SDG 6: Clean Water and Sanitation

UNIMAS is committed to making safe, affordable drinking water, adequate sanitation and good hygiene accessible to all. Through its research, teaching and community partnerships, the university encourages water conservation, better water quality and sustainable sanitation. It also works with communities beyond the campus through outreach and educational activities that build awareness of the value of clean water and proper sanitation.

6.2 Water consumption per person

6.2.1 Measure the total volume of water used in the university

UNIMAS Measures Total Water Consumption

In 2025, UNIMAS recorded a total water consumption of 3,069,836 m^3, supplied by the Kuching Water Board. UNIMAS monitors its water use to understand campus consumption and support responsible water management. The university's reported figure covers mains supply water.

Total Water Volume Consumed (m^3) in 2025

Month	Total Volume Consumed (m^3)	Average Daily Water Usage per Capita (m^3)
January	244,525	11.29
February	225,864	10.43
March	246,413	11.38
April	223,149	10.30
May	234,884	10.84
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July	270,275	12.48
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September	219,271	10.12
October	252,931	11.68
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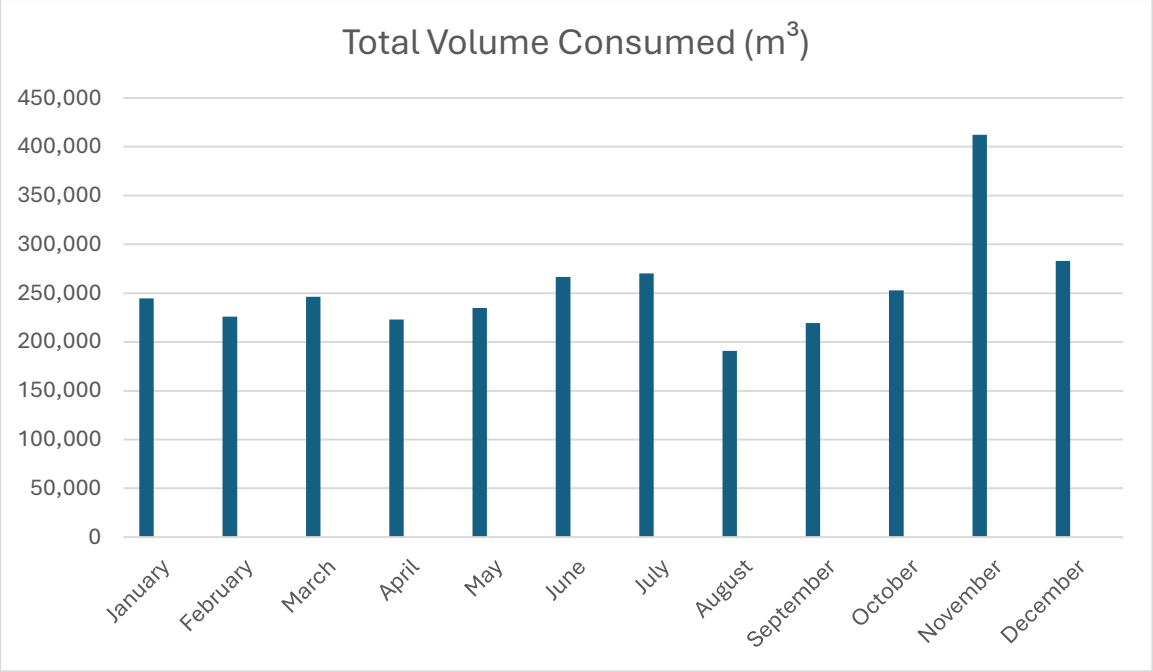
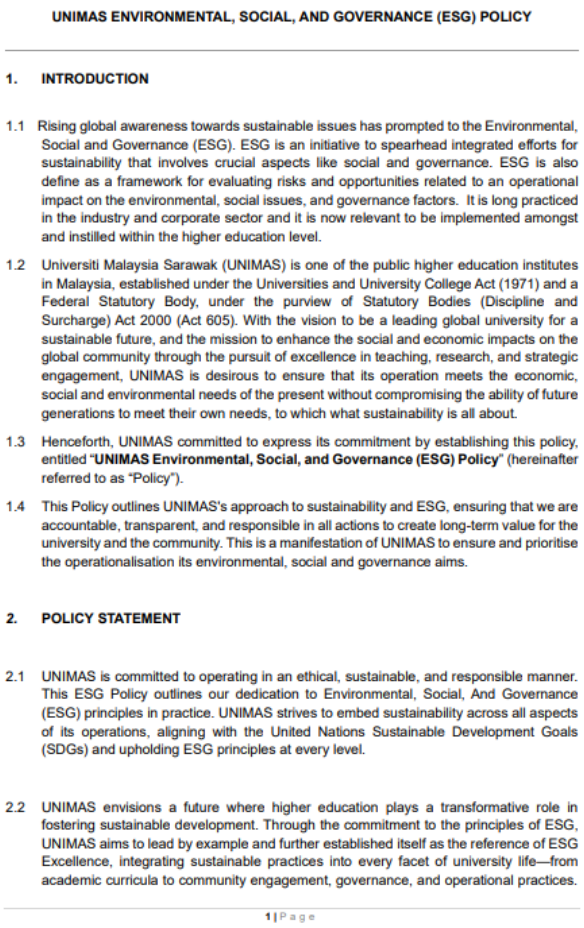


UNIMAS Environmental, Social and Governance (ESG) Policy

Under Section 8.2, *Environmental Responsibility*, of the UNIMAS Environmental, Social and Governance (ESG) Policy, the University commits to reducing water consumption and improving water-use efficiency across campus. The policy identifies water-saving technologies, improved monitoring and water-management practices as measures to reduce wastage. These commitments provide a basis for tracking water use and supporting more efficient campus operations.

Keywords: total water use; water consumption measurement; campus water use; water monitoring; water management; water-use efficiency; water-saving technologies; water conservation; monitoring and reporting; UNIMAS ESG Policy

Reference Link: UNIMAS ESG Policy



UNIMAS ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) POLICY

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1.1 Rising global awareness towards sustainable issues has prompted to the Environmental, Social and Governance (ESG). ESG is an initiative to spearhead integrated efforts for sustainability that involves crucial aspects like social and governance. ESG is also define as a framework for evaluating risks and opportunities related to an operational impact on the environmental, social issues, and governance factors. It is long practiced in the industry and corporate sector and it is now relevant to be implemented amongst and instilled within the higher education level.

1.2 Universiti Malaysia Sarawak (UNIMAS) is one of the public higher education institutes in Malaysia, established under the Universities and University College Act (1971) and a Federal Statutory Body, under the purview of Statutory Bodies (Discipline and Surcharge) Act 2000 (Act 605). With the vision to be a leading global university for a sustainable future, and the mission to enhance the social and economic impacts on the global community through the pursuit of excellence in teaching, research, and strategic engagement, UNIMAS is desirous to ensure that its operation meets the economic, social and environmental needs of the present without compromising the ability of future generations to meet their own needs, to which what sustainability is all about.

1.3 Henceforth, UNIMAS committed to express its commitment by establishing this policy, entitled "**UNIMAS Environmental, Social, and Governance (ESG) Policy**" (hereinafter referred to as "Policy").

1.4 This Policy outlines UNIMAS's approach to sustainability and ESG, ensuring that we are accountable, transparent, and responsible in all actions to create long-term value for the university and the community. This is a manifestation of UNIMAS to ensure and prioritise the operationalisation its environmental, social and governance aims.

2. POLICY STATEMENT

2.1 UNIMAS is committed to operating in an ethical, sustainable, and responsible manner. This ESG Policy outlines our dedication to Environmental, Social, And Governance (ESG) principles in practice. UNIMAS strives to embed sustainability across all aspects of its operations, aligning with the United Nations Sustainable Development Goals (SDGs) and upholding ESG principles at every level.

2.2 UNIMAS envisions a future where higher education plays a transformative role in fostering sustainable development. Through the commitment to the principles of ESG, UNIMAS aims to lead by example and further established itself as the reference of ESG Excellence, integrating sustainable practices into every facet of university life—from academic curricula to community engagement, governance, and operational practices.

1 | Page

UNIMAS Becomes the First Public University in Malaysia to Publish an ESG Report and Adopt a University-wide ESG Policy

UNIMAS's university-wide ESG Policy provides a framework for integrating sustainability into campus operations. Reported by the UNIMAS Gazette on 23 August 2025, the policy forms part of the University's broader sustainability commitment. This institutional framework can support the monitoring and management of campus resources, including water use.

The 2024 UNIMAS ESG Excellence Report provides quantitative evidence for the University's water consumption: UNIMAS recorded 2,490,580 m^3 in 2023, a 5.89% reduction from the previous year. The report identifies the UNIMAS Development Office as responsible for overseeing water consumption and describes measures such as rainwater harvesting, pipe-leak inspections, leak detection and greywater reuse. These details place the total volume of water used within UNIMAS's wider approach to campus water use, resource monitoring and water management. The university-wide ESG Policy, reported by the UNIMAS Gazette on 23 August 2025, provides a further institutional framework for integrating sustainability into campus operations, including the monitoring and management of water resources.

Keywords: total volume of water used; university water consumption; campus water use; resource monitoring; water management; sustainability policy; ESG Policy; UNIMAS campus operations; water-consumption data; UNIMAS ESG Excellence Report

Reference Link: UNIMAS Gazette: UNIMAS Adopts a University-Wide ESG Policy
Reference Link: UNIMAS ESG Excellence Report



Category	Materiality Issues	Description	SDG Alignment	ESG Focus Area
Energy	Energy Consumption	Practices that help to reduce greenhouse gases through energy efficiency and renewables.		
	Energy Policy	Policies that aim to reduce energy consumption and encourage the use of renewable energy.		
	Renewable Energy Initiatives	Practices and initiatives that promote the use of renewable energy sources such as solar panel to reduce dependency on fossil fuels and lower greenhouse gas emissions.		
Emissions	GHG – Fuel Consumption	Efforts aimed at reducing greenhouse gas emissions by optimizing fuel consumption in operations, focusing on energy efficiency and alternative fuels.		
Water	Water Consumption	Monitors and manages water usage to ensure efficient and sustainable consumption practices across all operations.		
	Water Management	Comprehensive strategies to manage water resources, including sourcing, treatment, distribution, and conservation to minimize environmental impact.		
	Water Reduction Initiatives	Programs and practices designed to reduce water usage and minimize waste, contributing to the conservation of water resources.		

6.2.2 Water consumption per person

UNIMAS Water Consumption per person

In 2025, UNIMAS recorded a total water consumption of 3,069,836 m^3, supplied by the Sarawak Water Board. Using a campus population of 20,685 people, comprising 18,286 students and 2,399 staffs, the University's water consumption was 148.41 m^3 per person for the year. UNIMAS monitors this figure to understand water use across the campus and support efforts to improve water efficiency.

Total Water Volume Consumed (m^3) in 2025

Month	Total Volume Consumed (m^3)	Average Daily Water Usage per Capita (m^3)
January	244,525	11.29
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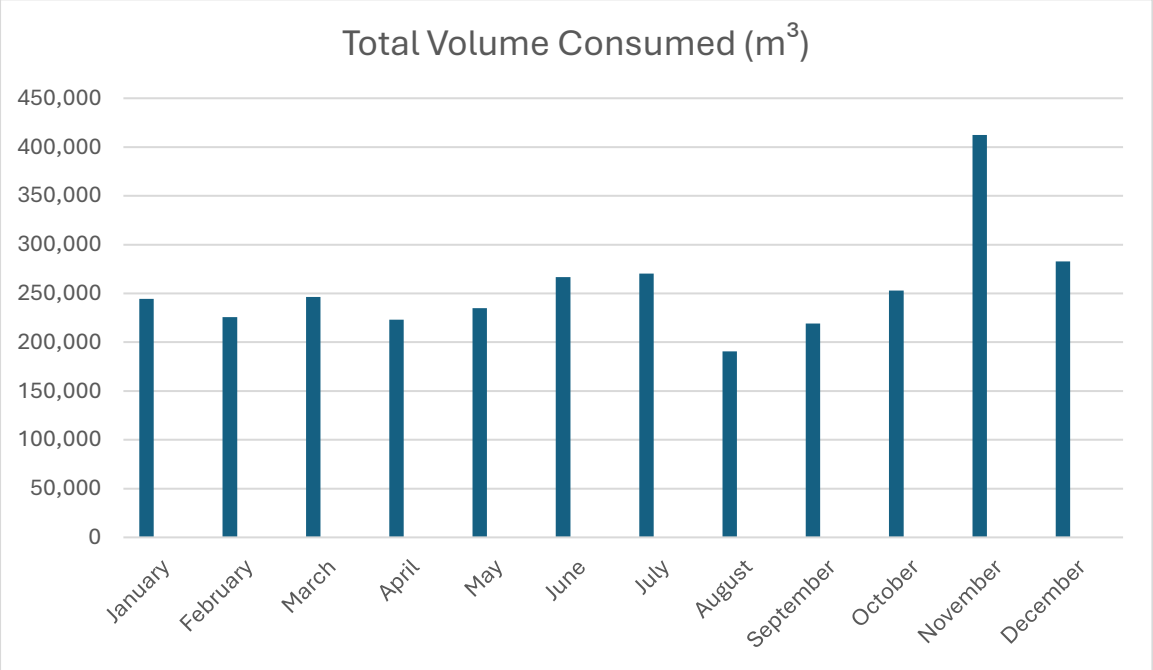


Campus population	20,685
Number of students	18,286
Number of staff	2,399
Total volume of water consumed in 2025	3,069,836 m^3

Water consumption per person = 3,069,836 / 20,685

= 148.41 m^3

6.3 Water usage and care

6.3.1 Wastewater treatment

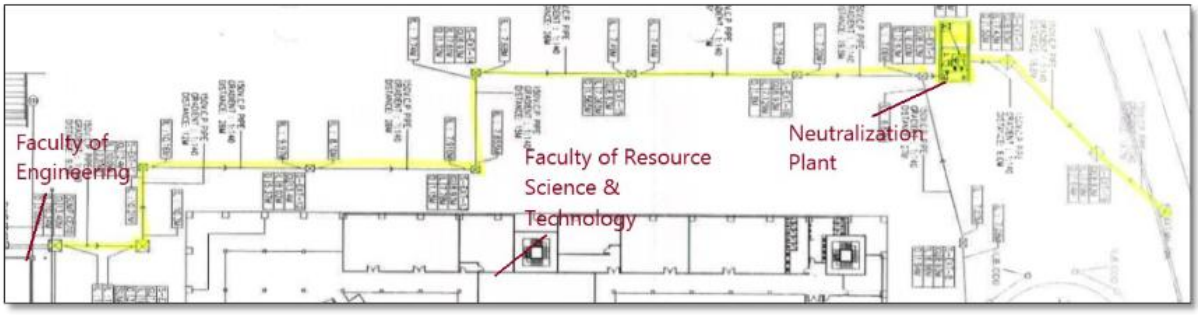
UNIMAS Treats Laboratory Wastewater before Discharge

UNIMAS operates neutralisation plants at the Faculty of Engineering and the Faculty of Resource Science and Technology to manage wastewater generated by laboratory activities. The wastewater treatment process begins as laboratory effluent flows by gravity into a raw wastewater tank for temporary storage. It is then pumped to an equalisation tank, where diffusers mix the wastewater to create a more consistent flow for treatment.

Next, the wastewater enters a neutralisation tank, where sodium hydroxide or hydrochloric acid is used to adjust its pH. The treated effluent is discharged only after it reaches the stated Department of Environment range of pH 5.5 to 9.0. Through laboratory effluent treatment, pH control and responsible discharge, UNIMAS helps manage wastewater and protect water quality in the surrounding environment.

Keywords: wastewater treatment; laboratory wastewater; neutralisation plant; raw wastewater storage; equalisation tank; pH adjustment; effluent treatment; responsible discharge; water-quality protection; UNIMAS

Reference Link: UNIMAS Treats Laboratory Wastewater before Discharge





UNIMAS Wastewater Treatment through STP 1 and STP 2

UNIMAS manages campus wastewater through its Sewage Treatment Plants (STP 1 and STP 2). The documented treatment sequence includes coarse and fine screening to remove solid debris, grit and grease removal, and biological treatment in anoxic and aeration tanks. Clarifiers then separate treated water from biological solids, followed by chlorination to disinfect the effluent. Sludge from the process is directed to holding, thickening and drying stages for further handling.

The plant layout and operating parameters describe treatment equipment and process controls, while the site networking image shows the locations of STP 1, STP 2 and the workstation, together with the PLC and SCADA communication system. These components support wastewater-treatment monitoring and management across the campus.

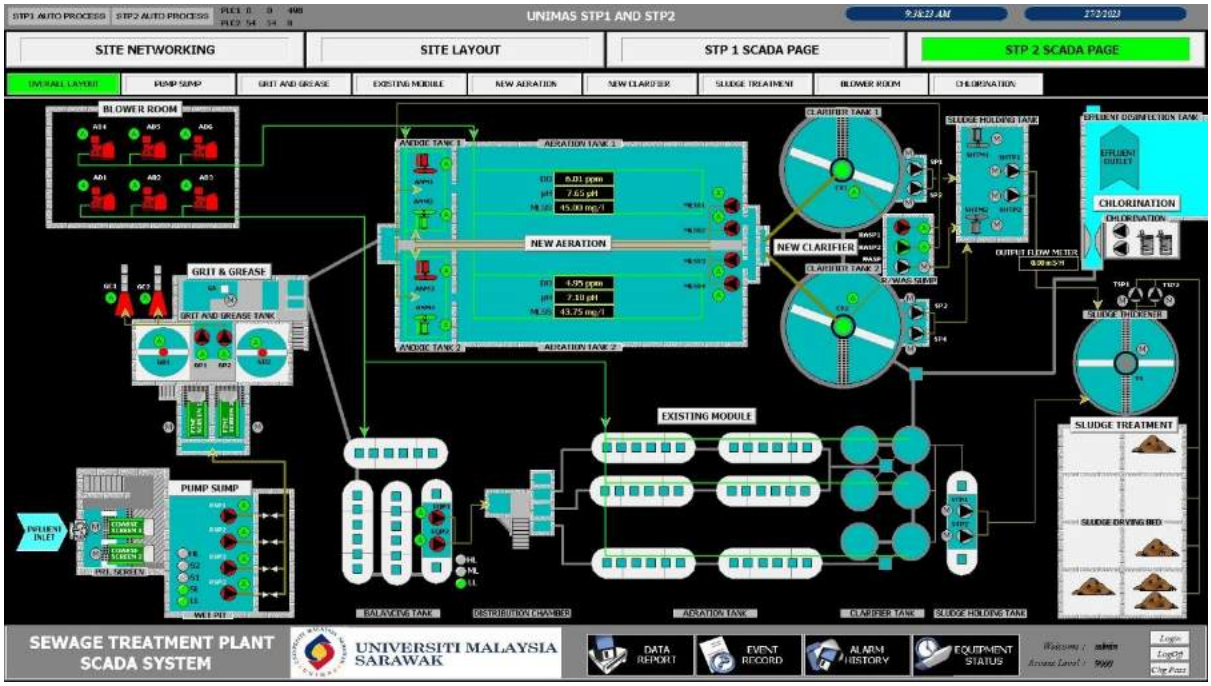
Keywords: wastewater treatment; sewage treatment plant; STP 1; STP 2; coarse screening; fine screening; grit and grease removal; anoxic treatment; aeration; biological treatment; clarification; chlorination; sludge management; PLC; SCADA monitoring; campus wastewater management

UNIMAS STP – Operation Parameters based on Design Parameters

Population Equivalent	15,000PE
Average Daily Flow	3.375 m^3 per day 3,375,000 litres per day
Peak Flow	11,776.1 m^3 per day 11,776,100 litres per day
Hydraulic Retention Time	20 hours (requirement = 18 – 24 hours)
Anoxic Tank	D.O. < 1.0 mg/L, as close to 0% as possible
Aeration Tank MLSS Level	Design: 4,000 mg/L Range: Min. 3,600 mg/L to max. 5,000 mg/L
Aeration Tank Dissolved Oxygen Level	Target: 2.0 mg/L Range: 1.5–2.0 mg/L
F/M Ratio	Design: 0.09 (target) At 3,600 mg/L = 0.1 (minimum) At 5,000 mg/L = 0.07 (wasting to be carried out) Guideline: 0.05 < F/M < 0.10
Clarifier Solids Loading at MLSS = 4,000 mg/L	Peak flow: 119.5 (requirement < 150) Average flow: 34.26 (requirement < 50) Surface overflow: 29.88 (requirement < 30)
Clarifier Solids Loading at Maximum MLSS = 5,000 mg/L	Peak flow: 149.4 (requirement < 150) Average flow: 42.82 (requirement < 50) Surface overflow: 29.88 (requirement < 30)
Sludge Age	At 3,600 mg/L = 24.58 days At 4,000 mg/L = 29.75 days At 5,000 mg/L = 47.88 days Requirement: > 20 days

Additional notes

- MLSS return pump: 24 hours operation. MLSS return = 2.5 × average flow.
- RAS recirculation pump: 24 hours operation. Ratio = 0.71.



UNIMAS Sewage Treatment Plant Layout

SEWAGE TREATMENT PLANT PROCESS



Treatment Unit	Process Description
1. Sump Pump and Mechanical Coarse Screen	Incoming raw sewage enters the sump, where a mechanical coarse screen removes large solid materials such as plastic bottles, rags, wet wipes, sticks and other debris. The raw sewage pump then transfers the wastewater to the subsequent treatment units and facilitates its movement through the treatment system.
2. Mechanical Fine Screen	Wastewater passes through a mechanical fine screen to remove smaller suspended solid materials that may have passed through the coarse screen, including hair, small plastics and other fine debris. This process protects downstream equipment and improves the efficiency of subsequent treatment processes.
3. Grit and Grease Chamber	Wastewater enters the grit and grease chamber, where grit, sand and other heavy inorganic particles are separated from the wastewater. Grease and floating oils are also removed to prevent accumulation, blockages and operational problems in downstream treatment units.
4. Anoxic Tank	The wastewater undergoes biological denitrification in the anoxic tank. During this process, denitrifying microorganisms convert nitrate (NO_3^-) into nitrogen gas (N_2), which is released into the atmosphere. This process helps reduce the nitrogen concentration in the wastewater.
5. Aeration Tank	Wastewater enters the aeration tank, where oxygen is supplied to support the growth and activity of aerobic microorganisms. These microorganisms break down biodegradable organic matter, reducing the Biochemical Oxygen Demand (BOD). Nitrification also occurs, whereby ammonium (NH_4^+) is converted into nitrate (NO_3^-) through biological oxidation.
6. Clarifier Tank	The wastewater flows into the clarifier tank, where sedimentation takes place to separate the treated water from the biological solids, known as activated sludge. The heavier sludge settles at the bottom, while the clarified water flows towards the final disinfection stage.
7. Chlorination Tank	The clarified effluent undergoes disinfection through the addition of liquid chlorine. This process inactivates harmful microorganisms and reduces the risk of pathogen contamination before the treated effluent is discharged or released for its intended purpose.
8. Sludge Holding Tank	Excess activated sludge (waste activated sludge) collected from the treatment process is transferred to the sludge holding tank for temporary storage before further sludge treatment.
9. Sludge Thickener	The stored sludge undergoes thickening to increase its solids concentration by removing excess water. This process reduces the overall sludge volume and makes subsequent sludge handling and treatment more efficient.
10. Sludge Drying Bed	Thickened sludge is transferred to the sludge drying bed for further dewatering. Water is removed through drainage and evaporation, producing dried sludge with a lower moisture content and reduced volume for subsequent handling and disposal.

6.3.2 Preventing water system pollution

UNIMAS supports water pollution prevention through measures that help protect water quality across campus. At the Faculties of Engineering and Resource Science and Technology, a neutralisation plant treats laboratory wastewater and adjusts its pH to the Department of Environment's stated discharge range of 5.5 to 9.0 before release. At the CUBE academic block, the rainwater harvesting system filters roof runoff and directs it through a first-flush diverter into a storage tank, with the total capacity of 8,000 litres (2 tanks). UNIMAS's campus water tank towers with the capacity of 1,000,000 gallons and 500,000 gallons also form part of its water storage and distribution infrastructure, supporting the managed supply of water to campus facilities. Together, wastewater treatment, rainwater filtration and responsible water-system management contribute to pollution prevention and water-quality protection.

Keywords: water pollution prevention; wastewater treatment; laboratory wastewater; neutralisation plant; pH control; rainwater harvesting; filtration; first-flush diverter; water storage; tank towers; water-quality protection; UNIMAS campus water management

Reference Link: UNIMAS Water System Pollution

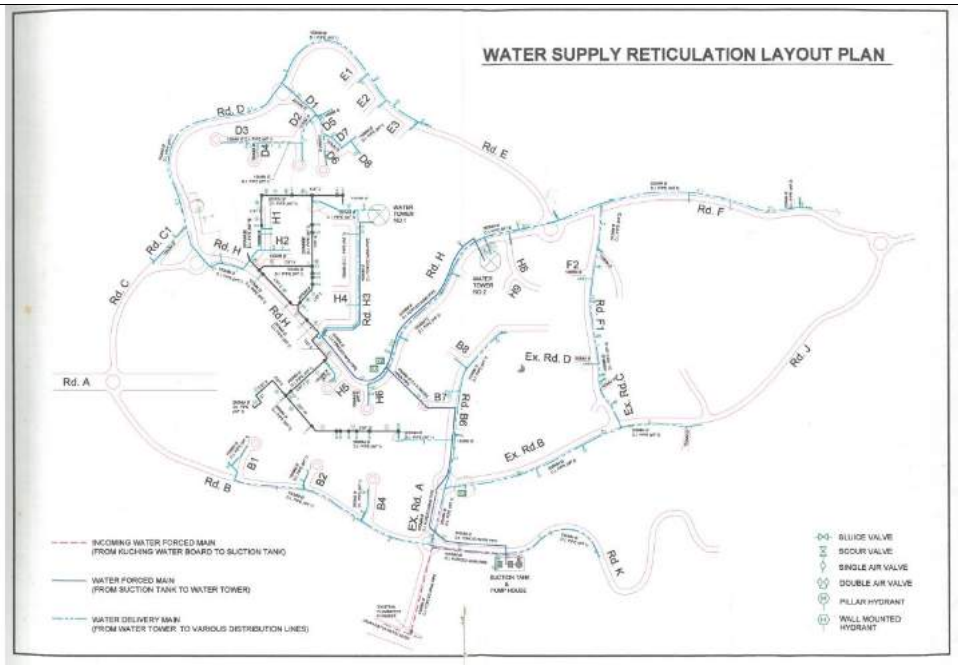
Water Tank Location	Pictures
Kampus Timur	

Rafflesia College		
Cempaka College		

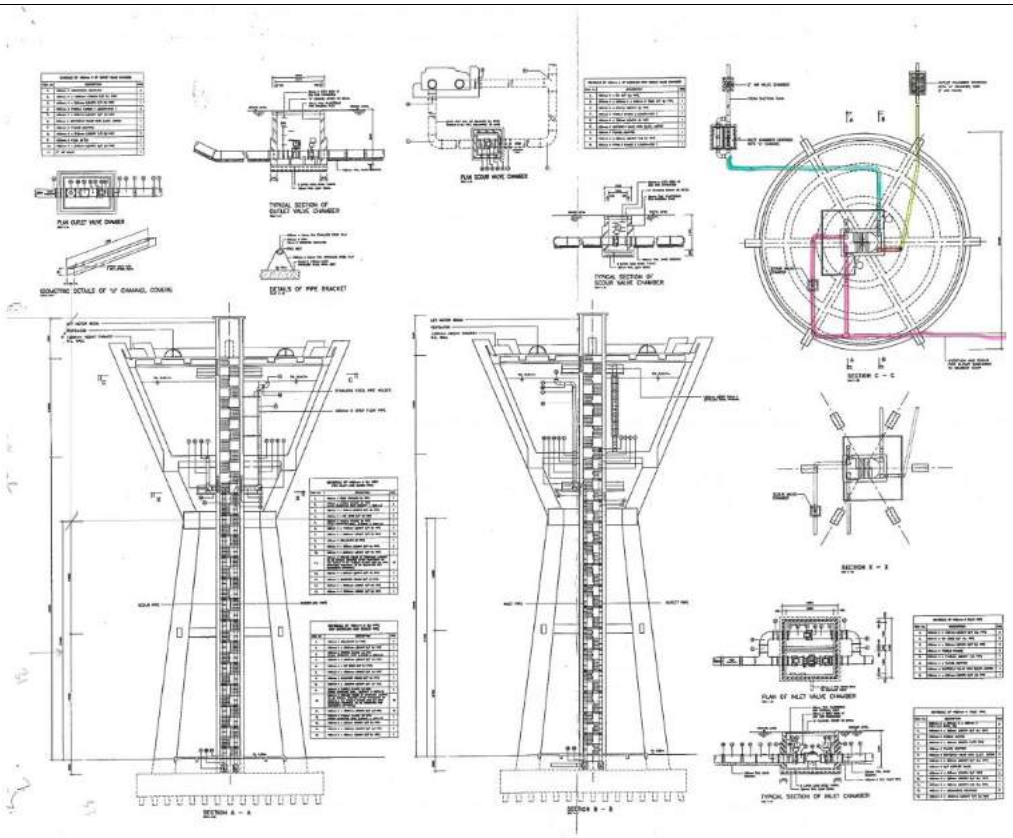
Student Pavilion	



Rain Water Harvesting in UNIMAS



Water Supply Reticulation Layout Plan in UNIMAS



UNIMAS Water Tower: General Arrangement and Engineering Details

6.3.3 Free drinking water provided

UNIMAS Free Drinking Water for Students and Staff

UNIMAS provides drinking-water dispensers in faculty and residential college blocks. According to the UNIMAS page, the dispensers are connected to the mains water supply, offering students a reliable source of drinking water. The fountains allow users to drink directly or refill water bottles. Direct connection to the mains also helps prevent water stagnation and supports hygiene.

Keywords: free drinking water; drinking-water dispensers; water fountains; mains water supply; student access; residential colleges; faculty buildings; bottle refilling; safe drinking water

Reference Link: UNIMAS Clean Water and Sanitation



Water Dispenser located at Faculty



Water Dispenser located at Residential College



Water Dispenser at Library

6.3.4 Water-conscious building standards

The Sarawak Buildings Ordinance 1994

UNIMAS's building planning operates within the regulatory framework of the Sarawak Buildings Ordinance, 1994. The Ordinance allows local authorities to set building requirements for water-supply and sanitary facilities, including their provision, maintenance and repair. It also provides for a sufficient and pure water supply to buildings. These requirements support the inclusion of water infrastructure in building planning.

Keywords: *building planning; water-supply; sanitary facilities; pure water supply; inclusion of water infrastructure; water conservation*

Reference Link: The Sarawak Buildings Ordinance 1994



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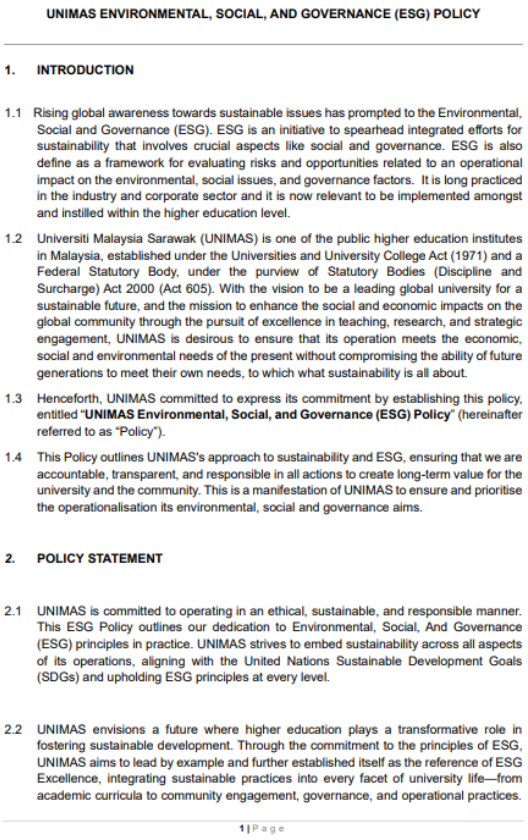
UNIMAS Environmental, Social and Governance (ESG) Policy

UNIMAS'S ESG Policy commits the university to responsible water management across its campus. It aims to reduce water consumption and improve water-use efficiency through water-saving technologies and reduced wastage, supported by better monitoring and management. Rainwater harvesting is one example of a water-saving measure used at UNIMAS, including the rainwater collector at The CUBE. As campus water is primarily supplied by the Sarawak Water Board, these measures support more responsible use of the university's water supply.

Keywords: responsible water management; reduce water consumption; water-use efficiency; water-saving technologies; reduced wastage; rainwater harvesting; water-saving measures; rainwater collector; Sarawak Water Board

Reference Link: UNIMAS ESG Policy



UNIMAS ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG) POLICY

1. INTRODUCTION

1.1 Rising global awareness towards sustainable issues has prompted to the Environmental, Social and Governance (ESG). ESG is an initiative to spearhead integrated efforts for sustainability that involves crucial aspects like social and governance. ESG is also define as a framework for evaluating risks and opportunities related to an operational impact on the environmental, social issues, and governance factors. It is long practiced in the industry and corporate sector and it is now relevant to be implemented amongst and instilled within the higher education level.

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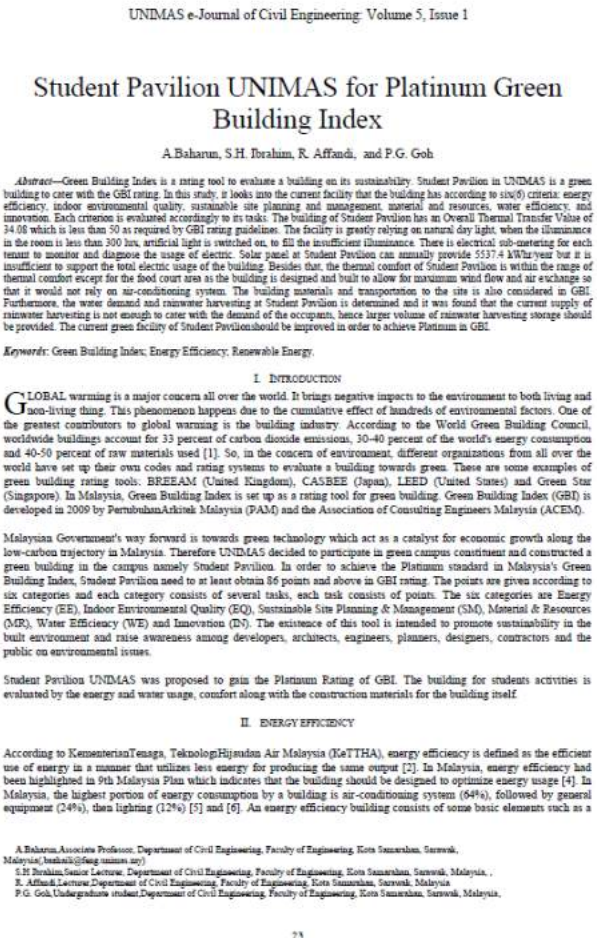
1 | Page

Student Pavilion UNIMAS for Platinum Green Building Index (GBI)

UNIMAS incorporates water-saving features into campus buildings through rainwater harvesting and green-building design. The Student Pavillion is described as a Green Building Index (GBI) rated building, with water efficiency among its assessment criteria and a rainwater harvesting system intended to supply occupants' needs. At the CUBE Academic Block, rooftop rainwater is filtered and channeled to storage for daily use, helping reduce reliance on the mains supply. Together, these examples show how UNIMAS applies water-conscious design measures to reduce building water demand.

Keywords: water-saving features; green-building design; Green Building Index (GBI); water efficiency; rainwater harvesting system; rooftop rainwater; water conscious design; building water demand

Reference Link: Student Pavilion UNIMAS for Platinum Green Building Index (GBI)



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Student Pavilion UNIMAS for Platinum Green Building Index

A.Baharun, S.H. Ibrahim, R. Affandi, and P.G. Goh

Abstract—Green Building Index is a rating tool to evaluate a building on its sustainability. Student Pavilion in UNIMAS is a green building to cater with the GBI rating. In this study, it looks into the current facility that the building has according to six(6) criteria: energy efficiency, indoor environmental quality, sustainable site planning and management, material and resources, water efficiency, and innovation. Each criterion is evaluated accordingly to its tasks. The building of Student Pavilion has an Overall Thermal Transfer Value of 34.08 which is less than 50 as required by GBI rating guidelines. The facility is greatly relying on natural day light, when the illuminance in the room is less than 300 lux, artificial light is switched on, to fill the insufficient illuminance. There is electrical sub-metering for each tenant to monitor and diagnose the usage of electric. Solar panel at Student Pavilion can annually provide 5537.4 kWhr/year but it is insufficient to support the total electric usage of the building. Besides that, the thermal comfort of Student Pavilion is within the range of thermal comfort except for the food court area as the building is designed and built to allow for maximum wind flow and air exchange so that it would not rely on air-conditioning system. The building materials and transportation to the site is also considered in GBI. Furthermore, the water demand and rainwater harvesting at Student Pavilion is determined and it was found that the current supply of rainwater harvesting is not enough to cater with the demand of the occupants, hence larger volume of rainwater harvesting storage should be provided. The current green facility of Student Pavilionshould be improved in order to achieve Platinum in GBI.

Keywords: Green Building Index; Energy Efficiency; Renewable Energy.

I. INTRODUCTION

GLOBAL warming is a major concern all over the world. It brings negative impacts to the environment to both living and non-living thing. This phenomenon happens due to the cumulative effect of hundreds of environmental factors. One of the greatest contributors to global warming is the building industry. According to the World Green Building Council, worldwide buildings account for 33 percent of carbon dioxide emissions, 30-40 percent of the world's energy consumption and 40-50 percent of raw materials used [1]. So, in the concern of environment, different organizations from all over the world have set up their own codes and rating systems to evaluate a building towards green. These are some examples of green building rating tools: BREEAM (United Kingdom), CASBEE (Japan), LEED (United States) and Green Star (Singapore). In Malaysia, Green Building Index is set up as a rating tool for green building. Green Building Index (GBI) is developed in 2009 by PertubuhanArkitek Malaysia (PAM) and the Association of Consulting Engineers Malaysia (ACEM).

Malaysian Government's way forward is towards green technology which act as a catalyst for economic growth along the low-carbon trajectory in Malaysia. Therefore UNIMAS decided to participate in green campus constituent and constructed a green building in the campus namely Student Pavilion. In order to achieve the Platinum standard in Malaysia's Green Building Index, Student Pavilion need to at least obtain 86 points and above in GBI rating. The points are given according to six categories and each category consists of several tasks, each task consists of points. The six categories are Energy Efficiency (EE), Indoor Environmental Quality (EQ), Sustainable Site Planning & Management (SM), Material & Resources (MR), Water Efficiency (WE) and Innovation (IN). The existence of this tool is intended to promote sustainability in the built environment and raise awareness among developers, architects, engineers, planners, designers, contractors and the public on environmental issues.

Student Pavilion UNIMAS was proposed to gain the Platinum Rating of GBI. The building for students activities is evaluated by the energy and water usage, comfort along with the construction materials for the building itself.

II. ENERGY EFFICIENCY

According to KementerianTenaga, TeknologiHijaudan Air Malaysia (KeTTHA), energy efficiency is defined as the efficient use of energy in a manner that utilizes less energy for producing the same output [2]. In Malaysia, energy efficiency had been highlighted in 9th Malaysia Plan which indicates that the building should be designed to optimize energy usage [4]. In Malaysia, the highest portion of energy consumption by a building is air-conditioning system (64%), followed by general equipment (24%), then lighting (12%) [5] and [6]. An energy efficiency building consists of some basic elements such as a

A.Baharun,Associate Professor, Department of Civil Engineering, Faculty of Engineering, Kota Samarahan, Sarawak, Malaysia(,bashaik@feng.unimas.my)
S.H Ibrahim,Senior Lecturer, Department of Civil Engineering, Faculty of Engineering, Kota Samarahan, Sarawak, Malaysia, ,
R. Affandi,Lecturer,Department of Civil Engineering, Faculty of Engineering, Kota Samarahan, Sarawak, Malaysia
P.G. Goh,Undergraduate student,Department of Civil Engineering, Faculty of Engineering, Kota Samarahan, Sarawak, Malaysia,

UNIMAS Rainwater Harvesting

In 2025, UNIMAS documented a water-conscious building measure at the Central UNIMAS Building for Educators (CUBE), where a rainwater harvesting system is installed in the Academic Block to help minimise water use. Rainwater collected from the roof is directed through gutters and downpipes, passes through a filter and first-flush diverter, and is channelled into storage tanks for intended daily use. The evidence records two tanks with a capacity of 4,000 litres each, providing a combined storage capacity of 8,000 litres. This rainwater collection and storage infrastructure integrates water-use efficiency into campus building design. The evidence notes that the pump is faulty, so the stated capacity reflects the installed system and does not confirm current water delivery or savings.

Keywords: water-conscious building standards; rainwater harvesting; CUBE Academic Block; roof-water collection; filtration; first-flush diverter; water storage; 8,000-litre capacity; water-use efficiency; campus water management



Rainwater Harvesting in UNIMAS

6.3.5 Water-conscious planting

Growing together: Takasago-UNIMAS Educational Forest @ Tree Planting Program 2025

Established in 2018, the Takasago–UNIMAS Educational Forest Project is a long-term collaboration between Universiti Malaysia Sarawak (UNIMAS), Takasago Thermal Engineering Co.

Ltd., the Japan–Malaysia Association and the Forest Department Sarawak. UNIMAS allocated approximately 10 hectares of campus land for the educational forest, creating space for forest restoration, environmental learning and research. By the 2025 programme, a cumulative 29,400 trees had been planted in the forest. On 29 November 2025, 150 participants planted a further 1,000 seedlings of indigenous tree species, continuing the project's restoration work.

The planting initiative contributes to forest landscape restoration, supports biodiversity and helps strengthen the long-term health of the campus landscape. Its use of indigenous species is relevant to water-conscious planting because it promotes a landscape approach informed by local environmental conditions and responsible land management. Through sustained planting and collaboration, the project also provides opportunities for environmental education, research and community participation in campus conservation.

Keywords: water-conscious planting; indigenous tree species; forest landscape restoration; biodiversity; responsible land management; sustainable campus landscape; environmental education; community participation; Takasago–UNIMAS Educational Forest.

Reference Link: Growing together: Takasago-UNIMAS Educational Forest @ Tree Planting Program 2025

Reference Link: Takasago Tie-Up to Establish 10 Hectares



UNIMAS 's Plant Landscape Minimize Water Use

UNIMAS's 2025 campus planting records document 550 trees planted across the South West and North West Campus. The recorded species include *Syzygium campanulatum* (*Eugenia oleana*), *Terminalia molinetii* (Bucida) and *Tabebuia rosea* (Tecoma or Rosy Trumpet). The records also identify vegetation at Tasik UNIMAS, along Jalan Belian and around Tasik Kampus Timur, including Chinese Palm, Nipa Palm and Rose of India. By documenting planting locations and species,

UNIMAS supports informed campus landscape planning, tree diversity and responsible management of green spaces.

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Keywords: water-conscious planting; sustainable campus landscaping; tree planting; 550 trees; tree diversity; native and ornamental species; green-space management; responsible land management; UNIMAS 2025

SENARAI NAMA DAN JUMLAH POKOK YANG DITANAM DI UNIVERSITI MALAYSIA SARAWAK (UNIMAS) 2025					
Bil	**Nama Saintifik**	**Nama Tempatan**	**Jumlah**	**Lokasi**	**Tahun Tanam**
1	*Syzygium campanulatum*	Eugenia Oleana	80	Selatan Kampus Barat	2025
2	*Terminalia molinetii M. Gomez*	Bucida	50	Selatan Kampus Barat	2025
3	*Tabebuia rosea*	Tecoma / Rosy Trumpet	80	Selatan Kampus Barat	2025
4	*Terminalia molinetii M. Gomez*	Bucida	20	Selatan Kampus Barat	2025
Jumlah pokok			**230**		
Bil	**Nama saintifik**	**Nama Tempatan**	**Jumlah**	**Lokasi**	**Tahun Tanam**
5	*Terminalia molinetii M. Gomez*	Bucida	180	Utara Kampus Barat	2025
6	*Syzygium campanulatum*	Eugenia Oleana	120	Utara Kampus Barat	2025
7	*Tabebuia rosea*	Tecoma / Rosy Trumpet	20	Utara Kampus Barat	2025
Jumlah Pokok			**320**		
JUMLAH KESELURUHAN POKOK			**550**		

Tasik UNIMAS



Jenis Pokok: Weeping Tea Tree, Sea Apple Tree, Pokok Pulai Bukit, Chinese Palm, Red Bucida, Bucida, Pokok Akasia, Yellow Flame Tree, Red Flame Tree, Pokok Kenanga & Elephant Apple Tree.

Kawasan Jalan Belian



Jenis Pokok: Pokok Tecoma (Sepanjang Jalan Belian) & Nipa Palm/Nipah (Semulajadi)

Tasik Kampus Timur



Jenis Pokok: Rose of India (Sekitar Tasik Kampus Timur dan Sepanjang Jalan)

6.4 Water usage and care

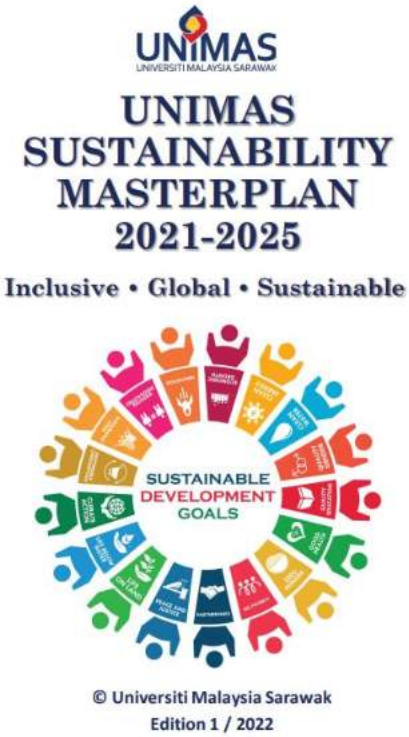
6.4.1 Water reuse policy

UNIMAS Sustainability Masterplan 2021-2025

Through Sustainability Masterplan 2021-2025, UNIMAS identifies the establishment of a water reuse policy as part of its SDG 6 agenda. The proposed policy would provide guidance for promoting water reuse across campus, conserving water resources and reducing wastage. The Masterplan also calls for research on water and sanitation and awareness programmes on sustainable water use, reinforcing UNIMAS's broader commitment to sustainable water management.

Keywords: water reuse policy; water reuse; conserving water resources; water and sanitation; awareness programmes on sustainable water use; sustainable water management; UNIMAS Sustainability Masterplan 2021-2025

Reference Link: UNIMAS Sustainability Masterplan 2021-2025



Sarawak Water Ordinance, 1994

The Sarawak Water Ordinance, 1994 provides a state-level framework for the conservation, protection, development and management of Sarawak's water resources, including water supply and distribution. It also recognises tanks and water towers as part of waterworks infrastructure. This framework gives broader context to responsible water stewardship and the management of campus water-supply systems.

At UNIMAS, the photographs document water-storage infrastructure, including a large modular tank and elevated water towers at the Pavilion, Residential College and Kampus Timur. The tank system has a reported capacity of 1,000,000 gallon and 500,000 gallons, providing substantial storage within the campus water infrastructure. Together, these facilities support water storage and distribution across different campus areas and illustrate the practical systems that underpin campus water management and water-supply services.

Keywords: Sarawak Water Ordinance, 1994; water stewardship; water-resource conservation; responsible water management; 500,000 gallon water storage capacity; water supply and distribution; campus water infrastructure; sustainable water use.

Reference Link: Sarawak Water Ordinance, 1994

LAWS OF SARAWAK

ONLINE VERSION OF UPDATED TEXT OF REPRINT

Chapter 13

WATER ORDINANCE, 1994

Incorporating all amendments up to 31st May, 2008

SarawakLawNet

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THE COMMISSIONER OF LAW REVISION, SARAWAK
UNDER THE AUTHORITY OF THE REVISION OF LAWS ORDINANCE, 1992
2008

Water Tank Location	Pictures
Kampus Timur	

Rafflesia College		
Cempaka College		

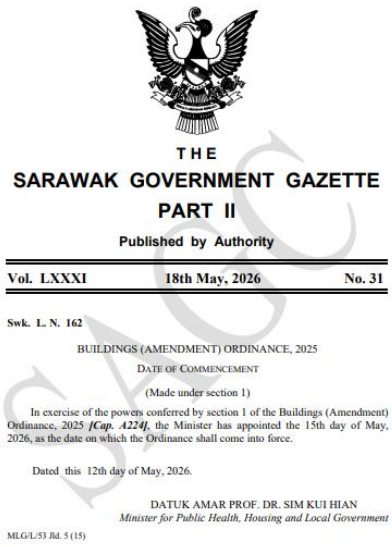
Student Pavilion	

Building (Amendment) Ordinance, 2025

The Building (Amendment) Ordinance, 2025 strengthens Sarawak's approach to environmental sustainability in the built environment. In force from 15 May 2026, the amendment establishes a framework for green building standards and certification, supporting more sustainable building design and development. For UNIMAS, it provides relevant regulatory context for advancing resource-conscious campus facilities and responsible water stewardship.

Keywords: green building standards; environmental sustainability; sustainable building design; resource conservation; water stewardship; campus facilities; regulatory framework; green building certification.

Reference Link: Building (Amendment) Ordinance, 2025



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Swk. L. N. 162

BUILDINGS (AMENDMENT) ORDINANCE, 2025

DATE OF COMMENCEMENT

(Made under section 1)

In exercise of the powers conferred by section 1 of the Buildings (Amendment) Ordinance, 2025 *[Cap. A224]*, the Minister has appointed the 15th day of May, 2026, as the date on which the Ordinance shall come into force.

Dated this 12th day of May, 2026.

DATUK AMAR PROF. DR. SIM KUI HIAN
Minister for Public Health, Housing and Local Government

MLG/L/53 Jld. 5 (15)

6.4.2 Water reuse measurement

UNIMAS Rainwater Reuse at the CUBE Academic Block

UNIMAS incorporates rainwater harvesting into the CUBE Academic Block as a campus measure to support water reuse and more efficient water management. The CUBE has two storage tanks, each with a capacity of 4,000 litres, giving a total rainwater storage capacity of 8,000 litres. Rain falling on the roof is channelled through the gutters and downpipes into the collection system, where it passes through a filter. The filtered rainwater is directed through a first-flush diverter into a storage tank for daily use. Capturing and storing rainwater on site provides an alternative source for suitable building needs and supports water conservation by reducing reliance on the main water supply.

Keywords: *water reuse measurement; rainwater harvesting; roof runoff collection; filtered rainwater; first-flush diverter; water storage; daily building use; water conservation; reduced mains-water demand; water monitoring; CUBE Academic Block; UNIMAS campus operations*

Reference Link: UNIMAS Rainwater Reuse at the CUBE Academic Block



Rainwater Harvesting in UNIMAS

6.5 Water in the community

6.5.1 Water management educational opportunities (free/paid)

UNIMAS Raises Public Awareness of Water Management and Floor Preparedness

On 7 February 2025, TVS published a freely accessible interview with Dr Rosmina Ahmad Bustami, Director of the UNIMAS Water Centre, about climate change and the increasing frequency of floods in Sarawak. The article provides a free public educational resource on water-related challenges, explaining how heavier rainfall, vegetation loss and ineffective river management can contribute to flooding. It also raises awareness of sustainable drainage guidance, including the Urban Stormwater Management Manual (MSMA) and Sarawak Urban Stormwater Management (SUStoM) Guideline, and highlights the need for stronger climate-change education, water management and community preparedness.

Through this media contribution, UNIMAS shares accessible information that can help the wider community understand water management, flood risk and climate resilience. The opportunity is free to access as a public news article. It supports awareness and informal learning; the evidence does not describe a formal course or training programme.

Keywords: water management education; free public learning resource; community awareness; flood preparedness; flood risk; climate change education; sustainable drainage; MSMA; SUStoM; climate resilience; UNIMAS Water Centre.

Reference Link: TVS: Perubahan Iklim Antara Punca Kekerapan Banjir



UNIMAS Water Quality and Water Treatment Processes Seminar

The workshop provided a water-management educational opportunity for civil engineers, technical staff and Inspectors of Works (IOWs) working in the water and environmental sectors. Its focus on water quality and treatment processes offered participants a way to develop relevant technical knowledge and strengthen their professional understanding of water-management practices.

By sharing this training opportunity with sector professionals, UNIMAS supported technical learning, professional development and capacity building in areas central to water services and environmental management. The Instagram announcement included a registration link and contact details for those seeking further information, helping interested participants access the educational opportunity.

Keywords: paid water-management education; water quality; water treatment processes; technical learning; professional development; capacity building; water and environmental sector; UNIMAS Water Centre.

Reference Link: UNIMAS Water Quality and Water Treatment Processes Seminar





Learning the SDGs the Creative Way at FSSH UNIMAS

On 21 November 2025, the Faculty of Social Sciences and Humanities (FSSH), UNIMAS, hosted the “Building a Better World: School Sustainability Toolkits 2025” free exhibition as part of its CARE experiential-learning framework. A student-led SDG educational activity provided participants with practical learning about water management, water filtration, water quality and clean water and sanitation. Using sand, gravel, charcoal and fabric, students demonstrated an affordable filtration method and discussed how accessible water solutions can support rural water access and community well-being. This community-based sustainability education engaged 60 students and 6 teachers from SMK Muara Tuang.

Keywords: water management education; water filtration; water quality; water management; water filtration; water quality; clean water and sanitation; rural water access

Reference Link: Learning the SDGs the Creative Way at FSSH UNIMAS



UNIMAS Leading Sustainable Aquaculture through Strategic Partnerships for Sarawak's Blue Economy and Food Security

Universiti Malaysia Sarawak (UNIMAS) contributes to water management educational opportunities through its free technical training and knowledge sharing on sustainable aquaculture. On 24 November 2025, experts from UNIMAS's aculty of Resource Science and Technology delivered sessions at the *Kursus Kelestarian & Daya Maju Projek Akuakultur Persatuan Nelayan*, organised by the Malaysian Fisheries Development Authority (LKIM) Sarawak for Fishermen Association managers from across Malaysia. The training covered aquaculture system design and water quality management, alongside marine aquaculture biology and aquatic disease prevention. By sharing practical expertise in aquaculture water systems, responsible resource management and sustainable aquaculture, UNIMAS supported participants' capacity to manage water quality in aquaculture projects and strengthen the sector's sustainability.

Keywords: water management educational; sustainable aquaculture; aquaculture system design; water quality management; marine aquaculture biology; aquatic disease prevention; aquaculture water system; water quality in aquaculture projects

Reference Link: UNIMAS Leading Sustainable Aquaculture through Strategic Partnerships for Sarawak's Blue Economy and Food Security



World Rivers Day at Kampung Stabut, Serian

Universiti Malaysia Sarawak (UNIMAS), through the UNIMAS Water Centre (UWC), contributed to water management educational opportunities by participating in the free World Rivers Day programme at Kampung Stabut, Serian, on 4 October 2025. Organised by the Sarawak Department of Irrigation and Drainage, the outreach included a River Ranger activity involving school students and local community members. Through this activity, participants learned about river conservation, the importance of protecting freshwater ecosystems, and their role in caring for local waterways. The programme promoted community-based water education, river stewardship and youth participation in sustainable water management.

Keywords: water management educational; river conservation; community-based water education; river stewardship; sustainable water management; freshwater ecosystem; River Ranger activity

Reference Link: World Rivers Day at Kampung Stabut, Serian



6.5.3 Off-campus water conservation support

Sarawak Level World Rivers Day 2025 Celebrations

Universiti Malaysia Sarawak (UNIMAS) supported off-campus water conservation through its participation in Sarawak's World Rivers Day 2025 celebration at Kampung Stabut, Siburan, on 4 October 2025. UNIMAS lecturers provided a briefing on the community-based River Ranger activity, which focused on river conservation. The programme also introduced the public to river monitoring techniques and encouraged shared responsibility for maintaining river cleanliness and ecosystem health. Through this community outreach, UNIMAS helped strengthen local awareness and participation in protecting freshwater resources.

Keywords: off-campus water conservation; river conservation; community outreach; River Ranger; river monitoring techniques; freshwater resources; local community participation; water stewardship; ecosystem health

Reference Link: Sarawak Level World Rivers Day 2025 Celebrations



FENG with Nature at Koloyan River Cottage, Bau, Kuching

The FENG Nature programme was conducted on 24 May 2025 at Koloyan River Cottage, Bau, with Year 2 and Year 4 students from the Department of Civil Engineering. The field activity gave students an opportunity to explore a local river and shallow stream, observe the river profile, and study related hydrology and hydraulic parameters in a natural setting. This practical experience connected water-management concepts with direct field observation and supported students' understanding of river systems.

Alongside the technical learning, the programme included soft skills development, with students gaining experience in event management. By combining field exploration with academic study and event-related learning, FENG Nature provided a local, hands-on educational experience focused on water systems and environmental awareness.

Keywords: local water-management education; field-based learning; hydrology; hydraulic parameters; river-profile study; stream exploration; water systems; environmental awareness; event management; soft skills; Civil Engineering students.

Reference Link: FENG with Nature at Koloyan River Cottage, Bau, Kuching





UNIMAS Water Centre and JBALB Cooperation on Innovative Solutions for Sustainable Rural Water Supply in Sarawak

On 19 June 2025, Associate Professor Dr Rosmina Ahmad Bustami, Director of the UNIMAS Water Centre, joined the Sarawak Alternative Water Supply System (SAWAS) programme in Kuching as a panel member. The programme focused on filtration technology and sustainable rural water supply. Dr Rosmina contributed her expertise to discussions and the evaluation of water-filtration products presented by private companies.

The session provided a professional water-management learning opportunity through the sharing of filtration technologies suited to rural and remote communities. Representatives from government agencies, water authorities, industry and academic institutions took part, encouraging knowledge exchange on effective water-treatment systems and potential solutions

to strengthen rural water access. The programme supported capacity building and informed discussion on sustainable water supply for communities beyond the main grid.

Keywords: *water-management education; filtration technology; rural water supply; sustainable water access; professional knowledge exchange; water treatment; capacity building; government–industry–university engagement; SAWAS; UNIMAS Water Centre.*

Reference Link: UNIMAS Water Centre and JBALB Cooperation on Innovative Solutions for Sustainable Rural Water Supply in Sarawak





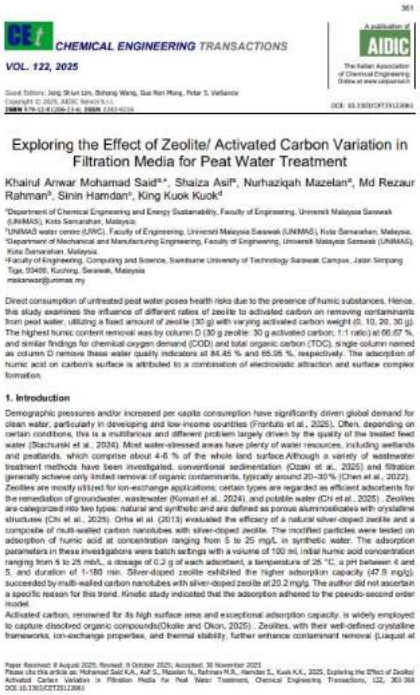
6.5.4 Sustainable water extraction on campus

UNIMAS Research Advances Peat-Water Treatment

In 2025, UNIMAS researchers investigated how zeolite and activated carbon can improve the treatment of peat water collected from Beladin, Sarawak. The study found that a 1:1 filtration-media ratio achieved the strongest reported results, removing 66.67% of humic compounds, 84.45% of chemical oxygen demand (COD) and 65.95% of total organic carbon (TOC). The research contributes to sustainable water management by exploring ways to improve the quality of a local water resource and informing future filtration-system development. It offers relevant research context for sustainable water use, although the publication describes peat-water treatment research rather than water extraction carried out on the UNIMAS campus.

Keywords: sustainable water management; peat-water treatment; local water resources; water-quality improvement; zeolite filtration; activated carbon; humic-compound removal; COD reduction; TOC reduction; filtration research; water security

Reference Link: Exploring the Effect of Zeolite/ Activated Carbon Variation in Filtration Media for Peat Water Treatment (2025)



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Exploring the Effect of Zeolite/ Activated Carbon Variation in Filtration Media for Peat Water Treatment

Khairul Anwar Mohamad Said[a,*], Shaiza Asif[a], Nurhazikqah Mazelan[a], Md Rezaur Rahman[b], Sinin Hamdan[c], King Kuok Kuok[d]

[a]Department of Chemical Engineering and Energy Sustainability, Faculty of Engineering, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan, Malaysia.
[b]UNIMAS water centre (UWC), Faculty of Engineering, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan, Malaysia.
[c]Department of Mechanical and Manufacturing Engineering, Faculty of Engineering, Universiti Malaysia Sarawak (UNIMAS), Kota Samarahan, Malaysia.
[d]Faculty of Engineering, Computing and Science, Swinburne University of Technology Sarawak Campus, Jalan Simpang Tiga, 93400, Kuching, Sarawak, Malaysia
mskanwar@unimas.my

Direct consumption of untreated peat water poses health risks due to the presence of humic substances. Hence, this study examines the influence of different ratios of zeolite to activated carbon on removing contaminants from peat water, utilizing a fixed amount of zeolite (30 g) with varying activated carbon weight (0, 10, 20, 30 g). The highest humic content removal was by column D (30 g zeolite: 30 g activated carbon; 1:1 ratio) at 66.67 %, and similar findings for chemical oxygen demand (COD) and total organic carbon (TOC), single column named as column D remove these water quality indicators at 84.45 % and 65.95 %, respectively. The adsorption of humic acid on carbon's surface is attributed to a combination of electrostatic attraction and surface complex formation.

1. Introduction

Demographic pressures and/or increased per capita consumption have significantly driven global demand for clean water, particularly in developing and low-income countries (Frontuto et al., 2025). Often, depending on certain conditions, this is a multifarious and different problem largely driven by the quality of the treated feed water (Stachurski et al., 2024). Most water-stressed areas have plenty of water resources, including wetlands and peatlands, which comprise about 4-6 % of the whole land surface.Although a variety of wastewater treatment methods have been investigated, conventional sedimentation (Ozaki et al., 2025) and filtration generally achieve only limited removal of organic contaminants, typically around 20–30 % (Chen et al., 2022). Zeolites are mostly utilized for ion-exchange applications; certain types are regarded as efficient adsorbents for the remediation of groundwater, wastewater (Komail et al., 2024), and potable water (Chi et al., 2025) . Zeolites are categorized into two types: natural and synthetic and are defined as porous aluminosilicates with crystalline structures (Chi et al., 2025). Orha et al. (2013) evaluated the efficacy of a natural silver-doped zeolite and a composite of multi-walled carbon nanotubes with silver-doped zeolite. The modified particles were tested on adsorption of humic acid at concentration ranging from 5 to 25 mg/L in synthetic water. The adsorption parameters in these investigations were batch settings with a volume of 100 ml, initial humic acid concentration ranging from 5 to 25 mb/L, a dosage of 0.2 g of each adsorbent, a temperature of 25 °C, a pH between 4 and 5, and duration of 1-180 min. Silver-doped zeolite exhibited the higher adsorption capacity (47.8 mg/g), succeeded by multi-walled carbon nanotubes with silver-doped zeolite at 20.2 mg/g. The author did not ascertain a specific reason for this trend. Kinetic study indicated that the adsorption adhered to the pseudo-second order model.
Activated carbon, renowned for its high surface area and exceptional adsorption capacity, is widely employed to capture dissolved organic compounds(Okolie and Okon, 2025) . Zeolites, with their well-defined crystalline frameworks, ion-exchange properties, and thermal stability, further enhance contaminant removal (Liaquat et

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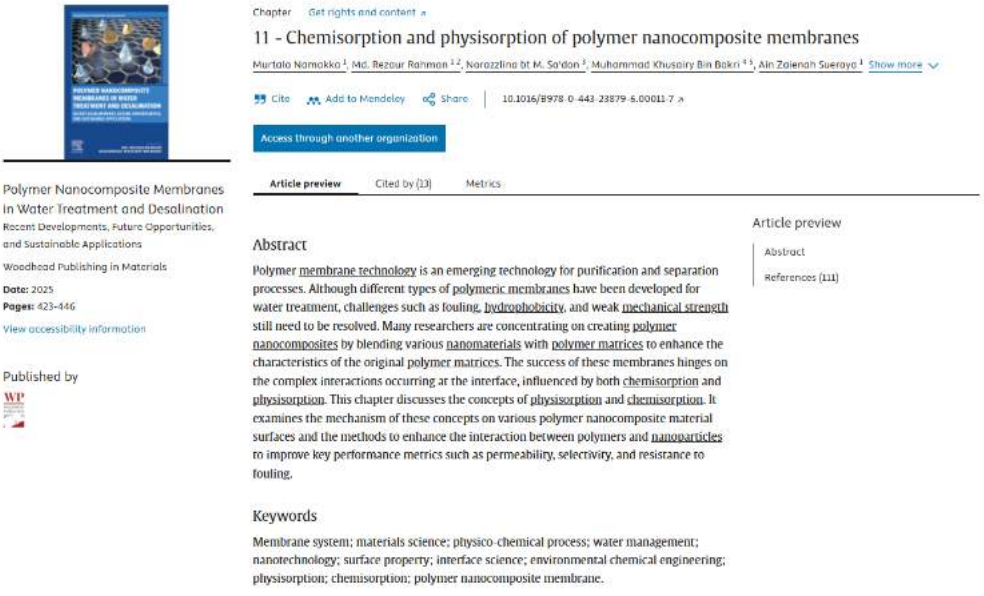
UNIMAS Research on Polymer Nanocomposite Membranes for Sustainable Water Treatment

In 2025, UNIMAS researchers contributed to a book chapter examining polymer nanocomposite membranes for water treatment and desalination. The chapter explains how chemisorption and physisorption occur at membrane surfaces and how these processes influence the separation and purification of water. It discusses membrane properties such as permeability, selectivity and resistance to fouling, which affect how effectively membranes can treat water.

By advancing understanding of these processes, the research contributes to the development of membrane technologies for water purification and desalination. Such technologies may support the treatment of water from different sources and contribute to wider efforts in sustainable water management and water security. The chapter therefore provides relevant research context for the development of water-treatment solutions.

Keywords: sustainable water management; water treatment research; water security; desalination; polymer nanocomposite membranes; membrane technology; chemisorption; physisorption; water purification; permeability; selectivity; fouling resistance; UNIMAS research

Reference Link: UNIMAS Research on Polymer Nanocomposite Membranes for Sustainable Water Treatment



Polymer Nanocomposite Membranes in Water Treatment and Desalination
Recent Developments, Future Opportunities, and Sustainable Applications
Woodhead Publishing in Materials
Date: 2025
Pages: 423-446
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11 - Chemisorption and physisorption of polymer nanocomposite membranes

Murtala Namakka [1], Md. Rezaur Rahman [1,2], Norazzlina bt M. Sa'don [3], Muhammad Khusairy Bin Bakri [4,5], Ain Zalenah Sueraya [1] Show more

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Abstract

Polymer membrane technology is an emerging technology for purification and separation processes. Although different types of polymeric membranes have been developed for water treatment, challenges such as fouling, hydrophobicity, and weak mechanical strength still need to be resolved. Many researchers are concentrating on creating polymer nanocomposites by blending various nanomaterials with polymer matrices to enhance the characteristics of the original polymer matrices. The success of these membranes hinges on the complex interactions occurring at the interface, influenced by both chemisorption and physisorption. This chapter discusses the concepts of physisorption and chemisorption. It examines the mechanism of these concepts on various polymer nanocomposite material surfaces and the methods to enhance the interaction between polymers and nanoparticles to improve key performance metrics such as permeability, selectivity, and resistance to fouling.

Keywords

Membrane system; materials science; physico-chemical process; water management; nanotechnology; surface property; interface science; environmental chemical engineering; physisorption; chemisorption; polymer nanocomposite membrane.

Article preview
Abstract
References (111)

UNIMAS Rainwater Harvesting as a Sustainable Campus Water Source

UNIMAS supports sustainable water sourcing on campus through a rainwater harvesting system at the CUBE Academic Block. The evidence records two tanks with a capacity of 4,000 litres each, providing a combined storage capacity of 8,000 litres. The system collects rainwater from the roof through gutters and downpipes, filters it and channels it through a first-flush diverter into a storage tank for daily use. By capturing rainfall on site, the system provides an alternative water

source for suitable campus needs and supports responsible water management while helping reduce reliance on mains water.

Keywords: sustainable water sourcing; rainwater harvesting; on-campus water collection; alternative water source; filtered rainwater; water storage; responsible water management; reduced mains-water reliance; CUBE Academic Block

Reference Link: UNIMAS Rainwater Reuse at the CUBE Academic Block



Rainwater Harvesting in UNIMAS

6.5.5 Cooperation on water security (local / regional / national)

UNIMAS Collaborates on Water Security through Microalgae-Bacteria Research

On 29 October 2025, the UNIMAS Water Centre participated in stakeholder engagement meeting in Kuching for the Microalgae-Bacteria Symbiosis Project for Optimal Heavy Metal Absorption. The meeting brought UNIMAS together with local agencies, including the Department of Irrigation and Drainage Sarawak (DID Sarawak), Kuching North City Hall (DBKU), Kuching South City Council (MBKS) and the Natural Resources and Environment Board (NREB). This multi-stakeholder cooperation on water security supports collaborative research into heavy-metal absorption and sustainable water innovation, contributing to local water resilience and broader water-management efforts.

Keywords: stakeholder engagement meeting; multi-stakeholder engagement; water security; sustainable water innovation; local water resilience; water-management efforts

Reference Link: UNIMAS Collaborates on Water Security through Microalgae–Bacteria Research



UNIMAS Water Centre Team Visited the Slabi Water Treatment Plant in Serian

Universiti Malaysia Sarawak (UNIMAS), through the UNIMAS Water Centre (UWC), strengthened local cooperation on water security during a visit to the Slabi Water Treatment Plant in Serian on 5 August 2025. Guided by Ir. Ts. Qairuniza Roslan and her team, UWC members learned about the plant's operational processes, water-treatment techniques and sustainable water-management practices. This knowledge exchange between UNIMAS and water-treatment practitioners supported shared understanding of treated-water management and strengthened expertise relevant to local water security.

Keywords: local cooperation on water security; water-treatment techniques; sustainable water management practices; water-treatment practitioners; treated-water management; local water security

Reference Link: UNIMAS Water Centre Team Visited the Slabi Water Treatment Plant in Serian



UNIMAS Water Centre at International Conference on Dam Safety Management and Engineering (ICDSME 2025)

The UNIMAS Water Centre, led by Assoc. Prof. Dr. Rosmina Ahmad Bustami, represented the University at the 3rd International Conference on Dam Safety Management and Engineering (ICDSME 2025), held from 4 to 7 November 2025. In partnership with the Malaysian National Committee on Larga Dams (MyCOLD), Sarawak Energy Berhad (SEB), and Universiti Tenaga Nasional (UNITEN), the conference brought together experts, industry representative and policymakers to discuss dam safety, energy transition and sustainable water management. This engagement supported knowledge-sharing and capacity-building among university, industry and professional partners, contributing to cooperation on Malaysia's water security.

Keywords: SDG 6; water security; cooperation on water security; regional collaboration; national partnerships; sustainable water management; dam safety; knowledge-sharing; capacity-building; energy transition; sustainable water management; UNIMAS Water Centre; MyCOLD; Sarawak Energy Berhad; UNITEN; ICDSME 2025

Reference Link: UNIMAS Water Centre at International Conference on Dam Safety Management and Engineering (ICDSME 2025)



World Rivers Day at Kampung Stabut, Serian

On 4 October 2025, the UNIMAS Water Centre (UWC) took part in the World Rivers Day celebration at Kampung Stabut, Serian, organised by the Sarawak Department of Irrigation and Drainage. The programme involved collaboration with lecturers from the Faculty of Resource Science and Technology and included a River Ranger activity for school students and community members. Through this local cooperation, UNIMAS helped raise awareness of river conservation and encouraged young people and residents to take an active role in caring for their waterways. This engagement supports cooperation on water security by bringing together a university centre, a government agency, faculty members and the local community around river stewardship.

Keywords: water security cooperation; river conservation; local partnership; Sarawak Department of Irrigation and Drainage; UNIMAS Water Centre; community engagement; River Ranger; youth participation; waterway stewardship; sustainable water management

Reference Link: World Rivers Day at Kampung Stabut, Serian



UNIMAS Shared Flood-Control Expertise through Water Sector Collaboration

On 8 July 2025, Associate Professor Ir. Dr Mah Yau Seng of UNIMAS presented on dry pond modelling at a seminar on improving flood control in Sarawak's stormwater systems, held in Kuching. Organised by TAM Sarawak, BIMAGE Consulting (M) Sdn Bhd and Autodesk Water, with support from MPHLG Sarawak, the seminar brought together expertise relevant to regional water management. UNIMAS's contribution supported knowledge-sharing on localized flood control and sustainable urban planning—issues connected to water security, stormwater management and community resilience.

Keywords: cooperation on water security; regional water management; flood control; stormwater systems; dry pond modelling; knowledge-sharing; sustainable urban planning; community resilient; stakeholder collaboration; UNIMAS Water Centre

Reference Link: UNIMAS Shared Flood-Control Expertise through Water Sector Collaboration



UNIMAS Water Centre Shares Water Research at Climate Change Seminar

On 29–30 July 2025, the UNIMAS Water Centre participated in the *International Seminar on Humanity and Climate Change Crisis: A Multidimensional Perspective*, organised by Majlis Islam Sarawak. Through an exhibition showcasing its water research and sustainability initiatives, the Centre shared information and engaged with participants on addressing climate challenges from scientific and community perspectives. This stakeholder engagement and knowledge-sharing with a Sarawak-based organiser supports wider discussion of water sustainability and climate resilience, contributing to cooperation relevant to regional water security.

Keywords: cooperation on water security; water sustainability; climate resilience; water research; stakeholder engagement; knowledge-sharing; community perspectives; regional collaboration; UNIMAS Water Centre

Reference Link: UNIMAS Water Centre Shares Water Research at Climate Change Seminar



UNIMAS Water Centre and JBALB Cooperation on Innovative Solutions for Sustainable Rural Water Supply in Sarawak

On 5 March 2025, the UNIMAS Water Centre (UWC) visited the Sarawak Rural Water Supply Department (JBALB) to share its expertise and discuss future collaboration in Sarawak's water supply management. The meeting included a briefing and discussion on opportunities to strengthen cooperation, followed by a visit to JBALB's Command Centre, where the delegation learned about digital monitoring of water supply systems across Sarawak. This engagement demonstrates regional cooperation on water security, linking university expertise with a state water agency to support improved water services and sustainable water management.

Keywords: cooperation on water security; UNIMAS Water Centre; water JBALB Sarawak; water supply management; university-government collaboration; digital water monitoring; sustainable water management; regional partnership; improved water services

Reference Link: UNIMAS Water Centre and JBALB Cooperation on Innovative Solutions for Sustainable Rural Water Supply in Sarawak



6.5.6 Promoting conscious water usage (on campus)

UNIMAS Promotes Conscious Water Use on Campus

UNIMAS promotes conscious water usage through clear awareness signage displayed beside a campus tap. The sign reminds users to turn off the tap when it is not in use, encouraging students, staff and visitors to avoid unnecessary water wastage during everyday activities. By placing the reminder at the point of use, UNIMAS makes water conservation a visible and practical action for the campus community. Repeated reminders can help strengthen responsible water-use habits and build a water-conscious campus culture, supporting the university's broader commitment to sustainable water management.

Keywords: *conscious water usage; water conservation; water-saving awareness; campus signage; turn off taps; responsible water use; prevent water wastage; point-of-use reminder; campus community; sustainable water management*



6.5.7 Promoting conscious water usage (wider community)

Sarawak Level World Rivers Day 2025 Celebrations Lively

Universiti Malaysia Sarawak (UNIMAS) supported conscious water use in the wider community through its participation in the Sarawak-level World Rivers Day celebration at Kampung Stabut, Siburan, on 4 October 2025. UNIMAS lecturers contributed to the River Ranger activity, a community education programme on river conservation. The event raised public awareness of the importance of rivers as clean-water sources and encouraged local residents to help maintain river cleanliness and ecosystem health. Through this community outreach, UNIMAS promoted water awareness, river stewardship and shared responsibility for protecting freshwater resources.

Keywords: conscious water use; wider community; water awareness; community education; river conservation; River Ranger activity; river stewardship; clean-water sources; freshwater protection; community outreach

Link: Sarawak Level World Rivers Day 2025 Celebrations Lively



UNIMAS Anum Mobile Application

On 4 September 2025, a UNIMAS student team showcased *Anum*, an augmented-reality mobile application, at the Digital Innovation Creativepreneur (DICE) 3.0 competition in Johor Bahru. Designed to promote conscious water use in the wider community, the app scans everyday objects to illustrate their virtual water footprint, estimates water costs using Malaysian tariffs, and encourages water-saving behaviour through education, gamification and community challenges. By making hidden water consumption easier to understand, *Anum* offers an engaging digital approach to building public awareness and supporting responsible water use.

Keywords: conscious water use in the wider community; virtual water footprint; water-saving behaviour; responsible water use

Reference Link: UNIMAS Anum Mobile Application



UNIMAS Promotes Conscious Water Use in Kampung Semera Lot Baru

As part of the Kampung Angkat MADANI 2025 programme, UNIMAS implemented a rainwater harvesting project for the community in Kampung Semera. The system, installed at community facilities including the mosque, collects and stores rainwater alongside treated water to provide a more reliable source for local needs. By introducing rainwater harvesting as a practical alternative supply, the project promotes conscious water usage and supports wider-community access to sustainable water resources, particularly during shortages. Suara Sarawak reported on the broader programme on 10 August 2025.

Keywords: rainwater harvesting; rainwater; treated water; conscious water usage; supports wider-community; sustainable water resources; sustainable water use; Kampung Angkat MADANI 2025

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