


ACLEDA Institute of Business

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Renovation

Primary energy need :
kWhpe/m².year
(Calculation method :)

ENERGY CONSUMPTION

| Consumption Range (kWhpe/m ² .year) | Grade | Category |
|--|-------|---------------------------|
| < 50 | A | Economical building |
| 51 à 90 | B | |
| 91 à 150 | C | |
| 151 à 230 | D | |
| 231 à 330 | E | |
| 331 à 450 | F | |
| > 450 | G | Energy-intensive building |

Building Type : School, college, university
Construction Year : 2017
Delivery year : 2018
Address 1 - street : Anlong Kangan Village, Sangkat Khmuonh, Khan Sen Sok 12000 PHNOM PENH, Other countries
Climate zone : [Aw] Tropical Wet & Dry with dry winter.

Net Floor Area : 25 196 m²
Number of Pupil : 2 866 Pupil

Certifications :



Proposed by :



General information

For years, ACLEDA Bank recruited the largest number of college graduates in Cambodia. As the demand for skilled professionals began to outpace the supply of graduates, ACLEDA Bank decided to build their own business school to address the shortage of higher education institutions. Today, the ACLEDA Institute of Business offers Associate, Bachelor and Master-degree levels for over 3,000 students the fields of business, banking and finance. The school also provides training to over 3,000 additional participants. Students at the ACLEDA Institute of Business study subjects such as micro small and medium enterprise (MSME) lending, financial planning, loan management and more.

ACLEDA Bank also believes that investing in education must be done responsibly. The green campus, which consists of three education buildings, administrative offices, a library and a dormitory, are resource-efficient, allowing for a reduced carbon footprint and lower operational costs. The campus uses less energy and water with features like energy-efficient air-conditioning and a black water treatment recycling system. Construction materials such as cored bricks for walls also reduce the embodied energy in materials.

ACLEDA Bank was first established as a locally owned, non-profit organization that helped rural entrepreneurs gain financing. The bank now employs over 12,000 employees and has more than 250 branches that provide financing to mostly microfinance borrowers and MSMEs. From lending to entrepreneurs to educating its country's future professionals, ACLEDA Bank is dedicated to the sustainable development of Cambodia. The ACLEDA Institute of Business has received final EDGE certification from thinkstep-SGS.

See more details about this project

<https://www.edgebuildings.com/projects/acleda-institute-of-business/>

Photo credit

Photos courtesy of ACLEDA Business Institute

Stakeholders

Contractor

Name : PISNOKA International Corporation Ltd

Contact : [khou_soklay\[at\]pisnoka.com](mailto:khou_soklay@pisnoka.com)

<http://www.pisnoka.com.kh/>

Construction Manager

Name : HSnK Architecture & Engineering Company

Contact : [hanoon\[at\]hsnk.co.kr](mailto:hanoon@hsnk.co.kr)

<http://hsnk.co.kr/eng/>

Stakeholders

Function : Investor

ACLEDA Bank

[acledabank\[at\]acledabank.com.kh](mailto:acledabank@acledabank.com.kh)

<https://www.acledabank.com.kh/kh/eng/>

ACLEDA Bank decided to build their own business school to address the shortage of higher education institutions.

Energy

Energy consumption

Initial consumption : 36,30 kWhpe/m².year

Envelope performance

More information :

Roof U-value: 1.99

Wall U-value: 1.86

Glass U-value: 5.75

More information

7 kWh/m².year : cooling Energy

3 kWh/m².year : fan energy

2 kWh/m².year : hot water

6 kWh/m².year : lighting Energy

10 kWh/m².year : catering Energy

2 kWh/m².year : equipment, lift, STP, water pumps

Real final energy consumption

Renewables & systems

Systems

Heating system :

- No heating system

Hot water system :

- Boiler fuel

Cooling system :

- VRF Syst. (Variable refrigerant Volume)

Ventilation system :

- Natural ventilation

Renewable systems :

- No renewable energy systems

Products

Product

Product category : Table 'c21_spain.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '0'

Reduced Window to Wall Ratio - WWR of 45.21 %

Insulation of Roof and external walls

Variable Refrigerant Flow (VRF) Cooling System - COP of 3.41

Energy-Saving Light Bulbs for internal and external spaces

Occupancy Sensors in Bathrooms

Product category : Table 'c21_spain.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '14'

Low-Flow Faucets in All Other Bathrooms - 5.03 L/min

Single Flush/Flush Valve Water Closets in Bathrooms - 6 lt/ flush

Water-Efficient Urinals in All Other Bathrooms - 3 L/flush

EDW11 Black Water Treatment and Recycling System

Product category : Table 'c21_spain.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '0'

Product category : Table 'c21_spain.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '9'

Mineral Wool : roof insulation

Cored bricks with plaster on both sides for internal and external walls

Cored (with Holes) Bricks with Plaster on Both Sides: Internal Walls

Cored (with Holes) Bricks with Internal & External plaster: External Walls

Insulation of External Walls: U-value of 1.95

Insulation of Roof: U-value of 0.46

Costs

Construction and exploitation costs

Additional information on costs :

Incremental Cost: 241 160.97\$

Payback in Years: 23.09 Yrs.

To know more about incremental cost: <https://www.edgebuildings.com/edge-cost-model/>

Energy bill

Forecasted energy bill/year : 36 850,97 €

Real energy cost/m2 : 1.46

Real energy cost/Pupil : 12.86

Health and comfort

Water management

Consumption from water network : 22 344,00 m³

Water Consumption/m2 : 0.89

Water Consumption/Pupil : 7.8

7 m3/day : shower

8 m3/day : water faucets

18 m3/day : cafeteria

25 m3/day : landscaping

2 m3/day : other

Final Water Use: 1862 m³/Month

Water Savings: 12395.28 m³/Year

Comfort

Health & comfort : This campus has been built and equipped with the security, fire protection, energy conservation, control and telecommunication, occupational health and IT systems at all the buildings.

Carbon

GHG emissions

GHG in use : 24,00 KgCO₂/m²/year

CO₂ Emissions from electricity Generation: 0.8 kg/kWh ; CARBON EMISSIONS: 208.07 tCO₂/Year

Contest

Reasons for participating in the competition(s)

Cambodia has a tropical **climate** with warm temperatures throughout the year.

Energy (35% energy savings): Reduced window to wall ratio, insulation of roof, variable refrigerant volume (VRV) cooling system, energy-saving lighting and occupancy sensors in bathrooms.

Water (44% water savings): Low-flow faucets and a black water treatment recycling system.

Materials (32% less embodied materials): Cored bricks with plaster on both sides for internal and external walls.

Building candidate in the category

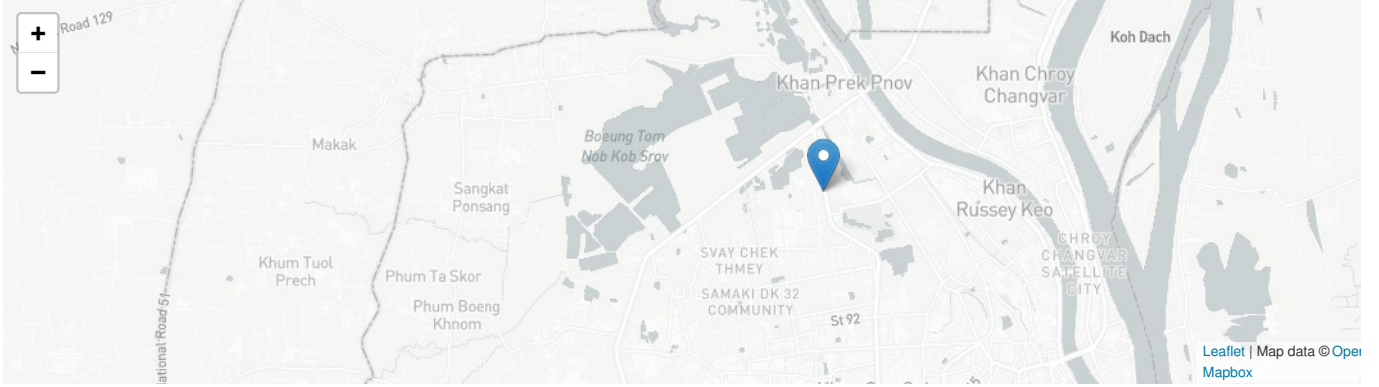


Energy & Hot Climates





Users' Choice



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