



VISHUDDHI ENVIRO

ENVIRONMENTAL EPC
WATER & WASTEWATER ENGINEERING

ENGINEERING | MANUFACTURING | PROJECT EXECUTION

INDUSTRIAL
MUNICIPAL
INSTITUTIONAL
INTERNATIONAL

VAPI · GUJARAT · INDIA

INTRODUCTION

Water infrastructure, engineered end to end.

Vishuddhi Enviro designs, manufactures and executes water and wastewater treatment works – from a single item of process equipment to complete sewage treatment plants at municipal scale.

For more than fifteen years our work has been engineering-led. A treatment plant succeeds or fails on its process design, the quality of its mechanical equipment, the integrity of its civil structures and the discipline of its commissioning. We keep all four within one engineering team.

That integrated scope is what this profile sets out to show: the processes we

design, the equipment we build in our own workshop, the civil, structural and steel works we execute, the controls we engineer, and the projects – industrial, municipal, institutional and international – on which we have delivered them.

It is written for engineers. Where a figure is given, it is drawn from our project records, and supporting documents are available for verification on request.

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PLANT TYPES

- STP
- ETP
- CETP
- WTP
- ZLD
- UF-RO
- PACKAGED PLANTS

DISCIPLINES

- PROCESS
- MECHANICAL
- CIVIL
- STRUCTURAL STEEL
- ELECTRICAL & CONTROLS



BIOLOGICAL TREATMENT STAGE, INDUSTRIAL EFFLUENT TREATMENT PLANT

01 • COMPANY OVERVIEW

An environmental engineering company that **builds what it designs.**

Vishuddhi Enviro is an environmental engineering company based in Vapi, Gujarat, working across water and wastewater treatment, civil infrastructure and steel structural works. We serve industrial plant owners, government and municipal authorities, institutions, EPC contractors and consultants.

Our core is process engineering for sewage, effluent and water treatment – biological systems such as MBBR, hybrid MBBR, SBR, MBR and extended aeration, and physico-chemical systems such as dissolved air flotation, clarification, oil separation and filtration.

Around that core sit the capabilities that turn a design into a working plant: an in-house manufacturing workshop for treatment equipment, civil and water-retaining construction, structural steel fabrication, and PLC-based electrical and control systems.

Our delivered plants range from 5 KLD packaged units to municipal sewage treatment plants of 14 MLD, in India and on export projects across Asia, Africa, the Middle East and Latin America.

15⁺

YEARS IN WATER &
WASTEWATER ENGINEERING

270⁺

COMPLETED ORDERS
IN OUR PROJECT ARCHIVE

140⁺

CLIENTS SERVED ACROSS
INDUSTRY & GOVERNMENT

40⁺

CLIENTS WHO HAVE
RETURNED WITH REPEAT ORDERS

15⁺

COUNTRIES SUPPLIED
OUTSIDE INDIA

5 KLD – 14 MLD

RANGE OF TREATMENT
PLANT CAPACITY DELIVERED



MUNICIPAL STP — CIVIL & STRUCTURAL
WORKS



PACKAGED EFFLUENT TREATMENT
PLANT



PROMAX PACKAGED PLANT

02 · INTEGRATED DELIVERY

One engineering team, **from process design to a commissioned plant.**

Most treatment plants pass through several hands — a process designer, an equipment vendor, a civil contractor, a panel maker. Each interface is a place where responsibility can be lost. We cover these disciplines within one organisation.

01	02	03	04	05	06
PROCESS	ENGINEERING	MANUFACTURE	CIVIL & STEEL	CONTROLS	COMMISSION
Characterisation, process selection, sizing, mass balance, hydraulic profile	P&IDs, GA drawings, equipment data sheets, structural & electrical design	Screens, aerators, clarifiers, DAF, mixers and packaged plants built in-house	Water-retaining structures, buildings, roads, sheds and platforms	MCC and PLC/HMI panels, instrumentation, SCADA scope	Erection, start-up, stabilisation, handover with O&M manuals

What this means on a project

- **One point of technical accountability.** Process performance, equipment and structures are engineered against the same design basis.
- **Control over critical equipment.** Mechanical items made in our own workshop are inspected before dispatch, not sourced and hoped for.
- **Realistic designs.** Designs are produced by people who also fabricate, erect and commission — so they are built to be constructed and maintained.
- **Complete documentation.** Drawings, data sheets, test certificates and manuals are prepared as part of the work, ready for consultant and authority review.

How we engage

- **EPC / turnkey** — design, supply, civil, erection and commissioning of a complete plant.
- **Civil & structural contracts** — treatment-plant structures, buildings, roads and steel works.
- **Equipment packages** — engineered process equipment with drawings and site support, for EPC contractors and OEMs.
- **Packaged plants** — factory-built PROMAX STP and ETP units.
- **Upgrades** — capacity or performance improvement of existing plants.



PACKAGED STP INSTALLATION



EFFLUENT TREATMENT PLANT WITH TERTIARY FILTRATION

03 · PROCESS ENGINEERING

The process is chosen for the water, not the other way round.

Every plant begins with the characteristics of the incoming sewage or effluent — flow pattern, organic and solids load, oil and grease, toxicity, and the discharge or reuse standard that must be met. From that design basis we select and size the treatment train, then check it against footprint, power, sludge handling and the operator who will run it.

Our process portfolio covers biological, physico-chemical and tertiary treatment, and the combinations between them. The table below shows the technologies we design and the plant scales at which we have delivered them.

TECHNOLOGY	PRINCIPLE	TYPICAL APPLICATION	DELIVERED RANGE
BIOLOGICAL TREATMENT			
MBBR	Moving bed biofilm reactor — attached growth on free-moving media; compact and tolerant of load variation	Sewage; industrial effluent	5 KLD – 6.5 MLD
Hybrid MBBR	Combined attached and suspended growth for higher removal in a small footprint	Packaged STPs; resorts	10 – 500 KLD
SBR	Sequencing batch reactor — fill, react, settle and decant in one tank under timed control	Municipal sewage	4.21 – 14 MLD
MBR	Membrane bioreactor — biological treatment with membrane separation for reuse-grade water	Townships; reuse	up to 100 KLD
Extended aeration	Low-loaded activated sludge with long sludge age and stable operation	Institutional sewage	75 KLD
PHYSICO-CHEMICAL TREATMENT			
Dissolved air flotation	Micro-bubble flotation of oil, grease and fine solids after coagulation and flocculation	Oily, food & process effluent	DAF-based ETPs
Clarification & settling	Clarifiers, clariflocculators, plate and tube settlers for solids separation	WTP; ETP primary & secondary	Equipment & plants
Oil separation	Corrugated plate interceptors, oil-water separators and oil skimmers	Refinery, steel & workshop drains	Equipment & plants
TERTIARY, RECYCLE & WATER TREATMENT			
Filtration	Pressure sand and activated carbon filtration for polishing	STP / ETP tertiary	Integrated
UF – RO	Ultrafiltration pre-treatment followed by reverse osmosis	Water treatment; reuse	550 KLD
Zero liquid discharge	Biological and membrane stages combined to eliminate liquid discharge	Textile & flooring industry	256 KLD



04 · MUNICIPAL & INFRASTRUCTURE

Sewage treatment at **municipal scale.**

Our municipal work covers sewage treatment plants for state water-supply and sewerage authorities, municipal councils and defence engineering services — with scope spanning civil and water-retaining structures, buildings, steel works and treatment equipment.

14 MLD

SBR

Sewage Treatment Plant, Ankleshwar
Gujarat Water Supply & Sewerage Board

G+1 administrative building in RCC frame, structural steel DG shed, water-retaining structures exceeding 10,000 m³, RCC road for heavy vehicles and WBM approach road.

6.5 MLD

MBBR

Sewage Treatment Plant, Umargam
Gujarat Water Supply & Sewerage Board

G+1 administrative building, steel DG shed, leak-proof water-retaining structures exceeding 4,000 m³, RCC road, WBM approach road with banking and a 5 m high retaining wall.

4.21 MLD

SBR

Sewage Treatment Plant, Daman
Daman Municipal Council

Treatment equipment for the municipal STP, including clarifier mechanism.

2 MLD

MBBR

Sewage Treatment Plant, Jamnagar
Military Engineering Services

Process equipment for a 2 MLD and a 100 KLD STP — pressure filters and vessels, oil skimmer and associated items, factory-tested before dispatch.

Structures that hold water — and hold up for decades.

A treatment plant is, above all, a set of civil structures: tanks, channels and sumps that must stay watertight under hydrostatic load, buildings that house plant and people, and roads that carry sludge trucks and chemical deliveries. We plan these together with the process, so levels, hydraulics and openings are right before concrete is poured.

We execute civil works as part of complete treatment plants and as stand-alone civil and structural contracts — with attention to leak-proof construction, waterproofing, corrosion-resistant materials and durability in service.

WATER-RETAINING STRUCTURES

- Treatment tanks & reactors
- Reservoirs & storage tanks
- Sumps & wet wells
- Channels & chambers
- Waterproofing & leak testing

BUILDINGS & INFRASTRUCTURE

- Administrative buildings (G+1)
- Plant & control rooms
- Industrial sheds & warehouses
- Foundations — shallow & deep
- Stormwater & drainage

SITE WORKS

- RCC roads for heavy vehicles
- WBM approach roads
- Retaining walls
- Embankments & banking
- Equipment plinths & pedestals

EXECUTED ON MUNICIPAL STPS

>10,000 m³
WATER-RETAINING VOLUME, 14 MLD STP

>4,000 m³
WATER-RETAINING VOLUME, 6.5 MLD STP

5 m
HIGH RETAINING WALL FOR TERRAIN STABILISATION



WATER-RETAINING STRUCTURE UNDER CONSTRUCTION



MUNICIPAL STP SITE — TANKS, BUILDINGS & ROADS

06 · STEEL STRUCTURAL WORKS

Fabricated steel, from shed to platform.

Our steel division designs and fabricates the structures that treatment plants and industrial facilities depend on — sheds that protect equipment, platforms and stairways that give operators safe access, and frames that carry pipework and process units.

Fabrication is carried out with the same workshop discipline as our process equipment: drawings checked against site conditions, members cut and welded to dimension, and surfaces protected with corrosion-resistant coatings suited to wet, chemical-laden environments.

- **Industrial steel frameworks**
Structures for factories, warehouses and process plants, designed for load and durability.
- **Sheds & canopies**
DG sheds, equipment shelters, roofing systems and canopies.
- **Platforms, walkways & stairs**
Operator access around tanks, clarifiers and packaged plants.
- **Process steelwork**
Fabricated tanks, pressure vessels, pipe racks and support frames.
- **Custom fabrication**
Bespoke components to project drawings.



STRUCTURAL STEEL SHED AND PLATFORMS OVER PACKAGED PLANTS





07 · MANUFACTURING

Process equipment, built in our own workshop.

We manufacture the mechanical equipment at the heart of a treatment plant. Designing and fabricating it ourselves lets us size each item to the process, control material and workmanship, and stand behind its performance on site.

Equipment is supplied within our own plants and as engineered packages to EPC contractors, consultants and OEMs — with GA drawings, data sheets, manuals and site support.

OXYMAX AERATORS

PROMIX MIXERS

PROMAX® PLANTS

PROCESS STAGE	EQUIPMENT
Screening	Manual and mechanical bar screens — arc, step, auto-rake and multi-rake types
Aeration & mixing	Fixed and floating surface aerators, agitators and reaction stirrers, flash mixers, flocculators, static and online mixers
Separation	Dissolved air flotation units, corrugated plate interceptors, oil–water separators, oil skimmers
Clarification	Clarifier and clariflocculator mechanisms, plate and tube settlers, sludge thickeners
Filtration	Pressure sand filters, activated carbon filters
Sludge & solids	Filter presses, screw conveyors
Flow control	Sluice gates and penstocks
Packaged units	PROMAX packaged sewage and effluent treatment plants



MECHANICAL BAR SCREEN



SURFACE AERATOR IN SERVICE



DISSOLVED AIR FLOTATION UNIT

08 · PACKAGED TREATMENT PLANTS

PROMAX[®] — a treatment plant, delivered as a finished unit.

PROMAX is our registered range of packaged sewage and effluent treatment plants. Each unit is engineered for its flow and load, fabricated and assembled in the workshop, and delivered ready for connection — reducing site time and civil work to a minimum.

Packaged plants suit sites where space and time are short, where flows are decentralised, or where a plant may later need to move: townships, institutions, resorts, mines, steel plants and remote industrial locations.

Capacity	5 KLD to 500 KLD per unit
Processes	MBBR, hybrid MBBR, MBR; DAF-based for effluents
Construction	Fabricated steel; SS304 where specified
Controls	Integrated MCC with PLC/HMI automation
Options	Tertiary filtration, disinfection, sludge handling

PROGRAMME REFERENCE

17

packaged treatment plants for Tata Steel

Designed, manufactured and installed across operating sites at West Bokaro, Joda, Noamundi and Meramandali — sewage and effluent units from 5 KLD to 500 KLD, supported by structural steel sheds and platforms.

500 KLD

HYBRID PSTP, ISLAND
RESORT, MALDIVES —
REPEAT ORDER IN
SS304

400 KLD

MBBR PSTP, RESORT,
SRI LANKA



PROMAX HYBRID PACKAGED STP



PACKAGED STP



ACCESS WALKWAY

Plants that run to a defined control philosophy.

A treatment plant is only as consistent as its controls. We engineer the electrical and control system as part of the process — starting from a written control philosophy that defines how each pump, blower, aerator, dosing system and valve responds to level, time and process signals.

PLC and HMI-based control is standard on our larger and packaged plants. Control documentation — I/O schedules, PLC control drawings and wiring diagrams — forms part of the project record on more than thirty-five of our completed projects, including plants built on Siemens S7 and Delta DVP platforms.

PLC – SCADA for larger plants

For municipal and large industrial plants we engineer the supervisory layer: the instrument schedule, I/O count, PLC-SCADA architecture, operator screens, alarm structure and data reporting. This gives the operating authority continuous visibility of flows, levels, equipment status and treated-water quality, and a record that supports compliance reporting.

CONTROL ENGINEERING

- Control philosophy & logic
- I/O lists & instrument schedules
- PLC control & wiring drawings
- HMI screen design
- Auto / manual modes & interlocks

PANELS & FIELD

- MCC and PLC panels
- Level-based pump control
- Blower & aerator sequencing
- Chemical dosing control
- Panel testing before dispatch

SUPERVISION & DATA

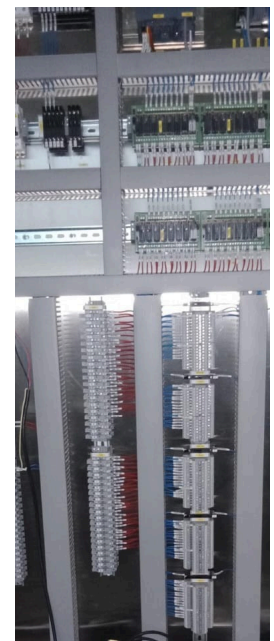
- Flow, level, pH and DO monitoring
- Alarm & fault annunciation
- Run-hour & trend records
- Operating reports
- SCADA integration scope



PLANT SUPERVISION ON A SCADA WORKSTATION



HMI SCREENS & PLC CONTROL PANELS



PLC PANEL

10 • DELIVERY METHOD

A disciplined route from enquiry to handover.

01 Requirement & site study

Flow, characteristics, discharge standard, site levels and constraints.

02 Process design & sizing

Treatment train, mass balance, hydraulic profile, equipment sizing.

03 Detailed engineering

P&IDs, GA drawings, structural, electrical and control drawings for approval.

04 Manufacture & inspection

Workshop fabrication, stage inspection, pressure and functional testing.

05 Civil & structural execution

Tanks, buildings, roads and steel works to approved drawings.

06 Erection & installation

Mechanical, piping, electrical and instrumentation works on site.

07 Commissioning

Start-up, biological seeding and stabilisation, performance checks.

08 Handover

As-built documents, O&M manuals and operator orientation.

Documentation we provide

- Process design basis and calculations
- P&IDs, layouts and general arrangement drawings
- Civil, structural and fabrication drawings
- Electrical, PLC control and wiring drawings
- Equipment data sheets and bought-out test certificates
- Inspection and testing records
- Operation & maintenance manuals

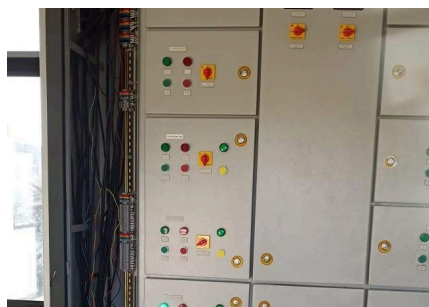
Our drawings have been reviewed and approved by owners' engineers and third-party consultants, including Engineers India Limited (EIL).

QUALITY POLICY

"We are committed to providing robust, excellent and reliable solutions, products and services that satisfy the requirements of our customers — and to continually improving quality, reliability and service, encompassing all statutory, regulatory, health, safety and environmental requirements at our workplace."

QUALITY OBJECTIVES

- Improving trend of customer satisfaction
- Continual improvement in on-time delivery
- Adherence to statutory, regulatory and EHS requirements
- Supplier quality monitoring and development



11 • SELECTED PROJECT REFERENCES

Government, public sector and industry.

CLIENT / END USER	LOCATION	PLANT	PROCESS	CAPACITY
GOVERNMENT, MUNICIPAL & PUBLIC SECTOR				
Gujarat Water Supply & Sewerage Board	Ankleshwar, Gujarat	STP	SBR	14 MLD
Gujarat Water Supply & Sewerage Board	Umargam, Gujarat	STP	MBBR	6.5 MLD
Daman Municipal Council	Daman	STP	SBR	4.21 MLD
Military Engineering Services	Jamnagar, Gujarat	STP	MBBR	2 MLD
Goa Tourism Development Corporation — 3 plants	Colva, Old Goa, Mapusa	PSTP	MBBR	15 – 32 KLD
Bharat Petroleum Corporation Ltd	Kochi, Kerala	PSTP	MBBR	25 KLD
ISRO	Bengaluru, Karnataka	PSTP	Hybrid	10 KLD
SIDCGL	Goa	PSTP	Hybrid	20 KLD
STEEL, POWER & HEAVY INDUSTRY				
Tata Steel Ltd — 17 plants	West Bokaro, Joda, Noamundi, Meramandali	PSTP / PETP	MBBR, DAF	5 – 500 KLD
JUSCO for Cummins, Timken & Tata Tube	Jamshedpur, Jharkhand	PSTP / ETP	MBBR, DAF	8 – 150 KLD
JUSCO	Puri, Jamshedpur	PETP	MBBR, Hybrid	100 KLD
Adhunik Power	Jharkhand	PSTP	MBBR	50 KLD
Athena Power	Chhattisgarh	PSTP	MBBR	10 KLD
MANUFACTURING & PROCESS INDUSTRY				
Welspun Flooring Ltd	Hyderabad, Telangana	ZLD	MBBR	256 KLD
Welspun Advanced Flooring Ltd	Hyderabad, Telangana	PETP	MBBR	70 KLD
Harsha Engineers	Ahmedabad, Gujarat	PSTP	Hybrid	60 KLD
Shapoorji Pallonji	Bhavnagar, Gujarat	PSTP	Hybrid	50 KLD
RPG Group	Mumbai, Maharashtra	PSTP	Hybrid	30 KLD
Fourcee Infra	Kandla, Gujarat	PETP	Hybrid	75 KLD
HIL	Vyara, Gujarat	PSTP	MBBR	20 KLD

40⁺

REPEAT CLIENTS

Most of our work comes from clients who return. Tata Steel, JUSCO, Goa Tourism Development Corporation, Welspun and the Finolhu resort have each placed further orders after their first plant — the clearest measure we know of how our plants perform in service.

11 • SELECTED PROJECT REFERENCES

Institutions, hospitality and international projects.

CLIENT / END USER	LOCATION	PLANT	PROCESS	CAPACITY
INSTITUTIONAL, TOWNSHIP & HOSPITALITY — INDIA				
Parklands Village	Vapi, Gujarat	PSTP	MBR	100 KLD
Cambay Resort	Gujarat	PSTP	MBBR	150 KLD
IBNI Spa Resort	Kerala	PSTP	Hybrid	75 KLD
South Indian Bank	Kerala	PSTP	Hybrid	20 KLD
INTERNATIONAL				
Finolhu Resort	Maldives	PSTP	Hybrid	500 KLD
Milaidhoo Resort	Maldives	PSTP	Hybrid	100 KLD
Anantara Resorts	Sri Lanka	PSTP	MBBR	400 KLD
Sheraton Hotel	Ethiopia	WTP	UF – RO	550 KLD
PepsiCo bottling plant	Ethiopia	PETP	MBBR	360 KLD
American Beverages	Guinea	PETP	MBBR	450 KLD
American Consulate General	Jeddah, Saudi Arabia	WWTP	Ext. aeration	75 KLD
Sunflag	Tanzania	ETP	MBBR	250 KLD
Shade Fashions	Bangladesh	PETP	MBBR	120 KLD
TTK · Yunabec Paints	Ethiopia	PETP	MBBR	20 – 25 KLD
Nefas Silk Paints	Angola	PETP	MBBR	20 KLD
Pemex project	Mexico	PSTP	MBBR	22 KLD
Winchester Procurement	Liberia	PSTP	MBBR	30 KLD

EXPORT FOOTPRINT

Plants and equipment supplied outside India, by region.

South Asia & Indian Ocean

Maldives · Sri Lanka · Bangladesh

Africa

Ethiopia · Guinea · Tanzania · Liberia ·
Angola · Rwanda · Mozambique · South
Africa

Middle East

Saudi Arabia · Kuwait · Bahrain

Americas, Europe & Asia-Pacific

Mexico · Guyana · United Kingdom ·
Spain · Indonesia

Selected references only. Several projects were executed for the end user named through EPC contractors and project partners.

STP Sewage treatment plant

WTP Water treatment plant

PSTP Packaged STP

WWTP Wastewater treatment
plant

ETP Effluent treatment plant

ZLD Zero liquid discharge

PETP Packaged ETP

KLD / MLD kilolitres / million
litres per day

Claims you can verify on paper.

An engineer evaluating a contractor should be able to check what is claimed. The documents below are held on file and can be produced for verification on request.

Client-issued certificates

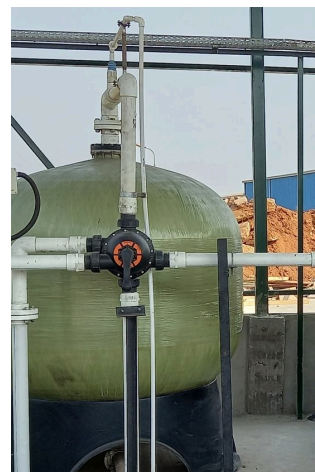
- Work completion certificate — Bharat Petroleum Corporation Ltd, packaged STP
- Letter of award and purchase orders — Tata Steel Ltd, packaged STPs
- Work completion certificates — 500 KLD hybrid packaged STP, Maldives
- Work completion certificate — clarifier, Daman Municipal Council
- Work completion certificate — Goa Tourism Development Corporation
- Work completion certificate — step screen, Jindal Saw Ltd
- Work completion certificate — ZLD system, Welspun Flooring Ltd
- Performance certificate — STP, Harsha Engineers
- Certificate for MBR plant — Larsen & Toubro
- Certificate — SIDCGL, Goa
- Drawing approval — Engineers India Limited (EIL)

Registrations

- PROMAX® — registered trade mark, Class 40
- MSME — Udyam registration
- Import-Export Code (IEC) holder
- GST registered

Technical records

- GA drawings and P&IDs for delivered plants and equipment
- Equipment manuals and operation & maintenance manuals
- PLC/HMI control drawings and I/O schedules
- Inspection, pressure-test and testing records
- Project photographs from manufacture to commissioning



CONTACT

Discuss your next **water or civil project with us.**

We welcome enquiries from government and municipal engineers, Panchayats, consultants, EPC contractors and industrial plant owners — for new plants, upgrades, equipment packages and civil and structural works.

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ENVIRONMENTAL EPC
WATER & WASTEWATER ENGINEERING
CIVIL & STRUCTURAL WORKS