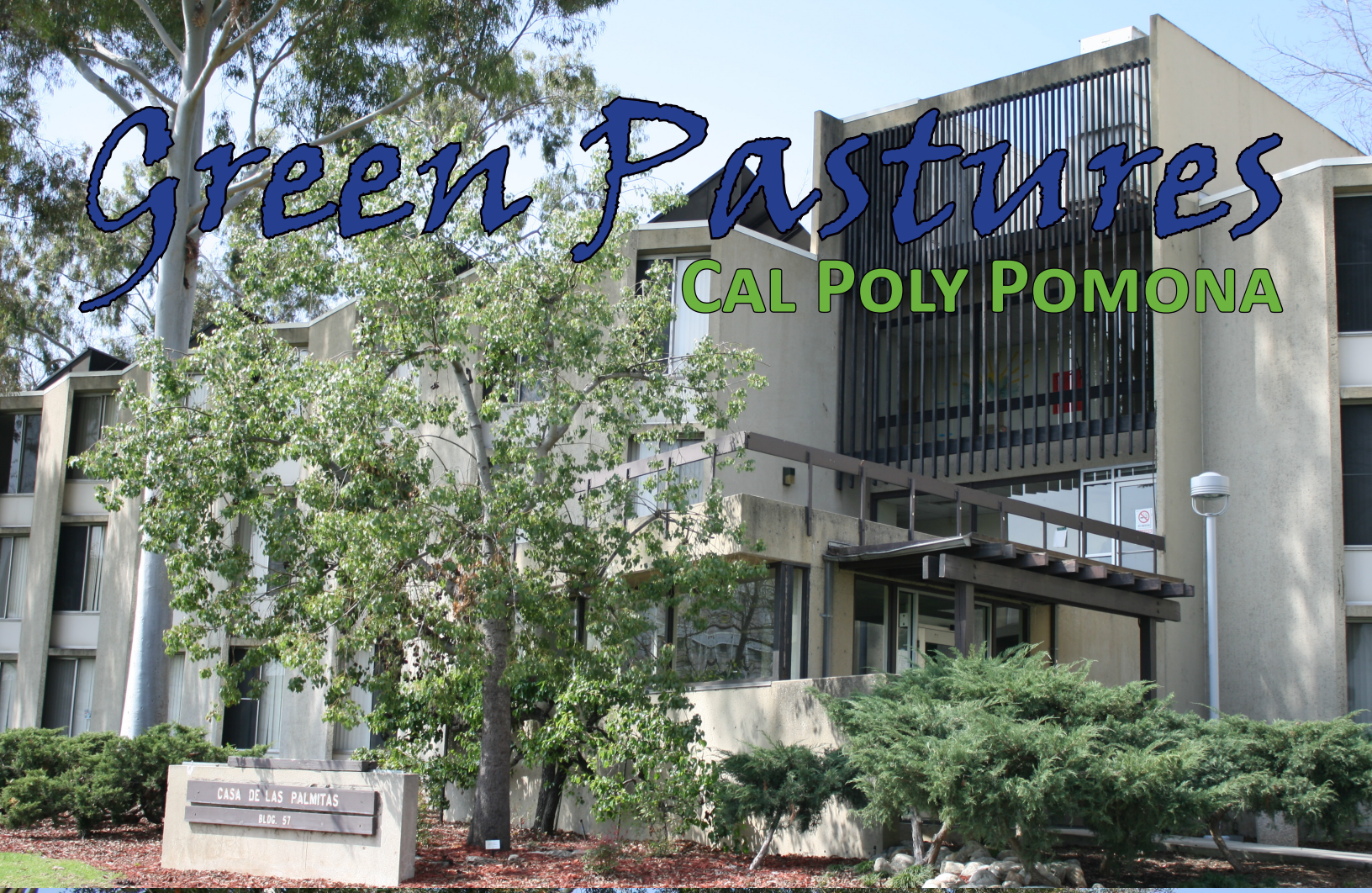
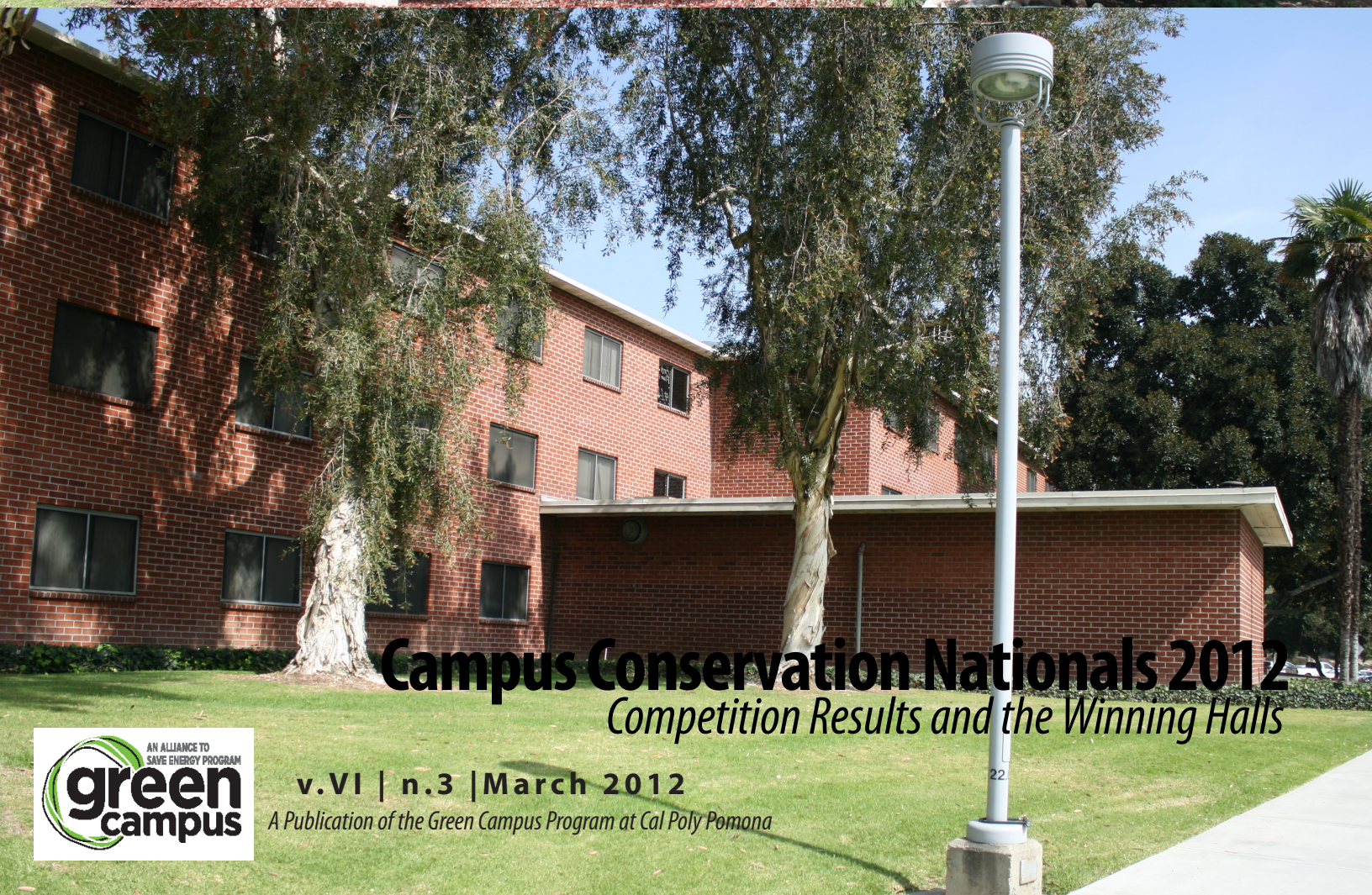
Green Pastures

Cal Poly Pomona





Campus Conservation Nationals 2012

Competition Results and the Winning Halls

AN ALLIANCE TO SAVE ENERGY PROGRAM
green campus

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Green Pastures
Cal Poly Pomona

AN ALLIANCE TO SAVE ENERGY PROGRAM
green campus

What is the Green Campus Program?

The Alliance to Save Energy's Green Campus Program empowers college students to be tomorrow's energy efficiency leaders. Currently on 16 universities and colleges and employing over 75 interns each year, the program engages students in building pathways to green careers, realizing measurable energy savings, infusing energy and energy efficiency concepts into academic curricula, and promoting energy efficiency awareness. Green Campus interns work closely with faculty, staff, administrators, and other students to engage them in energy efficiency projects.

For more information please visit our website:
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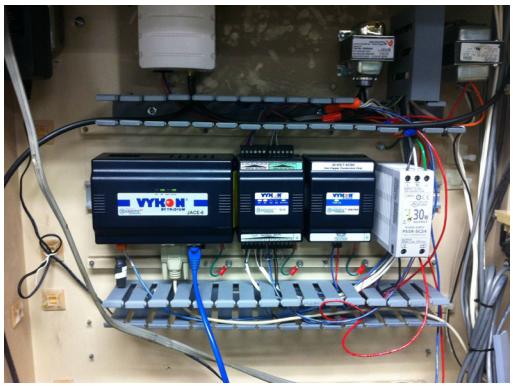
On the Cover
Palmitas (above) and Alamitos Hall (below), winners of the dorm hall energy competition.

Right
The network gateway, JACE-06. The Vigilent system is using this device to get in contact with both the IDF "Intermediate Distribution Frame," where all the network wiring goes and the VFD "Variable Frequency Drives", which is attached to the fan motor



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Congratulations!

to **Palmitas Hall** for winning the dorm hall energy competition!
and....
to **Alamitos Hall** for winning the dorm hall water competition!

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ALLIANCE TO SAVE ENERGY
Creating an Energy-Efficient World

The Alliance to Save Energy's Green Campus Program is funded by the ratepayers of California under the auspices of SCE, SDGE, PG&E, and Sempra Energy.

E-tap

By Sony Bui

An HVAC unit is a term used for a centralized heating, ventilation, and air conditioning system. It helps offset heat that is lost to the environment, provides fresh air to building occupants, and controls interior moisture. But why exactly is an HVAC important in terms of energy efficiency? Statistics have shown that an HVAC unit alone is accountable for roughly 25-40% of electricity usage in a building for heating, ventilating, and cooling. Therefore, by adjusting or modifying the HVAC unit, potential energy savings can be reached and this is where the ETAP project comes in.

Ever since last year, the implementation of the Energy Technology Assistance Program (ETAP) has gone through a series of developments and changes. ETAP's main goal is to upgrade the CAV (constant air volume) HVAC systems into a VAV (variable air volume) system in order to improve the HVAC system performance and energy efficiency in three academics Buildings 1, 2, and 13. Originally, the CAV can only provide a constant volume of air to a building without a specific setting or a program to follow by. This method is wasteful due to the fact that the motor responsible for powering the fan will use 100% of its energy in order to bring air into the building. By switching from a CAV system to a VAV system, the system can be program in such a way that it can automatically analyze the temperature and the volume of air at a specific location in the building and slowly adjust the air until the room's temperature and volume of air reach equilibrium. This system is simple, efficient and requires much less technical management compares to the current HVAC system.

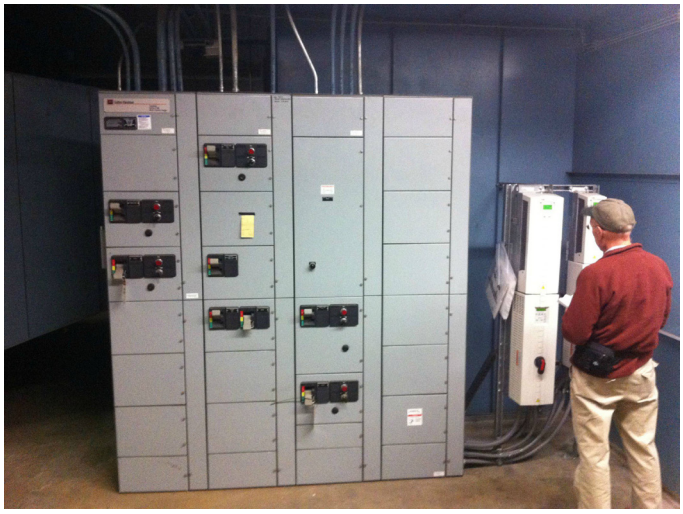


Photo above: Part of an HVAC system, responsible for running the HVAC with the help of the Vigilent system.

The general scope of work for this project is to upgrade the Invensys EMS (Energy Management System) with the Vigelent Discharge Air Regulation Technique (DART) wireless controls system. In addition to integrating with the Vigelent wireless control system, VFD (Variable Frequency Drives) will also be installed onto existing fan motors in order for the network system to have control over the existing AHU (Air Handling Unit). Overall, the EMS operates in a series of continuous steps to monitor and control the temperature of the environment. Every few minutes, the Vigilent system updates the database with the actual temperatures recorded by sensors distributed throughout the building. Each system has a high and a low setpoint, distinguished by colors, and these setpoints determine whether the system can increase fan speed or reduce the fan speed. For example, if the system finds that all sensor points are in the green setpoint (between 68-72 degrees), the system will reduce the fan energy by decreasing the spins of the fan by 1%. It will continue to reduce the fan speeds very slowly over time until multiple sensor points in the zone eventually starts sensing higher temperature. If that is the case, then the system will increase the fan speed by 1%.

Overall, the whole process consists of a series of sensor in a building collecting data of temperature over time. After a period of time, these sensors will send these data to a specific network gateway. From this network gateway, the data is sent to both the Vigilent system and the central network system, monitored by a technician. With these data, the Vigilent system updates the database with the actual temperatures and sends a command to the AHU fans for adjustments. This process is repeated throughout the day in order to obtain the optimal energy usage of an HVAC system.

Hiring Again!

This upcoming Spring Quarter, the Cal Poly Pomona Green Campus is hiring for the position of Project Coordinator/Intern. If you . . .

· are an environmentalist or are someone who wants to learn real ways to reduce our ecological impacts

· possess excellent writing and communication skills

· enjoy meeting up with students, faculty, and administrators on campus discussing ways to improve our campus

Then this is your chance! Next quarter, the Green Campus is currently looking for a new team member! If you or someone you know are interested and want to learn more about the Green Campus, please visit us at www.greencampuscpp.org or send us an email at greencampus.cpp@gmail.com!

Campus Conservation Nationals Results!

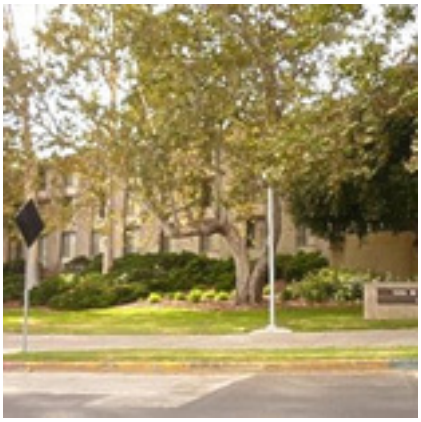
By Crystal Huang

February 26 marked the last day of this three-week Campus Conservation nationals competition. In a race to reduce energy and water savings all 6 residence halls competed against each other to be more aware of their energy and water consumption. To kickoff the event, the Green Campus Program hosted a pizza party on Encinitas' front lawn and gave attendees a slice of pizza with an energy/water saving tip. Some examples include turning off the lights when leaving the room, turning off the faucet when brushing teeth or shaving, and even taking shorter showers. Although in many cases, upgrading lighting fixtures or water technology is most efficient in savings, behavioral change is also recognized as a critical component to conservation. And throughout this competition, the halls that did it best were….

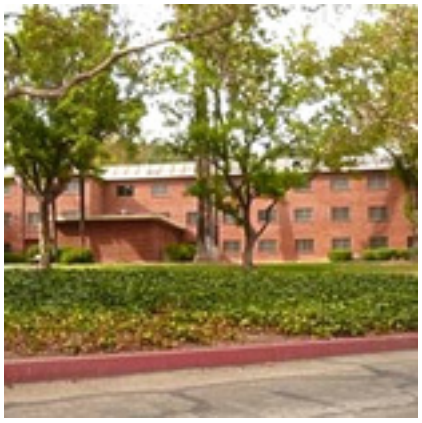
Palmitas Hall for most energy savings! The residents had overall 10% reduction, saving 2,400 kWh. And, Alamitos Hall for the most water savings! Alamitos reduced their water usage by 6% and saved an overall of 6732 gallons! Congratulations to both halls for best implementing these behavioral changes to improve energy and water efficiency in their halls. Great job to all six residence halls for participating in the competition, and helping Cal Poly Pomona reduce energy usage by 1%

Alamitos Hall
160 kWh
6732 Gal

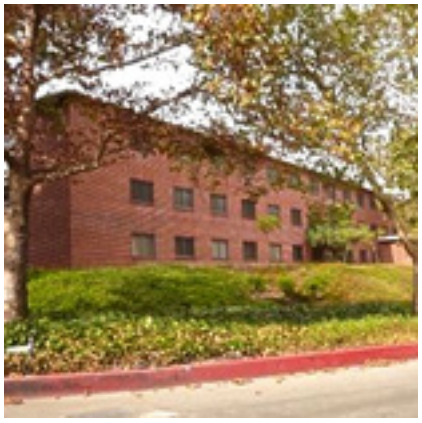
Aliso Hall
480 kWh
- Gal



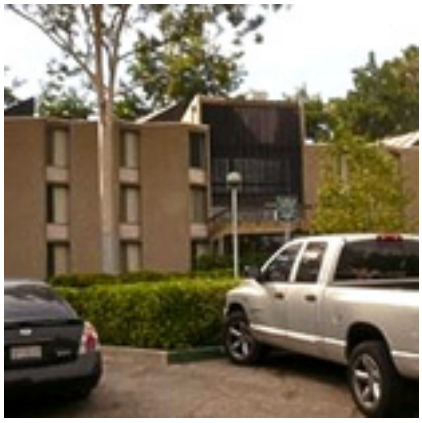
Cedritos Hall
480 kWh
5984 Gal



Encinitas Hall
320 kWh
- Gal



Montecito Hall
- kWh
- Gal



Palmitas Hall
2400 kWh
- Gal

Campus Conservation Nationals 2012 Savings

Energy & Water

And To Continue Saving... March Energy Efficiency Tips!

By Grace Jaen

1. Wait until after 7pm (after peak hours) to use appliances, such as, washers, dryers, and electric heaters as this can help reduce the use of power plants.
2. Replace old light bulbs with compact fluorescent light bulbs with the ENERGY STAR® label.
3. Air dry dishes instead of using your dishwasher's drying cycle.
4. Use a Laptop Instead of a Desktop: Laptop computers draw only 15 to 25 watts during regular use, compared to the 150 watts used by a conventional desktop computer and monitor.Howard, Brian Clark. "7 Easy Ways to Save Energy."The Daily Green. Hearst Communication, Inc. 2012.
5. Plug electronics into power strips and turn them off when not in use to avoid phantom loads
6. Enable the "sleep mode" feature on your computer, allowing it to use less power during periods of inactivity. In Windows, the power management settings are found on your control panel. Mac users, look for energy saving settings under system preferences in the apple menu. "How to Reduce Your Energy Efficiency." Nrdc.org. Natural Resources Defense Council. Web. n.d.
7. Turn the lights off when you leave a room
8. Take shorter or cooler showers

*Sources: * Howard, Brian Clark. "7 Easy Ways to Save Energy." The Daily Green. Hearst Communication, Inc. 2012.*
*** "How to Reduce Your Energy Efficiency." Nrdc.org. Natural Resources Defense Council. Web. n.d.*

Lighting Jargon Revealed

By Crystal Huang

The Green Campus Program dabbles in many aspects of sustainability and conservation, but what we focus on most is energy and water. Energy audits, dorm energy competitions, water savings represent just a few of the projects Green Campus interns focus on. However, sometimes energy terms can get a bit confusing. To help you out on your next energy saving ventures, we found these terms to be most important to know:

Efficacy
Efficiency of a light source expressed in lumens per watt (LPW or lm/W).

Lamp
Manufactured light source; the 3 broad categories of electric lamps are incandescent, fluorescent, and high intensity discharge (HID). Also, A generic term for a man-made source of light.

Illuminance
Light arriving at a surface, expressed in lumens per unit area; 1 lumen per square foot equals 1 footcandle, while 1 lumen per square meter equals 1 lux.

Footcandle, fc
A unit of illuminance equal to 1 lumen per square foot.

Corrections to Green Space

The Green Campus Program takes great pride in the Green Space program, which helps on campus offices to implement and improve their sustainable practices in order to reduce energy and save money. So when we start to receive feedback from new participants taking the sustainability quiz, part of the Green Space process, reporting that the answers provided did not match up with the quiz questions, we are eager to resolve the issue. We discovered the problem to be the quiz which had been recently updated and revised, so the answer key provided had the old quiz with the old answers. First, we contacted those affected by this issue and apologize for any inconvenience it may have caused them. The second step led us to find the new quiz answers and replace them with the old quiz answers that were currently on our website. Finally, we notified the participants that the problem had been fixed. We are very grateful to staff members and students who give us feedback because it helps create and maintain an effective organization. Without their input, we might miss details like the issues with the Green Space quiz answers. If you have any input or questions go to our Green Campus website and click on "contact us" and send us your questions or just give us feedback!

Contact Us!

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