

Proposed Effluent Treatment Plant (ETP) Facility – 2-Storied ETP Building

Coats Bangladesh Ltd., Fouzderhat Heavy Industrial Area, Pahartali, Chattogram, Bangladesh

Stakeholders: Client – Coats Bangladesh Ltd.; Consultant – Structural Design Associates Ltd.; Engineer – Achintya Kumar Saha (B.Sc. Engg. Civil, BUET, FIEB-10387).

Architectural drawing set dated 10 Dec 2024; BOQ workbook includes PHC pile, sheet pile, civil (RCC), steel, plumbing, landscaping, ETP IPL and SWDS work packages.

Site and key structures: ETP zone integrated within the existing factory campus and internal road network. Core treatment train structures include screening, lifting, equalization, neutralization and biological treatment (selector/aeration), MBR and RO systems, tertiary treatment, and full sludge management facilities.

Building overview: A 2-storey (Ground + 1st Floor) ETP facility with deep process tanks (tank bottom level ≈ -4500 mm) and service/utility spaces. Key levels shown in sections include Ground Floor +150 mm, 1st Floor +4300 mm, Roof +8450 mm and Top Slab +11450 mm. Roof/roof-top planning includes skylights, a grass/green roof zone, seating areas, rainwater plumbing ducting and solar panels.

Project scope and key concepts: Construction of RCC tanks/structures, excavation support and foundations (PHC piles and sheet piling as per BOQ), structural steel elements/platforms, plumbing and process pipe networks (including ETP IPL and SWDS), and roofing/landscaping works (waterproofing and geotextile for green roof areas).

Functional highlights:

- Ground Floor: core process tanks and equipment zones (equalization, aeration, MBR/RO, sludge thickening & pumps, chemical reagents, store/toilet).
- 1st Floor: office & laboratory, blowers and control panel areas, circulation walkways with multiple voids over tanks.
- Roof/Roof-top: skylights, green roof/grass zone, seating, rainwater ducting and solar PV installation.

Key process units / structures (from master plan ‘All Tank’ list):

Process / Tank Units

Fine screen; Lifting tank; Equalization tank; Neutralization tank
Biological feeding tank; Cooling tower; Roto-strainer; Selector
Aeration tank; MBR feeding pit; MBR tank; Sludge recycle pit
Sludge recycle pumps; MBR permeate pumps; MBR permeate tank
MBR neutralization tank; RO feeding tank; RO pumps; RO C.I.P.

Mechanical / Support Units

RO flushing pumps; Osmotized water tank; Reject tank
Tertiary treatment contact tanks; Tertiary treatment
Sludge extraction pumps; RO reject neutralization
Re-oxygenation tank; Chemical sludge thickener; Biological sludge thickener
Sludge pumps; Chemical sludge dewatering; Biological sludge dewatering
Chemical reagents; Blowers; Control panel; Office & laboratory
Reject water transfer pump

Floor area and storeys (as stated on drawings):

Level / Structure	Area (sft)	Approx. area (m ²)
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Ground Floor Plan	10,790.00 sft (plan area)	1,002.4
ETP 2-storied building (Block-1)	936.80 sft (footprint)	87.0
ETP 2-storied building (Block-2)	601.00 sft (footprint)	55.8
ETP balancing tank	816.60 sft (plan area)	75.9

Total number of storeys: 2 storeys (Ground + 1st Floor) with roof/roof-top facilities.