

## **SEWERAGE**

### **1) ADVISORY COMMENTS**

- 1.1 The proposed development (of more than 150PE) should be encouraged/ made to share one single treatment plant with an adjacent proposed development(s) in order to reduce the operation and maintenance cost of treatment plants in the future.
- 1.2 All developers must submit sewerage catchment study for the proposed development in relation to the existing and future development.
- 1.3 All developers are to revert an area for sewerage reserved to the State Government in accordance to Malaysian Sewerage Industry Guidelines (MSIG).
- 1.4 All developers should submit the cost and proposal for operation and maintenance.

## **2) REGULATORY COMMENTS**

### **2.1 SEWAGE TREATMENT PLANT**

- 2.1.1 The area allowed for the sewerage reserve must be adequate. Land area and buffer zone/distance should be provided and should be indicated on the site layout plan (MSIG Volume IV).
- 2.1.2 Detailed engineering drawings and calculations for the sewage treatment plant should be submitted for checking and approval by JKR prior to the commencement of construction.
- 2.1.3 Should the proposed sewerage system to be connected to existing STP, detailed engineering drawings and calculations to show the adequacy of the existing **sewerage system/ sewage treatment plant** to cater for the additional flow must be submitted for checking and approval by JKR prior to the commencement of construction.
- 2.1.4 All proposed development within 30m radius from public sewerage system must connect to Government sewer main otherwise item 1.1 shall take precedent.
- 2.1.5 Location of the sewerage system must be accessible at all time.
- 2.1.6 STP and Pump House must be fence with reliable material with signage "PROHIBITED".

## **2.2 SEPTIC TANK**

- 2.2.1 For a proposed development more than 150PE a proper sewage treatment plant must be provided (in the event of no Government sewer main in the area). Septic tank is not acceptable.
- 2.2.2 The proposed individual/communal septic tank must be provided with secondary treatment. In the event of space limitation, an alternative or recommendation to connect the secondary treatment system should be provided.
- 2.2.3 Detailed engineering drawings and calculations for the septic tank with secondary treatment should be submitted for checking and approval by JKR prior to the commencement of construction.
- 2.2.4 Sullage (wastewaters from kitchen, toilet basins, shower areas, clothes washing areas and from dish and clothes washing machines) must not be channeled directly to surface drainage systems. The discharge of sullage must be channeled to the sewerage system.
- 2.2.5 The width of the drainage/sewerage reserve at the back of the terrace houses should be minimum of 2.74m and to be clearly indicated on the drawing.
- 2.2.6 Desludging is required at the frequency of not less than once every two years to restore the designed treatment capacity. (MSIG Volume 3: Clause 3.2.4).
- 2.2.7 A 150 mm diameter bypass pipe from the last manhole before the septic tank and extended to the outside drain line of the premises and end capped, or plugged, for future connection must be provided. (MSIG Volume 3: Clause 3.2.8.a)

## **2.3 GENERAL**

- 2.3.1 The mode of sewage disposal should be clearly shown on the plan.
- 2.3.2 Installation of any type of Wash Basin Grinders is prohibited.
- 2.3.3 Disposal of industrial waste to the sewerage system is prohibited.
- 2.3.4 The minimum size of a gravity sewer conveying raw sewage shall be 200mm diameter for residential development and 225mm diameter for commercial development.
- 2.3.5 Manhole cover should be labeled/engraved "SEWER".
- 2.3.6 Minimum distance of manhole refers to Malaysian Standard MS1228:1991.
- 2.3.7 The type of sewer pipe proposed should be clearly indicated on the drawing.
- 2.3.8 All colour coding for the sewerage system refer to SPAN. (*sludge pipe=brown, effluent pipe=white, influent pipe=black water pipe=blue air pipe=*)
- 2.3.9 Detailed engineering drawings and calculations for the sewer system and associated appurtenances should be submitted for checking and approval by JKR prior to the commencement of construction.
- 2.3.10 All engineering drawings and calculation must be endorsed by Professional Engineer indicating their registered serial. The Professional Engineer shall take full responsibility of the design performance of the septic tank.
- 2.3.11 In addition to above mentioned Items, the design of sewerage system and associated appurtenances should also be in accordance with the principle set out in the '**Malaysian Standards MS1228: Code of Practice for Design and Installation of Sewerage Systems**' and '**Malaysian Sewerage Industry Guidelines (MSIG) Third Edition**'. Should there be any discrepancies between these two, the MS1228 will supersede.