



ندى الربيع
NADA AL RABEEI
لأجهزة تقنية المياه
WATER PURIFIERS EQUIPMENTS
PRODUCTION

Onsite Wastewater Treatment System



 **FujiClean**
Toward Clean Water...

4-1-4, Imaike, Chikusa, Nagoya, Aichi, JAPAN



What is FujiClean Onsite System



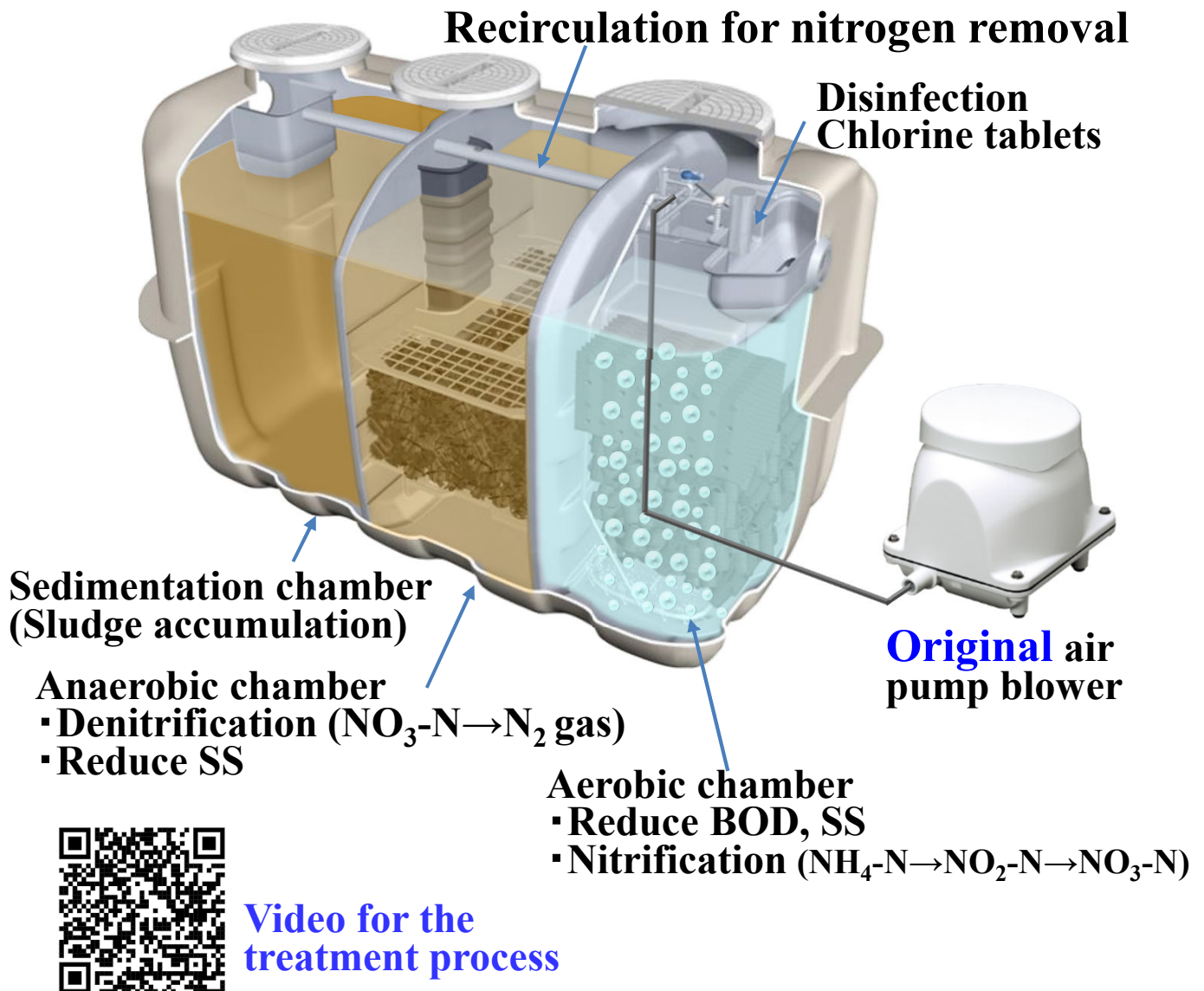
Centralized Sewage Treatment Plant

FujiClean onsite system

FRP tanks

Air Pump blowers

Basic treatment process



**Tubular type
Commercial**



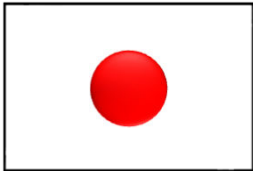
**Capsule type
Residential - Commercial**



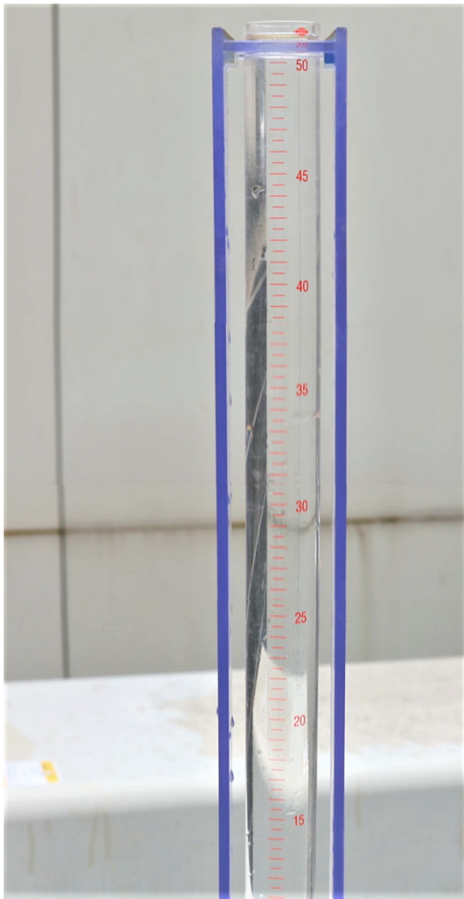
Advantages

Certified performance

Certification from 4 countries



Treated BOD $\leq$ 20 mg/l, SS $\leq$ 20 mg/l, T-N $\leq$ 20 mg/l



From **United Nations** video



United Nations Industrial Development Organization

No.1 market share in Japan

Millions of project achievements

Energy saving

Originally developed air pump blower for onsite wastewater treatment

- Energy efficient
- Easy to handle
- Long lifetime
- Lightweight
- Low noise



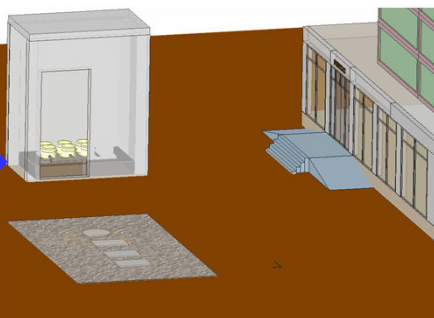
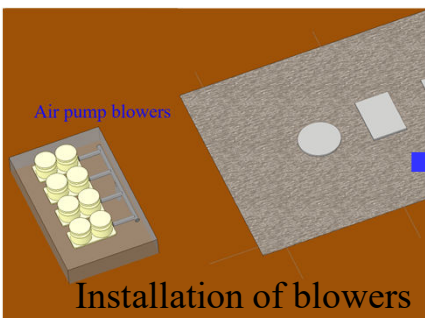
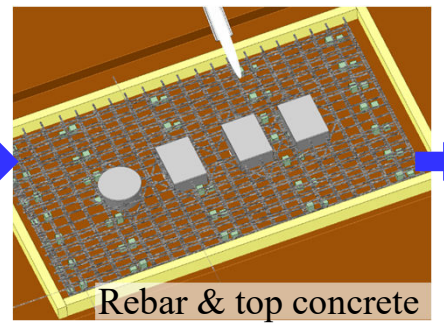
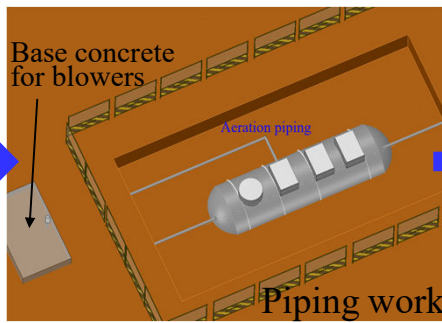
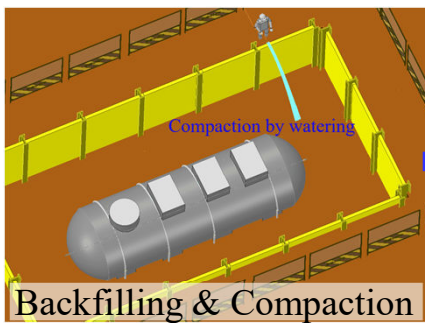
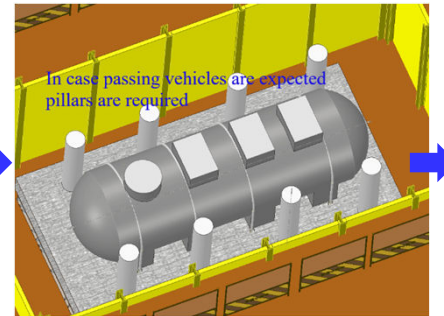
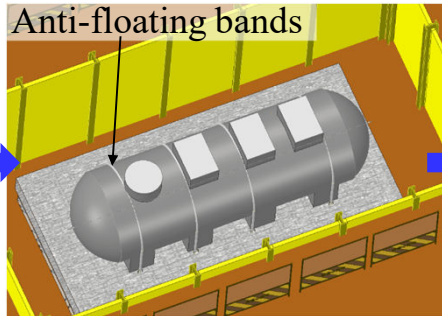
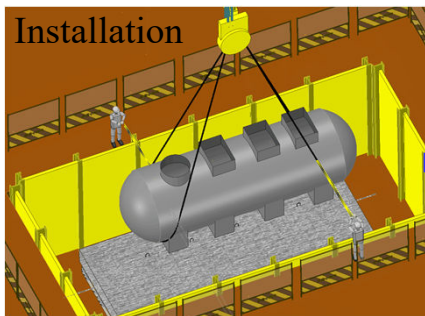
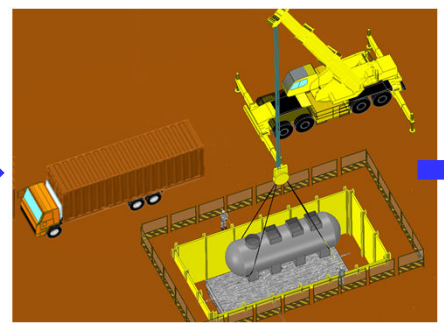
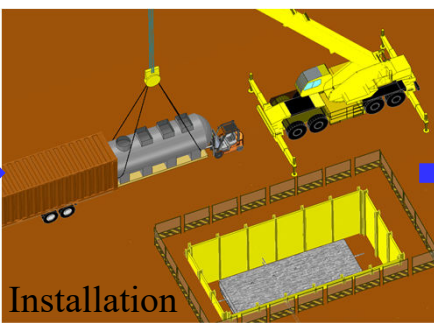
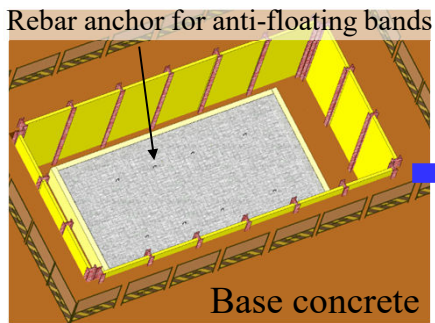
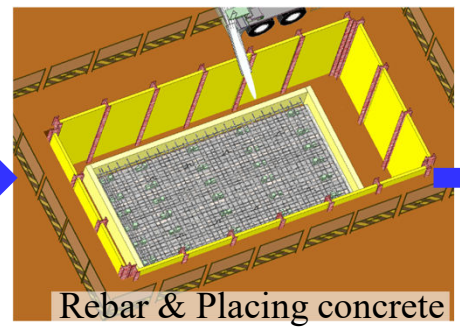
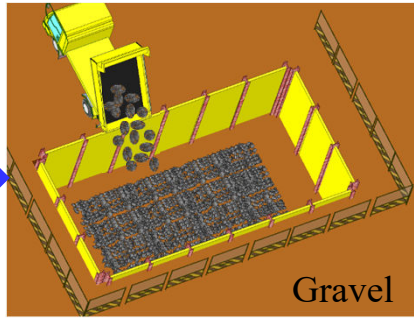
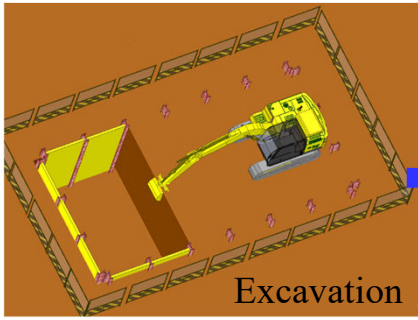
How does the air pump blower work



United Nations Industrial Development Organization

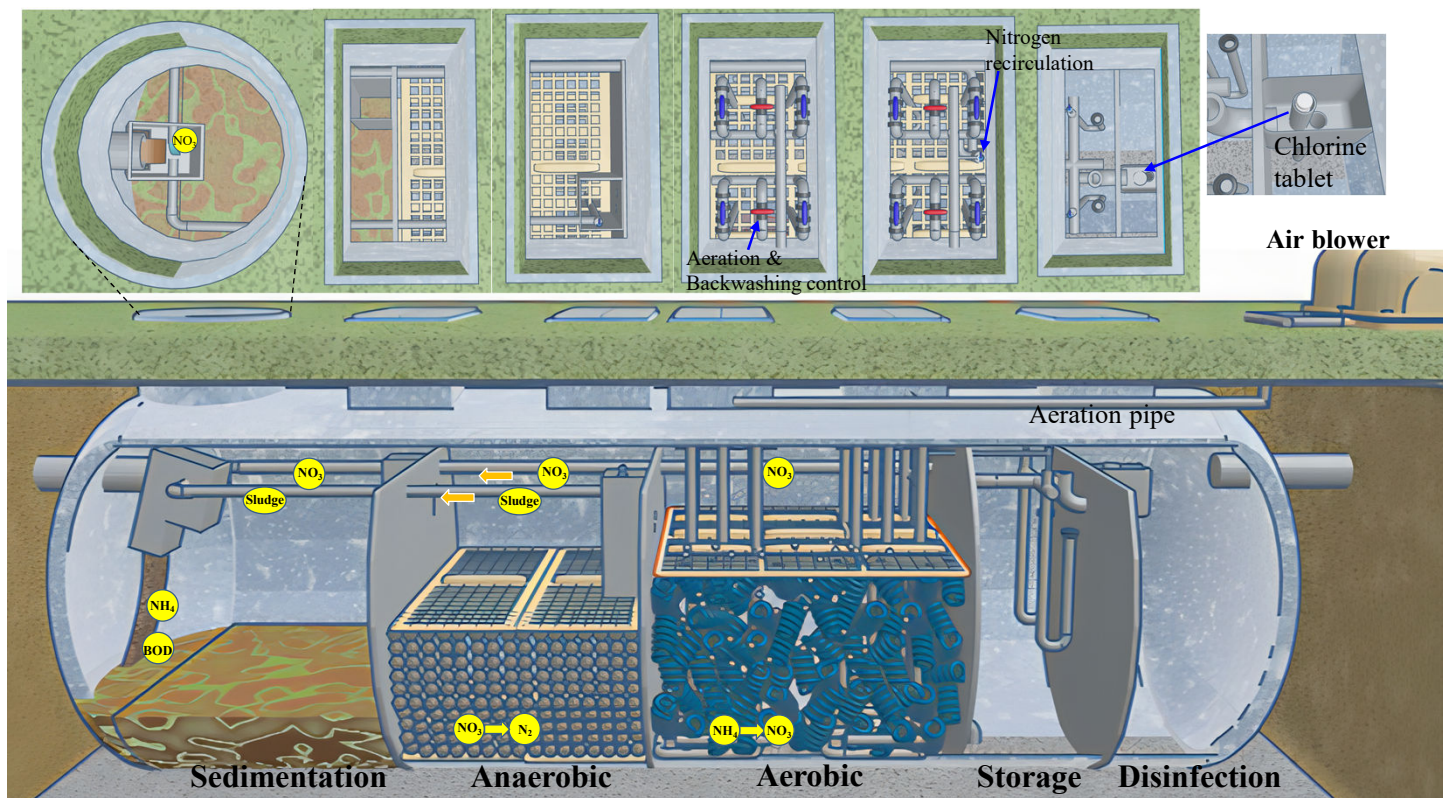
Reference for 500L/min, 20 kPa	FujiClean blower	Roots blower	Rotary blower
Units	2	1	1
Power consumption	372 W (186 W × 2)	750 W	750 W
Weight	19 kg (9.5 kg × 2)	40 kg	55 kg
Noise level	46 dB	50 dB	50 dB

Quick to install



Easy to maintain

Sustainable system with some simple maintenance



① Desludging before the sedimentation chamber is full of sludge.

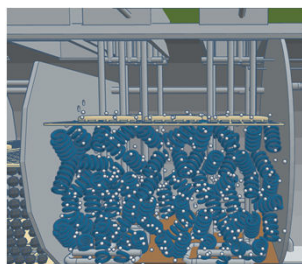
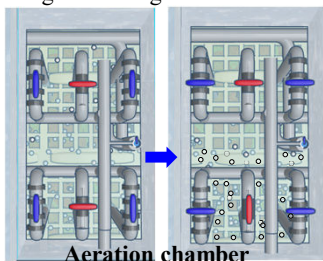


Mainly $\text{NH}_4\text{-N}$ and organic matter (BOD) flows into the system. Solids and sludge are stored in the sedimentation chamber with time.

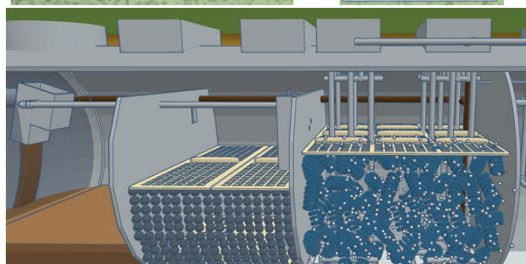
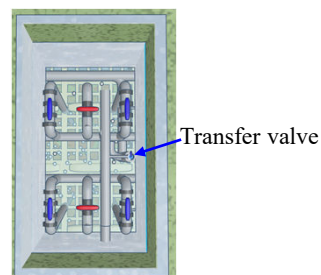
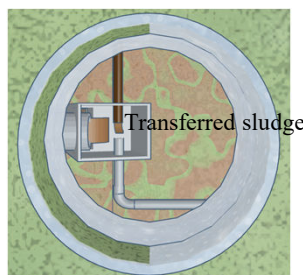
② Backwash of Filter media and sludge transfer

Organic matter is oxidized and gets stuck on the filter media with suspended solid (SS).

Turn some valves to concentrate the aeration for backwashing. The sludge settles at bottom

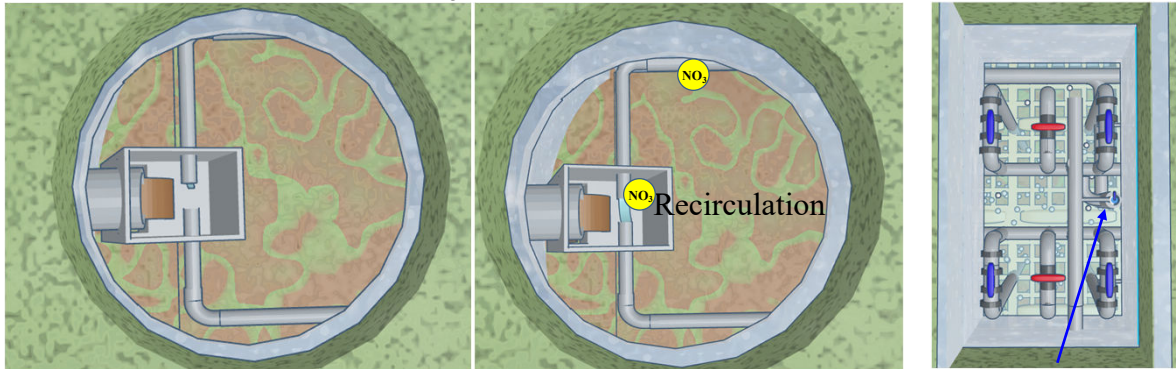


Turn a valve to transfer the sludge to the sedimentation chamber



③ Adjusting amount of recirculation

Microbes turn $\text{NH}_4\text{-N}$ into $\text{NO}_3\text{-N}$. Part of it is recirculated for denitrification.

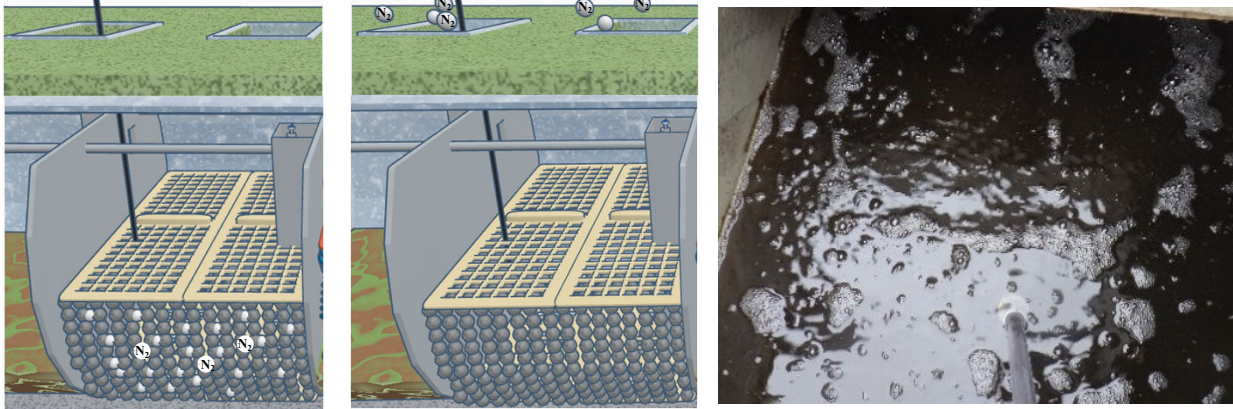


Just turn the valve to adjust recirculation

④ N₂ gas release

Microbes convert $\text{NO}_3\text{-N}$ to N_2 gas ($\text{Organics} + \text{NO}_3\text{-N} \rightarrow 1/2\text{N}_2 + 2\text{H}_2\text{O} + \text{CO}_2$)

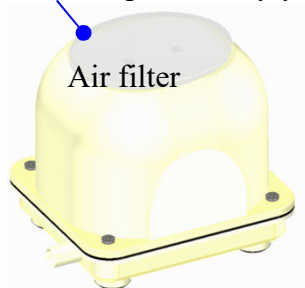
N_2 gas gets stuck on filter media. It needs to be removed by poking the media.



⑤ Replacement of Air pump blowers

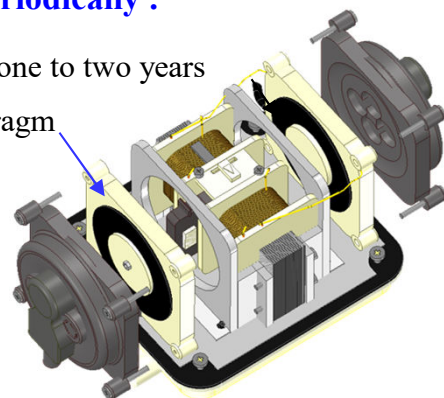
Diaphragms keep moving 24/7 and are replaced periodically .

Clean every time and replace every year

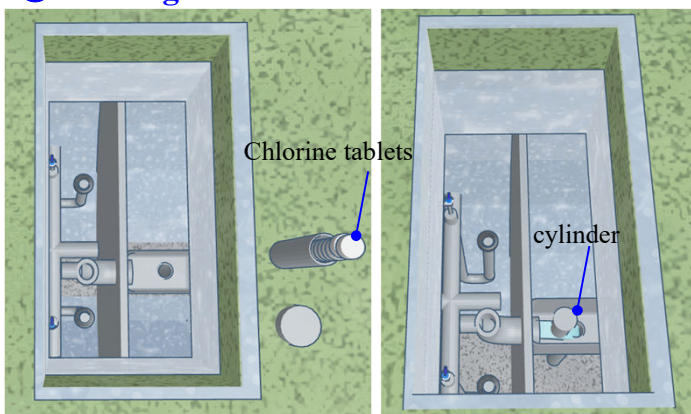


Replace every one to two years

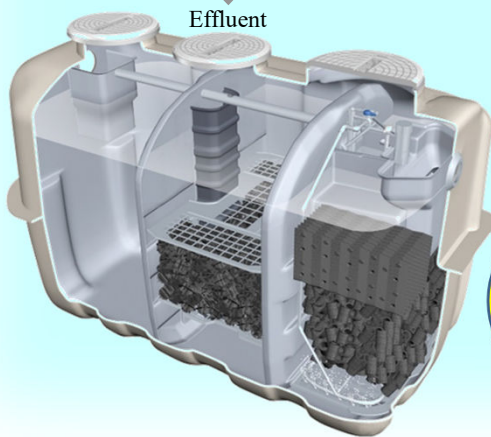
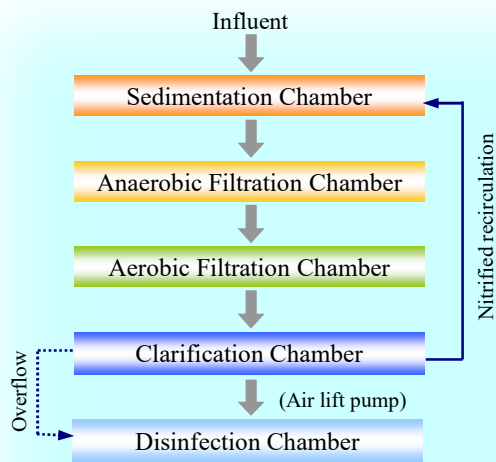
Diaphragm



⑥ Refilling of chlorine tablets

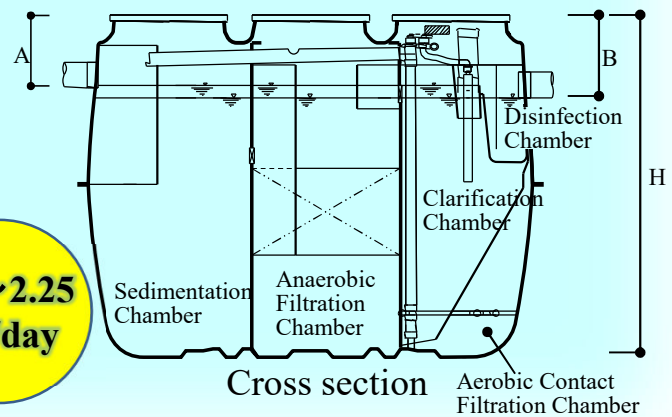
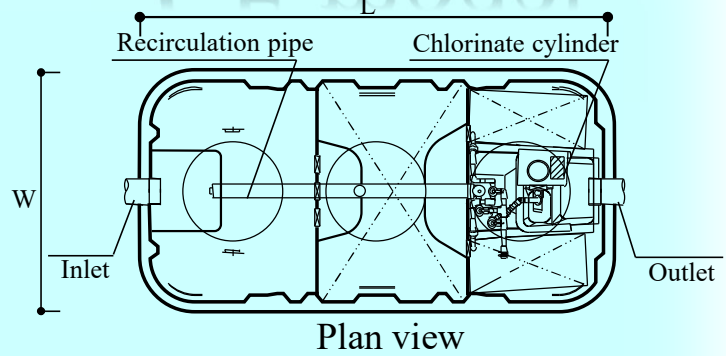


Chlorine tablets in the cylinder disinfect treated water.
Just refill the tablets at the time of the maintenance.



**1.2~2.25
m3/day**

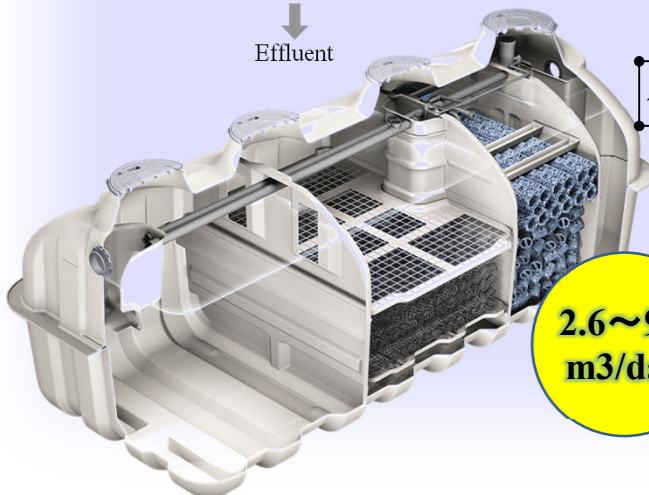
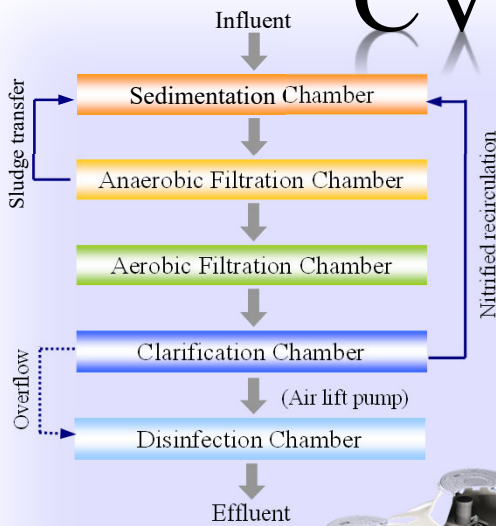
CE model



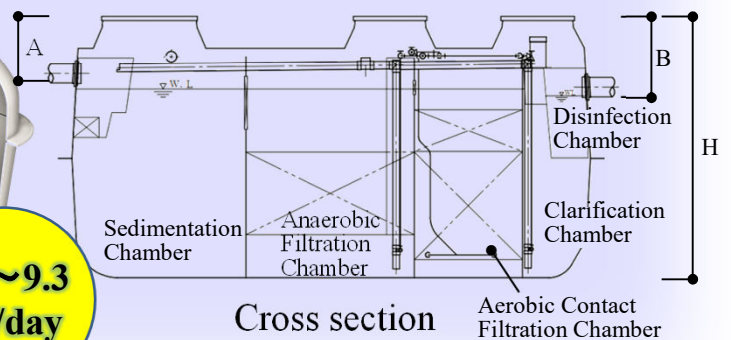
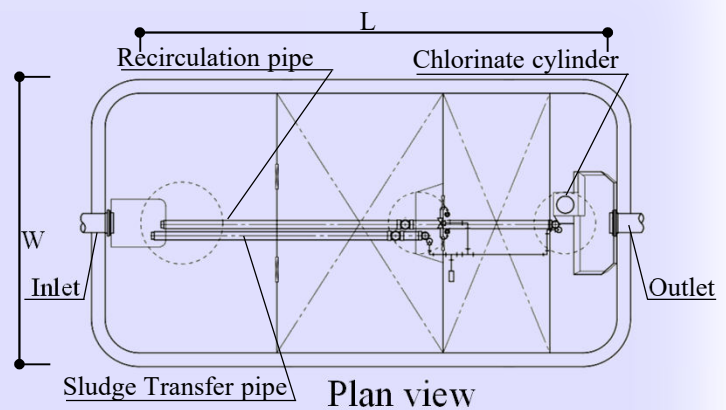
CV model

Influent & Effluent design

BOD:200 → 15 mg/L
SS:160 → 15 mg/L
T-N:50 → 20 mg/L

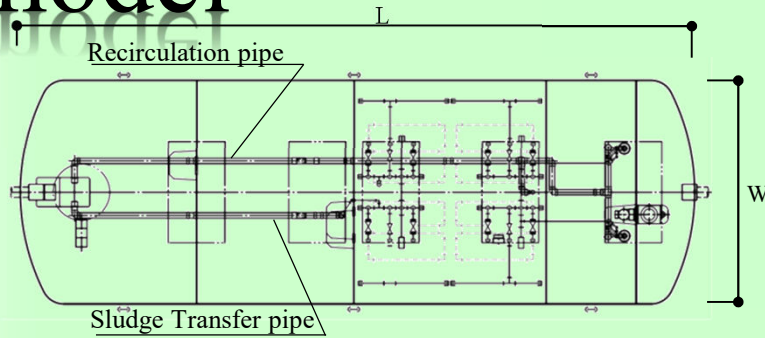


**2.6~9.3
m3/day**

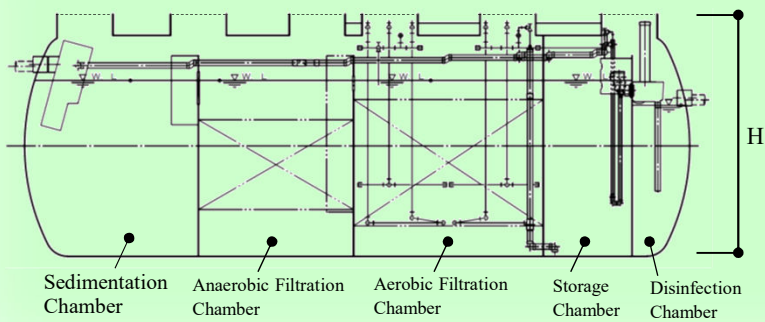


PV & PVN model

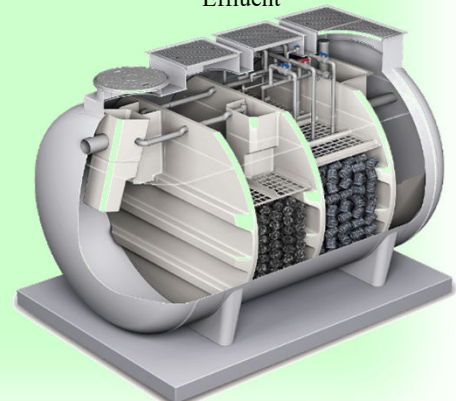
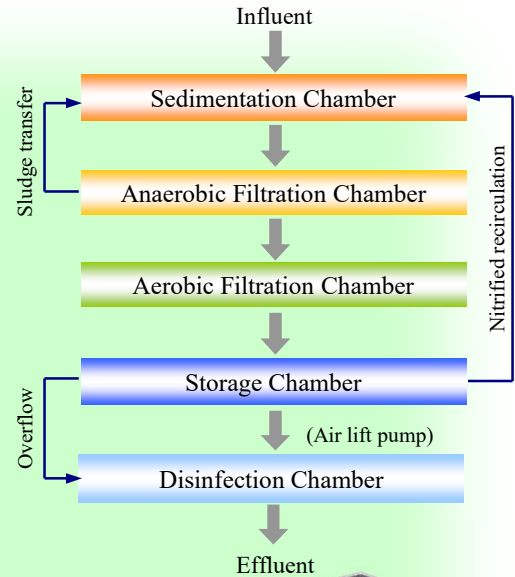
17~35
m³/day



Plan view



Cross section

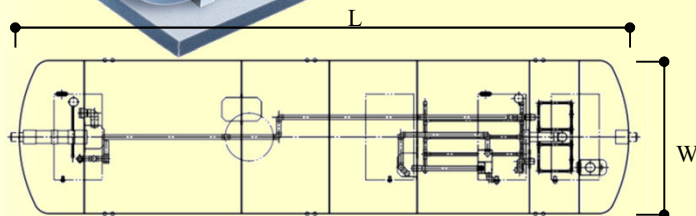
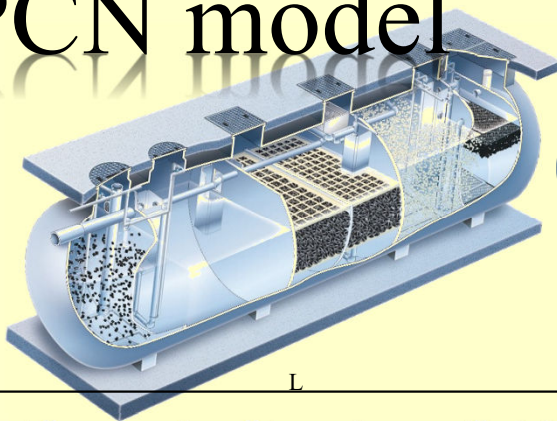


Influent & Effluent design

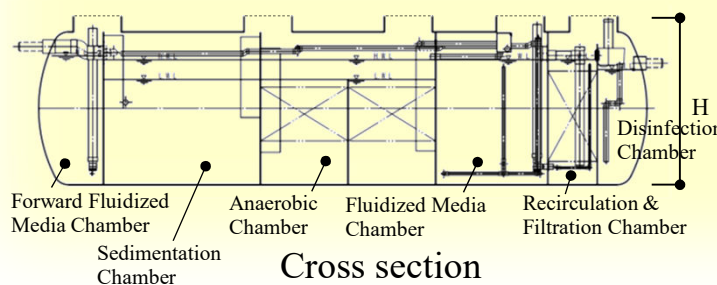
BOD: 200 → 15 mg/L
SS: 160 → 15 mg/L
T-N: 50 → 20 mg/L

PCN model

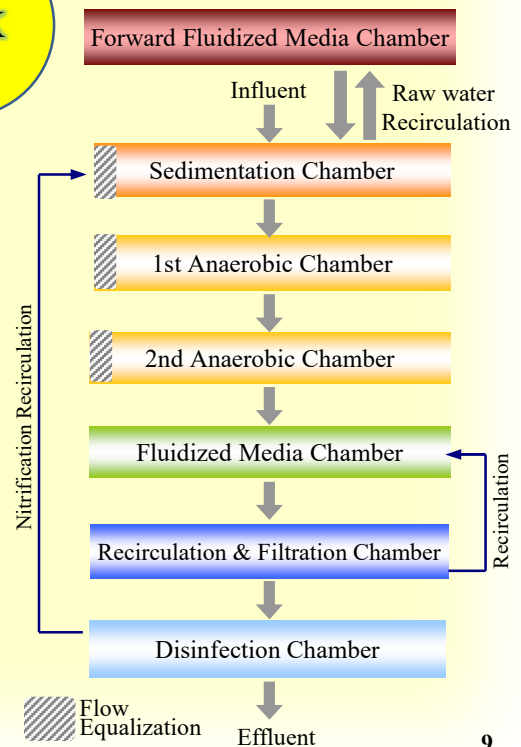
ASK

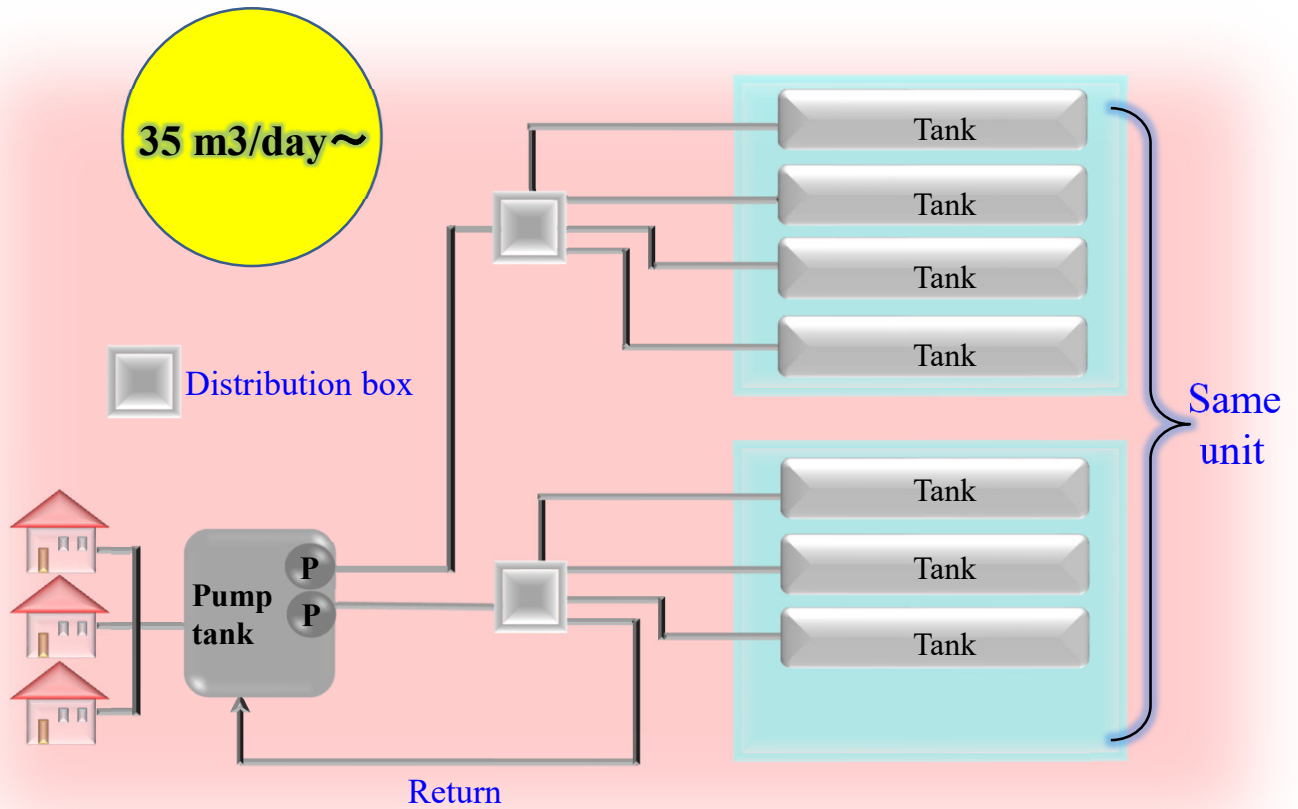


Plan view



Cross section

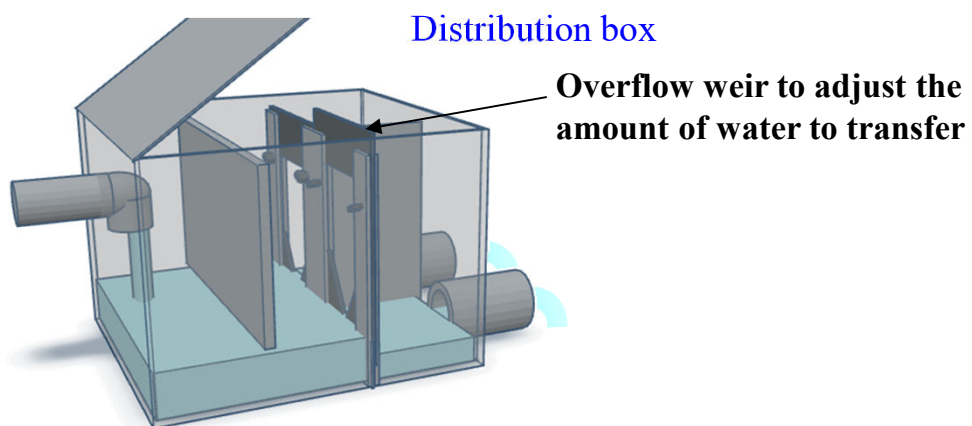




Above ground



Under ground



Specifications

Capsule type model

For Class A regulation

Inflow: BOD200mg/L, T-N50mg/L

Model Name		CE 5	CE 7	CE 10
Design Hydraulic Loading(m ³ /day)		1.2	1.55	2.25
Capacity (m ³)	Sedimentation Chamber	0.749	1.048	1.502
	Anaerobic Filtration Chamber	0.751	1.052	1.498
	Aerobic Contact Filtration Chamber (FLUIDIZED MEDIA)	0.380	0.482	0.687
	Clarification Chamber (RECIRCULATION & FILTRATION)	0.168	0.237	0.339
	Disinfection Chamber	0.015		0.021
	Total Volume	2.063	2.834	4.047
Dimension (mm)	Max Width : W	1,110	1,250	1,440
	Max Length : L	2,160	2,430	2,510
	Max Height : H	1,570	1,670	1,870
	Inlet Invert : A	310(610)		
	Outlet Invert : B	360(660)		
	Inlet and outlet Pipe Size	dia. 100		
Total Weight (kg)		180	210	320
Corresponding Air blower Type		MAC80RII × 1		MAC100RII × 1
Electric capacity (W) (50Hz)		47	47	68
Electric capacity (W) (60Hz)		51	51	80
Container type		20'/40'	20'/40'	20'/40'
Qty to be put into a 40' container		10	4	4
Qty to be put into a 20' container		5	2	2

Model Name		CV 14	CV 18	CV 21	CV 25	CV 30	CV 35	CV 42	CV 50
Design Hydraulic Loading(m³/day)		2.6	3.6	4.2	5	5.7	6.5	7.9	9.3
Capacity (m³)	Sedimentation Chamber	1.332	1.723	2.009	2.375	2.85	3.332	3.99	4.750
	Anaerobic Filtration Chamber	1,335	1.718	2.007	2.375	2.85	3.325	3.99	4.75
	Aerobic Contact Filtration Chamber (FLUIDIZED MEDIA)	0.83	1.139	1.331	1.57	1.815	2.077	2.52	2.962
	Clarification Chamber (RECIRCULATION & FILTRATION)	0.469	0.164	0.698	0.846	0.976	1.145	1.381	1.625
	Disinfection Chamber	0.003	0.053			0.073		0.105	
	Total Volume	3.996	5.247	6.098	7.219	8.564	9.952	11.986	14192
Dimension (mm)	Max Width : W	1,680	1,750		2,100		2,200		
	Max Length : L	2,650	3,380	3,880	3,370	3,940	4,530	4,550	5,280
	Max Height : H	1,660			1,860		2,110		
	Inlet Invert : A	400			450		500		
	Outlet Invert : B	500			550		600		
	Inlet and outlet Pipe Size	dia. 125							
	Total Weight (kg)	290	330	390	510	590	750	850	990
	Corresponding Air blower Type	MAC80RII × 2		MAC100RII × 2		MAC150RII × 2		MAC200RII × 2	
	Electric capacity (W) (50Hz)	70	94	136	172	200	200	280	280
Electric capacity (W) (60Hz)	76	102	160	202	250	250	318	318	
Container type		40ft						40'HC	
Qty to be put into a 40' container		4	3	3	3	2	2	2	2
Qty to be put into a 20' container		2	1	1	1	1	1	-	

Specifications

For Class A regulation

Inflow: BOD200mg/L, T-N50mg/L

Tubular type model

Model Name		PVN 401	PVN 402
Design Hydraulic Loading(m³/day)		17	35
Capacity (m³)	Sedimentation Chamber	4.05	8.05
	Anaerobic Filtration Chamber	4.06	8.06
	Aerobic Contact Filtration Chamber (FLUIDIZED MEDIA)	4.78	9.51
	Clarification Chamber (RECIRCULATION & FILTRATION)	1.92	3.80
	Disinfection Chamber	1.28	1.28
	Total Volume	16.11	30.72
Dimension (mm)	Max Width : W	φ2,150	
	Max Length : L	5,770	10,680
	Max Height : H	2,700	
	Inlet Invert : A	550(900)	
	Outlet Invert : B	980(1.330)	
	Inlet and outlet Pipe Size	dia. 114	
Total Weight (kg)		2145	3200
Corresponding Air Pump Type		300R II × 3	300R II × 5
Electric capacity (W) (50Hz)		836	1393
Electric capacity (W) (60Hz)		780	1300
Container type		Flat Rack Container or Roll on/ Roll off ship	
Qty to be put into a 40' container		1	
Qty to be put into a 20' container			

Air pump blower

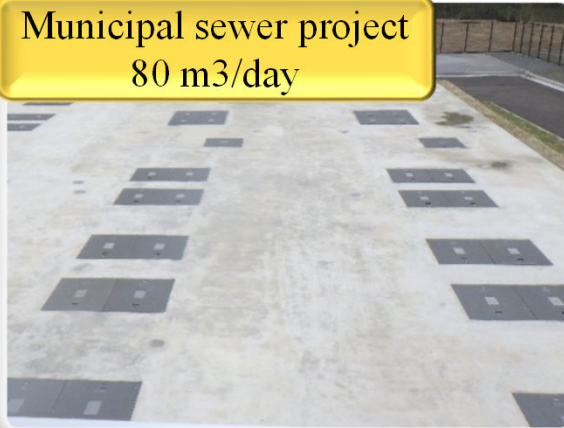
Air blower name	Air flow volume (L/min)	Pressure range (kPa)	IP	Watt		db	Volt	Weight(kg)	Outlet pipe size(A)	Circuit	Packing size(mm)	
				50hz	60hz							
MAC60R II	60	12 - 18	54	35	38	35	230 - 240V ±6%	5	13	Series	190W*276L* 230H	
MAC80R II	80			47	51	36		5	13			
MAC100R II	100	14 - 22		68	80	39		5	13			
MAC120R II	120			86	101	39		5	20			
MAC150R II	150	16 - 24		100	125	41		9	20	Paralle l	209W*394L* 240H	
MAC200R II	200			140	159	43		9	20			
MAC250R II	250			186	226	48		9	20			
MAC300R II	300			250	260	50		9	20			

Project achievements

Municipal sewer project
165 m³/day



Municipal sewer project
80 m³/day



Fast-food



Suffolk county in US Residence
More than 40 % market share



World heritage FRASER ISLAND
20 m³/day



Hospital
157 beds



Plaza Rizal
40 m³/day



Factory
20m³/day



Restaurant
23 m³/day



Shopping center
37 m³/day



Nursing home,
For 200 people



Blackwood Project Residence
More than 100 units



Restroom in an
Island 10 m³/day



Factory
For 430 people



Community center
For 250 people



Lodge
40 m³/day



Apartment building
For 80 people



Gas station
20 m³/day



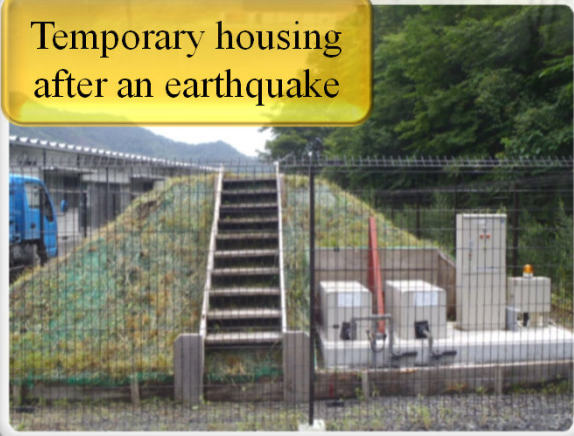
National Park
12 m³/day



Resort Hotel
40 m³/day



Temporary housing
after an earthquake



The Clear Choice for a Sustainable Oman

The partnership between **Nada Al Rabeei** and **FujiClean** is more than a business arrangement. It is a commitment to empowering Oman with best-in-class environmental technology.

By choosing this solution, you are not just installing a wastewater treatment plant, but you are investing in;

- **Uncompromising Quality:** Backed by Japanese engineering and Omani expertise.
- **Long-Term Value:** With lower operating and maintenance costs.
- **Environmental Leadership:** By enabling water reuse and protecting local ecosystems.

For any project demanding reliability, efficiency, and a commitment to sustainability, the choice is clear. Contact Nada Al Rabeei today to discover how the FujiClean advantage can transform your wastewater challenges into a sustainable asset for the future of Oman.

Authorised Dealer in Oman



FujiClean Co. Ltd.,
14th Floor,
Nagoya Shimizu-Fukoku Building,
1-16-15 Marunouchi
Nagoya-shi, Aichi 464-0850
JAPAN
<https://fujiclean.co.jp>
Phone: +81-52-733-0863
Fax: +81-52-733-0238



ندى الربيع | لمعالجة المياه
NADA AL RABEEI | WATER TREATMENT

Near Aulat Tareq Mosque, Al Khoud,
Muscat OM, 170,
Sultanate of Oman
<https://www.nada-rabeei.com>
E-mail: technical@nada-rabeei.com
GSM: +968-99818528
Phone: +968-24545390
Fax: +81-52-733-0238



ندى الربيع
NADA AL RABEEI
لأجهزة تقنية المياه
WATER PURIFIERS EQUIPMENTS
PRODUCTION