

6. SEWERAGE SYSTEM

6.1 Introduction

6.1.1.1 This section describes the design methodology adopted in developing the preliminary designs for the proposed South East Kowloon development (SEKD) sewerage system.

6.1.1.2 The first part of this section describes the design parameters that have been used to estimate the projected sewage flows based on the SEKD employment and population figures. The design parameters have been used to develop hydraulic models of the system, to establish pipe size and pipe gradient requirements to satisfy the requirements of the DSD Sewerage Design Manual¹. The second part of this section presents the design criteria used as a basis for the preliminary sewerage designs.

6.2 Part 1 - Design Parameters for Flow Estimation

6.2.1 Residential Flow Factors

6.2.1.1 The relevant factors for use in estimation of residential sewage flows are presented in Table 6.1.

Table 6.1 Residential Flow Factors (L/resident/day)

| Living Quarter Type | 2005 | 2011 and Later |
|------------------------------|------|----------------|
| Low cost rental | 240 | 240 |
| Private R1 | 240 | 240 |
| Private R2 | 291 | 300 |
| HOS Residential Development | 240 | 240 |
| PSPS Residential Development | 240 | 240 |

Source: DSD Sewerage Manual

6.2.1.2 The proposed unit flow factors and peaking factors are mainly based on the values defined in the DSD Sewerage Manual. Where flow factors other than those indicated in the DSD Sewerage Manual have been adopted, the rationale for adopting these flow factors is also given. For this study, private permanent population has been split into categories relevant to sewage flow projections (R1 and R2 etc) for each planning area, whilst public population includes rental, HOS and PSPS types.

6.2.2 Employment Flow Factors

6.2.2.1 The unit flow factor for employees for their own use while at their place of work is 60 L/employee per day for all the relevant study years. The flow factor for school children/students according to Table 2 of the Sewerage Manual is 25 L/person/day.

6.2.3 Commercial Activities

6.2.3.1 Flows from commercial developments including restaurants, hotels and laundries are calculated by assigning an additional factor to the general employment in each sub-catchment. The factor in the DSD Sewerage Manual increases with time from 273 L/employee/day in 2004 to 290 L/employee/day in 2011 and thereafter.

6.2.3.2 According to the Drainage Services Department, the above factors should be applied to all employment in the E2 – E5 categories (i.e. all employment other than manufacturing).

¹ Drainage Services Department Sewerage Manual Part 1 "Key Planning Issues and Gravity Collection System" - 1995