



ULUSLARARASI KIBRIS ÜNİVERSİTESİ
CYPRUS INTERNATIONAL UNIVERSITY



Evidence for THE Impact Rankings Questionnaire

University : Cyprus International University
Country : North Cyprus- Turkey
Web Address : www.ciu.edu.tr

[11]

[11.4.8]

Planning Development

Cyprus International University acknowledges the impact of its activities on the environment and thus the university invested and continually improves its smart building and Energy efficiency implementations. Both smart building implementations (See **Appendix 1**) and Energy efficiency implementations (See **Appendix 2**) are summarized and shown below.



Appendix 1:

Smart Building Implementations

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	Science and Technology Centre	Nicosia	x		x	x	x		x	x	x		x	x	x	x	x	x	x	x	16800
2	Student Services Centre	Nicosia	x		x	x	x		x	x	x		x	x	x	x	x	x	x	x	1600
3	Rectorate Building	Nicosia	x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	1500
4	Arena Sport Complex	Nicosia	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	9000
5	Engineering Laboratories	Nicosia	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3000
6	Graduate and Education Studies Building	Nicosia	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	6000
7	Çevik Uraz Centre	Nicosia	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	5600
Total																					43500

Smart building implementation

$$\frac{43500}{144160} \times 100\% = 30\%$$



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Science and Technology Center



Student Services Center



Education and Graduated Sciences Building





Automation

50%

- **HVAC System:** The duct temperature, pressure, and humidity, as well as exhaust temperature are connected to the BMS, and if their value exceeds defined limits, an alarm is generated.
- **Central Vacuum System, Central Fume Collection:** allowing for early identification of units requiring maintenance. Sudden breakdown would signal via alarms and then appropriate action can be taken to protect the product.
- **Technical Steam System:** Should, for instance, the pressure or temperature in the piping system fall below the defined regulatory values for clean steam, the BMS shall trigger an alarm, indicating a threat to product quality.
- **Hot Water System and Central Heating:** Temperature and pump control monitoring via the BMS allows for a proper functioning of hot water distribution through the facility.
- **Chilled Water System:** Control of the facility chillers could be supervised by BMS to monitor proper behavior of the system in terms of water/coolant temperature control or pump control to assure proper distribution within the distribution loop.
- **Sprinkler System (for fire safety)**
- **Electrical Monitoring System:** The BMS may monitor the consumed electrical power and the state of main electrical switches.
- **Interactive support for users via APP or online service.**



Safety

50%

- **Intruder Alarm System:** When magnetic sensor will detect the movements in the door or window, it would send signals to the control box which would in turn send a signal to the alarm device.
- **Fire – Fighting System:** It consists of three basic parts: 1- A large store of water in tanks, either underground or on top of the building, called fire storage tanks 2- A specialized pumping system 3- A large network of pipes ending in either hydrants or sprinklers.
- **Video Surveillance:** A surveillance system capable of capturing images and videos that can be compressed, stored or sent over communication networks.
- **Anti – Flooding System:** Waterproofing, Flood the basement

Energy

75%

- **Monitoring:** Automatic acquisition and logging system of energy consumption.
- **Management:** Automatic management system for energy supplies and production.

Water

62.5%

- **Monitoring:** Automatic acquisition and logging system of water consumption. → Flowmeter are Installed
- **Recovery:** Rainwater recovery system for covering the flushing and irrigation.



Indoor Environment

100%

- **Thermal Comfort:** Monitoring of environmental parameters related to thermo-hygrometric comfort (e.g. air temperature, relative humidity, air velocity, etc.)
- **Air Quality:** Monitoring of pollutants (e.g. VOC, PM, CO₂)
- **Real – Time:** Programming and management in real time according to the occupancy profile of the premises.
- **Passive System:** Passive cooling and/or exploitation/limitation system for free supplies.

Lighting

100%

- **LEDs:** high-efficiency luminaires.
- **Sensors:** Automatic lighting control.
- **Shielding:** Shielding adjustment and solar control.
- **Natural light:** Passive systems for natural light exploitation.



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High Speed Wi-Fi and Emergency exit button



Fire Alarm, Fire extinguisher and Card reader door lock



Motion sensors, Highly efficient VRF and Air Ventilation System



Temperature and CO₂ Sensors, LED illumination, Automatic door and high-tech teaching devices





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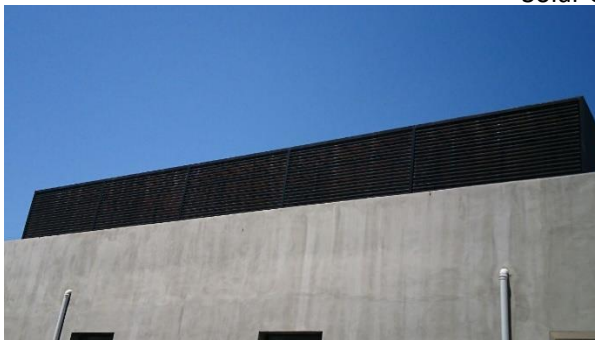
Shading System



Building Integrated Photovoltaic System (BIPV)

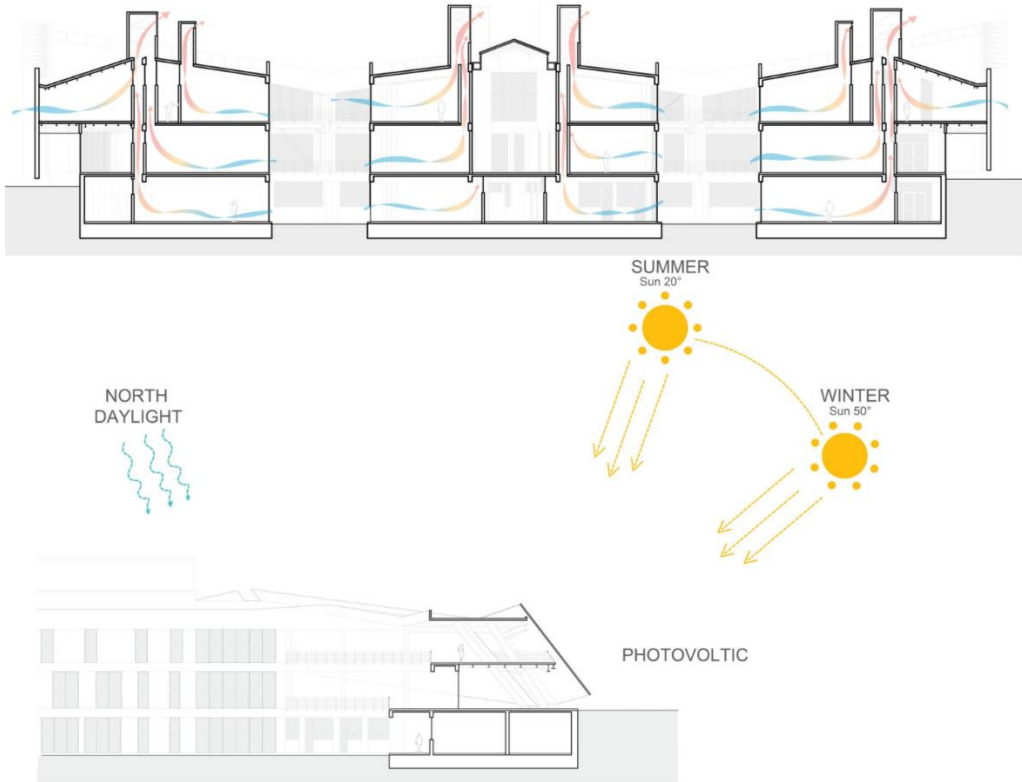


Solar Chimney



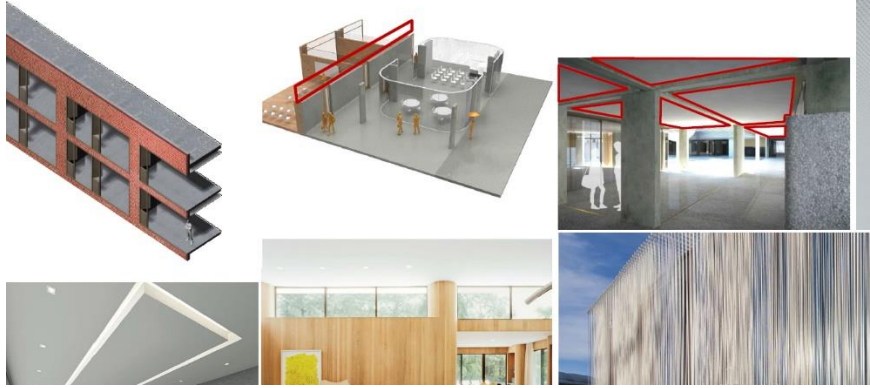


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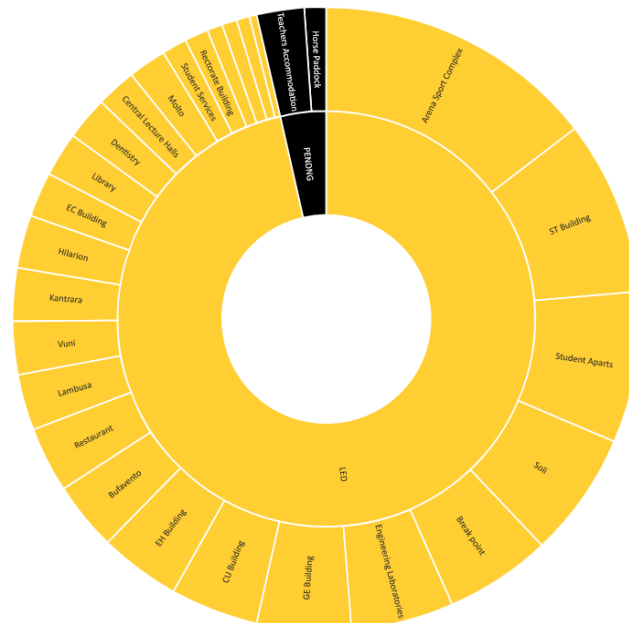
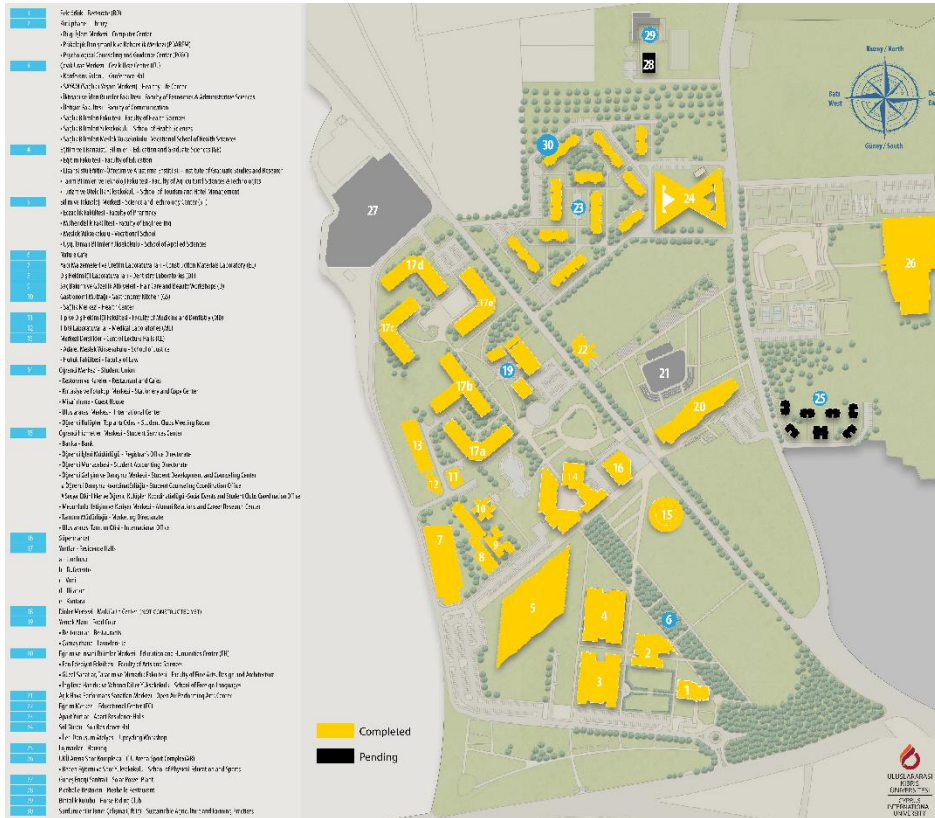


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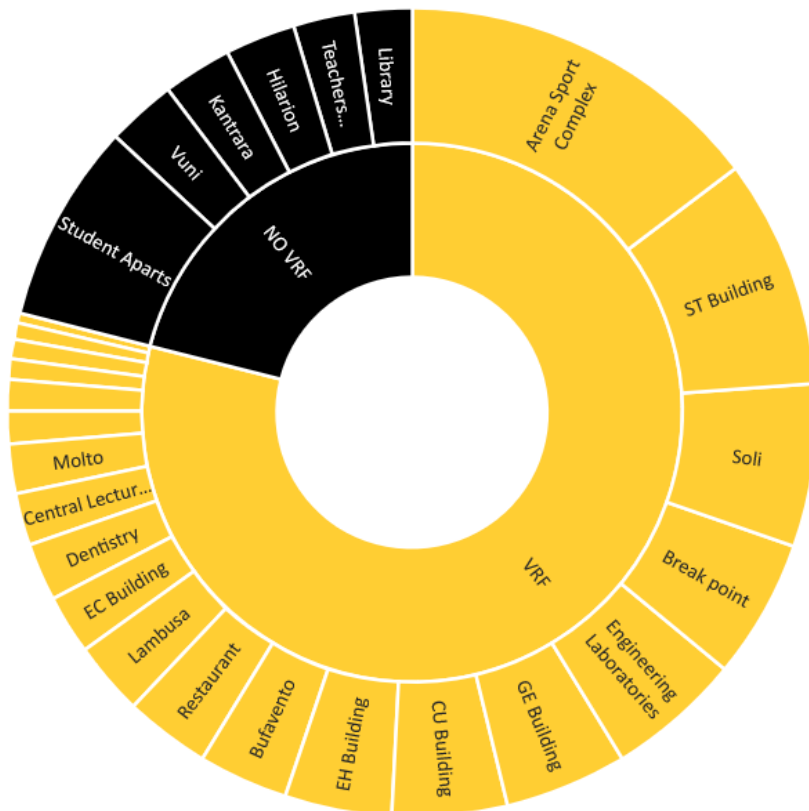
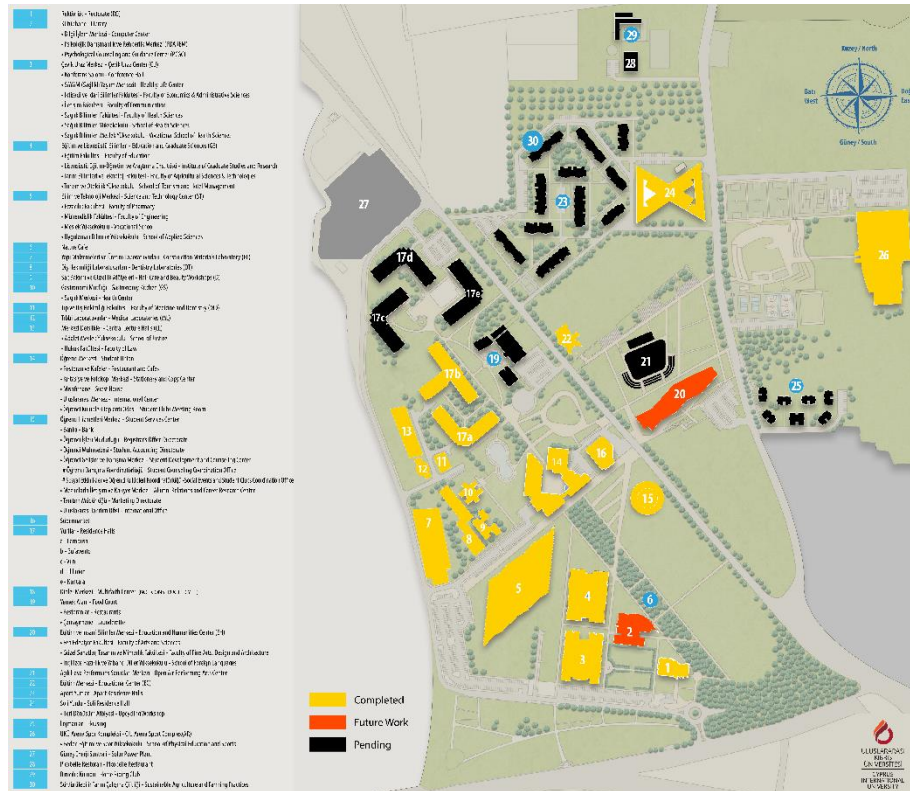




Appendix 2: Energy Efficient Appliances



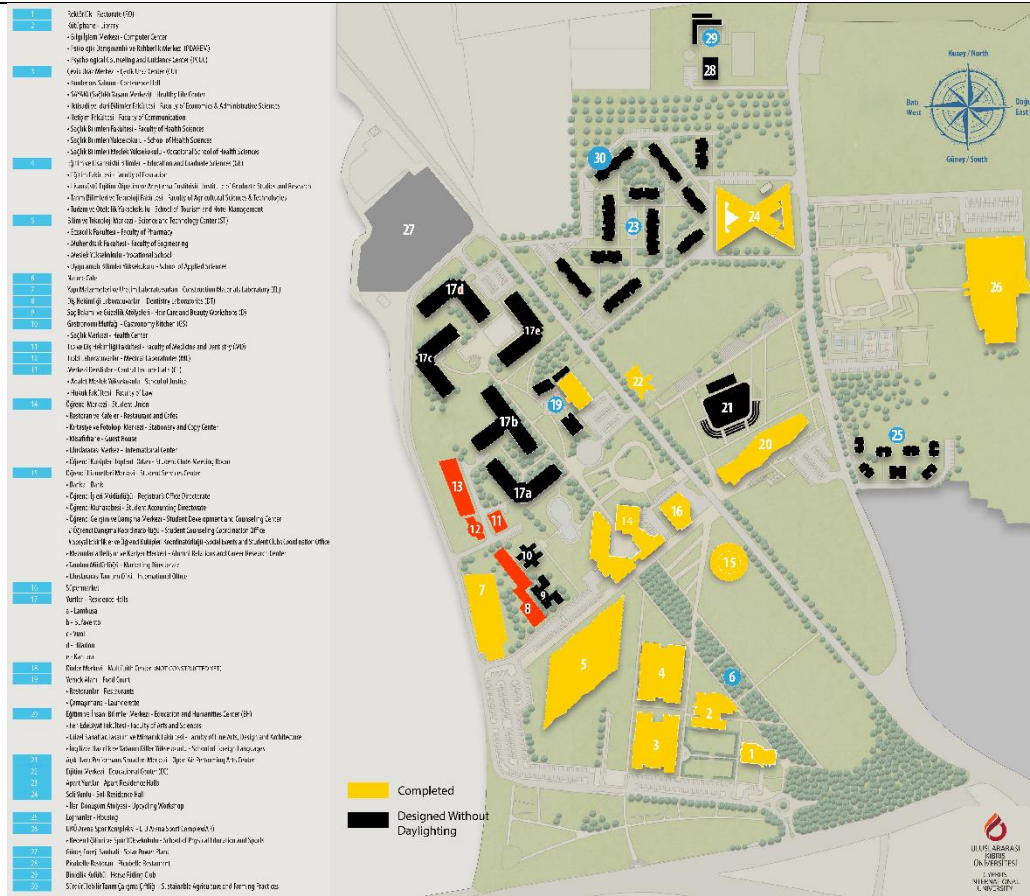
Energy Efficient Appliances Usage: 95 % of total building area is lighten by LED lighting and lamps.



Energy Efficient Appliances Usage: **76 %** of total building area is conditioned by VRF, Solar Chimney based Air Ventilation, Highly Efficient Air Handling Units and Ventilation systems.



Energy Efficient Appliances Usage: **75 %** of total building area is controlled by Light Sensor, Motion Sensor, Temperature Sensor, Windows Sensor, Gas Emission Sensor and Fire Alarm.





Energy Efficient Appliances Usage: Shading Systems with direct impact of the university location and climate (70%)





Energy Efficient Appliances Usage: All the new buildings are using thermal roof insulation and also more than 60% of old building insulated with this material. (70%)





Energy Efficient Appliances Usage: More than half of the whole buildings in the campus are designed with natural day-lighting to increase to consumption of electricity for illumination. **(68 %)**

Pictures00

Air Conditioning System	
LED Lighting	



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Shading System	
Daylighting	
Sensors	

- Double Glazing windows; ~ 100 %
- Energy Star Label Equipment; 85 %

Average value of Energy Efficiency implementations is 79.88 % for whole campus