Chapter 7 : Utility Services

Utility services are essential components of the basic infrastructure. The planning of their provisions should be well coordinated and integrated into the overall planning of new development areas such that a coherent and aesthetic design can be achieved.

Their planning standards are summarized below :-

Types of Utility	**Standards**			
	Site Area Required	**Minimum Width of access**	**Minimum safe working clearance**	**Maximum gradient of access**
Electricity Supply				
Extra High Voltage Substations (Switching Stations)	6 500m^2 (100m x 65m)	7.3m	200m away from the nearest fence of any telephone exchange, radio-communications and broadcasting installations	1 in 12
Bulk Infeed Substations (Switching Stations)				
(a) in CLP Power network	2 870m^2 (70m x 41m)	7.3m		1 in 10
(b) in HEC network :				
(i) 275kV /132kV Station	1504m^2 (32m x 47m)	7.3m		1 in 10
(ii) 275kV/132kV Station (with 2 x 300MVA 275/132kV transformers)	2 550m^2 (30m x 85m)	7.3m		1 in 10
Primary Substations (Zone Substations)				
(a) in CLP Power network	1 705m^2 (55m x 31m)	7.3m		1 in 10
(b) in HEC network	1 600m^2 (40m x 40m)	7.3m		1 in 10
Consumer Substations (Distribution Substations)				
(a) Outdoor Type	30.25m^2 (5.5m x 5.5m)	3m	-	-
(b) Indoor Type	51m^2 (8.5m x 6m)	3m	-	-
Overhead Transmission Lines (Voltage Level)				
(a) 400kV	-	6m; may be required to reach the	Horizontal : 5.5m Vertical : 7.6m	-

Types of Utility	Standards			
	Site Area Required	**Minimum Width of access**	**Minimum safe working clearance**	**Maximum gradient of access**
(b) 132kV	-	principal face of any adjacent building development for fire fighting purpose	Horizontal : 3.7m Vertical : 6.7m	-
(c) 33kV	-		Horizontal : 2.8m Vertical : 6.1m	-
(d) 11kV	-		Horizontal : 2.8m Vertical : 6.1m	-
Underground Cables	no set standard minimum separation between power cables and telephone cables is 0.3m wherever practicable.			
Gas supply	no set standard			
Telephone Services				
Telephone Exchange				
(a) local exchanges in rural areas with <10 000 lines	500m^2	-	at least 200m from any power generating station, bulk infeed substation or primary station	-
(b) local exchanges in urban area with 20 000 - 60 000 lines	1 000m^2-1 500m^2	-		-
(c) local exchange in urban areas with up to 120 000 lines or combined local/ tandem exchanges or telephone exchange complexes	1 500m^2-2 000m^2	-		-
Telephone cables	a minimum separating distance of 2.5m from the nearest Light Rail Transit System and 300m from Kowloon Canton Railway System.			

Types of Utility	Standards
Radio Telecommunications and Broadcasting Services	no set standard
Water Supply	
(a) service reservoirs	• as near as possible to the area served • at level where water can be fed by gravity to the supply zone
(b) pumping stations	• reasonable proximity to the source of supply • adequate vehicular access • away from noise sensitive uses • a minimum clear distance of 100m from the sea water intake of salt water pumping stations
(c) water treatment works	• comply with the procedures laid down by the Coordinating Committee on Land Use Planning and Control related to Potentially Hazardous Installations
(d) water mains	• normally placed underground and routed along carriage ways • adequate separation from power cables and other services
Drainage Services	
(a) foul sewerage system	• under carriageways, footpaths, or cycle tracks. • gravity sewerage system is preferred
(b) stormwater drainage system	• collected and conveyed in enclosed drains or open channels
(c) pumping stations and sewage treatment works	• with design to minimise noise, odour and visual problems • away from residential or other sensitive areas
(d) polder drainage and stormwater pumping schemes	• at lowest areas of the schemes • covered or properly fenced off
(e) drainage reserves	• structures not permitted
Dedicated Utility Reserves	• outside road reserves • adequate separation between different kinds of utility provisions
District Cooling System	• the minimum site area required for a standard DCS plant room is 5,400m^2 with a typical dimension of 180m x 30m to serve a cooling demand capacity of about 40,000TR (refrigeration ton).