





University : Universitat Internacional de Catalunya (UIC)
 Country : Spain
 Web Address : www.uic.es/en

[2] Energy and Climate Change (EC)

[2.1] Energy Efficient Appliances Usage

	
<p><i>Figure 1. LED lighting</i></p>	<p><i>Figure 2. Motion sensor bathroom lights</i></p>
	
<p><i>Figure 3. Twilight sensors on Passeig de la Fontana, calle Iradier (Barcelona campus)</i></p>	<p><i>Figure 4. Air conditioning units with VRV technology</i></p>

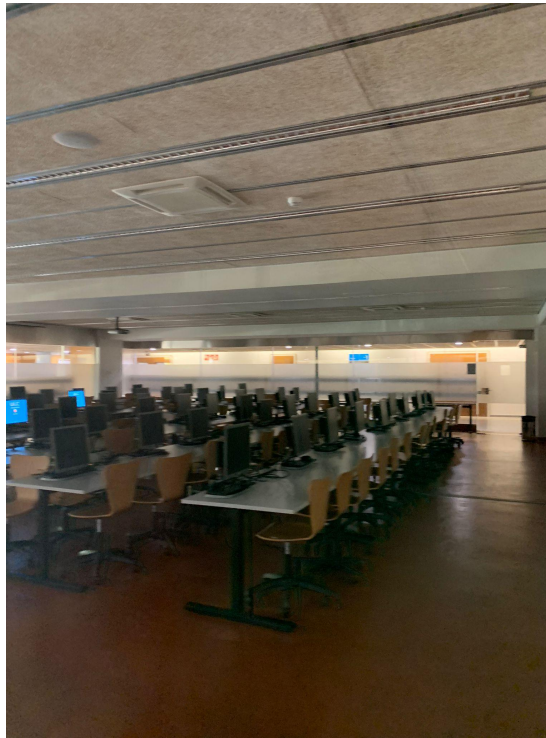


Figura 5. Desktop and laptop computers with hibernation and energy-saving functions.

Example of energy efficient appliances usage: replacing conventional appliances
(Universitat Internacional de Catalunya, Spain).

1. ENERGY CONSUMPTION REDUCTION MEASURES ALREADY IMPLEMENTED IN THE 21-22 ACADEMIC YEAR

Generals

1. Sending of a communiqué - publication in Newsletter:

In April from Operations some recommendations were launched (published in the newsletter) where energy measures were proposed which are described below in general terms:

- Respect the recommended temperature ranges according to RITE. Do not program thermostats with temperatures outside these ranges.
- Use air conditioning equipment only when necessary and turn it off when it is no longer necessary and, above all, when we leave.
- Do not open windows while the air conditioning equipment is in operation.
- Make sure that the lights are turned off when leaving a space, even if it is to go out to eat.
- Do not connect electrical appliances other than those that are essential and necessary to perform the tasks we carry out at UIC Barcelona.
- When you have finished using electronic devices, such as tablets, computers, or screens, they should be turned off completely. An electronic device on standby continues to consume energy.
- Inform Technical Services before connecting new equipment to the mains.

Sant Cugat Campus

1. Permanent shutdown of 33% of the lighting line on the side of the passageway that connects the main hall with L3:
o Implemented on June 15, 2022, indefinitely.
2. Permanent switch-off of 33% of the lighting in the main hall and the bathroom lobby:
o Implemented on June 15, 2022, indefinitely.
3. Permanent switch-off of the line of lights of the interior façade of the hall:
o Implemented on June 15, 2022, until October 15, which will be turned on at 6:00 p.m.
4. Reduction of 33% of the illumination of the classroom corridors of the Interphase Floor:
o Implemented on June 15, 2022, indefinitely.
5. Reduction of the timetable of the air conditioning service in the library and annexed study rooms while the final exams are not being held o from 8:00 to 23:00, from

Monday to Sunday during exam periods o from 9:00 to 21:00 from Monday to Sunday during normal periods.

6. Climatic independence of the critical spaces of the Campus in the 20-21 academic year to be able to turn off the air conditioning of the rest of the areas during the night and adjust the schedule of switching on and from the Campus climate from September 1, 20-21.

Affected areas measured:



Terré Campus

1. Set the air conditioning temperature to 23°C, blocking the possibility of moving the thermostat setpoint, since it has been detected that not everyone follows the advice that was transmitted.
- Implementation of a shutdown schedule for all air conditioning equipment:
From July 1 to August 31 - 15:30h.
2. Advance round of lights and air conditioners shutdown. From June 15 to August 31.
• 19:30h 15:30h
3. Permanent shutdown of Delta and Gama spiral staircase lights:
• From June 15 to October 30
4. Permanent shutdown of lobby and vestibule lighting:
• From June 15 to October 30

Figura 6. Energy Efficiency Plan UIC Barcelona

Description:

Between 2016 and 2018, the Universitat Internacional de Catalunya (UIC) carried out a project to replace all conventional light bulbs on its Barcelona campus with LED bulbs. On Sant Cugat campus, LED bulbs make up 95% of all lighting installations.

The lighting on the Barcelona campus is made up of 100% LED bulbs (Figure 1) and motion sensor lighting in the carpark and bathrooms (Figure 2), which account for 5.2% and 1.40% respectively of the total surface area of the Iradier and Terré Buildings. On Passeig de la Fontana, located between the Alpha and Beta Buildings on the same campus, there are also twilight sensors that light up depending on the level of natural light (Figure 3). They are all completely energy efficient.

In addition, the Barcelona campus has 28 VRV technology air conditioning units (Figure 4), spread proportionally throughout the buildings on calle Iradier and calle Terré. It should be noted that 100% of the air conditioning units in the buildings on calle Terré also have a management module that allows the machines to be automatically switched on and off.

In terms of the energy efficient devices on the Sant Cugat campus, there are 1826 LED bulbs (95%) installed, motion sensor lighting in the faculty bathrooms (1.85%), automatic doors, clocks installed in the electrical panels and management software for maintaining the SCADA equipment.

Finally, it should also be noted that the university has 1500 computers, both desktops (HP Elitedesk 800 G5) and laptops (HP Elitebook 840 G5) with hibernation and energy saving functions (Figure 5)

The university's Strategic Sustainability Plan envisages to increase the use of efficient electrical appliances and implement new measures to make the university even more efficient.

Appliance	Building	Total number	Total number energy efficient appliances	Percentage	Average percentage
LED lighting	<i>Alfa and Beta, calle Iradier</i>	2698	2698	100%	98,33%
	<i>Delta y Gamma, calle Terré</i>	375	375	100%	
	<i>Sant Cugat</i>	1826	1826	95%	
Motion sensor lights	<i>Alfa and Beta, calle Iradier</i>	100% efficient			100%
	<i>Delta y Gamma, calle Terré</i>	100% efficient			
	<i>Sant Cugat</i>	100% efficient			
Air conditioning	<i>Alfa and Beta, calle</i>	30	28	93.33%	64,44%

units (VRV technology)	<i>Iradier</i>				
	<i>Delta y Gamma, calle Terré</i>	22	22	100%	
	<i>Sant Cugat</i>	0	0	0	
Computers with hibernation and energy-saving functions	<i>Across UIC Barcelona</i>	1500	1500	100%	100%
			Average percentage		90,69%

Additional evidence links:

1. UIC Barcelona. (n.d.). *Energy management*. Retrieved October 21, 2022, from <https://www.uic.es/en/university/campus/sustainability/sustainable-campus/energy-management?active=web-results>