

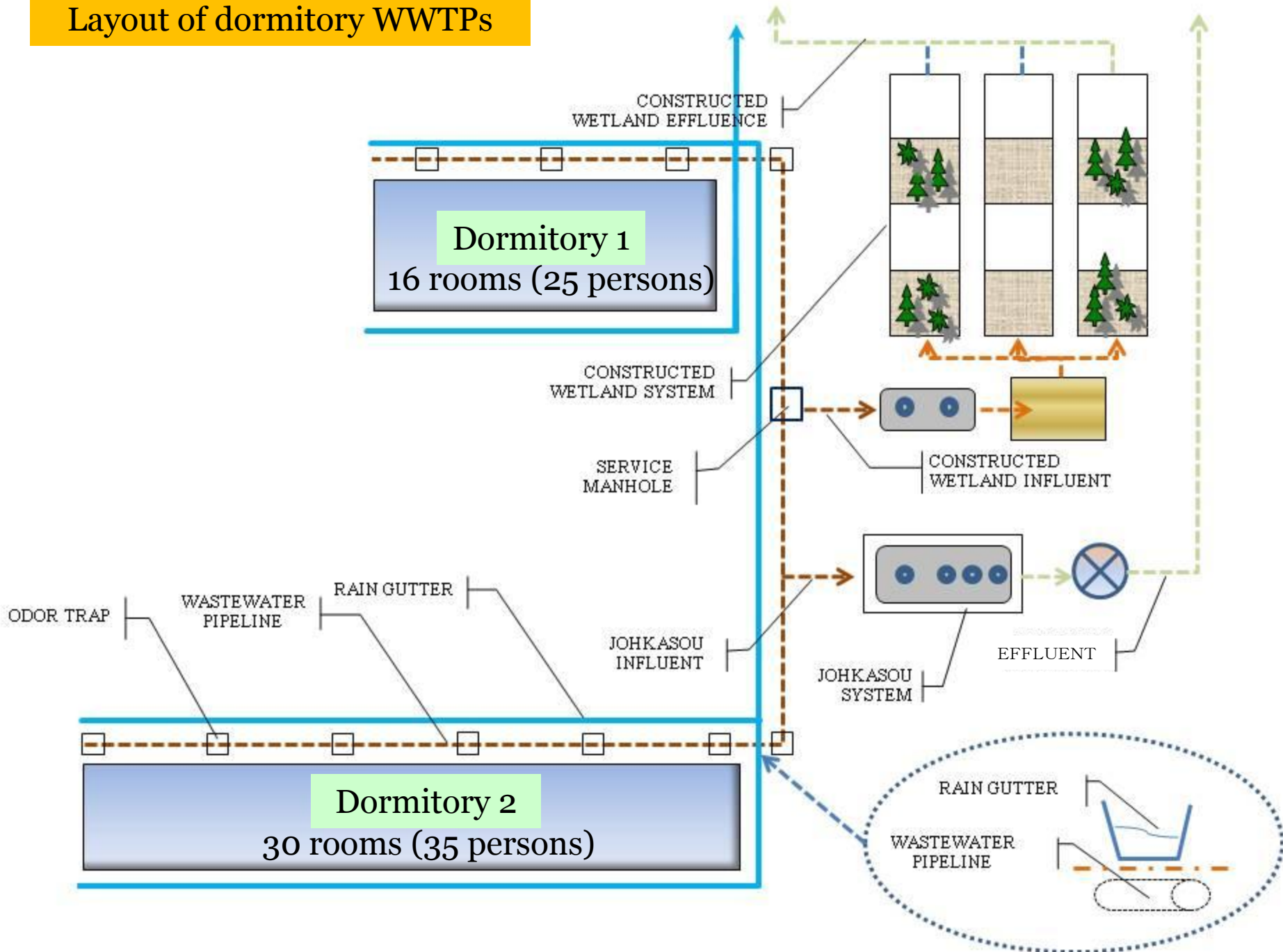
Application of Commercial Wastewater Treatment Unit for Treating ERTC Dormitory Wastewater



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Layout of dormitory WWTPs

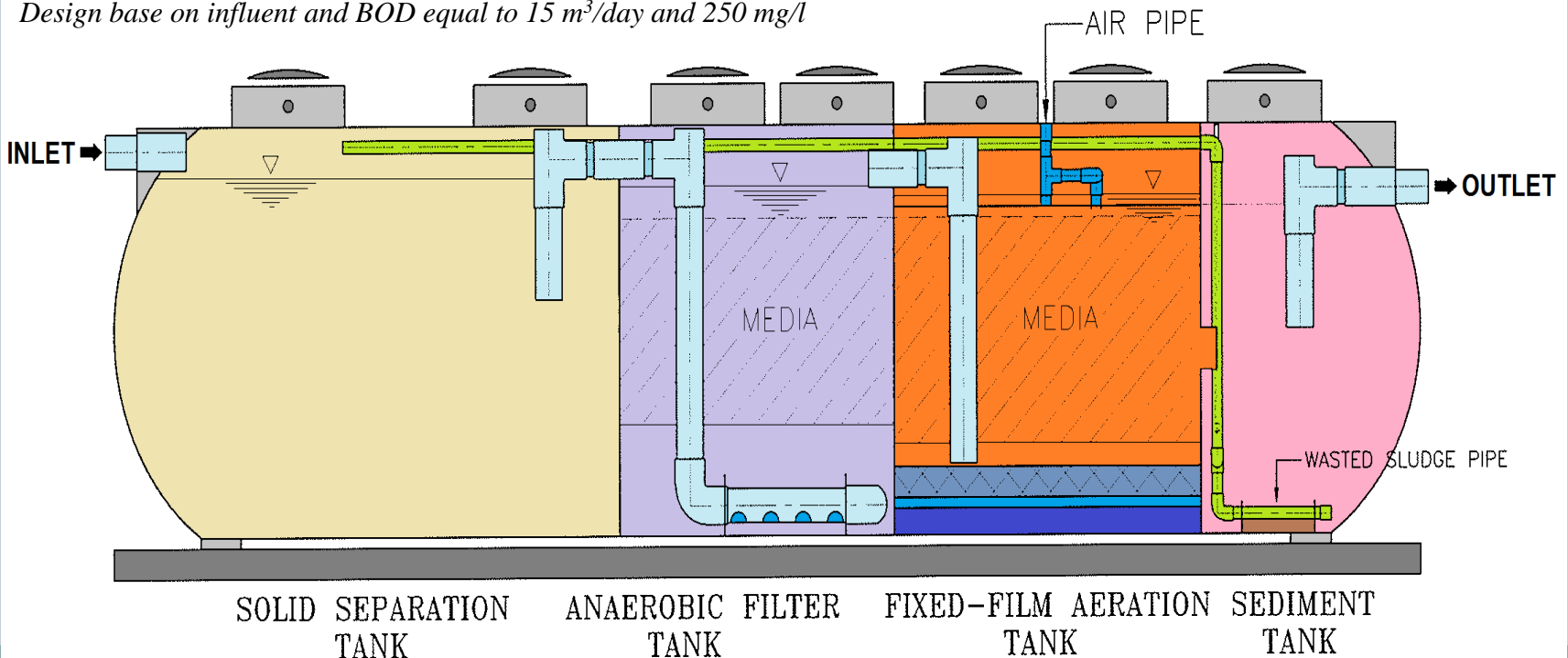


Johkasou design criteria

was supported by JICA under “ The project for capacity building of government authorities on decentralized wastewater treatment in Mekong region”

Partition	Volume (m ³)		Current HRT (hrs)
	Design	Actual	
Solid separation tank	7.50	8.48	13.57
Anaerobic filter tank	4.50	4.84	7.74
Aerobic chamber tank	3.13	6.17	9.87

Design base on influent and BOD equal to 15 m³/day and 250 mg/l



Cross sectional view of JOHKASOU

JOHKASOU installation and operation



Johkasou in flooding condition



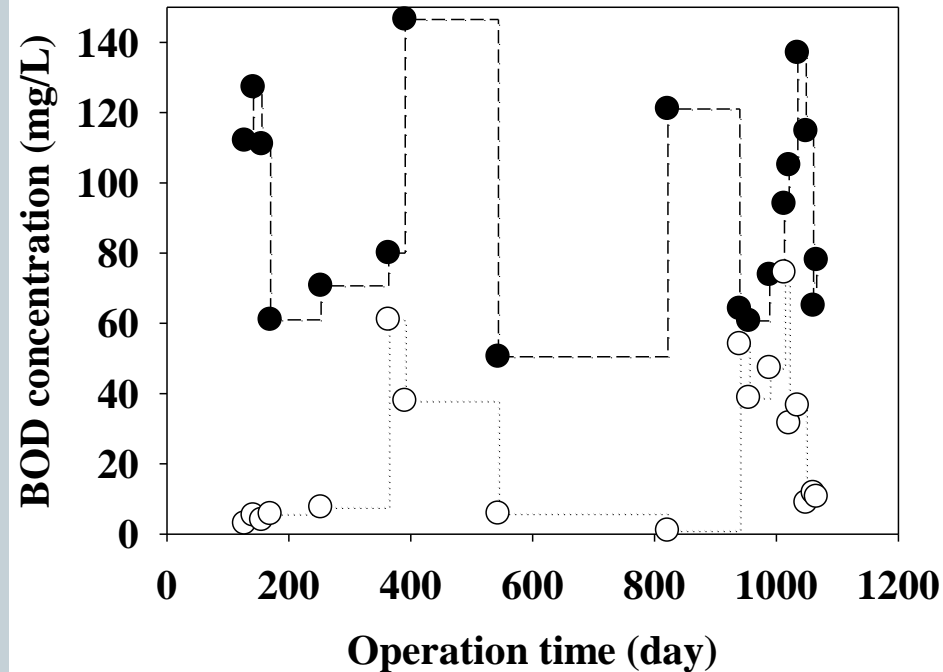
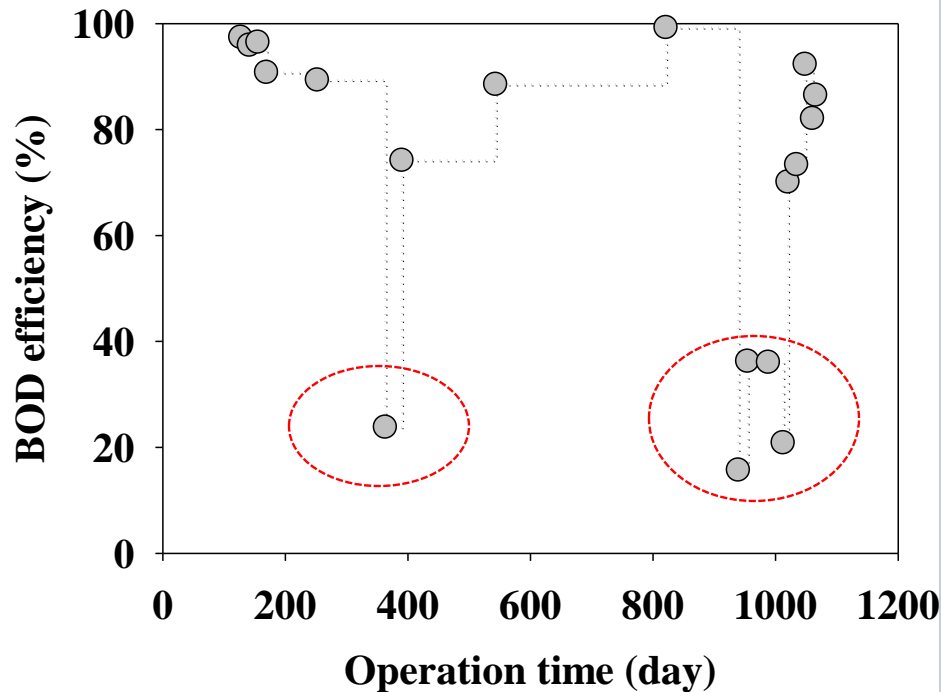
Operational performance



Parameters (mg/L)	Influent ¹			Effluent ²		
	Min.	Max.	Average (SD)	Min.	Max.	Average (SD)
pH	6.6	7.4	6.8(0.3)	6.6	7.7	7.0(0.4)
DO	0.0	0.3	0.1(0.1)	0.7	4.5	3.0(1.4)
BOD	61	146	95(30)	1	38	13(14)
SS	1	95	44(23)	3	38	11(11)
TKN	25.0	57.8	38.0(9.5)	7.1	45.1	28.0(10.5)
TP	1.2	5.2	3.3(1.0)	1.0	3.8	2.5(0.8)

remark: ¹n=19, ²n=14

Treatment performance

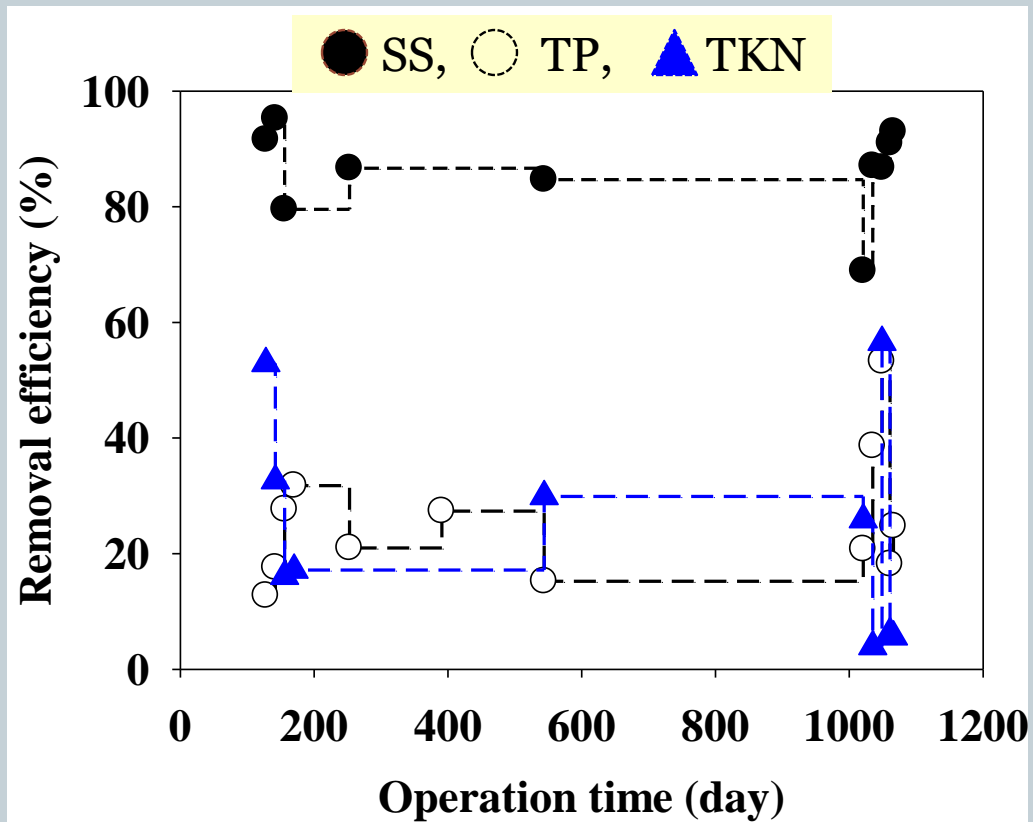


❑ The treatment efficiency in terms of BOD was decreased due to the high sludge accumulation on day 353.

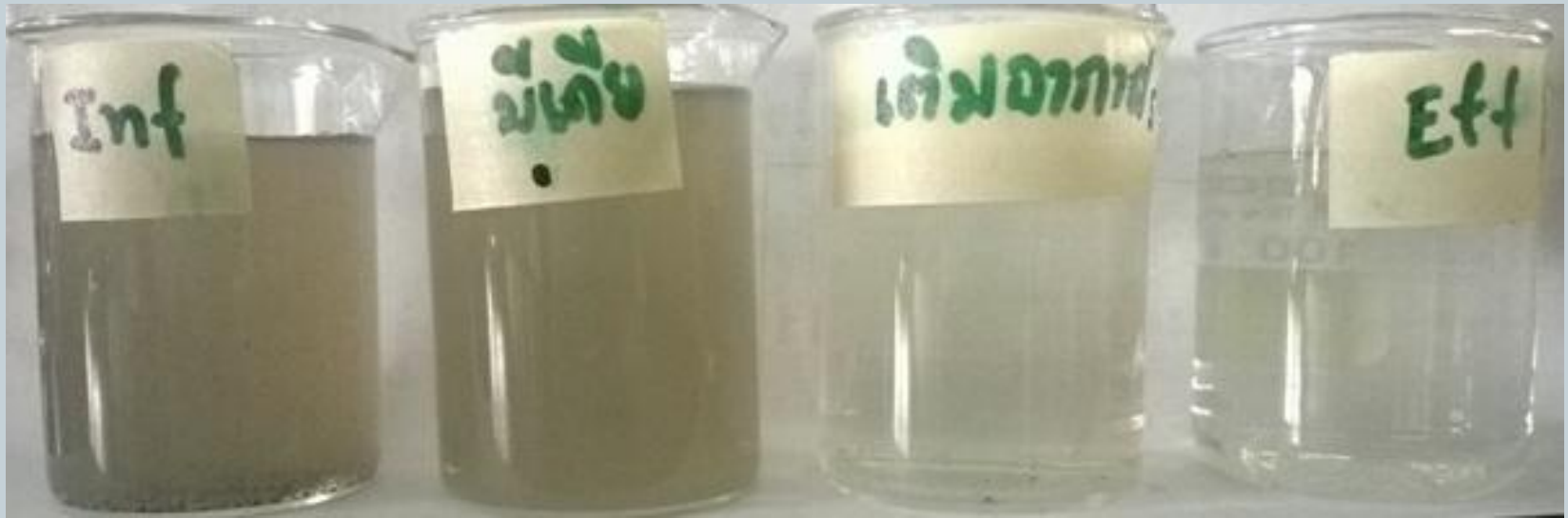
❑ Almost 3 years operation (on day 940), distribution line in anaerobic filter tank was clogged.

Treatment performance

average	BOD	SS	TP	TKN
% removal	88	86	28	30



Characteristic of treated wastewater



Influent

Anaerobic
tank

Aerobic
tank

effluent

Conclusion and recommendations



- ❑ BOD and SS removal were more than 85 % meanwhile TP and TKN were 28 and 30%, respectively.

Recommendations:

- ❑ Annual inspection for wastewater treatment unit should be done.
- ❑ Sludge should be removed at least once a year.
- ❑ Fine screening and storage wastewater tank should be installed prior to the operation.

Thank you very much for your kind attention

