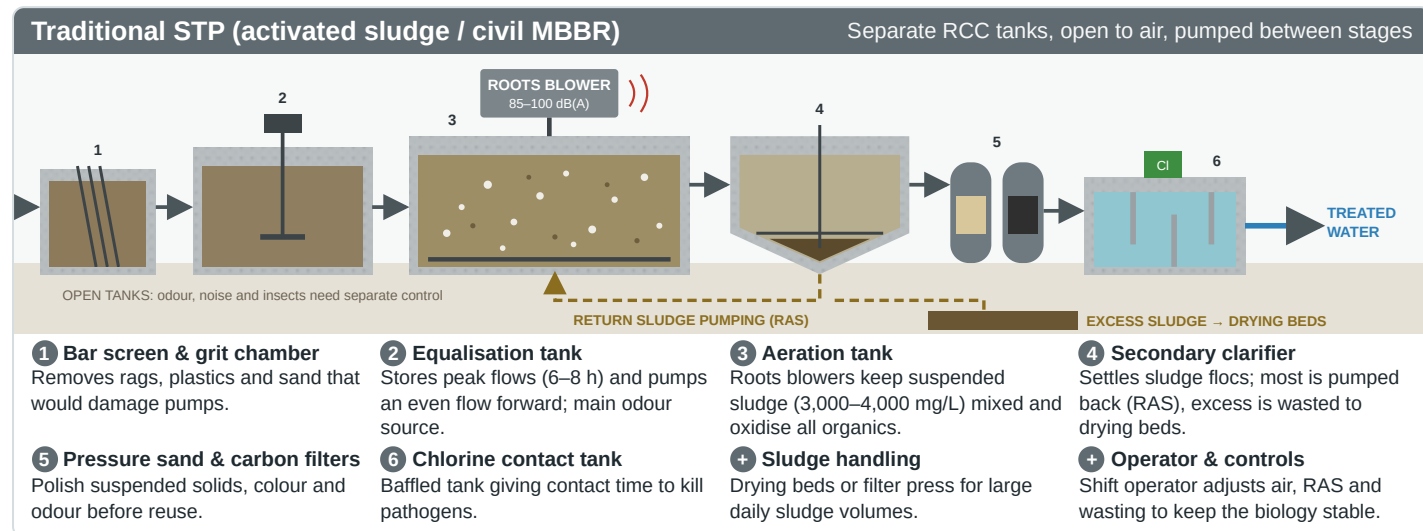
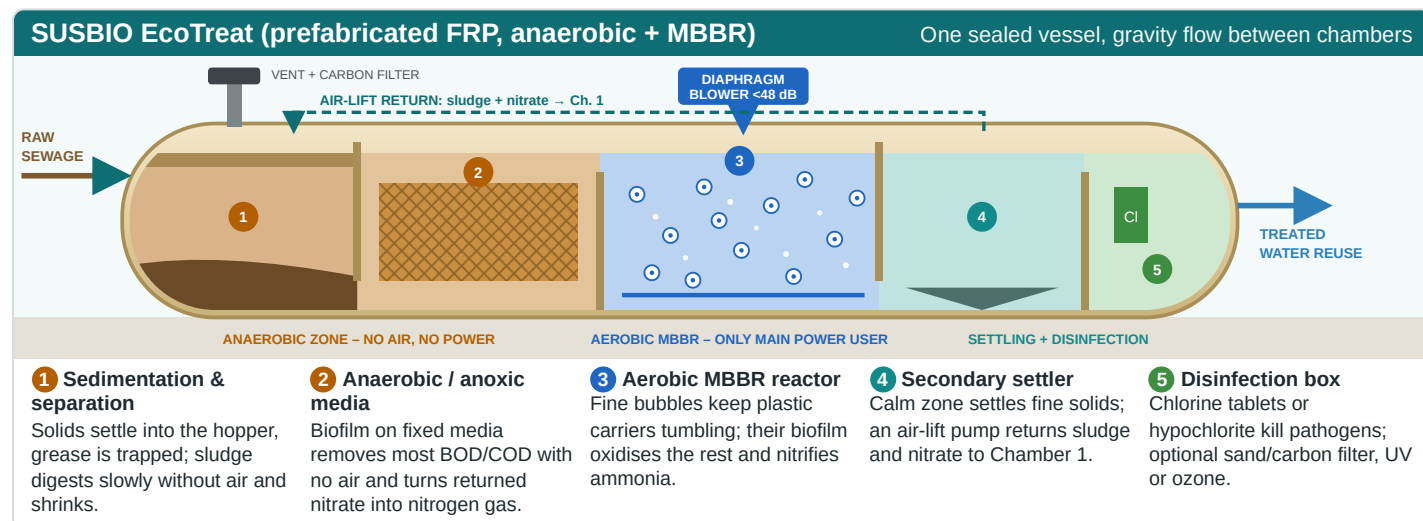


A traditional STP treats sewage in a chain of open civil tanks using **suspended activated sludge** and large blowers. **SUSBIO EcoTreat** fits the whole train into **one sealed FRP vessel**, using **anaerobic** then **aerobic MBBR** biofilm treatment, so most organics are removed before any air is used.



Aspect	Traditional STP	SUSBIO EcoTreat	Advantage
Treatment principle	Fully aerobic; all organic load oxidised with blower air	Anaerobic first (no air), aerobic MBBR polish	EcoTreat
Biology	Suspended flocs, kept alive by return-sludge pumping	Attached biofilm on fixed media and moving carriers	EcoTreat
Shock-load tolerance	Flocs wash out on peaks; needs equalisation tank	Biofilm stays in the reactor and recovers quickly	EcoTreat
Nitrogen removal	Needs a separate anoxic tank and internal recycle	Built in: nitrify in Ch. 3, denitrify in Ch. 1–2	EcoTreat
Hydraulic retention	≈ 18–32 h across several tanks	≈ 24 h within one vessel	Similar
Energy demand	≈ 1.6–2.0 kWh/m ³ ; Roots blowers, mixers, RAS pumps	≈ 0.8–1.2 kWh/m ³ (10 KLD+); small diaphragm blowers	EcoTreat
Noise	Roots blowers 85–100 dB(A); needs acoustic room	Blowers rated under 48 dB each; quiet at close range	EcoTreat
Odour	Open screens, EQ and sludge tanks release odour	Sealed vessel; gas vented via carbon filter	EcoTreat
Footprint & build	Multiple RCC tanks; months of civil work and curing	About half the area; factory-built, installed in weeks	EcoTreat
Sludge	Large daily excess sludge to drying beds or press	Digested in Ch. 1; tanker desludging every 12–18 months	EcoTreat
Operation	Skilled shift operator; tune air, RAS and wasting	Low supervision; automated blower and dosing	EcoTreat
Scale & control	Best above ~200–500 KLD; full control, redundancy	Best at ~2–150 KLD per site; parallel modules beyond	Traditional

Choose EcoTreat when

- Decentralised flows of about 2–150 KLD per site
- Space is tight, or the plant sits near homes, hostels or wards
- Low noise, no open-tank odour and simple operation matter

Choose a traditional STP when

- Flows are large (municipal or township, above ~200–500 KLD)
- Land is available away from sensitive receptors
- A staffed operations team and full process control are in place

Indicative process schematics, not to scale. EcoTreat values from SUSBIO published specifications and blower datasheet; traditional values are typical design ranges. Performance is confirmed by model-specific design and site testing.