

## Appendix 5.2 – Calculations for Reclaimed Water Demand

The estimation of reclaimed water demand for toilet flushing is shown in **Table 1**

**Table 1 – Estimation of Reclaimed Water Demand for Toilet Flushing**

	Units	Resident	Staff
Design Population	head	1200	45
Unit Flow Factor <sup>(1)</sup>	m <sup>3</sup> /head/d	0.063	0.05
Average Daily Demand	m <sup>3</sup> /d	78	

Note:

(1) The quantity of toilet flushing is estimated according to Appendix III of Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning

The estimation of reclaimed water demand for landscape irrigation is shown in **Table 2**

**Table 2 – Estimation of Reclaimed Water Demand for Landscape Irrigation<sup>(1)</sup>**

	Units	Communal Open Space's Landscape	Communal Landscape & Perimeter Landscape	Communal Streetside Landscape	Private Garden	Total
Area	m <sup>2</sup>	11,681	7,500	2,000	29,669 <sup>(2)</sup>	-
Irrigation Rate	l/m <sup>2</sup> /d	10 <sup>(3)</sup>				-
Average Daily Demand	m <sup>3</sup> /d	117	75	20	297	509

Note:

(1) Figures in the table are approximate and subject to detailed design. The Deed of Mutual Covenant (DMC) will stipulate the minimum requirement of landscape area (50,850m<sup>2</sup>) adopting reclaimed water for irrigation in the development, which is one of the design parameters of the Planning Submission. The DMC Manager shall manage and maintain the common landscape area while he/she shall also manage the private gardens by house rules to ensure the minimum landscape areas are provided. Should there be any intention of modification or removal of landscape area or irrigation system inside the private garden by future private house owners, prior approval should be obtained from the DMC Manager.

In addition, a pre-set semi-automatic control irrigation system with underground drip pipes would be installed in the private garden and managed by DMC manager to ensure that reclaimed water would be used up for irrigation. Should there be any intention of modification or removal of landscape area or irrigation system inside the private garden by future private house owners, prior approval should be obtained from the DMC Manager.

(2) The overall landscape coverage in private garden (29,669m<sup>2</sup>) is about 50% of the total private garden area (59,337m<sup>2</sup>).

(3) An average irrigation rate of 10 l/m<sup>2</sup>/d is assumed with reference to the irrigation rate adopted in the approved Water Supply Impact Assessment of the project "CE35/2006 (CE) - Kai Tak Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction".

The irrigation rate is an average rate with allowance for rainy days, and an average water demand of 10 l/m<sup>2</sup>/d would be required under the detailed landscaping design.

Reference has also made to the approved EIA report of the project "Sludge Treatment Facilities" (EIA-155/2008), which estimated reclaimed water demand for the landscaping area based on a daily consumption rate of 12 l/m<sup>2</sup>/d. As such, the adopted average irrigation rate is considered conservative for the purpose of estimation of irrigation water demand for the proposed Development. Additionally, the excessive reclaimed water, if any, will also be reused for irrigation of vertical green to be proposed under detailed landscape design.