

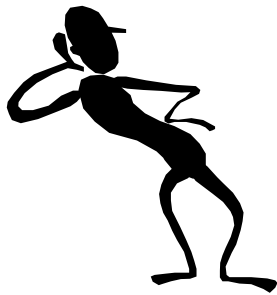
ACE OF Maine

Hampden ■ Bangor ■ Portland

Mentoring In Maine

GARY FRANKEL, AIA., RS, Sr. Architect, WBRC Architects Engineers, Hampden Team Leader

ACE is the place, to be if you are a high school student interested in a career in some aspect of the construction industry that is. ACE, (an anachronism for Architecture Construction Engineering) was created to help high school students, interested in a construction related career, launch into their chosen path and achieve their career goals through a mentoring process carried out during their high school experience. As such, the ACE Mentoring program of Maine is now in its third year and is still going strong with three separate teams in three cities involving approximately 20 students. As we move forward it seems that word of the opportunity which the ACE Mentoring program provides to high school students in terms of the exposure, experience, education and the potential for scholarships towards higher education, is spreading throughout the state.



We've had requests for information regarding the program and the possibility of students participating from as far away as Caribou. We aren't there yet, but it's clear the demand is there.

The goal of the ACE Mentoring Program is to reach as many high school students, who are interested in a career in construction, as possible and to expose

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ACE Students "Power-Up" on Knowledge

SHANE DUNN, Intern Architect

On Tuesday January 4th, 2011 the ACE students and mentors were given the opportunity to take a tour of a year-round functioning Co-Generation facility that provides power and steam to Eastern Maine Medical Center. This state of the art facility is one of only a handful of similar hospital power generation plants in the nation. It provides not only 100% of the hospital's electricity demand but also steam for sterilization used throughout the hospital.



The tour began right outside of the control room where the students and mentors were introduced to the systems within the facility. It was described to everyone how the power and steam is generated. Natural gas is first piped directly into the facility where it enters a large turbine engine which is similar to an engine found in large airplanes. The natural gas and outside air enter the turbine engine which in turn generates steam and electricity. The facility does still have back up oil burners and can utilize the normal electricity grid in case of an emergency situation. After a basic understanding of how things work, the tour then



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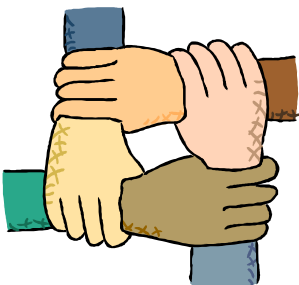


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them to the daily experience of working in the building industry in order to help prepare them for the challenges which await them in both their future educational and professional endeavors. This is accomplished by introducing students to practicing design, construction and engineering professionals who share their knowledge and experience with the students during the bi-

weekly meeting sessions which last throughout the school year. In addition, students take on a design project in which they begin to learn about the interaction of the varied construction team members which comprise the overall design team contributing their expertise to the overall project. Through this process, students are able to gain valuable insight into how the built environment is created, which ultimately helps each of them more completely decide upon their individual career paths.

The programs intent is to bring new talent into the industry to help meet the demands of an ever increasing marketplace and infrastructure fueled by a growing populace and economy. By doing so, ACE, its volunteers and supporters do far more than help students on their way to professional success. Given the recent economy, it is no secret that the educational system has suffered financially forcing budgetary constraints including program cuts and teacher lay-offs in school districts throughout the country. Given these developments, ACE Mentoring, and programs like it, become even more important since there is virtually no cost to the school systems in which they operate, yet they help provide a very valuable learning experience and opportunity to the students who choose to participate.



In her book "It Takes a Village: And Other Lessons Children Teach Us" then-First Lady of the United States Hillary Rodham Clinton presented her vision for the children of America. She

focused on the impact individuals and groups outside the family have, for better or worse, on a child's well-being, and advocates a society which meets all of a child's needs. Given the realities of the current and foreseeable economy, it is increasingly difficult for our established institutions to maintain themselves and continue to "go it alone". ACE is such an outside group, focusing solely on high school students. In doing so, ACE Mentoring is not only making an investment in the students future and well being, but in the future and well being of society as a whole.

The reality is that the United States has fallen to "average" in international education rankings as stated in a report by the Organisation for Economic Co-operation and Development, reported by Karin Zeitvogel, AFP (Agence France-Presse) in a Dec 7, 2010 article. America has received scores around 500 on a scale that goes up to 1,000: 487 in math, 500 in reading and 502 in science. The three-yearly OECD Programme for International Student Assessment (PISA) reports, which compares the knowledge and skills of 15-year-olds in 70 countries around the world, ranked the United States 14th out of 34 OECD countries for reading skills, 17th for science and a below-average 25th for mathematics. As the educational system falls behind in its efforts to provide a viable and valuable education, whatever the cause, it increasingly falls to "groups outside the family" to pick up where the schools leave off to help insure a stable society, economic growth and continued opportunity for those interested in taking advantage of it.



We hope you will take a moment to learn more about the ACE Mentoring Program by going to www.acementor.org to read about the program in more depth and learn about how you can become a volunteer mentor and/or supporter of the program. Education is the key to a successful economic future, and it is up to all citizens to insure a good education.

moved on inside the Control Room where all systems within the Co-Gen facility are monitored, analyzed, and controlled. This large amount of information such as energy production and efficiency is digitally displayed on a row of computer monitors showing graphics, charts, schematics, and other data. A staff member is stationed within the control room to interpret the data and make any needed adjustments to the system.



The background on the design and construction of the facility was also a topic discussed in depth. Multiple challenges had to be overcome in order to have this facility become a reality. First, the only available space for the building on the site was a narrow area of land which

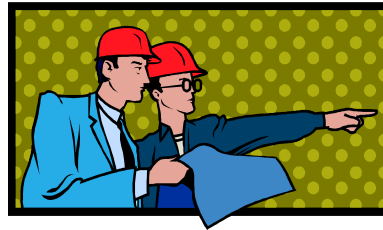


was very limiting to the floor plan design. It forced the plan to become an elongated rectangle which had to allow for future expansion at one end. This rectangular building was situated on the sloping back site of the hospital, parallel with the Penobscot River. Another hurdle that stood in the way was the concerns from the local community about noise pollution and its potential to disturb its neighbors. The walls of the building had to be designed in a way to contain noise produced by the equipment within, all to meet local sound level codes. The aesthetics of the building was also a concern for the local citizens. The color of the building was carefully chosen along with the smoke stack which was given a light gray color in an attempt to blend in with an overcast or cloudy sky.

After leaving the control room, the tour continued on to circle around the large turbine engine and then past the natural gas connection into the building and ended back at the control room. Walking past all of the various equipment and valves that make everything



work, gave the students the chance to appreciate how such a mechanical room can be designed in a way not to waste space while at the same time allowing ease of access to the equipment for maintenance. Such thinking spurred the conversation of just how many different types of engineering disciplines are involved to make everything come together. Design, fabrication, installation, controls, and operation are all areas that had to be considered and performed to make the facility a success.



The Cogeneration facility at EMMC is a great example of engineering coordination and success. It is able to save the owner money while at the same time having a reliable and clean source of power. How such a facility could do all that was explained along the tour. By the end, the students had a better understanding of why good design of mechanical spaces and systems are necessary in any of today's building designs.

Meet the Mentor

BOB GREENE, Cianbro Corp., Portland Team Mentor

My name is Bob Greene, I remember from my earliest days growing up in Portland, Maine having an interest in building things and figuring out how things worked. In school, my interests generally seemed to lean toward mathematics and the physical sciences, but it wasn't until probably my junior year in high school that I began to think seriously about engineering as possible career path.



I chose to attend the University of Maine at Orono, earning a Bachelor of Science degree in Civil Engineering. Civil Engineering is one of the oldest engineering disciplines and considered one of the core branches of engineering study. As such, Civil Engineering is a broad field offering many opportunities to specialize. For me though, it offered a unique opportunity to help create and build something.

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The Chair's Corner

As I had discussed in my last article we have started our third year as the Ace Mentor Program of Maine. As we conducted the first year program in Hampden Academy in the 2008-2009, it continues with great success due in large part to the Principals participation. AS well we have added both Bangor HS and Deering High School in 2009-2010 and then Portland HS in 2010-2011.

Although it looks like we have added schools, we in fact have lost some participating schools. Unfortunately, our Bangor HS curriculum had to be dropped this year due to a lack of interest and participation. We switched schools in southern Maine to Portland HS in lieu of Deering and the program has been doing quite well with active interest, participation and excitement, again due in large part to the staff.

For those student's who continue to participate, this year's curriculum is proving to be more exciting and engaging and should prove to be quite successful and beneficial for participants and mentors. There is much excitement among the participating student's and we have heard excitement from the parent's as well. Where else can you get this much professional advise for free?

As we mentioned in our last article our next challenge is to expand this program to new schools. With the recent loss, we have come to realize, that we must do a better job in rallying the school at all levels to gain their participation and commitment to the ACE Mentor Program of Maine. Many new schools have expressed interest and we have initiated contacts with people engaged at various levels within those schools to discuss adding our program to their academic extracurricular activities. We are continuing our investigation and discussions at these new schools for next year, and have realized that we will need the active participation of the school staff to advertise and promote the program to students from within. As professionals we will promote participating mentors from within and recruit new Mentors to participate in these new programs as well.

If anyone reading this article has an opinion as to how we can better the program or initiate a more effective participation from student's I would welcome your comments. As architects, engineers and construction professionals we are very active in the design and business community. Part of the ACE program, as student's pursue an engineering degree, graduate from college and are looking for career opportunities will become evident when they can call on a past mentor for advise or potential job opportunities. We are here to

introduce student's to the industry, guide and help the future generation of engineers, architects and construction professionals gain an advantage for their future.

If anyone reading this article has an opinion as to how we can better the program or initiate a more effective participation from student's I would welcome your comments. As well, if you are interested in joining us as a mentor, please call us to arrange for a meeting, we would appreciate your active participation.

For more information about ACE Mentoring of Maine and each of its' affiliates or to contact us, please go to www.acementor.org and click on Bangor, Hampden or Portland.



Tom Figura, Chairman
ACE Mentoring of Maine
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After college, I began my professional career working for Cutler Associates, Incorporated located in Worcester, Massachusetts. Cutler is a design and construction company specializing in corporate, industrial and institutional building construction up and down the east coast. Beginning as a Field Engineer, I held several different positions while at Cutler Associates, each with increasing levels of responsibility, including Assistant Project Manager, Project Manager, Project Executive and finally as the Vice President of Construction. My career at Cutler spanned some thirty (30) years, however my desire to move back to Maine finally won out and in 2008 my family and I relocated back home.

I am currently employed by Cianbro Corporation where I work principally in project development of commercial, institutional and healthcare building projects throughout the northeast.

My career has introduced me to many interesting organizations as well as numerous talented design, engineering and construction professionals. Each project has provided an opportunity to meet and work with new people and participate in a different set of challenges. As I look back at the goals and objectives which I had originally set for myself, my career choice in engineering and construction has proven all that I had hoped it would, or stated more simply, it has given me the opportunity to "build something"

Where can I get info about the ACE Mentoring Program?

Go to our website, the addresses are:

Hampden: www.acementor.org/814
Bangor: www.acementor.org/953
Portland: www.acementor.org/902



Or, contact any of the team members via email at:

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Thank You to Our Sponsors for their Continued Support

This program relies totally upon the generous support of our sponsors. By providing financial support and other resources, our sponsors enable us to offer this program at no cost to the school or to the students who participate. In this way, the best, most talented, interested and motivated students from all levels of society can participate in the program. We hope you will take a moment to contact our sponsors and join us in extending our sincerest thanks to each for their very generous support of the ACE Program in the 2009-2010 School Year. They can be reached through their link on our website www.acementor.org/814.

WBRC ARCHITECTS ENGINEERS ATA MARTIAL ARTS, HAMPDEN
THE CIANBRO CORPORATION
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