

General Information¹

Country	SRI LANKA
Commercial capital	Colombo
Administrative Capital of Sri Lanka	Sri Jayawardanapura Kotte
Nationalities	Sinhalese (Majority) Tamils, Muslims
Area	65,000 Sq. km
Total Population	19 million
Rural Population	13 million
Urban Population	6 million

COLOMBO CITY

Area of Colombo City	37.31 Sq. km
Resident Population	640,000
Floating Population	500,000
Water Distribution	60m gls/day
Garbage Collection	600 t/day
Road Network	480 km
Sewerage Network	250 km
Sewered Area	80%
No. of Pumping Stations	14

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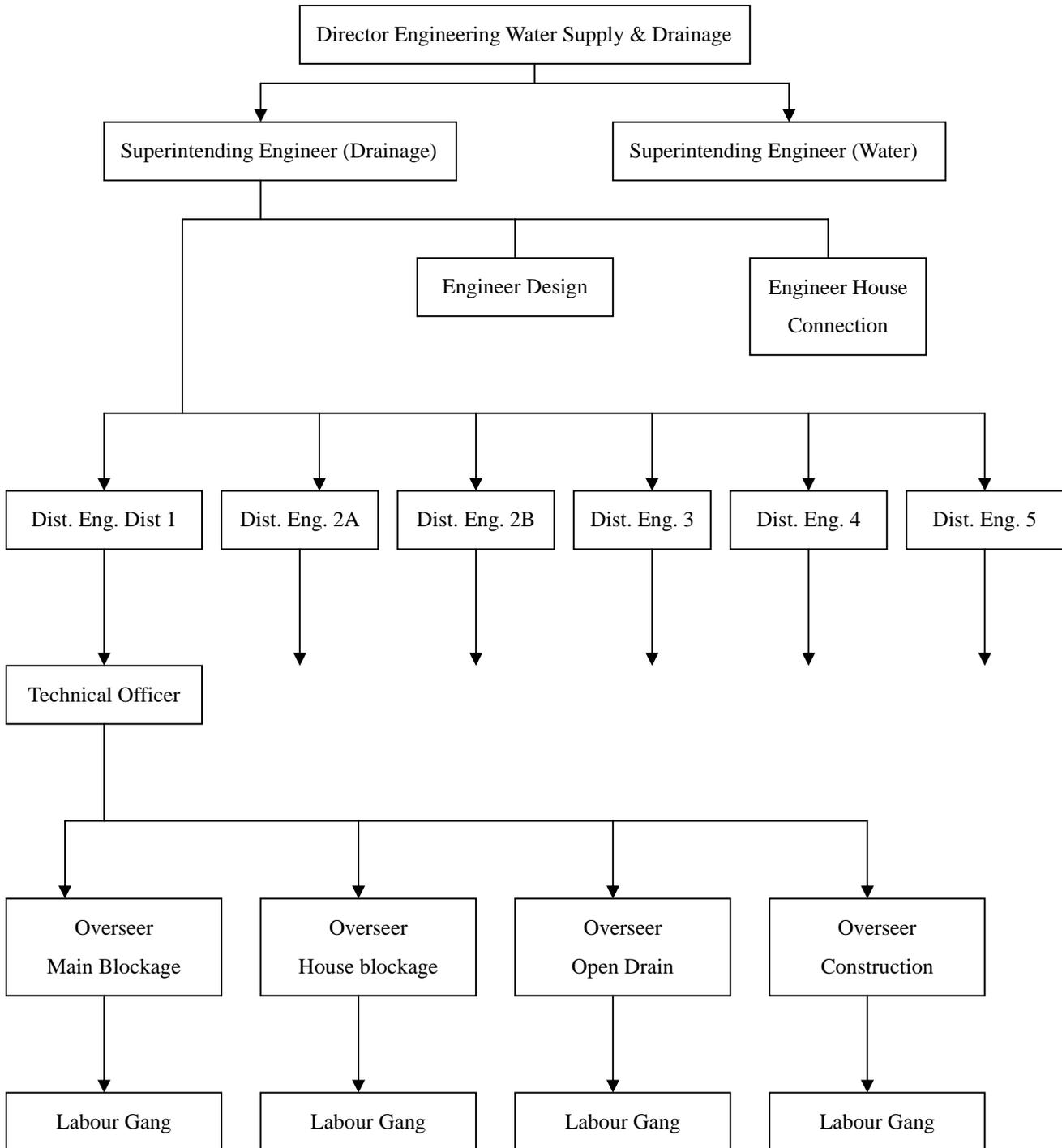
Outline of My Organisation

Colombo Municipal Council (CMC) is the biggest local Government authority in Sri Lanka and is one of the oldest democratically elected bodies in the whole Asian region. The council having its own sources of revenue and also an Act of Parliament under which it is instituted has a very high degree of autonomy in conducting its affairs.

CMC has fourteen departments for different activities. The Municipal Engineer's department, which provides infrastructure facilities, is the biggest department. The total cadre is 12 649 employees and there are 57% female employees. The Municipal Engineers department has seven divisions namely works, solid waste management, water supply and drainage, traffic & design, projects, planning and municipal workshop.

I work as the Superintending Engineer under the Director Engineering (Water Supply & Drainage) at the Water Supply & Drainage Division.

ORGANISATION CHART-DRAINAGE DIVISION



Environmental Related Laws, Rules and Regulations

The Urban development Authority under the Ministry of Local Government Housing and Construction specifies the following requirements for a new building:

- Every building be provided with a water supply system connected to an existing public or private service.
- No well used for the supply of drinking water shall be closer than 15m of a cesspit or a soakage pit or a septic tank.
- Every dwelling unit shall have at least one water closet.
- All sewerage and waste water outlets shall be connected to an existing public sewerage system and the authority may in any particular case require the sewage and waste water to be pretreated to bring them to acceptable standards before being connected to a public sewerage system.
- Where a public sewerage system does not exist or the outlets cannot be connected to the public system the sewerage shall be disposed off through a septic tank and waste water shall be suitably disposed of through a soakage pit. Every building shall be provided with adequate drainage facilities to drain off the rain water from the roof to a street drain or other approved outlet.

Sewerage and Waste Water Treatment Facility

The Colombo municipal council is the only local Authority in Sri Lanka with sewerage facilities. The sewers were constructed between 1906 and 1913. The system was designed to serve an area of about 2300 ha and a population of 373,000 by 1951. The dry weather flow (DWF) was based on a generation rate of 114 lped with a peaking factor of 6. The existing sewerage system is shown in Figure 1.

The system was subdivided into a large northern section draining to the Kelani Gangs and a smaller southern section draining to the ocean near Wellawatta. Approximately three-quarters of the City's sewage was carried northward in the North Trunk Sewer for discharge to the Ketani River. The sewage from the Southern portion was collected and discharged to the ocean at Wellawatte.

Sewerage Program

The sewerage system within the Colombo Municipal Council has not been rehabilitated or extended to any significant extent since its original construction. However, over the years there has been a steady increase in the number of household and commercial connections to the sewer system. Approximately 50,000 households have made connections to the existing sewerage system in 60 years. The number of connections made from 1968 to June 1978 are shown in the Table below. Over this ten year period an average of about 224 new sewer connections were made each year and about 60 septic tanks per year were installed.

Type of Connection	YEAR										
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Sewer Connection	270	250	220	224	216	222	230	230	230	180	100
Additions to Existing Sewer Connections	337	275	322	220	240	234	229	247	198	185	97
Septic Tanks	34	39	40	82	65	64	73	69	77	64	37

COLOMBO MUNICIPAL COUNCIL SEWER AND SEPTIC TANK CONNECTION -- 1968 TO 1978

Discharged Water quality Standards

The National Environmental Act. No. 47 of 1980 as amended by Act. No. 56 of 1988 gives the general standards for discharged of effluents:

DISCHARGE OF EFFLUENTS INTO IN LAND SURFACE WATERS

No	Determinant	Tolerance Limit
1.	Total Suspended Solids	50 mg/lt
2.	Particle size of Total Suspended Solids	Pass sieve 850 micro m.
3.	PH value at ambient temperature	6.0 to 8.5
4.	BOD in 5 days at 20°C	30 mg/lt
5.	Temperature of discharge	Not exceeding 40°C
6.	Oils and Grease	10.0 mg/lt
24.	COD	250 mg/lt

DISCHARGE OF EFFLUENTS INTO MARINE COASTAL AREAS

No	Determinant	Tolerance Limit
1.	Total Suspended Solids	150 mg/lt
2.	Particle size of Total Suspended Solids	Pass sieve 3mm to 850 micro m.
3.	PH value at ambient temperature	6.0 to 8.5
4.	BOD in 5 days at 20°C	100 mg/lt
5.	Temperature of discharge	Not exceeding 45°C
6.	Oils and Grease	20.0 mg/lt
24.	COD	250 mg/lt

Partnership With Private/Business Sector in the CMC

Currently, CMC has awarded major contracts in the area of solid waste collection and janitorial services. Remarkable achievements have been gained in cost and effective service delivery. These are presently given as contracts and this is expected to develop the equipment resources after which partnership type of contract could be considered.

Several collaborative type of partnership were developed where Street Name boards, Bill Board, Gantry signs for traffic Channalisation, maintenance if dispensaries and pay toilets, etc. were given out to private

enterprises, where these were used by them for advertising while meeting the cost of erection and maintenance. Annual rental is remitted to the Council.

Civic conscious companies have directly invested in improving free dispensaries to needy public, horticultural improvement of traffic islands, provision of amenities at public recreational spaces, and water supply and sanitation project for underprivileged.

Institution to Support Public/Private Sector Investment

The institution which supports investment in Sri Lanka is the Board of Investment (BOI). It is an autonomous body. For viable projects the BOI gives physical benefits such as taxfree holidays and duty free concessions.

There is no legal framework of PPP at national level.

Potencial for Public-Private Partnerships for Wastewater Treatment

The Table below shows the present coverage of sanitation facilities in Sri Lanka.

Sanitation Facility	% of the Total Population
Piped Sewerage	4
Institutional/Industrial sewage systems	2
On-site Sanitation (Septic Tanks)	80
No proper sanitation	15

Piped water supply is a natural monopoly, which serves a basic need and has a profound effect in the health of the whole community, but a sewerage system is not necessarily a monopoly since alternative on-site sanitation methods of sewerage disposal are acceptable in many circumstances. The investment needed to provide piped sewerage facilities in selected area amounts to Rs. 76.5 billion (US \$796.8 million). One source of investment can be from the private sector.

The Local Authorities have statutory responsibility to provide water supply and sanitation facilities within their respective area. In most situations tariff levels for water are kept low so that the charge is affordable by the poorer strata the community thus subsidizing the service. Charges for sewerage are normally added to the water rate (26%) but sometimes charged as a property tax or billed separately. Economic and quality regulations are essential to ensure that the private sector provides an acceptable service at a fair price.

Conclusions

As a third world country we are facing the economical and social problems which affect the infrastructure developments. Scarcity of money and lack of new technology are the drawbacks for the improvements of the current situations.

New sewerage treatment plants must be assigned to private companies for management in order to enhance management know-how and apply advanced and appropriate technology from private companies, thereby improving the overall management system of sewerage projects.

Treatment of wastewater involves very high capital and maintenance costs. Being a developing country with little population and low income levels, it is very difficult for us to attract investors for a joint partnership. Investors prefer to serve a large population so that their returns are high.

This forum is a very good opportunity for us to learn innovative PPP approaches and concepts from the participants.