



## **PUNGGOL - SERANGOON DAM**

**Proposed Punggol Serangoon Reservoir: DAMS, Gates, Dredging and Ancillary Works - Contract 2**

**Developer**

**Public Utilities Board**

**Engineer/Architect**

**CPG Consultant Pte Ltd**

**Main Contractor**

**Koon Construction & Transport Co Pte Ltd**

**Sub-Contractor**

**L&M Foundation Specialist Pte Ltd**

**Contract Sum**

**Approximately S\$ 5.0 M**

**Construction Period**

**April 2009 to December 2009**

**Scope of Works**

**Cement-Bentonite Cut-Off-Wall**

**Location**

**Estuary of Sungei Serangoon**



- The first and largest LMFS 800m long Cement bentonite Cut off Wall work on the East Serangoon Dam and West Serangoon Dam .
- The cut off wall acted as a low permeability cut-off in the dam minimising the seepage through the dam and adjacent embankments. It was constructed after the dam and using self hardening cement bentonite slurry in a one-stage operation. Excavation of the trench was carried out under the cement bentonite slurry and was allowed to set in place after the completion of excavation.

▪ **Method of Construction:**

1. Cut-off Wall trench stability design.
2. Monitoring & stability checks.
3. Cement Bentonite slurry mix design.
4. Sequence of excavation.
5. Over Cuts at panel ends for continuity in vertical and horizontal directions.
6. Cut off wall levels
7. Monitoring for tolerance checks and stability of neighbouring properties.

Summary of Cut-Off-Wall Quantities		
Panel Details	East Dam	West Dam
Wall Thickness	800 mm	800 mm
Depth	26 - 33 m	15 - 30 m
Total Length	380 m	420 m
Excavation Area	8,880 m <sup>3</sup>	8,700 m <sup>3</sup>



12 Silos, 3 ATM50 Mixers and 3 Agitator Tanks are set-up to store and supply Cement - Bentonite Slurry.