3. Building Performance

3.1 Water Consumption

Limiting the use of potable water is a priority in any new building.

The design has been undertaken using Estidama requirements as guidelines. Accordingly, plumbing fixtures have been selected based on flow and/or flush rates to maximize water reductions.

Within the bathroom and prayer rooms, the following water saving devices (and corresponding performances) have been selected;

- Dual flush valve toilets : 6/3L flushing at working pressure 417.7 kpa
- Urinals : 0.S litres per flush at working pressure 417.7 kpa
- Ablution Taps fitted with infra-red tap systems 1.9 litres per min at working pressure 417.7 kpa
- Bathroom taps fitted with infra-red tap systems 1.9 litres per min at working pressure 417.7 kpa
- Bidet hand sprays with 2 litres per min at working pressure 417.7 kpa
- Tenant Kitchen taps shall be S litres per min at working pressure 417.7 kpa
- Janitor sink taps with S litres per min at working pressure 417.7 kpa

As none of the aforementioned fixtures are composting or waterless, standard maintenance and cleaning procedures apply.

Ablution fixtures and washbasin taps will have infrared sensors to prevent unused water flow.

Tenant spaces shall have flow rates no higher than those specified within the base building design.

3.2 Mechanical System

The key sustainability aspects associated with the mechanical design include:

- In order to minimize building air conditioning (cooling) requirements, all building fabrics and elements have low U-values
- All HVAC systems are controlled and monitored by DDC - BMS system.
- The outside air supply rates are varied to match the building occupancies (to maintain allowable $C0_2$ levels).
- The AHUs are fitted with heat wheel type heat recovery systems.
- Where applicable heat pipe systems are used for the reheating of dehumidified fresh air (no electric heaters).
- All buildings receive chilled water from the high-efficiency centralized cooling plant.
- Locations of air intakes/outlets are 10m or more apart, to avoid the air recirculation and the intakes are over 20m from pollution sources.
- HVAC air filtration systems ensure good Indoor Air Quality (IAQ).