1.1 GENERAL

1.2 Related Technical Requirements
  .1 Section 10 28 00 Toilet, Bath, and Laundry Accessories
  .2 Section 22 05 00 Plumbing - General Requirements
  .3 Section 22 11 18 Backflow/Cross Connection Control
  .4 Section 22 10 00 Plumbing Piping

1.3 Coordination Requirements
  .1 Coordinate with SFU Facilities.

1.4 Description
  .1 Additional SFU design and approval requirements for Plumbing Fixtures.

2.1 MATERIALS AND DESIGN REQUIREMENTS

2.2 General
  .1 Architects and Mechanical Engineers must propose the fixture types very early in the design to enable them to be tested on campus.
  .2 Hard-wired, ‘No-touch’ motion detector-activated plumbing fixtures and accessories are required for faucets, urinals, water closets and are to be considered for paper towel and soap dispensers.
  .3 All fixtures and trim shall be CSA approved.
  .4 Emergency showers and eye wash stations shall meet ANSI Z358.1 Standards Latest Edition.
  .5 All plumbing fixtures and trim used in barrier free locations shall comply with the British Columbia Building Code.

2.3 Plumbing Fixtures
  .1 All fixtures are to be approved by SFU Facilities Mechanical Department.
  .2 All toilets are to be wall mounted unless approval given by SFU Facilities.
  .3 Toilets are not to be low or dual flush toilets.
  .4 Toilets are to be fitted with a 1.28 Gal/Flush flushometer.
  .5 Specify water conserving type of fixtures and trim. For projects not certified under LEED or REAP, refer to Table 1.0, Plumbing Fixture Water Efficiency, for fixture flow requirements.
  .6 Low flow faucets are not to be specified unless approval given by SFU Facilities.
  .7 Waterless Urinals are not to be specified unless approval given by SFU Facilities.
  .8 All fixtures within the building shall be generally and where possible of the same manufacturer.
.9 Specify make of fixtures with manufacturers’ local representation.

.10 All plumbing fixtures and trim used in handicapped accessible locations shall comply with the latest version of the British Columbia Building Code.

.11 Emergency Showers and Eye Wash Stations:
   
   .1 Emergency water at all emergency showers and eyewashes supply shall be tempered and not exceed 20°C.
   
   .2 Emergency showers/eye wash stations shall have ‘stay open’, hand controlled valves.
   
   .3 Emergency showers/eye wash stations shall each have a floor drain plumbed in, complete with trap primers. Floor surfaces slope to drain.
   
   .4 Eye wash shall be specified as eye wash only not face and eye wash combination.
   
   .5 Emergency shower/eye wash isolating valves shall not be readily accessible to the user.
   
   .6 All eyewash and emergency showers shall be provided as per WCB requirements.

.12 Drinking Water Fountains
   
   .1 All buildings over 600 gross square metres shall have at least one accessible drinking water fountain, located in a public area. The drinking fountain must include an appropriate fixture for filling water bottles.
   
   .2 For all new buildings, drinking water fountains shall be located inside buildings at level 1 entrance lobbies and should be visible from the exterior.
   
   .3 All new buildings shall have drinking water fountains installed on the shortest dead leg possible off of a line that is flowing regularly. This line would preferably be serving a washroom.
   
   .4 Chilled drinking water founts are permitted but only bottle fill type, not filter type.
   
   .5 Drinking water fountains shall NOT have filters and hence no backflow preventers will be required.
   
   .6 Non-testable backflow devices are not permitted.
   
   .7 One vendor that supplies drinking water fountain and bottle filling stations that meet the above requirements is Elkay (web site: elkaypro.com).

.13 Domestic Water Dispensing and Filtration Equipment
   
   .1 The installation of water dispensing/filtration equipment for office and kitchenette type areas is acceptable only with approval from SFU Facilities. An approved backflow device must be installed as per Section 22 11 18 Backflow/Cross Connection Control to prevent water from being drawn out of the filter system back into the water supply line. The hazard presented by the desired equipment must be such that the required backflow protection is non-testable and therefore requires no annual certification. Equipment requiring the annual certification of a backflow device will not be acceptable for installation.
2.4 Plumbing Fixture Water Efficiency

.1 New or replacement fixtures shall meet water efficiency performance requirements in Table 1.0. The table also shows comparative reference points in other standards and codes.

.1 Efficiency requirements for shower heads and faucets are about 20-30% more efficient than BC Building Code requirements; these levels of efficiency are proven and easily achievable in most projects with minimal incremental costs.

.2 Toilet efficiency requirements are equivalent to BC Building Code requirements introduced in 2011, and reflect current and proven best practices.

Table 1.0. Fixture Water Efficiency Requirements

<table>
<thead>
<tr>
<th>Requirement (Maximum Volume or Flow Rate)</th>
<th>Comparative Notes</th>
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<tbody>
<tr>
<td>Toilets 4.8 litres/flush average</td>
<td>Equivalent to existing BC Building Code</td>
</tr>
<tr>
<td>Urinals 1.9 litres/flush</td>
<td>Equivalent to BC Building Code</td>
</tr>
</tbody>
</table>
| Shower head 7.6 litres/minute             | BC Building Code is 9.5 litres/min  
                                          | Equivalent to LEED 2009 prerequisite |
| Kitchen Faucet 6.8 litres/minute          | BC Building Code is 8.3 litres/min  
                                          | Kitchen faucets usually need higher flow than lavatories for good user experience |
| Lavatory Faucet – non sensor/metering 5.6 litres/minute | BC Building Code is 8.3 litres/min  
                                          | Lavatory faucets do not require flows as high as kitchen faucets for good user experience |
| Lavatory Faucet – sensor/metering 0.76 litres/cycle | Equivalent to LEED 2009 prerequisite |

***END OF SECTION***