

# Half-Day Talk on “Managing Beyond Stormwater Treatment – A New Approach using CDS Technology”



by Ir. Dr John Eow

IEM SOUTHERN BRANCH

IEM Southern Branch recently invited Mr. Yale Wong, Managing Director of Ecoclean Technology Sdn Bhd, to present a half-day talk on stormwater management using the Continuous Deflective Separation (CDS) technology on 21 May 2011 at The Zon Regency Hotel, Johor Bahru. The talk was chaired by Ir. Dr John Eow, and was attended by more than 50 participants.

For the first part of his talk, Mr. Wong explained the concept of CDS technology, which is an innovative non-blocking screening technology for the separation of solids from liquid streams. Unlike direct screening, CDS utilises the principle of indirect screening where the particles are carried by the flow across the face of the screen. This, in conjunction with hydraulic balancing across the screen, delivers a process capable of removing solids from high flows of water and wastewater. Figure 1(a&b) illustrates the comparison between a normal direct filter screen and the CDS indirect screening technology. With normal direct filter screening, particles impact directly on the screen and eventually cause blinding [see Figure 1(a)]. With CDS indirect screening, particles sweep past the screen which remains clear [see Figure 1(b)].

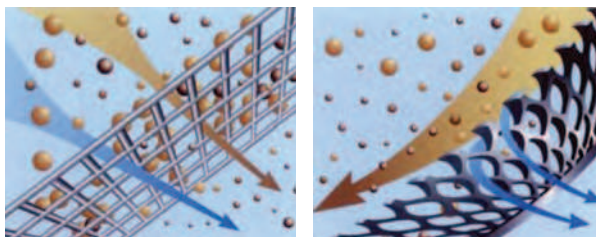


Figure 1(a): Normal Direct Screening

Figure 1(b): Indirect CDS Screening Technology

The indirect CDS Screening Technology utilises a cylindrical screen with tangential inlet for the fluid above the screen and a sump below the screen. The tangentially introduced flow rotates inside the screen, keeping the screen surface free of solids while the fluid passes through each of the apertures in the screen. Solids will be retained inside the screen on the rotating column of fluid if of neutral density, sink into the sump if settleable, or float to the surface of the fluid in the unit. Characteristics of the CDS technology include non-blinding operation, high loading rates (up to 32m<sup>3</sup>/s), capture performance that is independent of flow rate, and low operation and maintenance requirements and no electrical power cost.

Figure 2 illustrates a CDS unit in operation, and its performance is summarised in Table 1. It is claimed that CDS is the only non-blocking screening technology independently validated by world-class research organisations such as

CSIRO (Commonwealth Scientific & Industrial Research Organization), CRCCH (Co-operative Research Centre for Catchment Hydrology) and UCLA (University of California Los Angeles). In Malaysia, successful CDS stormwater management projects include several rivers within the Iskandar Development Region, Puteri Harbour, Nusajaya, Medini Development, Legoland, Putrajaya precincts, Bandar Botanic (Parcel A) in Klang and the University of Nottingham in Selangor.

The CDS technology has also been adapted to operate in raw sewage. There are also CDS units in use for screening of coolants, food processing, potable water intakes, coal fines separation and wash-down yards. Today, the range of products include surface and rainwater treatment devices, sewer mining process appliances for water re-use and smart water plants to class A water re-use. These units remove solids that include man-made litter, organic material (leaves, twigs, etc), and sediments from the influent.



Figure 2: CDS unit in stormwater treatment operation

Table 1: Typical performance of the CDS screening technology

Description	Capture Rate
Gross Pollutants (> 5mm)	98%
Coarse Sediment (> 0.2mm)	90%
Suspended Solids (TSS)	70%
Total Phosphorus (TP)	30%
Free Oil	95%

Recently, Shell has used CDS technology for stormwater management, and the Shell 3 building in Cyberjaya has recently won the country's first LEED certified Gold category Green Building.

Last but not least, IEM Southern Branch is very grateful to Mr. Wong for his invaluable contribution to the knowledge of local practising engineers in the field of stormwater management. The speaker was presented with IEM souvenirs by Ir. Mohd Khir Muhammad, the Chairman of IEM Southern Branch. For more information on CDS Screening Technology, Mr. Wong can be contacted at [yalewong@ecoclean.com.my](mailto:yalewong@ecoclean.com.my) ■