



UI GreenMetric Questionnaire

University : SONGKHLA RAJABHAT UNIVERSITY
Country : Thailand
Web Address : www.skru.ac.th

[2] Energy and Climate Change (EC)

[2.3] Smart Building Implementation (EC.2)

***Min. at least five requirements for each building**

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m ²)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
1	SKRU : Faculty of Education Building No.68	Songkhla, Thailand				✓	✓		✓	✓	✓		✓			✓	✓		✓	✓	22,149.00
2	SKRU : Faculty of Science and Technology Building No.73	Songkhla, Thailand				✓	✓		✓		✓		✓			✓	✓		✓	✓	27,876.00
3	SKRU : Faculty of Management Sciences Building No.66	Songkhla, Thailand				✓	✓		✓		✓		✓			✓	✓		✓	✓	29,856.00
4	SKRU : Faculty of Industrial Technology Building No.74	Songkhla, Thailand	✓	✓		✓	✓		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	16,200.00
5	SKRU : Office of Academic Resources and Information Technology Building No.59	Songkhla, Thailand	✓	✓		✓	✓		✓	✓	✓		✓			✓	✓		✓	✓	10,724.00
6	SKRU : Agricultural Technology Building No.62	Songkhla, Thailand	✓	✓		✓	✓		✓	✓	✓		✓			✓	✓		✓	✓	11,436.00
7	SKRU : Administration Building No.48	Songkhla, Thailand	✓	✓		✓			✓	✓	✓		✓			✓	✓		✓	✓	9,150.00
8	SKRU : Class room building room 2	Songkhla, Thailand	✓	✓		✓			✓	✓	✓		✓			✓	✓		✓	✓	2,500.00
9	SKRU : Faculty of Humanities and Social Sciences buildings (Buildings 3, 4, 5)	Songkhla, Thailand				✓	✓		✓	✓	✓		✓			✓	✓		✓	✓	12,496.00
10	SKRU : Classroom Building No 10	Songkhla, Thailand				✓	✓		✓	✓	✓		✓			✓	✓		✓	✓	2,016.00



No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m ²)
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4	
11	SKRU : Songkhla Palace Hotel Building (Building 11)	Songkhla, Thailand			✓	✓		✓	✓	✓		✓			✓	✓		✓	✓		2,875.00
12	SKRU : Academic Resources Center	Songkhla, Thailand	✓	✓	✓	✓		✓	✓	✓		✓			✓	✓		✓	✓		6,675.83
13	SKRU : Student Complex (Student Activity Center)	Songkhla, Thailand			✓	✓		✓	✓	✓		✓			✓	✓		✓	✓		9,588.51
14	SKRU :Industrial Technology Laboratory Building 47	Songkhla, Thailand	✓	✓	✓	✓		✓	✓	✓		✓			✓	✓		✓	✓		806.40
15	SKRU :Faculty of Fine and Applied Arts Building 58	Songkhla, Thailand			✓	✓		✓	✓	✓		✓			✓	✓		✓	✓		20,493.40
16	SKRU :Industrial Technology Laboratory and Academic Services Building	Songkhla, Thailand	✓	✓	✓	✓		✓	✓	✓		✓			✓	✓		✓	✓		1,294.24
Total																					186,136.38

————— Please compile one row for each building (or homogeneous part of it) by ticking with a “X” for each requirement —————

Smart building implementation

$$\frac{\text{total smart building area}}{\text{total building area}} \times 100\%$$

Total Building Area: 283,558.54 m²

$$\frac{186,136.38 \text{ m}^2}{291,533 \text{ m}^2} \times 100\% = 63.84\%$$

1.Smart Building Implementation: 16 buildings such as

Faculty of Education Building No.68 have smart building	
	
Description : The Faculty of Education Building has been fully upgraded to a Smart Building, highlighting 5 key features:	



- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming for energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity for an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring for efficient water consumption.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, access control, and advanced fire alert systems.

Faculty of Science and Technology Building No.73



Description :

The Faculty of Science Building has been fully upgraded to a **Smart Building**, highlighting 5 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and real-time fire alert systems.

Faculty of Management Sciences Building No.66



Description :

Faculty of Management Sciences Building No.66 has been fully upgraded to a **Smart Building**, highlighting 5 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and real-time fire alert systems.

Faculty of Industrial Technology Building No.74

1. Building



2. Control box automatic control system of light and fan





3. Control box of smart light



4. Automatic car park

Description :

Faculty of Industrial Technology Building No.74 has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L2,L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and real-time fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline and optimize overall facility operations.

Office of Academic Resources and Information Technology Building No.59



Description :

Office of Academic Resources and Information Technology Building No.59 has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and real-time fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline and optimize overall facility operations.



Faculty of Agricultural Technology building 62

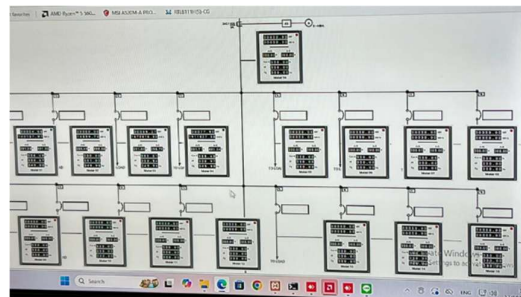
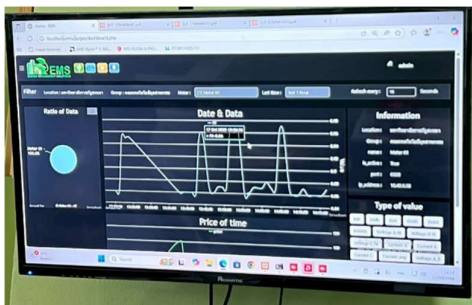


Description :

Faculty of Agricultural Technology building 62 has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and real-time fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline and optimize overall facility operations and Temperature control system

Adminstration Building 48



Description :

Administration Building 48 has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal working and learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2):** Smart surveillance, advanced access control, and real-time fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline overall operations, including a computerized Electrical enegy consumption monitoring system.

Classroom building 2



Description :

Classroom Building 2 has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight harvesting to maximize energy efficiency.



- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal working and learning climate.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2):** Smart surveillance, advanced access control, and real-time fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline overall operations, featuring automated lighting controls and automatic door systems.

Faculty of Humanities and Social Sciences buildings (Buildings 3, 4, 5)



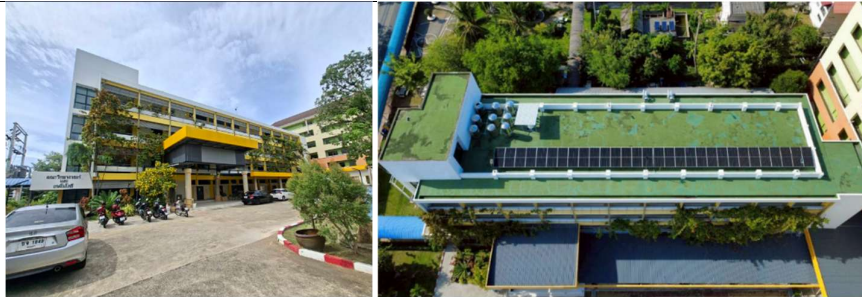


Description :

Faculty of Humanities and Social Sciences buildings (Buildings 3, 4, 5) has been fully upgraded to a **Smart Building**, highlighting 5 key features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming for energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity for an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring for efficient water consumption.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar cell power generation system to promote renewable energy usage.
- **Safety & Security (S2, S3):** Smart surveillance, access control, and advanced fire alert systems.

Classroom building 10



Description :

Classroom building 10 has been fully upgraded to a **Smart Building**, highlighting 5 key features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming for energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity for an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring for efficient water consumption.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar cell power generation system to promote renewable energy usage.
- **Safety & Security (S2, S3):** Smart surveillance, access control, and advanced fire alert systems.

Songkhla Palace Hotel Building (Building 11)



Description :

Songkhla Palace Hotel Building (Building 11) has been fully upgraded to a **Smart Building**, highlighting 5 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and advanced fire alert systems.



Academic Resources Center



Description :

Academic Resource Center has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar power system.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and advanced fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline overall operations, featuring an automated library system.

Student Complex (Student Activity Center)



Description :

Student Complex (Student Activity Center) has been fully upgraded to a **Smart Building**, highlighting 5 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning and activity environment.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar power system.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and advanced fire alert systems.

Industrial Technology Laboratory Building 47





Description :

Industrial Technology Laboratory Building 47 has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar power system.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and advanced fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline overall operations, featuring automated lighting controls and automated electrical appliance power systems.



Faculty of Fine and Applied Arts Building 58

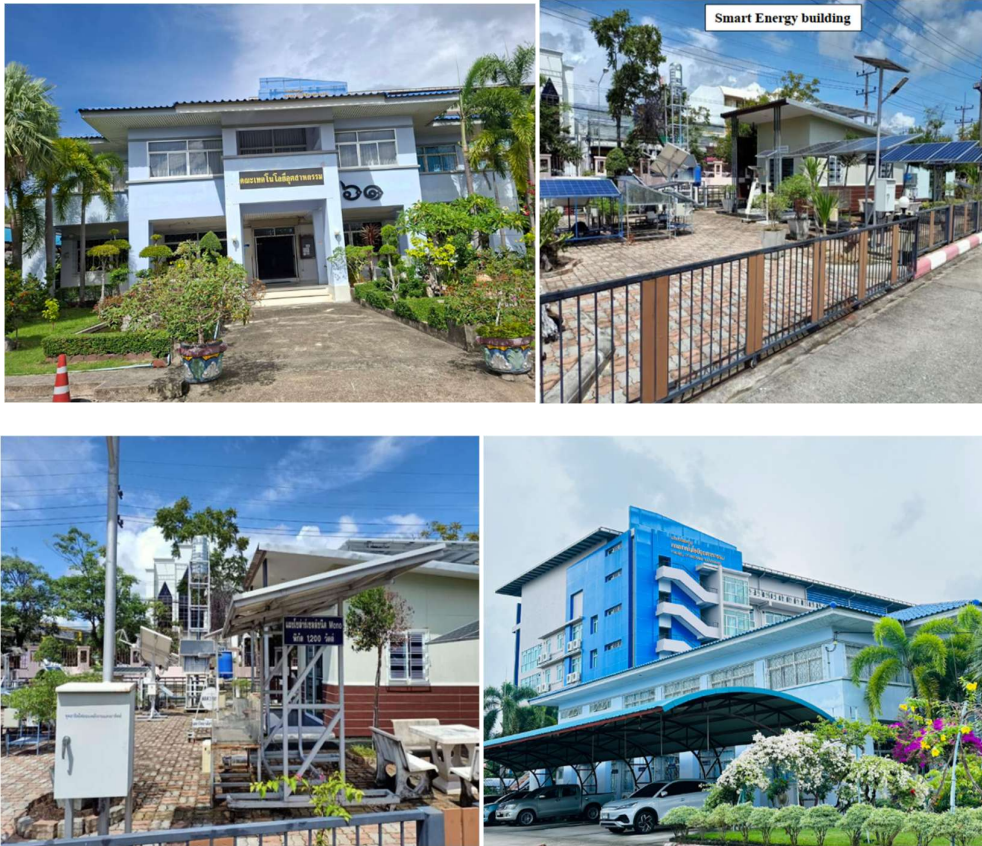


Description :

Faculty of Fine and Applied Arts Building 58 has been fully upgraded to a **Smart Building**, highlighting 5 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar power system.
- **Safety & Security (S2, S3):** Smart surveillance and advanced fire alert systems.

Industrial Technology Laboratory and Academic Services Building 61



Description :

Industrial Technology Laboratory and Academic Services Building has been fully upgraded to a **Smart Building**, highlighting 6 key operational features:

- **Lighting (L1, L3, L4):** Automated on-off controls and daylight dimming to maximize energy efficiency.
- **Indoor Environment (I1, I4):** Optimized air quality, temperature, and humidity to create an ideal learning environment.
- **Water Management (A1):** Intelligent monitoring to ensure efficient water consumption and minimize waste.
- **Energy Management (E1, E2):** Smart metering to analyze and control electricity usage cost-effectively, integrated with a solar power system.
- **Safety & Security (S2, S3):** Smart surveillance, advanced access control, and advanced fire alert systems.
- **Building Automation (B1, B2):** Integrated building automation systems to streamline overall operations, featuring smart building management and automated parking systems



2. Total Building Usage Area at Songkhla Rajabhat University

Faculty of Agricultural Technology building 62	
	
Faculty of Fine Arts building 58	
	
Faculty of Industrial Technology building 74	
	
Faculty of Humanities and Social Sciences buildings (Buildings 3, 4, 5)	





Faculty of Education building (Building 68)



Faculty of Management Science Building



Graduate School Building (Building 9)



Classroom building 8





Adminstration Building		
		
Science Center classroom building		
		
Songkhla Palace Hotel Building (Building 11)		
		
Classroom building 1		
		



Hospital room



Chalerm Phra Kiat Auditorium



Swimming pool (Building 70)



Gymnasium Stadium (Building 76)



Classroom building 10



Faculty of Agricultural Technology (Building 62)



Animal Research and Laboratory Building





Aquaculture building



Agronomy Practice Station



hospice





Student dormitory building (Building 18,69,75)



Number of Building	:	76	building
Total area of buildings	:	283,558.54	m²