

1.0 GENERAL

1.1 *Related UBC Guidelines*

- .1 *Division 01, Section 01 91 00 Monitoring Based Commissioning*
- .2 *Division 25, Section 25 05 00 Building Management Systems*
- .3 *Division 26, Section 26 27 13 Metering*

1.2 *Coordination Requirements*

- .1 *Coordinate with UBCO Facilities.*
- .2 *Coordinate with UBCO Energy Team.*
- .3 *Obtain details of space requirements, access, location and provision of associated services such as electrical, BMS, telecommunications wiring from UBC Building Operations – Technical Services.*

2.0 MATERIALS AND DESIGN REQUIREMENTS

- .1 *The project shall bear all costs associated with installation of meters.*
- .2 *Site-level meters: All site meters shall be supplied by the project.*
- .3 *All UBC owned and non UBC owned buildings and all irrigation systems constructed on UBC property shall have meters installed on all services, for example:*
 - 1. *Water*
 - 2. *District Energy System (DES)*
 - 3. *Gas*
 - 4. *Electricity*
- .4 *Main building water, gas, district energy, and electrical meters shall be compatible for remote monitoring and be wired to the building BMS for monitoring. The Division 25 contractor shall be responsible to install all pathways and wiring for remote monitoring of these meters.*
- .5 *Standard of acceptance of mechanical meters shall be as follows:*
 - 1. *Water: Badger M2000 utilizing pulse output configured at 0.1m3 per pulse.*
 - .1 *For core campus buildings the design requirements are shown in standard drawing 1140-UT-07A-WaterMeterStdMag. See also Division 26 16 00 Section 2.4*
 - .2 *If the manufacturer and designer confirm that a strainer is not required upstream of a meter, a spool piece with a 1.5"-2" port, isolation valve and hose bib shall be installed in place of the strainer.*
 - 2. *Gas: Fortis Provided meter complete with pulse hand-off module.*
 - .1 *The project is responsible for providing any required protection, such as installing a lockable enclosure and/or bollards as per UBCO Facilities Management approval.*
 - 3. *District Energy: Refer to Division 25 05 00, section 4.9 and Monitoring Based Commissioning 01 92 00.*
 - 4. *Electrical Meters: Refer to Division 25 05 00, section 4.6 and Division 26 16 00.*

END OF SECTION