CFSST™
Compact Faecal Sludge Separation and Treatment

NEERI

GVAK, Deolapar

KKSU, Ramtek

Technical Video of CFSST Plant

CFSST Plant at GVAK Deolapar 125 L/day

CFSST Plant at KKSU Ramtek 1000 L/day

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Swachh Bharat Mission

अमृत 2.0
Atal Mission for Rejuvenation and Urban Transformation

AMRUT

6 CLEAN WATER AND SANITATION
11 SUSTAINABLE CITIES AND COMMUNITIES

Sustainable development Goal

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Safe Sanitation and Resource-Recovery

CFSST™
Compact Faecal Sludge Separation and Treatment

Compact Faecal Sludge/Septage Separation and Treatment Plant

Technology Readiness Level - 8

Featured in CSIR Technology Transfer Commitments-2030 and Vision Viksit Bharat 2047

Council of Scientific and Industrial Research (CSIR) – National Environmental Engineering Research Institute
Nagpur, Maharashtra-440020

NEERI

Current Scenario

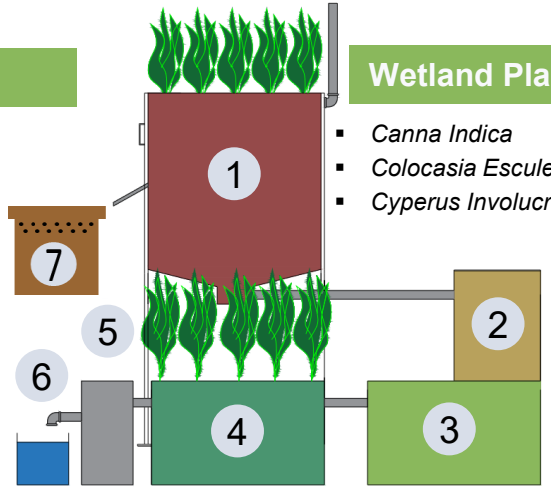
- India generates around 0.12 million tonnes of faecal sludge/septage on a daily basis.
- Almost 60% of urban India relies upon On-site Sanitation Systems (OSS)
- Faecal sludge /septage is generated from various types of on-site sanitation facilities such as septic tank, soak pit, aqua privy, twin pit toilets etc.
- Existing treatment facilities have limitations, such as more footprint for construction site, insufficient treatment, challenges in operation and maintenance, etc.

Compact Faecal Sludge Separation and Treatment (CFSST)

- CFSST provides effective solid-liquid separation of Faecal sludge / septage as well as treatment of separated liquid and solid material.
- Solid-liquid separation works on the principle of gravity and evapotranspiration while the treatment of separated effluent works on the principle of Up-flow Anaerobic Baffled Reactor (UABR), Up-flow Constructed Wetland (UCW) and Upflow Dual Media Filter (UDMF).
- The separated solid content is treated in a biological system and turned into Biosolids.

Components of CFSST

1. Media & plant - based solid liquid separator
2. Storage tank
3. UABR
4. UCW
5. Upflow dual media filter
6. Disinfection & treated water
7. Separated solids treatment



Wetland Plants

- *Canna Indica*
- *Colocasia Esculenta*
- *Cyperus Involucratus*

Treatment Stages

Faecal Sludge | Separated Liquid | UABR Effluent | UCW Effluent | Treated Effluent

Processed Biosolids

Performance of CFSST

Water quality	Faecal Sludge / Septage	Treated effluent
pH	5.5 – 6.5	5.5-8.5
TSS	>10000	< 20
BOD	>2000	< 30
COD	>10000	< 50
TN	>100	< 10
TP	>10	< 5

All parameters in mg/L except pH

Reuse and Recycle

Reuse of treated effluent in cultivating fodder, gardening, floriculture, cleaning and waterbody rejuvenation.

Processed biosolids in agriculture, gardening and soil enrichment.

Treated Biosolids

Complies with the US-EPA Biosolid Standard

Salient Features

- Media and plant based solid-liquid separation
- Nature-based treatment of faecal sludge
- Minimum requirement for energy/electricity
- Compact, covered and detachable
- Low capital and operation & maintenance costs
- Compliance of standards for separated treated liquid and treated solids

IPR

Patent
202311045768

Design Registration
489830-001

Trade Mark
6574903

Recommended Material of Construction – FRP (upto 1 KLD) and RCC