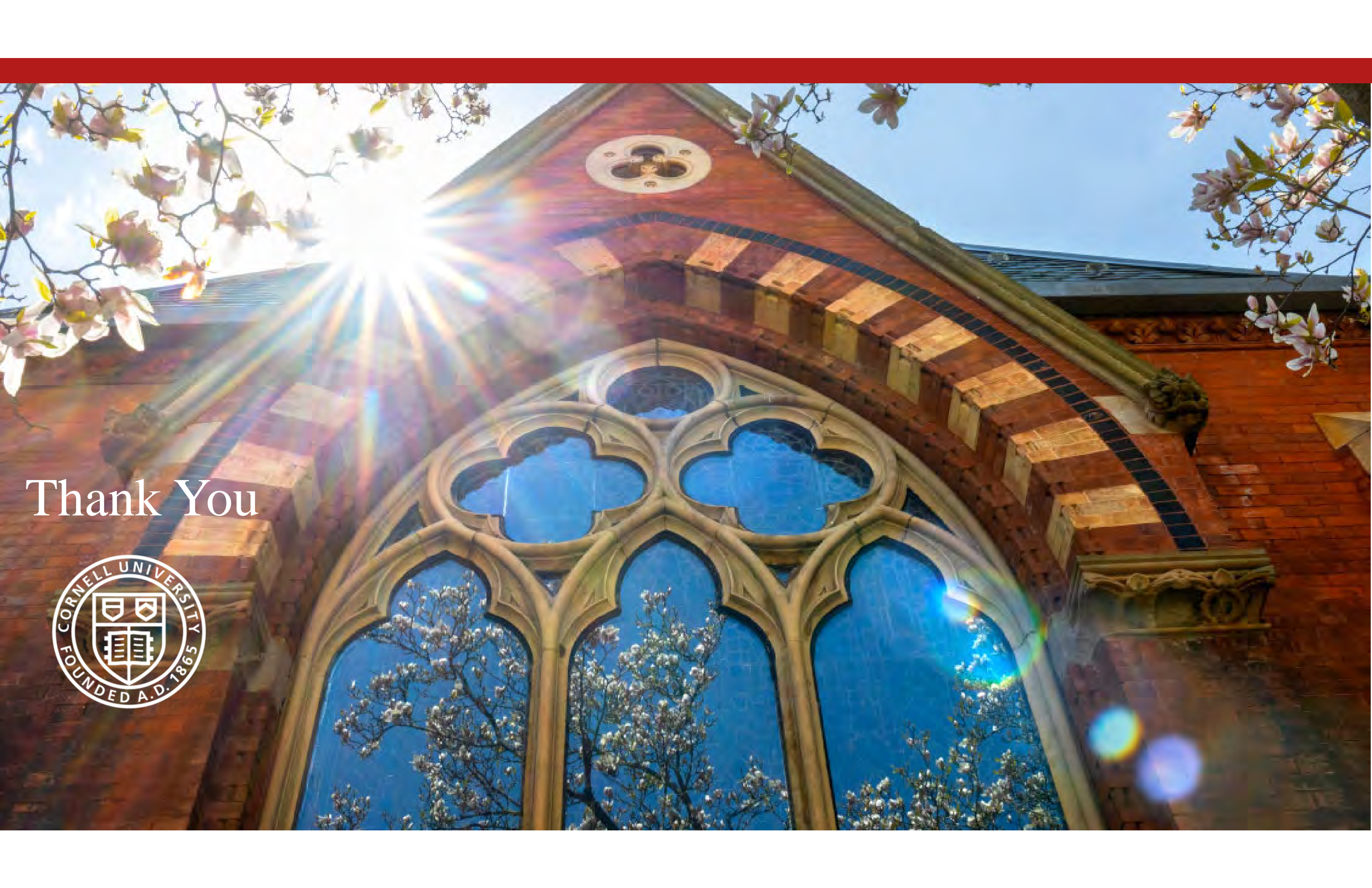
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MEPG:

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Goals/Next Steps

- Documentation strategy for field observations
- Refine process to update campus standards
- Updated PM Checklist incorporating QA
- Final Design Review Comments
 - Receive final responses from design team
 - Verify incorporation of feedback
- Coordinated Page Turns of Design Documents
- Value Engineering Phase Involvement
- New QA Position for Facilities Management



Thank You

