Sustainability Report 2024

President's Statement

Valaya Alongkorn Rajabhat University under Royal Patronage (VRU) Over the past year, has strengthened its use of the Sufficiency Economy Philosophy in all aspects of university life. Our focus is on balanced, sustainable growth, reducing environmental impact, promoting social well-being, and encouraging moderation and self-reliance among students, faculty, and staff. This report highlights our key achievements and strategies to support sustainable development.

This year, we launched several projects to reduce our environmental footprint and use resources more efficiently, including a 15% reduction in energy use, the installation of 500 solar panels, and expanding organic farming on campus. These efforts reflect our goal of creating a self-sufficient and sustainable university.

Our campus operations have focused on sustainability, including completing an eco-friendly academic building, introducing electric shuttles, and reducing water usage by 10%. We also promoted local food production and reduced waste across campus. In education and research, we introduced new courses on sustainable agriculture, community development, and environmental ethics. Our research teams made progress in renewable energy, water management, and self-sufficiency models, aiming to address both local and global sustainability challenges.

Looking forward, we will continue advancing sustainability with a focus on self-sufficiency and moderation. Our goals include achieving carbon neutrality, expanding green spaces, and forming partnerships for sustainable development locally and globally, with the Sufficiency Economy Philosophy guiding our future efforts. Reflecting on our progress, we are motivated to keep building a sustainable future. VRU is committed to collaboration, innovation, and leadership in sustainability, with a focus on balanced development that benefits both the university and the wider community.

Associate Professor Dr. Sombat Kodchasit

Overview of VRU

In 2024, Valaya Alongkorn Rajabhat University under the Royal Patronage, aims to be a "Green and Sustainable University. The university operates with a commitment that emphasizes community engagement processes, leading to collaborative efforts from external agencies at all levels at local, national and international to become a "Sustainable university by 2036".

PHILOSOPHY : Outstanding academics, emphasizing morality, leading local development, advancing in technology

VISION : A university of collaboration driven by The King's philosophy aiming to be a wisdom repository for sustainable education, community and social development.

MISSION

1. Provide education for people of all ages with standards that meet the needs of national development and produce graduates who are valuable to society.
2. Produce and develop research, innovation, academic work for social service, and creative work that is accepted and beneficial to the community and society.
3. Coordinate with the community, society, and network agencies to create power and support the drive of the economy, society, education, arts, culture, and the environment until it becomes sustainable development.
4. Develop a university of well-being that is managed according to excellent operational criteria and good governance principles, moving towards becoming a Smart University and an environmentally friendly university (Green University).

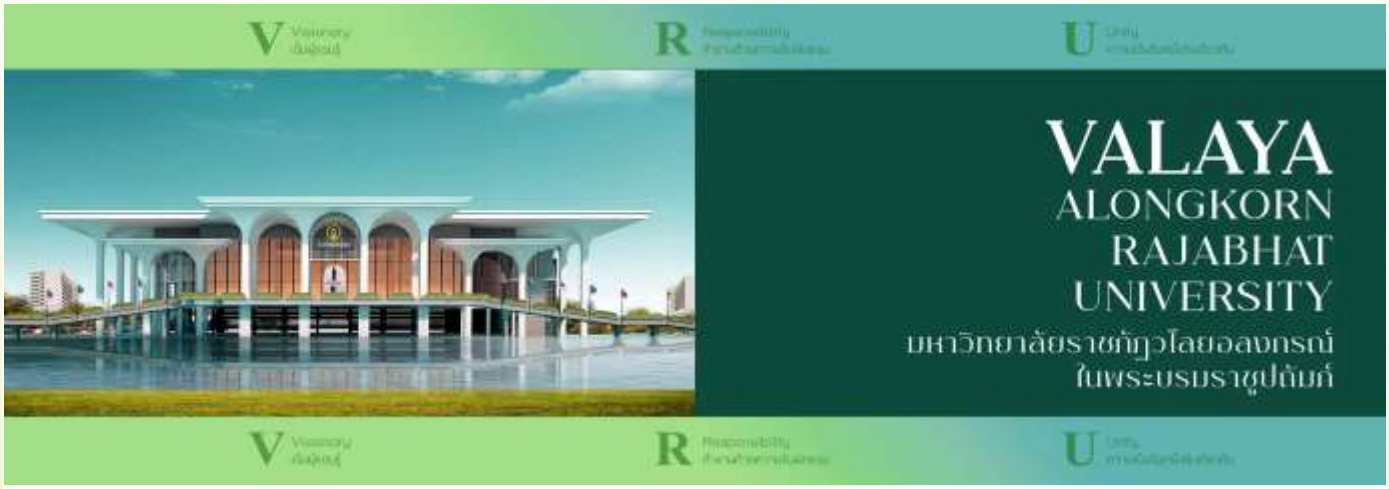
Uniqueness and identity

UNIQUE : A university of knowledge that drives the King's wisdom towards sustainable development

IDENTITY : Graduates who have a volunteer spirit, expertise in science and have 4 characteristics:

1. Having a good and correct attitude towards the country
2. A solid and strong foundation in life - having morality
3. Having a job - having a career
4. Being a good citizen - having discipline

VRU DRIVING TO "Green and Sustainable University"



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Chapter 1

Setting and Infrastructure

Valaya Alongkorn Rajabhat University under the Royal Patronage, there are 3 campuses with learning and teaching management. VRU service in 3 areas are the main campus, located in Pathum Thani province, the Bangkok campus and the Sra Kaew campus.

The location of the VRU on Phaholyothin Road. The surrounding area has Nava Nakorn Industrial Estate in the south and west. Communities and agricultural areas to the north The east side of the university is a densely populated village. VRU is comprehensive type of higher education institution.

Main campus

Bangkok campus

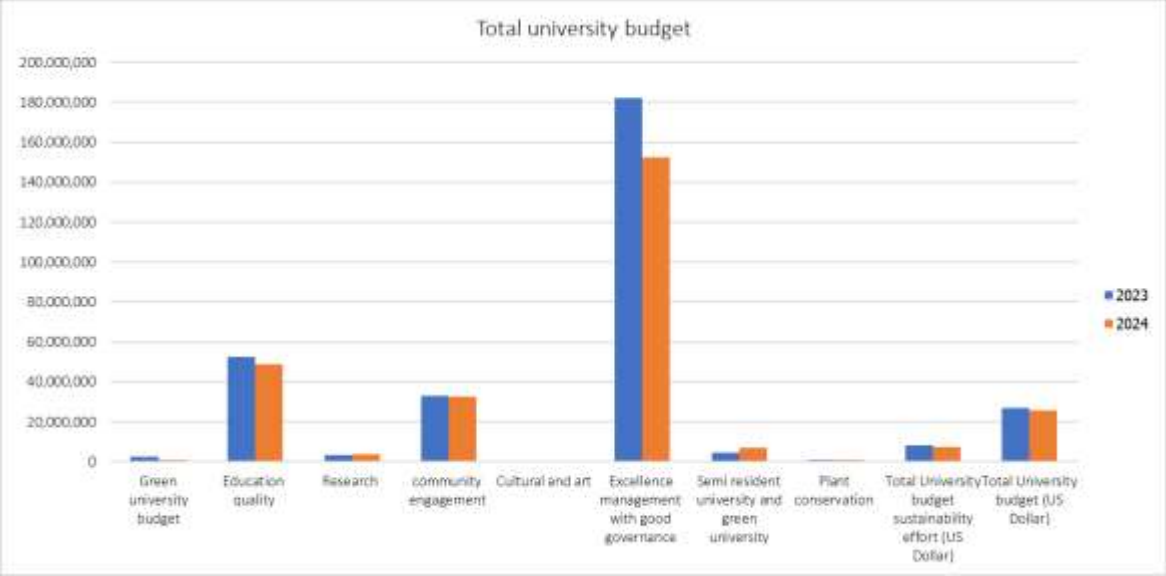
Sra Kaew campus

VRU campus setting	2024
University Area (m^2)	610,751
Total campus ground floor (m^2)	64,213
Total campus buildings area (m^2)	186,483
The ratio of open space area to total area	89.49
Total area on campus covered in forest vegetation (m^2)	207,300 (34 %of Total area on campus)
The covered in planted vegetation area (m^2)	242,771 (40 %of Total area on campus)
Total area on campus for water absorption (m^2)	150,634 (25 %of Total area on campus)

Total university budget and Populations in VRU

University budget for sustainability efforts

In 2024, more than 40 percent of the university budget allocation focuses on sustainability efforts. Total university budget of VRU: 25,682,689 US Dollars. And VRU budget for sustainability effort: 7,349,668 US Dollars. Percentage of university budget for sustainability efforts within a year : 44.72 %



** Exchange rates of the Bank of Thailand on October,23 2024 : 1 Thai Baht = 0.030 United States Dollar

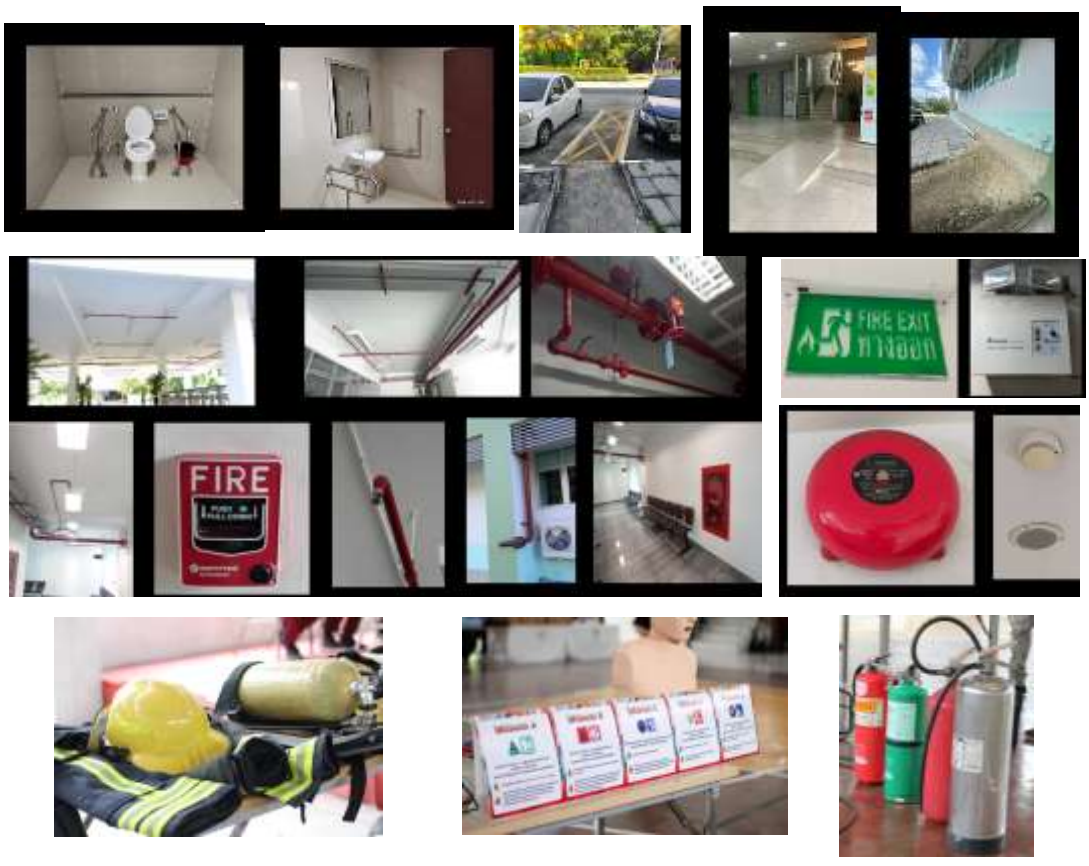
Open space area in campus and Populations

Total number of regular students (part time and full time) 11,803 students. 8,178 students of undergraduate and graduated, and 2,292 students in school. Total number of academic and administrative staff : 1,009 staffs. And the total open space area divided by total campus population : ((610,751-64,213)/ 11,675) = 57.1%

Total number of regular students (undergraduate and graduated)	**8,178**
Total number of regular students (school)	2,292
Total number of academic and administrative staff	1,093
total open space area divided by total campus population	57.1%

Campus facilities and safety

In the year 2024, VRU 63 buildings in total, with a total learning area : 186,483 m^2 . Total of 20 operation and maintenance activities : area of operation and maintenance activities 55,558 m^2 (55,558 /186,483) x 100 = 29.79 %. The university campus facilities for has renovated sidewalks and ramps with blocking areas to prevent parking, including renovating disabled toilets in most of the old buildings. For new buildings, facilities will be designed and implemented for disable and maternity care.



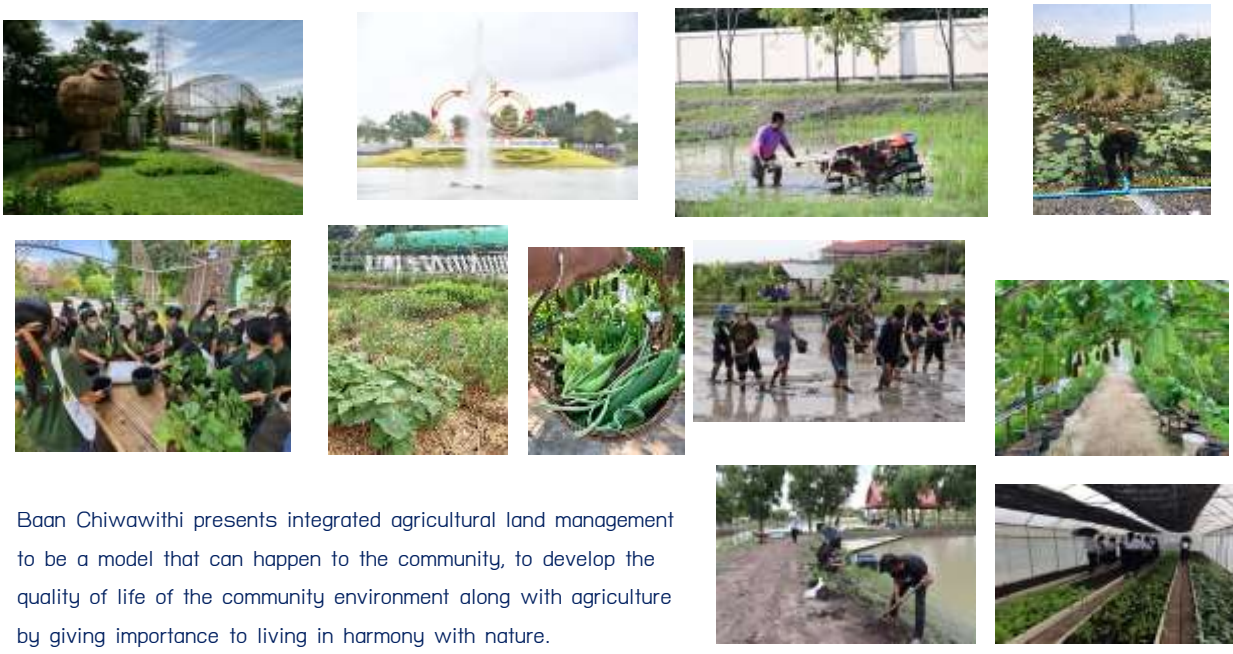
Emergency Button/Fire Alarm/Springer Water System/Fire Water System

VRU Health infrastructure facilities for students and academic and administrative staff wellbeing. First aid, emergency room, clinic, hospital and certified personal, system and accessible for public.

Conservation plant, animal, and wildlife, genetic resources for food and agriculture secured

Conservation of plant genetics and biodiversity has been fully utilized with 100% responsibility. The total area of 135,872 m^2 is divided into conservation areas, propagation of local vegetables and Economic plant crops of 82,124 m^2. Water resource areas, aquatic animals and aquatic plant propagation 53,748 m^2. There has been an action on conservation of endemic plants such as lotus and endemic vegetables. In addition, create a community food source both vegetable garden organic vegetables, biological systems, organic animals that are human food such as ducks, chickens, fish, etc.

Conservation plant, animal, and wildlife



Baan Chiwawithi presents integrated agricultural land management to be a model that can happen to the community, to develop the quality of life of the community environment along with agriculture by giving importance to living in harmony with nature.

Chapter 2

Energy and Climate Change

In 2024, VRU have various buildings will be upgraded. By giving importance to choosing equipment that is energy efficient and environmentally friendly. 2021–2024 saw the replacement of 219 air conditioning units with over 15 years old, low-efficiency air conditioners with inverter system models. At minimum once a year, a cleaning action plan is created to improve air conditioner efficiency. Energy conservation policies minimize the amount of electricity consumed, and appliances with energy-saving labels (such as No. 5) are used. Furthermore, a fluorescent lamp replacement was carried out using 12,000 LED bulbs. Every electrical item at the institution had its performance evaluated. and set up electric equipment that use less energy. Additionally, there are effective safeguards for employees who utilize power.

Electrical energy loss survey

The university has adjusted activities focus on reducing the use of electricity from air conditioners.

Selection of energy-saving and highly efficient electrical appliances

Building renovation for energy efficiency and savings

Smart building and Green Building

VRU have **Energy Sustainability Environmental Action Plan in 2021-2025**, Start a project to establish a hybrid renewable energy innovation learning center to promote sustainable learning potential in Pathum Thani Province, and a project plan to establish a learning center Integrated waste management.

Smart building Element

1. There is a building that use natural air circulation and use sun light for lighting inside the building.
2. There is a building that use solar cell for energy supplied.
3. There is water conservation, such as using sanitary ware and water.
4. Environmental Protection, such as waste management, odor and smoke disposal system, and waste water treatment plant.
5. There is quality control being utilized in the indoor environment, such as filter film from sunlight and control air condition at 25 °C.
6. Increase green space and use of natural light.

Energy Sustainability
Environmental Action Plan in 2021-2025

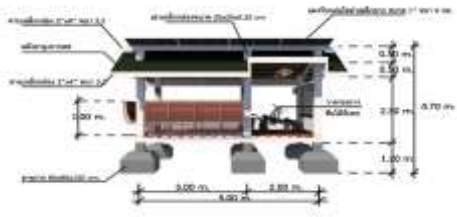
VRU Hospitality Training Center (960 m^2)

Actions on elements of Green Building
include renovating the Office of Information Technology by installing a solar power system

Renewable energy sources on campus

VRU are now renewable energy resources which includes solar panels mounted on the rooftop of the library building, Solar houses and 40 solar cell street lights on campus. In addition, the university produces biogas from food waste fermentation, approximately 10 cubic meters per day, equivalent to 4.6 kg of LPG. There are 4 sets of wind power, Wind power is hybrid energy power standalone (Wind and Solar power) and it is the newest energy the university has to operate with a generating capacity of 200 watts/set. All so, there is a biodiesel generator with a capacity of 40 liters per hour.

In 2023-2024, install a solar power generation system on the roof (Solar Rooftop) with a production capacity of not less than 1205.54 kWp. Initially, it is planned to install a total of 10 buildings and a design survey will be carried out to install an electric charger. Normal Charger (EV Charger) size not less than 22 kW, at least 4 units.



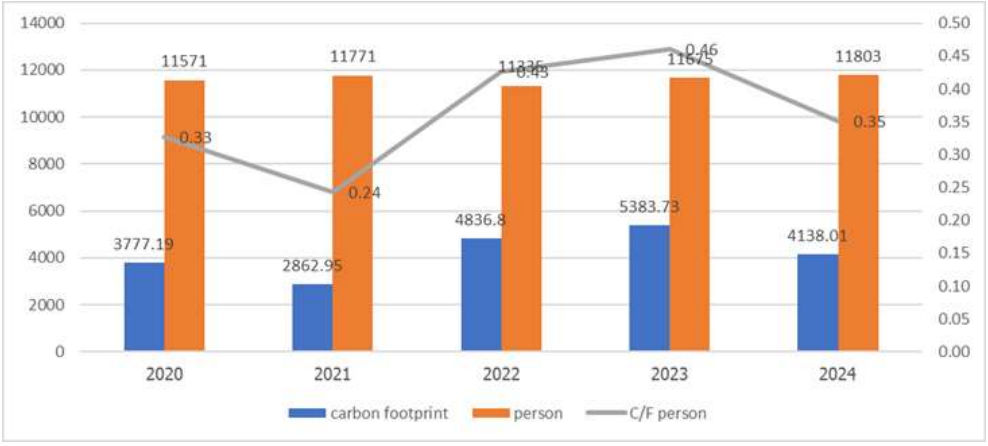
Total electricity usage and renewable energy production

In 2024, Electricity consumption 4,507,240 kWh of Valaya Alongkorn Rajabhat University under the Royal Patronage, Pathumthani, Thailand. There are staff and student equal to 1,009 and 10,794 persons, respectively. When comparing electricity consumption per number of people in the university, it is 381.87 units/person/year. From the statistics of increased electricity use, the university has a policy to increase alternative energy production sources.

	2017	2018	2019	2020	2021	2022	2023	2024
Unit	6,340,972	6,665,036	7,121,665	4,033,922	4,234,277.4	6,546,753.0	5,918,740	4,507,240.0
Price (Us dollar)	855,303.30	809,757.01	975,615.63	489,501.12	662,809.63	951,282.00	1,094,727.0	563,405.00

In 2023-2024, install a solar power generation system on the roof (Solar Rooftop) with a production capacity of not less than 1205.54 kWp. Initially, it is planned to install a total of 10 buildings and a design survey will be carried out to install an electric charger. Normal Charger (EV Charger) size not less than 22 kW, at least 4 units. In addition, renewable energy such as solar power, wind power, and biomass power are being widely applied in universities. And there is a work from home and online learning policy for staff and students.

In 2024, Total carbon footprint divided by total campus' population = 4,138.01/11,803 = 0.3506 metric tons per person



Total Carbon Footprint

Greenhouse gas emission reduction program

In 2024, VRU set renewable energy resources which includes solar panels mounted on the rooftop of the library building, Solar houses and 40 solar cell street lights on campus. In addition, the university produces biogas from food waste fermentation, approximately 10 cubic meters per day, equivalent to 4.6 kg of LPG. There are 4 sets of wind power, Wind power is hybrid energy power standalone (Wind and Solar power) and it is the newest energy the university has to operate with a generating capacity of 200 watts/set. All so, there is a biodiesel generator with a capacity of 40 liters per hour. Charing station and for light at night 22.24 kW

- Solar water pumping in rice field 6.48 kW
- Solar pumping for water circulation 1.56 kW
- Charing station in rest area 600 W
- Solar energy boat for waterway tourism development in VRU
- Solar drying cabinet, Solar insect trap and solar powered water pumps for agriculture for transferring knowledge and promoting the use of renewable energy in the community

In 2023-2024, install a solar power generation system on the roof (Solar Rooftop) with a production capacity of not less than 1205.54 kWp. Initially, it is planned to install a total of 10 buildings and a design survey will be carried out to install an electric charger. Normal Charger (EV Charger) size not less than 22 kW, at least 4 units. And 200 electric motorcycles to serve students and help reduce carbon dioxide emissions.

Chapter 3

Waste

VRU realized the importance of waste treatment which arising from many activities at the university and a lot of occurred waste. The university has promoted all staffs and students to share the responsibility for environmental conversation by initiating the projects and activities related to the waste treatment and recycling.

The purposes of the activities are created environment friendly behavior of staffs and students to reuse waste or leftover the materials by the following **3Rs**.

Reduce: reduce using materials which cause the wastes.

Reuse: bring back the used materials to be used again.

Recycle: processing the leftover materials and used again.

From October 2023 to September 2024, approximately 19 percent of recyclable waste 73.26 tons (73,268 kg) can be separated from the total 388.40 tons (388,400 kg).

Recyclable waste From October 2023 to September 2024

VRU Activities in waste management to reduce, reuse and upcycling

VRU to reduce avoid and stop using foam containers and plastic bags for good health and the environment follows: Reduce by except get plastic bags and say no for foam boxes for food from shops in the university. Select environmentally friendly materials as food containers for meetings, seminars, and trainings. The university has organized a campaign for waste separation for university personnel. The university has provided 10 more sets of clearly separated bins, installed in university buildings and shops. These bins have bins for organic waste or food waste, recyclable waste, and general waste.

Upcycling Activity are converting waste materials or unusable products into existing products into new quality and value-added products. Upcycling is a process that focuses on resource efficiency by developing waste materials into new products that have both design and commercial value. VRU's team brought new ideas let's develop leftover items to come back to life for reuse. This is an attempt to create products that are environmentally friendly and take into account social responsibility.

VRU Recycle bank

VRU had promotes waste separation. Recycle bank is an operational model for promoting the separation of solid waste. The recycle bank is the best place for students to understand the benefits of waste separation. The solid recyclable waste will be sold to the dealers for processing into reusable materials. Recycle Bank deposits can be separated to 4 types such as papers, glasses, metals, plastics old vegetable oil and shockproof foam.

The university organized a workshop on "Waste Sorting before Disposal" for over 500 students to provide them with knowledge and understanding about properly disposing of waste, create awareness of proper waste disposal and demonstrate the value of recyclable waste.

Program to reduce

paper and plastic in campus

VRU has implemented the policies and methods for reducing paper and plastic usage for the goal that is to create a friendly living environment by inviting to do many relevant activities. **Reducing the plastics project,** VRU has partnered with convenience stores, restaurants and cafés to reduce of disposable plastic bag and disposable products. **Say no to foam,** the university aware about food packaging product issues especially, the foam boxes.

Program to reduce single use plastic and foam from food container

VRU has implemented the policies and methods for reduce paper using by E-office program

Information technology plays a crucial role in university management. Traditional systems, such as paper-based processes, have been replaced by various development projects, including electronic systems the Internet, and website development. These systems facilitate the transfer of knowledge, information, and communication among stakeholders. The advantages of these systems include increased speed, cost-effectiveness, reduced manpower requirements, and streamlined work processes. Database using electronic report. Nowaday, VRU have 10 electronic system including E-Saraban system, Personnel Performance Reporting System, ERP System: Enterprise Resource Planning, V-room system, Human Resource Management encompasses, The Vehicle Management System, Personnel salary verification system, A classroom management system, Strategic Information System (SIS) and Electricity Usage Reporting System.

E-Saraban system

Personnel Performance Reporting System

Waste treatment

• Organic waste

• More than 50% of all solid waste is organic waste such as food waste, vegetables, fruits and weeds. The organic waste can be into compost and this choice turns burden into value.







The composting project



Upcycling

Recycle waste material


Inorganic waste

Factors in choosing a waste disposal method include the nature of waste, quantity, equipment, and waste disposal area. The cooperation of students and staff benefits from the elimination of many types of waste thrown away every day.

Toxic waste

Total volume of toxic waste 0.24 tons per year: general toxic waste produced 0.17 tons per year, chemical waste produced 0.05 tons per year, infectious waste produced 0.02 tons per year. Total volume of toxic waste operated in cooperation with the municipality to collect and dispose of properly.



Chapter 4

Water

In 2024, Implementation of the water conservation project of VRU there are many formats. Can be adapted to suit departments and areas within the university as follows:

Installation of a wastewater treatment system to use techniques and methods to improve wastewater that is in the form of wastewater. It has a sanitary treatment system to keep the water clean according to standard criteria. The university has installed 4 sites.

Wastewater treatment using nature It is a joint process of living and non-living things. under a certain environment Suitable water filter plants It is the use of plants to filter or purify water to make it cleaner because plants will absorb nutrients contained in wastewater to use for growth.

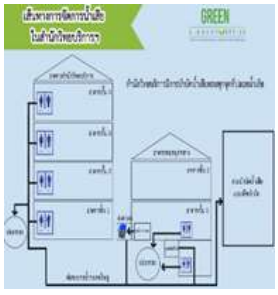
Water turbine, solar and electric aeration. There is a fountain system to bring water up and come into contact with oxygen.

Biological fermentation It is the production of a liquid obtained from the fermentation reaction of plants, vegetables, and various fruits with clean water and natural sugar or molasses.

Carrying out **water conservation activities** by raising fish in cages Releasing treated water into rice fields and lotus fields to emphasize sustainable water utilization.

There are also **activities of students creating innovations** to add aeration to water sources. The Green Youth Project encourages students, teachers, and staff to participate. There is a public relations sign posted. Campaigns by various units regarding conservation of resources, energy and water, such as the Office of Science Services and Information Technology Vocational experience training center and Faculty of Science and Technology, etc.

There is a public relations sign posted. Campaign of various units regarding conservation of resources, energy and water under the GREEN DIGITAL by VRU project.









Implementation Water recycling program and

Water- efficient appliances usage

VRU have two systems that are oxidation pound and activated sludge.

Afterwards, the influent is drained to **16 stabilization pounds** around the university. Water resource management activities / rainwater / water tanks / wells.

The water after treated from the wastewater treatment systems (**approximately 12,500 L/week) is implied to plant watering and floor cleaning and etc.**

Furthermore, not only recycling water usages. **620,000 L of reclaimed water is utilized to fish cultivation ponds as well.**

VRU has a policy to support faculty and various unit for Use water-saving devices in the water closet.

Classroom buildings according to various faculties Bathrooms have been renovated to include products that **reduce water use by approximately 29%.**

There are water saving devices as follows: 1) Sensor urinal system set 2) Central system sink set 3) Use the Automatic Single Faucet Karat automatic hand washing system. 4) Sanitary ware: Cotto flat-sitting sanitary ware.

Implementation

Consumption of treated water

VRU Wastewater treatment systems have been built at 4 sources, including the 100 Years of Somdet Phra Srinagarindra Building, the main cafeteria, Satit VRU School, the dormitory cafeteria, and the student dormitory. The fixed film systems (biological wastewater treatment process) have been used to treat wastewater from the 100 Years of Somdet Phra Srinagarindra Building, while the septic tanks and grease and oil traps have been used to treat wastewater from Satil VRU School, the main cafeteria, dormitory cafeteria, and student dormitory. Afterward, rainfall and treated water are drained into stabilization pounds in the university (19 pounds) that are applied to wetland plants and aerators to improve water quality.

Water storage and delivery system in the university.

The university can > **75% treated water consumed** and also utilize the treated water for garden watering, solid waste shelter cleaning, and approximately 260,000 L/week. Furthermore 1,040,000 L from the oxidation pounds will be drained into the paddy fields, the lotus gardens, and the fish culturing cages. The aerated water will be pumped to rice fields, lotus gardens, and to raise fish in cages. The amount of water used in such activities is approximately 350,000 liters/ convert.

Implementation Water pollution control

VRU has set the policy towards a green university with the targets of changing and developing a sustainable environment. The water quality has been sampled and monitored every month and has the following parameters: 1) Physical parameters (pH, turbidity, temperature) 2) Chemical parameters (DO, BOD with Azide Modification Method, COD, conductivity, TKN, and TDS), respectively. In addition to water quality monitoring, the water quality committee informs all Green U committee members about the water quality of surface water within the university and the water management guidelines. Moreover, VRU has set up wastewater treatment systems at the main cafeteria, student dormitory, training center, and Valaya Alongkorn Rajabhat University Demonstration School under royal patronage cafeteria so that the water quality parameters do not exceed the surface water standard.

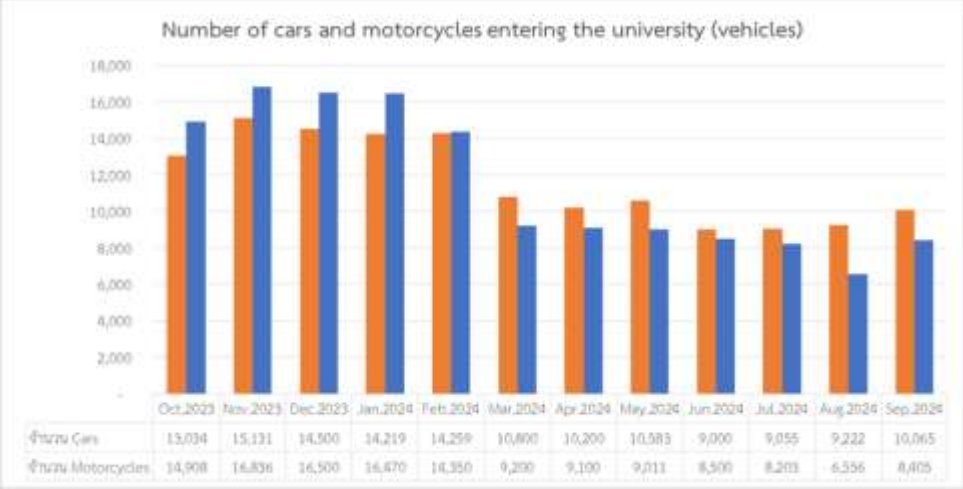

แผนงานปีการเก็บตัวอย่างน้ำและพารามิเตอร์ที่ตรวจวัดคุณภาพน้ำ
มหาวิทยาลัยราชภัฏวไลยอลงกรณ์ ในพระบรมราชูปถัมภ์
ประจำปี 2567

ครั้ง	วัน/เดือน/ปี	พารามิเตอร์ที่ตรวจวัด	หมายเหตุ
1	วันที่ 11/01/2567		
2	วันที่ 8/02/2567		
3	วันที่ 14/03/2567		
4	วันที่ 4/04/2567		แล้ง
5	วันที่ 2/05/2567		แล้ง
6	วันที่ 6/06/2567		
7	วันที่ 6/07/2567		
8	วันที่ 1/08/2567		ฝนตก
9	วันที่ 26/09/2567		ฝนตก
10	วันที่ ...../10/2567		
11	วันที่...../11/2567		
12	วันที่...../12/2567		

Chapter 5 Transportation

The total number of vehicles: 0.074

The university has activities and projects for count car and motorcycle assess to university. Report of reservation of 41 central cars in 2023, has the same usage 13,548 times. The total distance of the car is 1,246,674 kilometers. The average number of cars entering the university is 384 cars/day, approximately 140,068 cars/year. The average number of motorcycles entering the university is 379 vehicles/day, approximately 138,039 vehicles/year.



Shuttle services

The university has provided a shuttle bus service. Projects for arranging transportation within the university for substitute private vehicles. These are free service to avoid using private vehicles of staff, instructors and students. Follow by: Shuttle/bus campus inside campus 3 shuttle bus, 8 electric car, Walking, Public transportation station. Electric vehicle charging station, and the use of public vehicles in the office

Zero Emission Vehicles (ZEV)

Zero Emission Vehicles (ZEV) policy on campus. The university's policy is to reduce greenhouse gas emissions and reduce the use of private cars and reduce the use of cars that generate polluting the combustion engine. The university has provided more electric trains to serve students and staff, with a charting station available. The university also encourages students and staff to use bicycles with 499 registered, 50 electric bicycles/electric motorcycles, 10 Electric cars and 200 Electric bike rental. There are 9 more electric trains in free service.

The total number of Zero Emission Vehicles (ZEV) The university also encourages students and staff to use bicycles, with 93 registered, 30 electric bicycles/electric motorcycles and 20 free borrowed bicycles. There are 8 more electric trains in free service. The total number of Zero Emission Vehicles (ZEV) divided equal to 168 vehicle. Total campus population 11,675 persons.

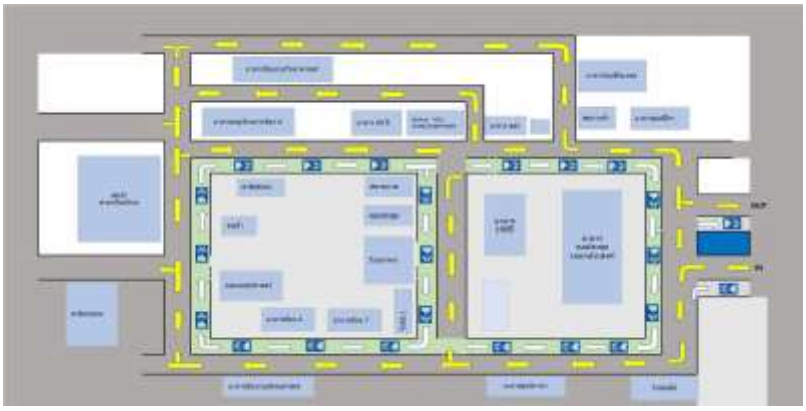
Formular ((5.10)/(1.12+1.14)) = 768/10,794 = 0.071

The ground parking area

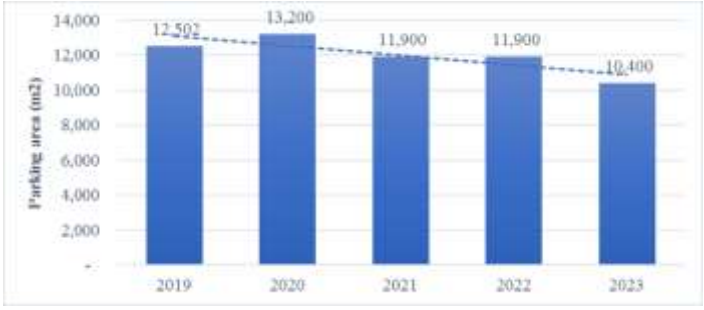
Ratio of ground parking area to total campus' area

In 2023-2024, Parking space has been organized for other uses, resulting in a reduction of parking space by 1,500 square meters. In addition, parking spaces are organized in an orderly manner and there are restrictions on the use of personal cars within the university. Ratio of parking area to total campus area.

Formula: ((5.12/1.5) x 100%)= ((10,400/610,751)x100%) = 1.702



Transportation program designed to limit or decrease the parking area on campus for the last 3 years. Transportation program designed to limit or decrease the parking area on campus for the last 3 years. Transportation program designed for parking spaces will have a restriction policy for parking to include points at the parking building. From the collection of parking spaces, there is a tendency to decrease due to more utilization of space and increasing green space. Program result in 21.2 % decrease in parking area .



•Number of initiatives to decrease private vehicles on campus

• The university has a policy of providing zero-emission vehicles and can transport large numbers of people to reduce the use of personal vehicles. In addition, there is also a way to change travel behavior to be the same way together. Tram free service, Electric car free service, Bicycle free service and Electric car free service.



Pedestrian path on campus

Pedestrian is developed that can walk along the building. Separator between road for vehicle and pedestrian path. Street lamp for pedestrian in night use solar energy by focusing on safety and orderliness.









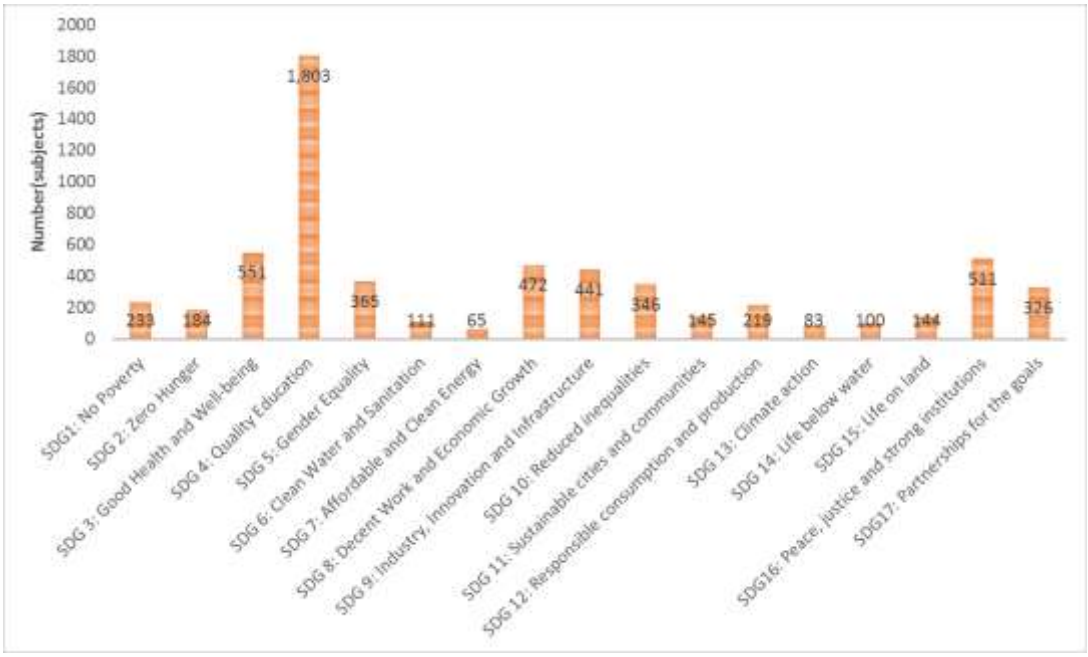
Chapter 6

Education & Research

Number of courses/subjects related to sustainability offered

Number of courses/subjects related to sustainability offered in 2023 of 6,384 subjects. Total Number of courses/subjects offered in 2024 of 7,140 subjects. The total number of courses related to Sustainability offered in 2023 of 79 courses and 6,384 subjects from 7,140 subjects as a percentage of 89.94%

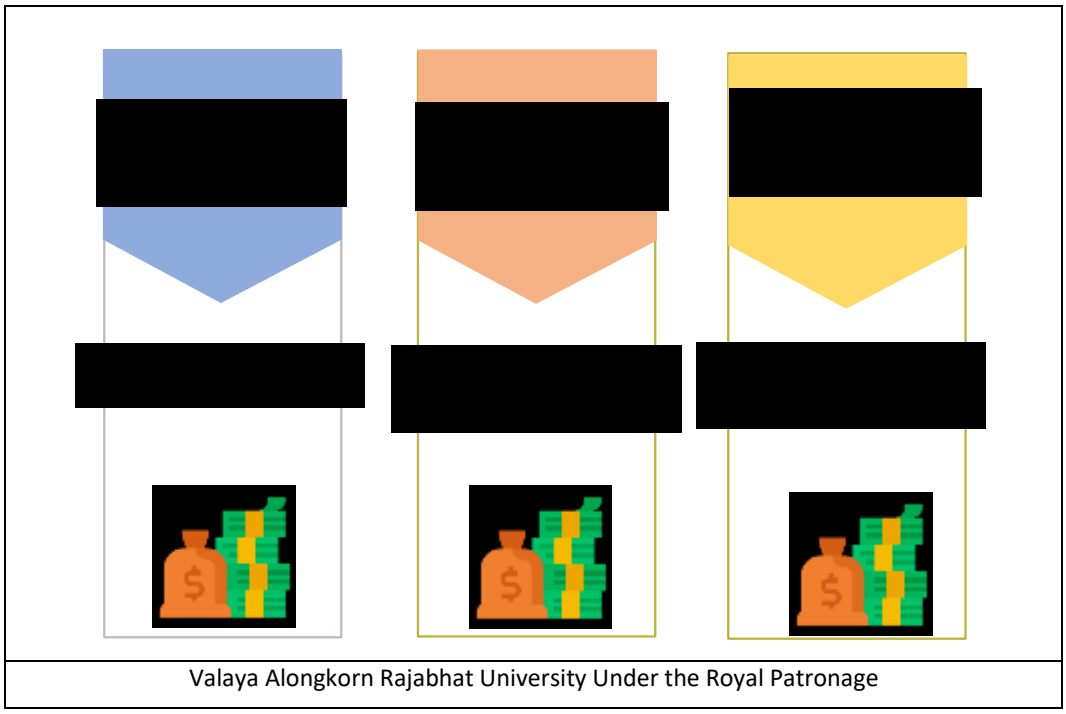
(6,384 / 7,140) X 100% = 89.94%



The sustainability Research funding

Number of courses/subjects related to sustainability offered

Total Research Funds Dedicated to Sustainability Research per annum over the last 3 years 1,743,771 US Dollars. The ratio of sustainability research funding to total research funding 100%



Valaya Alongkorn Rajabhat University Under the Royal Patronage

Number of events

Related to sustainability

Number of events related to sustainability. (average annually for the past 3 years) : 61 events

Number of events

Related to sustainability

- Number of events related to the issues of environment and sustainability hosted or organized by your university equal to 54 events. For example Recycled Waste Bank Learning Base Workshop, Recycling Waste Bank Project Activities, Activities to participate in the Student Leader Potential Development Project and Volunteer Camp, Rajabhat Volunteer Camp Activities, Volunteer VRU for Environment Camp, Volunteer Family Club, Volunteer VRU for Safety, culture exchange , Volunteer VRU for Health, and Robot Club.












Cultural activities on campus

Program(s) with international collaborations

Number of cultural activities on campus.

Project to promote the preservation of arts and culture to further the creative economy equal to 4 events per year follow as: Cultural festival activities , Culture For Learning activity, Culture for Learning, Network development activities and arts and culture activities and Activities to disseminate arts and culture (Arts and Culture Council of Thailand)

Number of university sustainability program(s) with international collaborations.

Important projects of the VRU university and international cooperation: 23 projects

Sustainability community services project organized and/or involving students

- **Number of sustainability community services project organized 6 projects.**
- 1) School Botanical Garden Training Project 5 Components Course.
- 2) 4 learning base projects, including Bhumi Phalang Phaendin Flooding food streams for the community food security and contemporary Thai ways.
- 3) Resource collection survey project Resource protection activities and resource planting and conservation activities Assemble the benefits.
- 4) Project for conservation and resource utilization activities Conducting research together with various faculties to study the potential of food and medicinal plants. plant tissue culture.
- 5) Plant Genetic Information Center activity project Biodiversity information, plant species information, as well as wisdom on the use of plant genetics and a framework for creating awareness.
- 6) Activities project to create awareness of resource conservation Operating according to the school botanical garden Activities to create awareness of conservation of plant resources and utilization of plants. To be a source of knowledge and advice to create stability in environmental resources.

https://pubhtml5.com/ovom/vgow/?fbclid=IwAR24gCu0YHXmA2U31orro22KHZtZDyScy6Q14EWqCTB8Bjbea8goH_xJAeI

Sustainability-related startups

Total number of sustainability-related startups initiated and managed by university: **41 startups.**









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