

# Waste Water Treatment

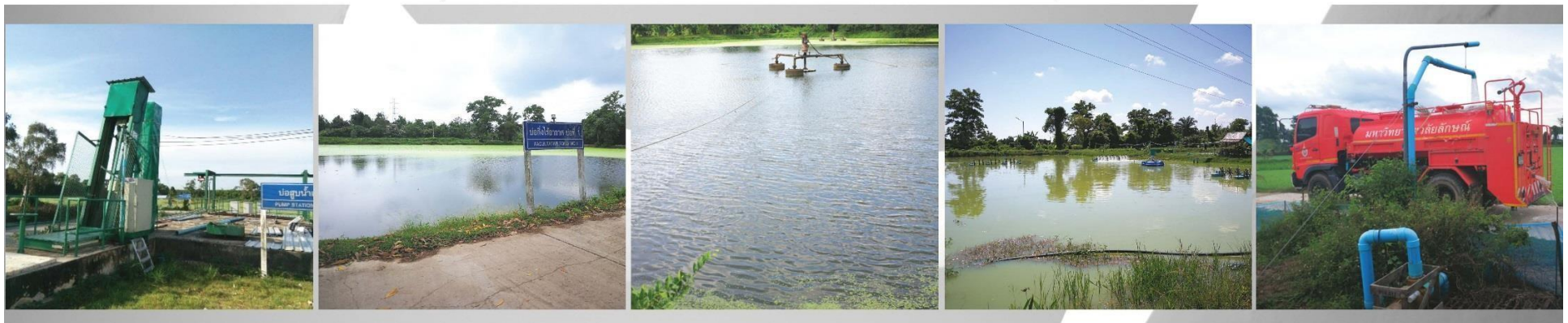
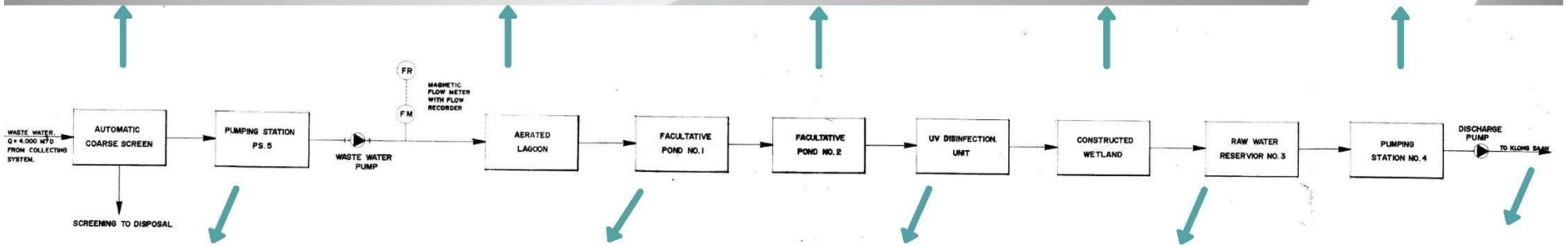




The sewage water, the water usage patterns of students and staff of Walailak University are both grey water, namely wastewater from washing either from bathing, dishes or laundry and black water as wastewater from toilets due to Walailak University is a comprehensive university. Walailak University has a method to dispose sewage water with regard to environment and well-being of community. In the part of black water, The University use underground septic tank set to disposal. For the gray water to be collected by the combined pipe system into the central wastewater treatment of university. The central wastewater treatment plant uses aerated lagoon, followed by the pond stabilization. The treated wastewater characteristic is better than the wastewater standard which determinate by the Pollution Control Department, Thailand. The treated water was utilized for watering a tree in the university area and fishing.

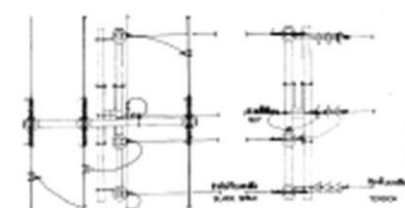
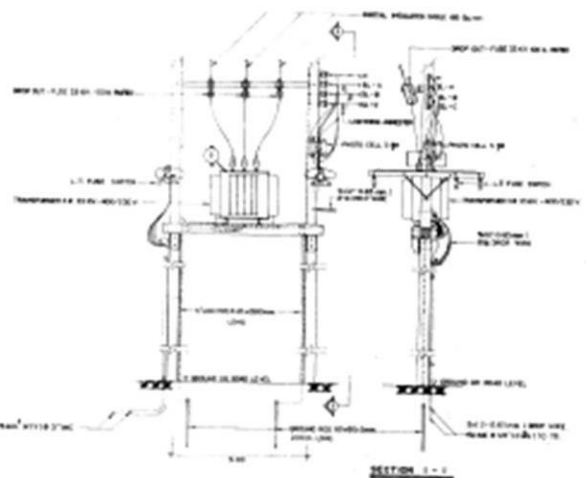
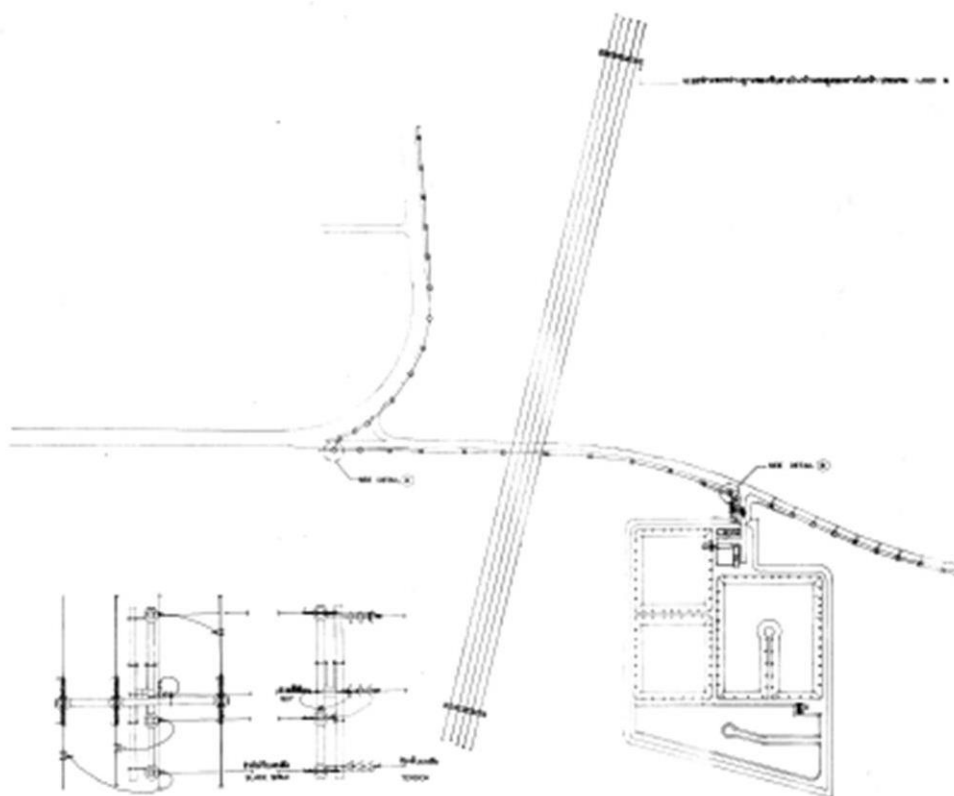








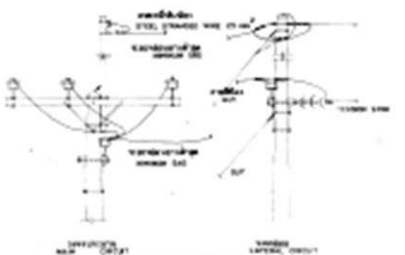




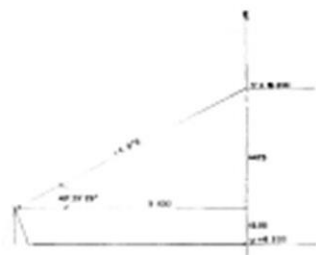
SECTION 2-2



SECTION 2-3



SECTION 2-4



SECTION 2-5

DETAIL 2-1-40

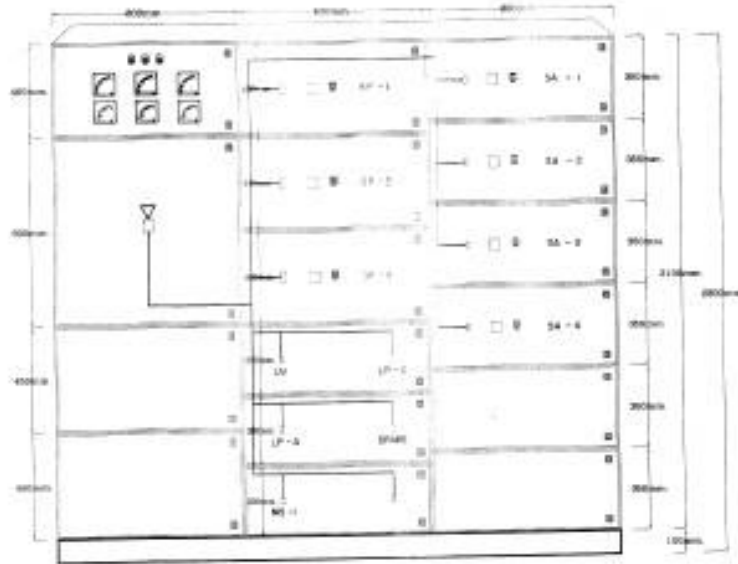
REV.	BY	DESCRIPTION	DATE	TITLE	PAGES

		<b>กรมส่งเสริมการเกษตร</b> <b>กรมส่งเสริมการเกษตร</b> <b>กรมส่งเสริมการเกษตร</b>	
วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี	วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี	วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี	วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี วิทยาลัยการเกษตรและเทคโนโลยี

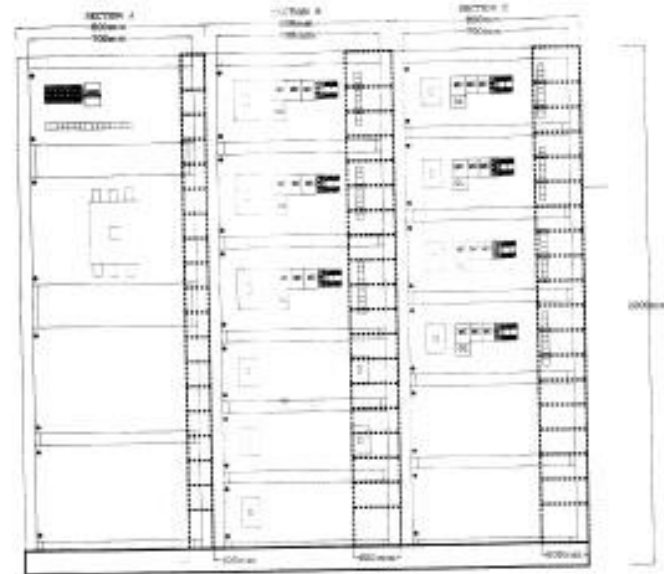
FRONT VIEW

SCALE 1:10



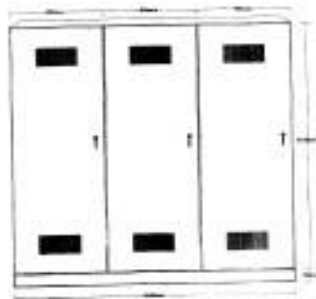
EQUIPMENT (INTERNAL)

SCALE 1:10



BACK VIEW

SCALE 1:10



SIDE VIEW

SCALE 1:10



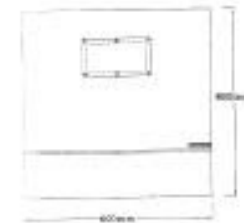
IN SIDE VIEW

SCALE 1:10



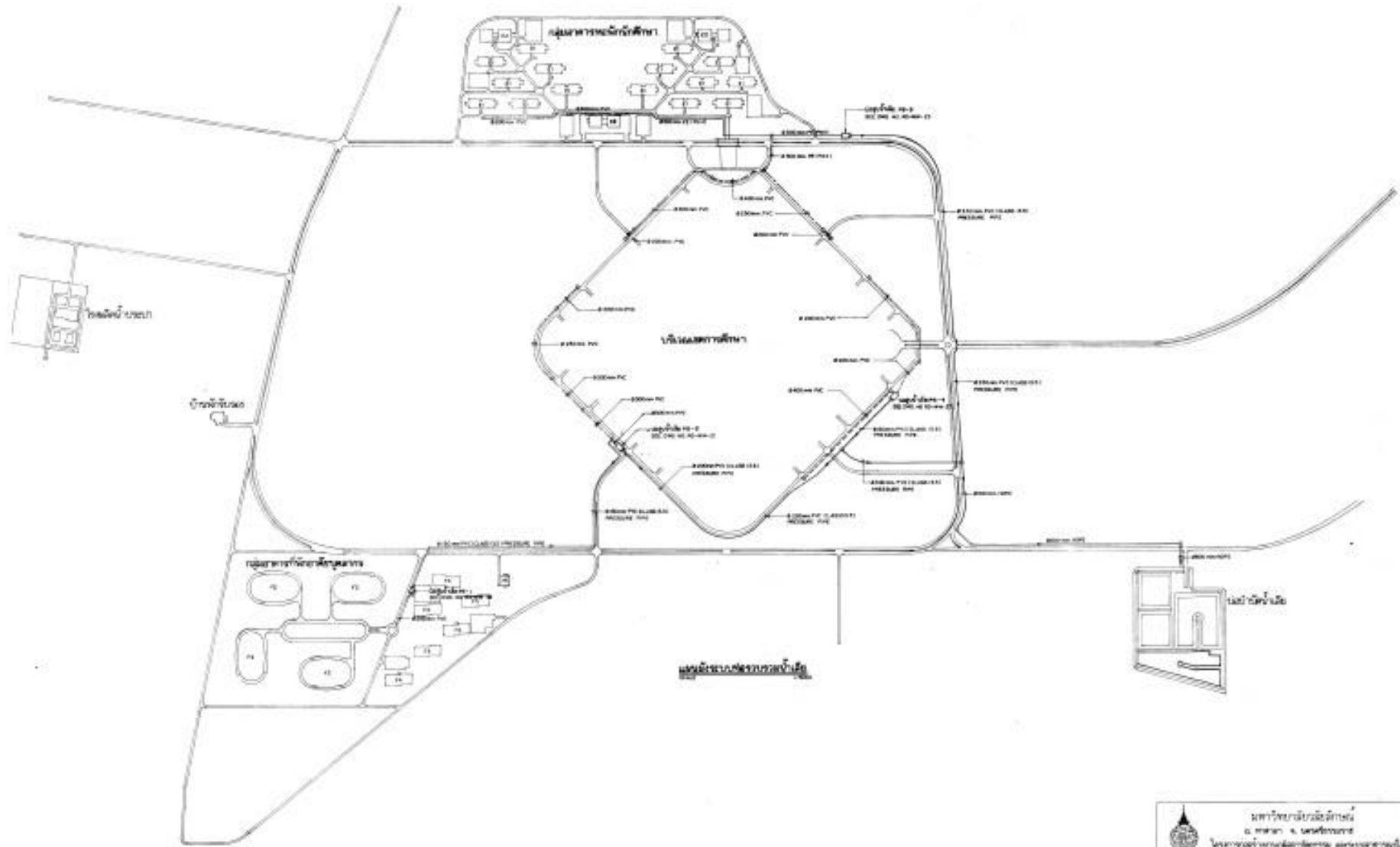
BOTTOM VIEW TOP VIEW

SCALE 1:10



หน่วยงานรับผิดชอบ  
 หน่วยงานต้นสังกัด  
 หน่วยงานต้นสังกัด

FILE	BAR DISTRIBUTION BOARD CONTROL CENTER	PROJECT NO.	11/20
DESIGNED BY	PROJECT MANAGER	DATE	11/20
CHECKED BY	PROJECT MANAGER	DATE	11/20
APPROVED BY	PROJECT MANAGER	DATE	11/20



แผนผังบริเวณโรงเรียนวัดป่าสัก

NO.	DATE	REVISION	DESIGNER	CHECKER	DATE

**กรมการศึกษานอกโรงเรียน**  
**สำนักงาน ก.ส.ศ.บ.**  
**โครงการพัฒนาระบบสารสนเทศ โรงเรียนวัดป่าสัก**

<b>ชื่อโครงการ</b> ๑. อาคาร ๑, ๒, ๓, ๔, ๕, ๖, ๗, ๘, ๙, ๑๐, ๑๑, ๑๒, ๑๓, ๑๔, ๑๕, ๑๖, ๑๗, ๑๘, ๑๙, ๒๐, ๒๑, ๒๒, ๒๓, ๒๔, ๒๕, ๒๖, ๒๗, ๒๘, ๒๙, ๓๐, ๓๑, ๓๒, ๓๓, ๓๔, ๓๕, ๓๖, ๓๗, ๓๘, ๓๙, ๔๐, ๔๑, ๔๒, ๔๓, ๔๔, ๔๕, ๔๖, ๔๗, ๔๘, ๔๙, ๕๐, ๕๑, ๕๒, ๕๓, ๕๔, ๕๕, ๕๖, ๕๗, ๕๘, ๕๙, ๖๐, ๖๑, ๖๒, ๖๓, ๖๔, ๖๕, ๖๖, ๖๗, ๖๘, ๖๙, ๗๐, ๗๑, ๗๒, ๗๓, ๗๔, ๗๕, ๗๖, ๗๗, ๗๘, ๗๙, ๘๐, ๘๑, ๘๒, ๘๓, ๘๔, ๘๕, ๘๖, ๘๗, ๘๘, ๘๙, ๙๐, ๙๑, ๙๒, ๙๓, ๙๔, ๙๕, ๙๖, ๙๗, ๙๘, ๙๙, ๑๐๐		<b>ชื่อสถาปนิก</b> ๑. นายสมชาย ใจดี ๒. นายสมชาย ใจดี ๓. นายสมชาย ใจดี ๔. นายสมชาย ใจดี ๕. นายสมชาย ใจดี	<b>วันที่</b> ๑. ๒๕๖๓ ๒. ๒๕๖๓ ๓. ๒๕๖๓ ๔. ๒๕๖๓ ๕. ๒๕๖๓	<b>สถานะ</b> ๑. ๒๕๖๓ ๒. ๒๕๖๓ ๓. ๒๕๖๓ ๔. ๒๕๖๓ ๕. ๒๕๖๓
---	--	--	--	---

**SCALE** : 1 : 1000

## **Wastewater treatment system Walailak University**

Walailak University has established a wastewater treatment system It is designed to be able to handle 4,000 cubic meters/day of wastewater at a BOD of 150 mg/L when treated. The effluent will be discharged from the system at the BOD value of 20 mg/l. The system is designed as a biological treatment system. Consisting of 1 aeration pond, followed by 2 semi-anaerobic ponds, an ultraviolet sterilization system, and 1 Wet Land pond, which serves to hold water before it is released into nature. The work process consists of

1. Garbage screen driven by an electric motor, wastewater discharged from the wastewater combined system. There will be various debris attached to it and will flow to the sewage pumping pond. Which must be separated from the waste trap first to reduce the problem of debris clogging and damaging the submersible pump.
2. Sewage pumping wells Wastewater, when flowing through the grate like garbage, will flow together at the sewage pumping pond. to collect wastewater to the aeration pond There are 3 sets of wastewater pumps with a size of 340 cubic meters/hour, working at a maximum of 2 sets and 1 set of reserves, which will work alternately.
3. Aeration pond When wastewater is pumped into the aeration pond Which can support wastewater of 18,903 cubic meters, which will have 4 sets of slow-cycle aerators of 15 kW, with water retention for 4-5 days, will help reduce BOD by approximately 70%.
4. The semi-anaerobic pond No. 1 has a size of 18,217 cubic meters, holding water for 4.5 days by using the AEROBIC and ANAEROBIC FACULTATIVE BACTERIA processes to decompose organic weaves in wastewater, reducing BOD by approximately 60%.
5. The second semi-anaerobic pond has a size of 37,752 cubic meters and holds water for 9.4 days, reducing the BOD by approximately 50%.
6. Ultraviolet light sterilization system The treated wastewater from the second semi-anaerobic well contains some pathogens. Before releasing the wastewater to natural sources, it must be sterilized using ultraviolet light. It consists of four UV modules capable of handling wastewater at a maximum flow rate of 250 cubic meters/hour.
7. The WETLAND pond acts as a reservoir for the treated wastewater in the pond before it is released. Continue into the reservoir. and used as a natural science study of the university It will be kept at this pond for 1.2 days with a water volume of 4,900 cubic meters.
8. Tilapia pond treatment wastewater The university has experimented with raising tilapia in 4 ponds to ensure the quality of the water before releasing it into natural water sources.