

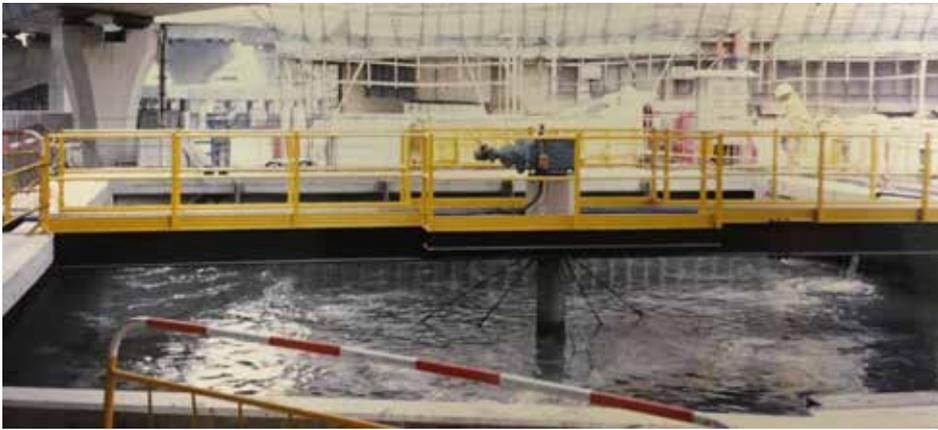
DM Crossflow Detritor & Grit Rake Classifier

Grit and sand are very abrasive and if not removed from the sewage flow can foul equipment and rapidly wear pumps and other plant downstream.

Sand and grit are washed into the sewers from roads and from the ground through cracks in sewers.

Grit gets carried along with the flow but if the flow of the sewage is slowed down the grit and sand will settle out.

It is important that the speed is not too slow or organic material, which should pass forward for further treatment, will also be settled out.



Grit Settlement

Upon entry to the Detritor Chamber the sewage flow is evenly distributed through adjustable, vertical concrete baffles (by civil contractor). Adjustable mechanism supplied by Ham Baker Adams.

The flow slows down to about 0.3m/s and the grit and sand settle to the floor of the tank. Scrapers push the material to small sumps at the side of the tank, from where it is pumped to washing equipment which removes any organic matter.

The width of the chamber is determined by the flow rate to ensure that settling velocity is achieved, i.e. when the grit falls out of suspension before the outlet weir.

The outlet weir, except at minimum flow, will usually be submerged to form a barrier to ensure that the settled grit is contained in the flat bottomed chamber.

The relatively clean grit is then deposited in skips for transportation to landfill.



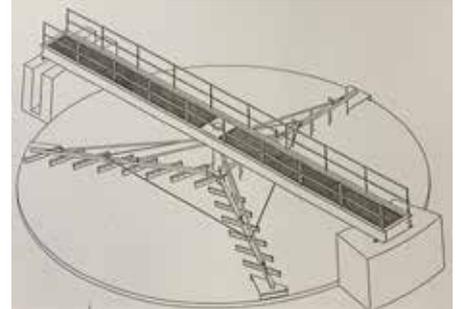
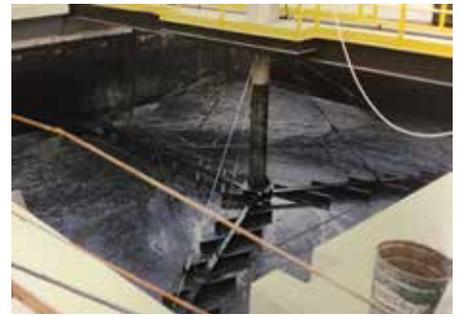
Grit Collector

The rotating scraper has three fabricated arms, manufactured from painted mild steel or stainless steel 316. Each arm has a number of scraper angles positioned so that the settled grit is moved spirally outwards from the centre. A bucket, fitted at the end of each arm collects the grit and transfers it to the perimeter of the tank to the washing/rake chamber.

The arms are fixed to the central drive assembly and have cantilevered, adjustable supports to ensure that the arms are level. Anti-sway bars are also included.

The drive assembly has an IP55 rated motor, with anti-condensation heaters, which provides drive through a gearbox and heavy duty drive shaft with coupling and slewing bearing. A torque limiting device is incorporated to provide protection in the event of blockage and will disconnect the drive thus preventing damage to the scraper mechanism.

The drive unit is mounted on a bridge, rated at 5kN/m², which spans the chamber and includes hand-railing, kick plates and open mesh flooring. It can be supplied in either galvanised mild steel or stainless steel 316. The bridge allows access to the drive assembly for maintenance and lubrication. The drive is designed for easy removal if necessary.



Grit Rake Classifier

The Grit Rake Classifier has a fabricated raking mechanism which consists of a series of scraper blades welded along the length of the assembly. The self-aligning crankshafts (primary and secondary), provided the reciprocating motion which moves the grit from the washing chamber up to the discharge point. The rake mechanism is driven by an IP55 rated motor/gearbox unit which is externally mounted for ease of access for maintenance. The assembly is fully guarded.

Organics Return Pump & Rag Screen/Filter

The Organics Return Pump has a stainless steel 316 impeller driven through a vertical extended shaft from a direct drive motor. The pump returns organic matter released from the settled grit, during washing, back to the main flow for further treatment. This is screened by a perforated plate cylindrical screen/filter.

Key Features:

- Settlement chambers can be designed from 3m to 12m diameter
- Maximum flow, for 95% removal of grit greater than 210 microns in size with an S.G > 2.65, range from 150 to 2700l/s
- Grit handling rate from 0.05 to 0.95m³/hr
- Detritor motor power rating from 0.1 to 0.75kW
- Grit Rake Classifier motor power rating from 3.0 to 5.0kW
- Organics Return Pump motor power rating 0.75kW.

Process Equipment Division

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