RETC: Greening Romeo through Photovoltaic Panels

When one thinks of Romeo, what comes to mind? Perhaps the Bulldogs, Kid Rock, peaches, and Tillson Street Halloween decorations, but what about solar panels? The gray metal roof at the Romeo Engineering and Technology Center, (RETC) has been looking rather green recently due to the installation of a 20kW Photovoltaic Panel Array System. Being one of the largest photovoltaic systems in the area, the system was funded through a grant received in May 2010 from Energy Works Michigan. The grant is set up to help fund programs for Michigan public and private K-12 schools designed to demonstrate energy technologies, raise public awareness, and educate the next generation so that they can fully contribute to meeting and exceeding the carbon reduction targets of the 2030 Challenge. Originally, the grant was for a 10kW system, but through additional grant money, RETC was able to increase the size to 20kW. Combining grant money from Energy Works Michigan, the MISD and a rebate from Detroit Edison Solar Currents Program, RETC was able to obtain this $116,500 system for zero cost to the district.

RETC's system can expect to generate approximately 110 kWh per day on average throughout the year. This translates to powering approximately four average homes. Although, the panels don't generate the complete electrical needs of the RETC building, it is a sizable amount, and could be a larger portion in the future. Asking students how they can help reduce RETC's energy consumption, 9th grader, Aaron Greb replied, "If we don't leave lights on in school, we won't waste the extra energy."

Introduction to Alternative Energy

The 20kW system is a noteworthy starting point for the "Alternative Energy in Romeo Community Schools" program concept. Upon approval, the first class, "Introduction to Alternative Energy" is being planned to run starting the 2011-2012 school year. There are many trends showing people are interested and increasingly following through on alternative means of energy production, as well as conservation. In the area of Career and Technical Education, focus on student learning of relevant curriculum, proper instruction, and assessment is vital and alternative energy is an extremely relevant topic. With fossil fuels existing in limited reserves, environmental concerns, and economic factors all on the forefront of the news, students need to have the opportunity to learn and understand about this growing field.

In the Introduction to Alternative Energy class, students will explore the concepts of renewable energy and careers, and gain a comprehensive understanding of Solar, Solar Hot Water, Wind, Geothermal, Biomass, Vehicle Alternative Energy, Micro-Hydro, Nuclear, Sustainable/Green Building for Residential and Commercial, Home Energy Assessments and Energy Policies. Every segment will include "hands-on" projects, builds or activities, giving the students an opportunity to see each technology in working form. Sophomore Justin Nixon stated, "Hands-on activities let you interact with the stuff you are designing, making or learning about."

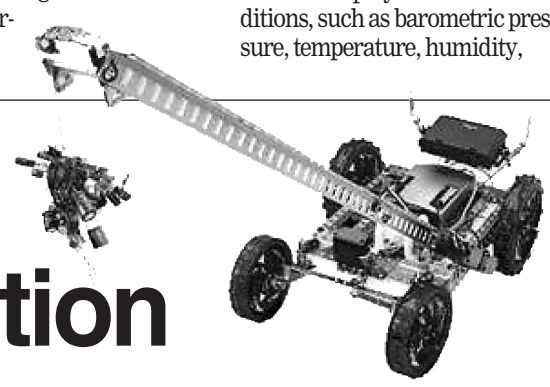
RETC: Reaching All Romeo Students

Although the panels are installed on the RETC, the overall goal of the program is to reach all 5,500 students district wide. Romeo has been implementing green initiatives into the school district for many years. Both the RETC and high school participates in weekly pickups of recyclable goods and the SERVE program beautifies the downtown through plantings. There has also been an interest in entering Romeo in the Green Schools Initiatives program which supports "green" actions by students, teachers, and parents. Through these actions, Romeo wants to evolve the idea of green initiatives into a strong part of the student's curriculum through the exploration of alternative energy. Everyone in the district and community can have access to the PowerDash website that displays and provides data on RETC's energy production information. The weather station installed at the school also monitors and displays the current conditions, such as barometric pressure, temperature, humidity, rainfall, wind speed and direction, which will allow students to compare weather conditions with energy output.

Future Plans

Although the program is only in the beginning stages, future plans are already in the works. In high school, students remember and learn best from the projects that were unique. That is why teachers Craig Bryant and Evva Dossin are in the process of writing grants for some exciting classroom materials. Books will have to share space in the classroom with a solar powered golf cart, a solar shower, a nuclear reaction demo and — the largest step — the purchasing and installation of a wind turbine. Although actively grant writing, Romeo would like to team up and become a partner with companies or individuals with knowledge and an interest in advancing the Romeo program with financial sponsorship and expertise. Ideally, Romeo Community Schools would like to become a "proving ground" for alternative energy and sustainable ideas so students can pass along the data of what works well to the community.

The Byting Bulldogs ready to compete in new competition



Romeo High School has a new team unlike any other in Romeo. You won't find this team in the gym or the swimming pool, on the football field or the baseball diamond; but if you had gone to Waterford Mott High School on March 11 or 12, you would have seen the team compete against other teams from across Michigan in the FIRST Robotics Competition.

The Byting Bulldogs is a competitive robot-building team consisting of 10 students under the direction of Mr. Dan Gardner, Computer Repair and Electronics teacher.

In Januar, more than 200 teams from across the country, consisting of approximately 10-25 high school students each, were given 60 days to build a competition-ready robot. Then March through early April, teams will compete in district and regional events which will culminate in national competition in late April.

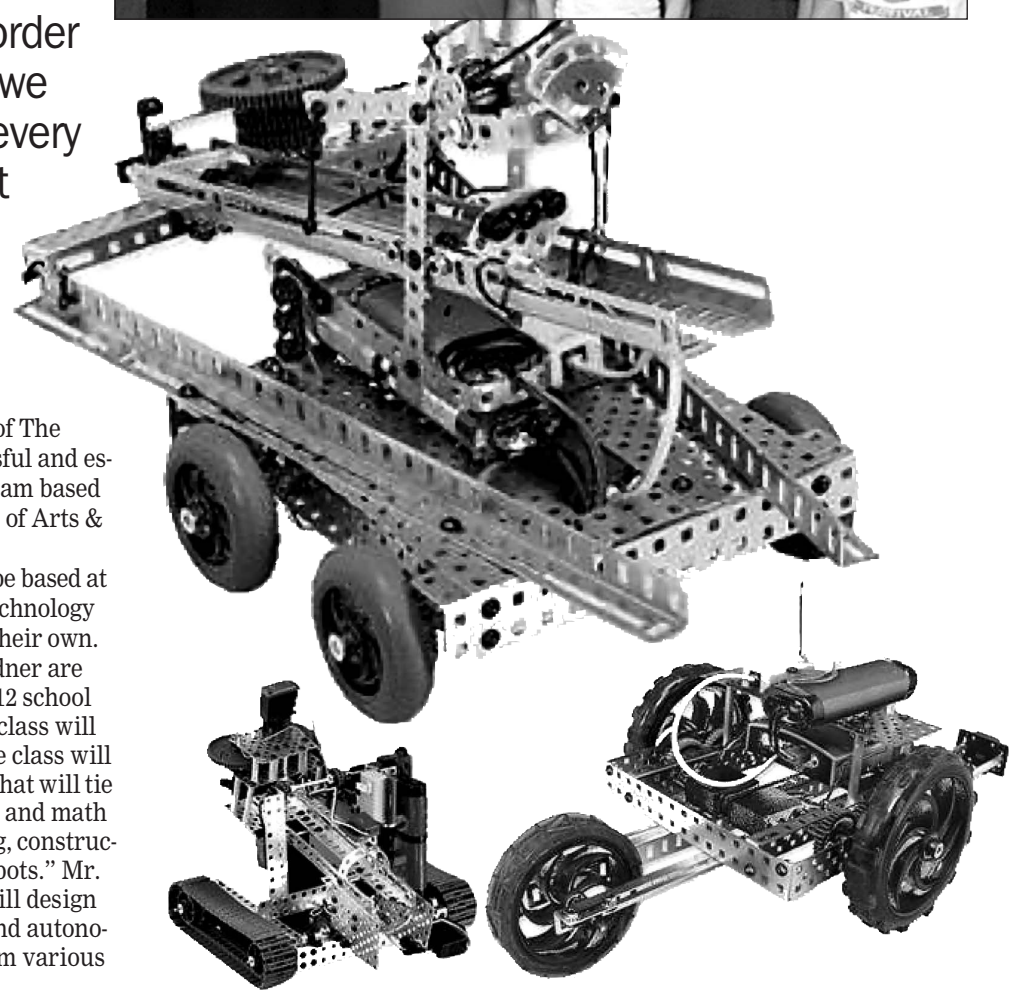
The robot will perform several different tasks in order to score points in the competitions. For example, the robot must be able to pick up objects and hang them on a wall peg. Mr. Gardner points out that to create an electro-mechanical machine that can perform a task such as this on its own is a serious competitive challenge.

The task is monumental and couldn't be done without the help of professional mentors and business support. The Ford Motor Company has partnered with Romeo to help with the design of the robot. Additionally, during the past month the team has been meeting at the Ford Engine Plant, working under the direct supervision and mentoring of The Fighting PI, a highly successful and established FIRST Robotics Team based out of the Macomb Academy of Arts & Sciences.

> It's fun, but serious. It's a mature environment. Everyone is really goal oriented and it's really fun! Dakota said. In order to build a robot, we have to explore every avenue of what it takes.
>
> **— Dakota Maynor, a member of the team**

Next season the team will be based at the Romeo Engineering & Technology Center doing everything on their own.

The students and Mr. Gardner are also excited that in the 2011-12 school year a Robotics Technology class will be offered at the RETC. "The class will offer students a curriculum that will tie together science, technology and math through the design, modeling, construction and programming of robots." Mr. Gardner added, "Students will design and build radio controlled and autonomous robots that will perform various tasks."



Emergency Medical Technician-Basic

Romeo High School was the first high school in Macomb County to offer its students the opportunity to take an Emergency Medical Technician-Basic (EMT-B) class as an elective during the school day. That was some fourteen years ago and the program is still in high demand. As an addition to that program, the allied health sciences department has expanded to offer a Medical First Responder class. It is anticipated that a more concentrated class in health occupations will be offered next year.

The EMT class is still a very popular choice for those students who have career plans in medicine. The EMT class covers a wide variety of emergency situations, including CPR, fracture control, breathing, child delivery, pediatrics and managing bleeding to name just a few. Students are also given the opportunity to apply classroom instruction to real-life situations by completing a rigorous externship in area hospital emergency departments and fire departments. In these instances, the student is under the guidance and supervision of a registered nurse or firefighter/paramedic. In addition, students are able to participate in regional, state and national competitions to further their learning experience.

At the conclusion of the school year, those students who have completed all of the requirements may take the National Licensing examination and receive their EMT-B license from the State. Students not only receive a high school diploma but also an employable job skill.