

Sub: Invitation of Sealed Quotations for 100 KLD STP Plant at Birla Institute of

Description of Renovation work of Computer Labs	Quantity
Supply & installation of Sewage Treatment Plant capacity - 100 KLD MBBR Reactor & Tanks with Electro Mechanical Equipments and Complete Civil work required for installation of STP plant. Details are as given in Annexure –I, II, III & IV	01 STP Plant

Management Technology, Plot no 05, Knowledge Park -2, Greater Noida.

ANNEXURE –I

BASIS OF DESIGN PARAMETER AND PROCESS

BASIS OF DESIGN PARAMETER:

S No	Parameter	Inlet	Out let
1.	Total flow	100 KLD	< 100 KLD
2.	BOD	250 - 300 mg/ ltr	< 30
3	COD	600 - 750 mg / ltr	< 150
4.	pH	6 - 8	6.5-7.5
5.	Oil and grease	50 - 100 mg/ ltr	< 10
6.	Total suspended solids	200 - 300 mg /ltr	< 50

TYPE OF PLANT: MBBR TECHNOLOGY BASED PLANT

PROCESS DETAIL:

Sewage coming from Toilets and Kitchen are passed through screen chamber and oil & grease trap. Suspended solids and oily materials are separated from these units. Now sewage will come to the Equalization tank through gravity. Sewage Pump to Anoxic Tank for denitrification, then transfer by gravity to MBBR tank, MBBR tank filled with bio media to increase the surface area as well as efficiency of the system. Air is supplied to equalization tank & MBBR Tank through air blower then diffuse air by coarse/fine bubble diffusers. Sewage from this tank by gravity passes to settling tank for the separation of

MLSS from treated sewage. Separation is done due to gravity and stored in hopper. Sludge Transfer through pump to Sludge Holding Tank, for sludge thickening. Sludge pump to filter press for dewatering. Sludge cake may be used as manure after complete dry. Treated Sewage from tube settler collected in chlorine contact tank by gravity. Chlorine contact tank is fitted with filter feed pump to feed Multi Grade Filter for removal of suspended solids and Activated Carbon Filter removal of color and odor. Treated sewage will meet the norms of pollution control board. It can be used for horticulture or plantation / in Cooling Towers / Flushing.

ANNEXURE-II

CIVIL WORK

S No	Unit	MOC	Size	Qty
1.	Bar Screen	RCC	1.0 x 0.8 x 0.75 M + FB	01 No.
2.	Oil & Grease Trap	RCC	0.8 X 2.0 x 1.5 M + FB	01 No.
3.	Equalization Tank	RCC	5.0 x 3.0 x 3.0 M FB	01 No.
4.	Equipment Platform	RCC	12.00 x 5.0 x 0.25 M	01 No.
5.	Panel Room	RCC/BW	4.0 x 3.0 x 3.0 M	01 No.

ANNEXURE-III

SCOPE OF SUPPLY

1) BAR SCREEN

M.O.C of screen : SS-304
Quantity : 02No.
Coarse Screen : 8-10 mm
Fine Screen : 5-6 mm
Size : 450 x 750 mm

2) SEWAGE TRANFER PUMP

Application : To transfer sewage from equalization tank to MBBR tank.

Type	:	Non-clog submersible
Quantity	:	02 Nos. (1W + 1 Stand By)
Capacity	:	5.0 m ³ / hr at 10 M head
Make	:	Wilo/ KSB

3) ANOXIC TANK WITH MIXER

Application	:	To Denitrification of Sewage
Water	:	
M.O.C of Reactor	:	MSEP
Quantity	:	01 No.
Size Each Tank	:	2500 x 1500 x 3000 mm + FB
Mixer Drive with accessories	:	

4) MOVING BED BIO-REACTOR TANK

Application	:	Reaction of Sewage in presence of
Oxygen	:	
M.O.C of Reactor	:	MSEP
Quantity	:	02 Nos
Size Each Tank	:	1.75 x 2.5 x 3.0 M + FB

5) MBBR MEDIA

Application	:	Enhancement of surface area.
M.O.C of media	:	PVC UV treated
Surface area of media	:	400 m ³ / m ²
Quantity	:	6.0 m ³ .

6) LAMELLA CLARIFIER

Application	:	Separation of sludge from treated
sewage	:	
M.O.C of Clarifier	:	MSEP.
Quantity	:	01 No.
Surface area	:	4.0 m ²
Size	:	1.6 x 2.5 x 3.0 M

7) LAMELLA MEDIA

Application	:	For Quick Settling of Sludge
M.O.C of media	:	PVC

Size : 110 x 1000 mm
Quantity : 3.5 m³

8) CLEAR WATER TANK

Application : To store of clarified water
MOC of tank : MSEP
Quantity : 01 No.
Size : 1.25 x 2.5 x 3.0 M

9) SLUDGE HOLDING TANK

Application : To Store and thickening of sludge
MOC of SHT : MSEP
Quantity : 01 No.
Size : 1.75 x 2.5 x 3.0 M

10) TREATED WATER TANK (OVER GROUND TANK)

Application : To storage of final treated water
MOC of tank : MSEP
Quantity : 01 No.
Size : 3.0 x 2.5 x 3.0 M

11) SLUDGE RECIRCULATION PUMP

Application : For Recycling of Bio-Sludge
TYPE : Non-clog centrifugal
Make : Wilo / Kirloskar
Model : SP0M
MOC : C.I.
CAPACITY : 3.0 m³/hr @10M
Quantity : 02 No. (01W+01S).

12) CHLORINE DOSING SYSTEM

Application : To dose chlorine in filter feed tank
M.O.C : P.P
Capacity : 0 - 6 LPH

Quantity	:	01 Nos.
Make	:	Milton Roy/ Eq.
Tank	:	01 Nos.
Volume	:	100 Liters

13) POLY DOSING SYSTEM

Application	:	To dose poly in Clarified Sewage
Quantity	:	01 Nos.
Tank Capacity	:	100 Liters
M.O.C	:	HDPE
Pump capacity	:	0- 6 LPH
M.O.C	:	P.P.
Make	:	Milton Roy/ Eq.

14) FILTER FEED PUMP

Application	:	To feed water in MGF & ACF
Type	:	Horizontal, centrifugal
Quantity	:	2 Nos. (1No. + 1 SB)
Capacity	:	6.0 m ³ / hr at 28 M head
Make	:	Wilo / Kirloskar.
M.O.C	:	C.I.

15) MULTIGRADE FILTER

Application	:	To removal of suspended Solids
from treated		Sewage.
Size (Dia x HOS)	:	800 x 1500 mm
Quantity	:	01 Set
MOC	:	MSEP
Bed Depth	:	1000 mm
Shell Thickness	:	5.0 mm
Dishend Thickness	:	6.0 mm
Flow rate	:	6.0 m ³ /hr.

16) ACTIVATED CARBON FILTER

Application	:	To remove Color & Odor for
Filtered Sewage		

Size (Dia x HOS)	:	800 x 1500mm
Quantity	:	01 Set
MOC	:	MSEP
Bed Depth	:	1000 mm
Shell Thickness	:	5.0 mm
Dishend Thickness	:	6.0 mm
Flow rate	:	6.0 m ³ /hr.

17) AIR BLOWERS

Application	:	Supply oxygen to the system
Type	:	Twin lube
Quantity	:	2 Nos. (1W+1 SB)
Capacity pressure	:	100 - 150 m ³ / hr at 0.5 kg/ cm ²
Power drive	:	7.5 H.P 415 volts, 50 Hz
Make	:	Ingersoll/Everest/Eq.

18) AIR PIPE LINE AND AIR DIFFUSERS

Application	:	To supply Air MBBR, sludge Holding tank & Equalization Tank
Air Pipe Line quantity	:	01 Lot
MOC (External)	:	MS/cPVC
Make	:	Jindal/Astral.
MOC (submerged Pipe Line)	:	uPVC
Make	:	Astral/Eq.
Diffusers Type	:	Coarse Bubble/Fine Bubble
Quantity	:	10 Nos + 20 Nos
MOC of membrane	:	Silicon.
Size	:	63 x 650 mm

19) INTER CONNECTING PIPE LINE

Application	:	Supply sewage to System by pump & gravity
Pipe Line quantity	:	01 Lot
MOC	:	uPVC/cPVC
Make	:	Astral/Eq.
Size	:	25 to 80 mm

20) CENTRIFUGE FEED PUMP

Application	:	To feed sludge from sludge holding tank into centrifuge.
Type	:	Non-clog mono block
Quantity	:	02 Nos. (1W + 1 Stand By)
Capacity	:	3.0 m ³ / hr at 10 M head
Make	:	Wilo/ KSB

21) CENTRIFUGE

Application	:	Dewatering of Sludge
Qty	:	01 Set
Type	:	Top Discharge Basket.
Dia	:	600 mm
Height	:	325mm
MOC of perforated Basket:		SS-304

Centrifuge Perforated basket Statically & Dynamically balanced, 3 points pendulum suspended, outer body MS Epoxy Painted, 3.0 H.P./ 3-phase /1440 rpm/415 Volt/ 50Hz, foot mounted electric motor, make- Crompton/ Eq. , Basket rpm 1100,

Rated charge in basket 40-50 liter.

Mechanical Break Arrangement, centrifuge force depends on material density
2 Number limit switches for lid and break

3 Number foundations bolts 1 Number pp Filter cloth with SS fittings

Centrifuge mounted on triangular base frame.

22) ELECTRIC CONTROL PANEL & CABLING

Application	:	To run all power drives
Size	:	Suitable
Type	:	Auto/Manual.
Make Devices	:	L & T
MOC of Cable	:	Copper.
MOC of enclosure	:	CRCS Powder coated

23) INSTRUMENTATION

I) LEVEL CONTROLLER

Application	:	Provided for dry run protection of pumps
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Type : Two point ON/ OFF
MOC : PVC
Quantity : 01 Lot

II) PRESSURE GAUGE

Range : 0 -7 kg or 0-5 kg
Quantity : As per requirement

III) ENERGY METER

Quantity : 01 No
Type : Electronic

IV) FLOW METER

Quantity : 02 Nos
Type : Electromagnetic
Size : 40 mm

V) PH METER

Quantity : 01 No
Type : online
Range : 0-14
Make : Digital/ Eq.

ANNEXURE-IV
SCHEDULE OF EXCLUSION

Our supplies will be restricted to the included in the technical data. The list of exclusions from our supply is given below:

1. Lighting at Site
2. Water for Plant Erection and Commissioning
3. Electricity for Erection and Commissioning will be providing on Free of Cost
4. Piping up to inlet of the Screen Chamber and the outlet from MGF.
5. Final discharge of Treated Sewage

6. Client will provide necessary qualified operating staff during Start-up, Testing and Commissioning of Plant
7. Unloading and safe custody of equipments at site

Duly signed sealed quotations are invited for the 100 KLD STP Plant at Campus of Birla Institute of Management Technology, Plot no 05, Knowledge Park –II, Greater Noida, 201306.

To understand and have clarify about the scope of work and detailed specifications , please visit our Campus, Birla Institute of Management Technology, Plot no 05, Knowledge Park –II, Greater Noida, 201306 and contact Mr Anand Chauhan, Senior Facility Manager, contact no 9911112893.

Sealed quotations to be submitted by hand to the office of General Manager (Campus Administration) by 5:00 PM of 31st May, 2022.

The Institute reserves the right to accept or reject any quotations or to reject the bidding process or any quotation wholly or partly without assigning any reasons thereof.

The scope of work can be changed as per the requirement and will be the sole discretion of the Institute.