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Day 5: Greenest Challenge

A "green" Montgomery College is a rising star for energy saving

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Montgomery College (MC) is getting greener, cleaner, and more environmentally for its sustainable growth. By taking clean energy initiatives and energy-saving projects from building solar panels, wind mills, green roofs and a fleet of electric vehicles, the college is trying to become a leader in Montgomery County in saving energy and having a sustainable growth.

Being a public and open access community college in Montgomery County outside Washington, D.C., MC has nearly 60,000 students from over 170 countries and more than 1,500 faculty members. To support the big community, energy saving is constantly an important topic in the campus no matter it is to provide food, transportation, A.C., or light, heating, and water.

Nearly 95% of the energy in the campus is supplied by electricity. The rest 5% energy is driven by green energy sources, said Mr. John Day, the Plant Maintenance and Operations Manager who has been working with the college for nearly 30 years. He witnessed the campus become more energy efficient and clean by building and running the green-energy facilities as follows.

100 solar panels

The one hundred solar panels built on the flat roof of Bioscience Building totally generated 158,282 kWh (SolarEnergyWorld) since they went into operation three years ago. It means during the period, these solar panels have saved 6 trees, 47 lbs. of coal, 99,100 miles which equals 3,670 gallons of gasoline, and a total of \$21,843 financially.

There are totally seven buildings in the campus. Mr. Day said he expects there will be more solar panels built on those roofs in the near future.

5 wind mills

They can generate 16,900 kWh in a year which can support 1.5 individual's electricity consumption in a year (U.S. Energy Information Administration). A U.S. residential utility customer uses 10,766 kWh averagely a year.

Mr. Day said the energy generated by both the solar panels and wind mills contributes 5% of the energy needed in the campus.



1 green roof

On the flat roof of the Bioscience Building, a vegetation from Arizona desert is planted here. This plant does not need much water to survive.

When it rains, the vegetation will absorb the rainwater. After it turns to sunny, the water on the surface will evaporate to keep the atmosphere with moisture. Meanwhile, the plant will produce oxygen and consume carbon dioxide through photosynthesis. Therefore, instead of being flooded or going in the drains, the rainwater on the green roof helps generate more fresh air and oxygen for the campus.



The green roof on the BE Building of Germantown Campus.

9 frozen-water tanks

There are nine frozen-water tanks in the Bioscience building to help the A.C. generate cold air in a more effective and cost efficient way.

During the non-peak hours from 11pm to 5am, these tanks work to generate very cold water and keep it in the tanks. During the day time, these tanks will send the cold water to the A.C. systems to generate cold air. Instead of fully depending on the electricity to generate cold air, the frozen-water help reduce the energy and saved 60% to 70% of expense from the electricity bills, said Mr. Day.



The frozen-water tanks to support A.C. to work more effectively.

A sophisticated Facility Control Center

Mr. Day calls the Facility Control Center at the college "state of art" because the computer system in the Center is connected with and monitors all the facilities in the campus.

The system can detect the performance and status of each facility running in the campus. For example, if the temperature in one classroom is lower than 72° F, the Control Center will instruct the AC to stop providing cold air for the room until its temperature is higher than the standard setting. Unlike the conventional AV that will keep working constantly as far as it is turned on, the computer system at the Control Center can communicate with and monitor each facility and make the best use of its energy generated and to save more energy.

Recycling as much as we can

Mr. Day said in MC, they recycle almost everything in the campus from plastics, paper, glasses to name a few.

A fleet of electric vehicles

During the past five years, Montgomery College got all its rangers (similar to golf carts) and shuttle buses charged by electricity and gas free to save coal and keep the air clean.

"I have an 8-year grandson. I want him to be able to breath the clean air when he is 30 years old without wearing a mask," said Mr. Day, who will carry on with his hard work to keep the campus green and clean.



Mr. John Day showed me the green facilities in the campus and explained how they work.

After learning from Mr. Day who showed me, the writer, the above green energy facilities from solar panels, wind mills, to green roof, I feel so proud of the initiatives MC has taken in protecting environment. While we can be more creative to use the inexhaustible resources from the mother nature, we must also be more sensitive on what we can do to save energy in daily life. It could be ending consuming the phantom energy at home, using LED lights, getting a water-saving sink, or consuming less straws.

We, the human being, and other organisms in the world are one body with the Mother Nature. Saving resources and keeping the earth green and clean is to save ourselves and reserve a green and vibrant world for our younger generations.

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To Be Continued...

My learnings and the story shared on Face Book (screen shots).

The screenshot shows a Facebook profile for Elaine Zhang. The post, made 'Just now', features a collage of six images illustrating green energy initiatives at Montgomery College. The images include: a large white building with solar panels on the roof; a close-up of solar panels; a view of a green roof with vegetation; an interior hallway with BAC (Building Automation Control) units; a view of a building with a large globe sculpture; and an exterior view of a building with solar panels. The post text reads: 'The green energy facilities and initiatives taken at the Montgomery College, who is a rising STAR in energy saving and keeping the campus Clean!'. Below the post, a 'Friends' section shows 63 friends, with three profile pictures visible: 黄雅惠 (Wong Nga Wai), Pang Jin, and Chin Chin Fatt (with 10 new posts).