

## 1.0 **GENERAL**

### 1.1 **Related UBC Guidelines & Documents**

- .1 Section 20 00 05 Mechanical - General Requirements
- .2 Section 22 00 00 Plumbing (and all subsections)
- .3 All other Tech Guidelines as may be applicable to a given project.
- .4 UBC Hazardous Waste Disposal Guide

### 1.2 **Related Documents External to UBC**

- .1 BC Plumbing Code and all references contained there within
- .2 BC Building Code and all references contained there within
- .3 Work Safe BC Occupational Health and Safety Regulation

### 1.3 **Description**

- .1 The Guidelines apply to all work completed within buildings on both UBC Vancouver and UBC Okanagan campuses unless stated otherwise.
- .2 In instances where conflicts are found between these guidelines and provincial regulations or codes, please notify UBC Mechanical Engineer.
- .3 These guidelines are intended to be read by designers and their content integrated into construction drawings and specifications. Construction documents are not to reference the technical guidelines directly.
- .4 It is the requirement of the mechanical designer to coordinate these requirements with other disciplines.

## 2.0 **MATERIAL AND DESIGN REQUIREMENTS**

These are requirements specific to UBC that may not exist in code or other jurisdictions. Any deviation from these guidelines requires a variance be granted.

### 2.1 **Design Requirements**

- .1 UBC does not support the installation or use of acid neutralization tanks (small under counter, or large centralized) or acid waste piping. Researchers are to collect their acid waste in an appropriate container and follow the procedures outlined on UBC's Hazardous Waste Disposal Guide.
  - .1 In buildings with existing central acid waste piping and tank – the system shall be considered de-commissioned. New fixtures/appliances that enable users to put acids down the drains shall not be installed.
  - .2 This does not apply condensate neutralization tanks on gas fired HVAC/Plumbing equipment with condensing flue gases. However, care should be taken to ensure that these tanks are installed in a serviceable manner and that they have enough capacity that the lime chips don't have to be replenished very often. They should be the style where the top opens to put more lime chips in, opposed to closed tube style assemblies.
- .2 Refer to section 22 30 00 for requirements for sump pumps.
- .3 Specify floor drains in all public washrooms.

- .4 UBC requirements to avoid clogs in sanitary piping systems:
  - .1 All consultants should read and be familiar with the article “Dry Drains” by Ron George which was published on the PHCP website on Jan 18, 2019 and shall consider the design guidance provided therein. It is also available [here](#).
  - .2 Double Wye fittings are not acceptable on horizontal pipe runs. A disproportionate number of our clogs occur at these fittings. Instead, use regular wye fittings and “roll them up” to ensure that no backflow into the fitting occurs.
    - .1 The design of these fitting necessitate that they are installed flat. As a result, every time the flow passes one, the hydraulic depth is reduced, eventually leading to solids dropping out.
    - .2 Solids which enter these fittings from the sides have a tendency to hit and become lodged on the opposing corner which eventually leads to build up and forms a clog.
    - .3 See videos at [this link](#) for examples of the above.
  - .3 All toilets in ICI buildings shall be BCBC maximum flow, 6LPF (see Section 22 40 00 – Plumbing Fixtures for more info). Lower flow toilets are not acceptable except when they are required as a mandatory requirement for LEED.
  - .4 Avoid long horizontal runs which are common in academic buildings with long hallways and consider increasing pipe slopes (while being aware that too great a pipe slope can result in the liquid portion of waste passing the solid waste and dropping the solids into the pipe).
- .5 Grease interceptors – UBC sewage system connects to Metro Vancouver Sewage system. Grease interceptors must be installed to the requirements of Metro Vancouver.

## 2.2 Construction and Material Requirements

- .1 Acceptable piping systems
  - .1 Sanitary Above Grade
    - .1 Copper
    - .2 Cast Iron

## 3.0 LESSONS LEARNED & COMMON MISSES ON UBC PROJECTS

Items in this section are not specific requirements of UBC but are code or industry best practices which have been missed on past jobs. These items should be considered in mechanical designs at UBC. However, if they're not applicable then a variance is not required.

- .1 None noted at this time.

\*\*\*END OF SECTION\*\*\*