C-13: Evolution of a structure for exclusion of silt and floating material at Polgolla intake

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Since Polgolla diversion (2000 cusecs) took effect in 1974. siltation of the small pond and the intake canal (R-Oya) and accumulation of floating debris has caused serious problems with regard to diversion.

The gradual accumulation of silt in the pond and the intake canal has reduced the intake capacity making it impossible to divert the design discharge at the design pool elevation. The floating debris at the same time has caused blockages of the Intake screens leading to frequent stoppages of the power plants at Ukuwela.

At the initial stages, silt excluders have been evolved through model studies but never been built. Instead, ad hoc measures such as dredging has been carried out to desilt the pond, while floating bamboo screens have been employed with very little success to exclude floating debris.

In this study, arrangements capable of trapping and flushing silt continuously have been investigated. These structures consist of a conduit at the bottom with a low level orifice opening to the conduit with a submerged spur wall on top.

Also, an arrangement for continuous trapping and flushing of floating debris has been evolved.