



# Construction Process Guide

**Subject:** Project Handover Demonstrations

CPG #: 01

Last revised: June 20, 2024

Pertinence: All construction projects at UBC

Audience for this guide: UBC Project Mangers (Project Services, Properties Trust, Construction Office)

Written by: UBC Facilities Technical Review Team - Kayna Merchant, Jeff Cheong, Andrew Porritt

Re: Process for Completing Project Handover Demonstrations to UBC Facilities at UBC Vancouver

---

The purpose of this guide is to provide guidance on when and how to organize demonstrations to UBC Facilities at UBC Vancouver Campus.

Demonstrations should take place after the consultant deficiency walkthroughs have been completed and major deficiencies have been completed. The goal should be that the entire building is demonstrated and handed over at once but that's not always practical and we recognize that in some cases it may be necessary to complete the handover one system at a time.

Handover (either of a system or in full) must be complete prior to:

- Any regulatory requirements coming in place (for example the fire alarm system must be handed over prior occupancy)
- Handover must be complete before UBC users are using the systems and are likely to be calling UBC Facilities for support (for example, plumbing handover must be done prior to UBC users using the bathrooms).

**All construction projects should have at least one demonstration.**

The project demonstrations are one piece of the handover checklist which needs to be completed prior to UBC Facilities assuming operation of the building. If you don't have the checklist, please request it from Kayna Merchant, the Architect of the Technical Review Team.

Please consider which trades groups are impacted by your project. For example, if a plumber is needed for part of the project then a plumbing demonstration is probably required. Some demonstrations may be very short and there is nothing wrong with scheduling a 30 minute demonstration if that is sufficient time. If in doubt, reach out to the applicable person on the Technical Review Team, and we will be happy to assist you.

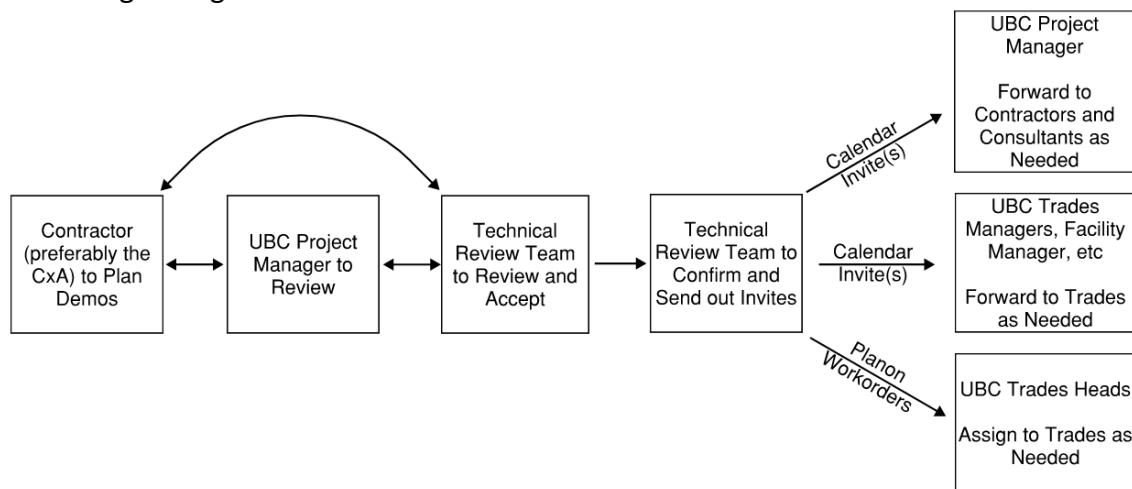
At a minimum, demonstrations should serve to orient UBC trades to the project so that they are familiar with the new equipment, any new operational requirements and are engaged with the change. Depending on the project, it may be necessary to have equipment-specific manufacturers present (for example metering equipment, lighting controls, chillers, etc.). These need to be determined on a project by project basis. If you are unsure if a manufacturer demonstration is required, again, please reach out to the Technical Review Team.

In addition to the demonstrations, it is anticipated that many of UBC’s trades will be engaged in the final months of a project to assist with shutdowns or other coordination items and that this will help develop their familiarity. This is particularly true for Fire and Life Safety Systems where we expect the contractors to engage with the UBC FLS crews throughout commissioning. In addition to being a necessary step to onboard these systems, it is also anticipated that this process is used to satisfy the BCBC requirements for training ongoing testing and troubleshooting – so please reach out to Jeff Cheong, the Electrical Engineer the Technical Review Team to further coordinate these items.

Trades attendees may identify items which they view as project deficiencies. Their instructions are to forward these items to the Technical Review Team via their manager. The Technical Review Team will then review the deficiencies and forward to the project team.

- If items are identified directly to the project team at the demonstrations, please instruct the trades to forward their concerns to the Technical Review Team via their manager.

The process for organizing a demonstration is as follows:



More details on each step from the above flow chart are below.

### Project Team Steps:

- Identify which trades groups require a demonstration and work with the Technical Review Team to determine logical divisions for multiple demonstrations. Typically, electrical won’t attend mechanical demonstrations, etc.
  - Large projects such as new or full building renews may have six or more separate demonstrations.

- Small projects may just have a single demonstration, such as a simple walk through for all disciplines.
- It is recommended to review your proposed attendee lists with the Technical Review Team, so as not to inadvertently miss any trades.
- Create an agenda for the demonstration (frequently done by the commissioning authority or commissioning agent but could be done by others within the construction team at the discretion of the UBC PM/PC). The agenda should include a:
  - Brief description of the project. Please keep in mind that many people who receive the invitation may not even be aware of your project.
  - Disciplines which should attend
  - Location to meet
  - PPE requirement (if any)
  - Sequence of events and approximate times
- Schedule the demonstration **for 9:30am or 12:30pm** on a **Tuesday, Wednesday or Thursday** that is **at least two weeks** from the day the invite is sent out.
  - Note that UBC trades do not work M-F schedules, so availability is much better mid-week.
  - Tradespeople's morning breaks are typically from 8:45am-9:00am, 11:30am-12:00pm and 1:45pm-2:00pm so please do not schedule during these times (with 10 min on either side to mobilize).
- Coordinate with the Technical Review Team to ensure that you're meeting all of UBC's requirements.

### *Technical Review Team and Building Operations Steps:*

- The Technical Review Team will review the agenda and confirm that it meets UBC Building Operations requirements as outlined above. They will coordinate with the project team as needed to get the invites in line.
- Depending on the audience the Technical Review Team will:
  - Create a work order in UBC's maintenance management software (Planon) and work with the service center to have the work order assigned to all relevant trades.
    - Here is an example of the information which we put in the workorder. Please use this as a guide on the type of information that needs to be submitted when planning the demonstration.

Comment

SC, please assign this to: Operating engineers, Steam fitters, Gas fitter, Electricians, Control Electricians

Project Name: JBM and FSC Steam Boilers

Purpose: Handover Demo

Date: May 14, 9:30am

Meeting Location: JBM Mech Room

Project Description:

At each site, JBM and FSC (and CHBE, currently incomplete, to be demo'd in the future) the existing electric process steam boilers were replaced with new duty/standby boilers. One thing that is unique is that a tie breaker switch was used which prevents both boilers from being simultaneously energized. In doing this, we were able to avoid triggering a 5th class plant despite installing 2x 100kW boilers.

Meeting Description:

- 35min JBM Mech Room for all trades
- 20min remobe to FSC
- 35min FSC Mech Room for all trades

PPE requirements: normal UBC PPE

- Forward the calendar invite directly to attendees. Including
  - Trades Managers
  - Facility Managers (respective FM should be invited to all demonstrations – attendance is at their discretion)
  - Other attendees who don't manage their schedule in Planon

Due to the number of moving pieces in this process, scheduling requirements noted above will be enforced to ensure successful attendance.

Sincerely,

Building Operations Technical Review Team

Attached: Appendices for discipline-specific information

## Appendix 1 - Mechanical Specific Items

Invites for this group should be coordinated with the Mechanical Engineer of the Technical Review Team. They will then forward it to necessary attendees.

The mechanical trades that UBC B-Ops has are as follows:

- Mechanical Trades – Trades Manager: Sean McGregor
  - Steamfitters (hydronic piping, steam piping, cleaning strainers, servicing valves, flushing lines, filling systems, bleeding air, etc.)
  - Plumbers (domestic cold and hot water, sanitary and storm drains, lab gases, compressed air, etc.)
  - Sheet metal (ductwork, louvers, etc.)
  - Millwrights (service pumps, fans, bearing, belts, miscellaneous motors, etc.)
  - Mech assistants (change filters in all air handling equipment)
- Operations Trades – Trades Manager: Lee McCormick
  - Operating Engineers (boiler and pressure vessel regulatory, first point of response for many items across multiple disciplines)
  - BMS Operators (constant monitoring from operations center, need to understand what's on site so they can correlate it to what they see on their screen, often called on to adjust setpoints or address customer complaints)
  - Refrigeration Mechanics (respond to many heating/cooling issues, fix problems related to refrigeration such as chillers, air conditioners or sometimes client equipment such as growth chambers)
- Controls Electricians – Head: Dariusz Jaworski ([controlshop.buildingops@ubc.ca](mailto:controlshop.buildingops@ubc.ca))
  - Controls electricians (all control wiring, controllers, actuators, sensors, etc.)
    - Not actually part of the mechanical team but they will often attend mechanical demonstrations.

## Appendix 2 - Electrical Specific Items

Invites for this group should be coordinated with the Electrical Engineer of the Technical Review Team. They will then forward it to necessary attendees.

The electrical trades that will be involved in demonstrations are indicated below with the type of equipment covered under their purview:

- Maintenance Electricians – John Lampietro (Head), Neil Ram (Subhead)
  - Contact: [electricalshop.buildingops@ubc.ca](mailto:electricalshop.buildingops@ubc.ca)
  - Power Distribution:
    - Metering
    - Switchgear/Switchboards
    - Motor Control Centres (MCC)
    - Panelboards
    - Transformers
    - Disconnects
    - Receptacles
  - Lighting
    - Lighting Fixtures
    - Lighting Controls
  - Emergency Power:
    - Automatic Transfer Switch (ATS)
    - Generator
    - Uninterruptible Power Supply (UPS)/Inverter
- Fire Life Safety Electricians – Naval Aery (Head), Scott Kerr (Subhead)
  - Contact: [fls.buildingops@ubc.ca](mailto:fls.buildingops@ubc.ca)
  - Fire Alarm Systems
  - Emergency Lighting and Exit Signs
  - Elevator
  - Emergency Power:
    - Automatic Transfer Switch (ATS)
    - Generator
    - Uninterruptible Power Supply (UPS)/Inverter
  - Fire suppression systems (sprinklers, dry systems, pre-action, chemical, etc)
- Controls Electricians – Dariusz Jaworski (Head)
  - Contact: [controlshop.buildingops@ubc.ca](mailto:controlshop.buildingops@ubc.ca)
  - Variable Frequency Drives (VFD)
  - Motor Control Centres (MCC)
  - BMS related items as covered in the mechanical section

## *Appendix 3 – Architectural, Municipal and Custodial Specific Items*

Invites for this group should be coordinated with the Architect of the Technical Review Team, who will then forward it to necessary attendees.

For most projects, a deficiency walkthrough will be sufficient instead of an architectural demo. Please ensure an invite for the architectural walkthrough is sent to the architectural, municipal and custodial managers (depending on the scope of work).

### *Architectural Specific Items*

The architectural technical specialist at UBC B-Ops should be invited to all demonstrations, they will decide to attend or not based off the project scope:

- Michael Cunningham – Architectural Technical Specialist

The following architectural items will need to be included when system demos are being planned for a project and depend on the project scope of work.

- Overhead and rolling doors
- Motorized operable windows
- Over-sized sliding doors – wood or glass
- Raised flooring systems
- Manual or motorized operable partitions/room dividing systems
- Prefabricated awnings or sun control devices
- Expansion joint covers
- Any other specialty architectural items If unsure, please contact Kayna Merchant to see if demonstrations are needed.

### *Municipal Specific Items*

The UBC Facilities Municipal group should be invited to the demonstrations noted below. They will decide to attend or not based off the project scope:

- Tamas Weidner, Manager, Waste Management
- Dean Gregory, Landscape Architect

The following municipal items will need to be included when demos are being planned for a project and will depend on the project scope of work.

- New loading bay and back of house area for new and renewal projects - Waste management systems when a compactor, dust extractor, animal bedding extractor and/or dock leveler systems are installed for a particular building. Also includes review of waste bin holding area and bin count.
- Existing loading bay and back of house area in building expansions and major renovations – review of waste bin holding area and bin count.
- Irrigation systems – refer to Division 32 of the UBC Technical Guidelines for timing and demo requirements. As landscape systems are usually completed after project handover, coordinate demo requirements and handover with Dean Gregory separately.
- Any other specialty municipal items that relate to the architectural design. If unsure, please contact Kayna Merchant to see if demonstrations are needed

### *Custodial Specific Items*

Depending on scope of the project, UBC Facilities Custodial Services group require a walkthrough to be organized with the Operations Manager. The custodial walkthrough is to be organized prior to occupancy particularly if a building or renovation will be user occupied immediately. Once occupancy is granted and users have occupied a building (regardless of whether handover to Facilities has been completed or not), Custodial Services will begin attending all trouble calls. Having sign-off from Custodial Services is therefore important. Flooring specifications and maintenance procedures should be submitted in advance of the custodial walkthrough. Washroom, kitchen and lounge accessories plus interior waste stations supply and install to be confirmed with Custodial Services prior to occupancy.

- Conor Cregg-Guinan – Operations Manager, Dayshift, Facilities Custodial Services