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 Section 23 21 05 District Hot Water Heating System
.4 All other Tech Guidelines as may be applicable to a given project.

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 UBC Vancouver Campus Buildings.
.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 Sump Pumps
   .1 All sump pumps are to be selected as duty/standby. Design is not to be for parallel operation in normal operating conditions.
   .2 Controller is to rotate runtime between the two pumps.
   .3 Pumps are to be controlled by three floats. The configuration of the floats at UBC is specific because we want to ensure that we receive an alarm to BMS when one pump has failed. A typical configuration will not send an alarm until both pumps have failed and the water level overcomes the highest float.
      .1 Stop pumps
      .2 Start lead pump
      .3 Start lag pump and sound alarm

.2 Water heaters
   .1 All new and renewed buildings are to be connected to the district energy system. This system is to be the primary source of heat for hot water systems. Refer to section 23 21 05 and 33 61 00 for more details including energy transfer station piping arrangement.
      .1 If a project is not going to connect to DES, they must have a variance in place from UBC Energy and Water Services (Section 33 of the TGs)
.2 Water heaters with storage capacity of 120 L or less and heating capacities of 3.0 kW or less may be electric.

.3 UBC’s Climate Action Plan (CAP) has set a target of 100% reduction in GHG emissions below 2007 levels by 2050. In support of this plan, natural gas shall not be used as the primary heating source in domestic water heating.

.4 Where on demand domestic hot water heaters are specified, make provisions for water expansion without relying on pressure relief valve for control of water pressure.

.3 Expansion tanks shall be installed on all domestic hot water systems.

2.2 Construction and Material Requirements

.1 Housekeeping pads are to be installed under all equipment.

.2 All tanks containing hazardous materials must be registered with UBC Risk Management Services. This includes but is not limited to chemical feed tanks, acid neutralization tanks, oil water separators, grease traps, etc. [https://stdb.rms.ubc.ca/index.asp](https://stdb.rms.ubc.ca/index.asp)

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 All sanitary sumps shall be vented and have sealed lids as per BC Plumbing Code 2.4.6.3.2.

***END OF SECTION***