TYLER JOHNSON, a 2002 Deering High School graduate who works as an intern architect at WBRC Architects/Engineers, is mentoring about a dozen current high school students about architecture, engineering and construction careers. Students in the program meet regularly with professionals in those fields and visit building projects. Most recently, the students met after school to work on building and testing bridges. At the end of the year, students in the program have the opportunity to win scholarships.

Deering alum starts mentoring program for architecture, construction, engineering students

By Randy Billings

PORTLAND — Tyler Johnson grew up on Capisic Street in a family of construction workers and wanted to carry on the tradition. Only he wanted to work more with his mind than his muscles.

It wasn't until he got to college that Johnson finally decided he wanted to be an architect. But he realized he didn't know exactly what an architect did. Had he known sooner, he said, his path to achieving his goal may have been smoother.

"I think a lot of kids do the same thing," Johnson said. "When they go to college, they assume (architecture is) one thing and then realize it isn't really what it is. Architecture school has a high attrition rate and I think that has something to do with it."

That's why the 25-year-old was compelled to start an ACE mentoring program at his alma mater, Deering High School.

The program partners students interested in architecture, construction and engineering with local mentors who are professionals in their fields. That way, for example, students inclined to become engineers can figure out whether they want to be mechanical, electrical or civil engineers.

"Just having a mentoring program helps kids figure out what they want to do," said Johnson, a 2002 DHS graduate now working as an intern architect at WBRC Architects & Engineers in Portland. "If I was in school with this program, I think it would have helped me out."

At the end of the year, up to four students could be selected to receive scholarships.
Johnson said there are about eight students participating in the program, a 16-year-old national program now in its first year at Deering. He said he hopes next year to be able to expand the program to Portland High School.

In addition to working closely with mentors to determine their career path, Johnson said students also gain valuable experience by working on specific projects, visiting construction sites and building model bridges.

This year, students, who meet for two hours after school every other week, are working on a proposal for a community center for the pines area behind Deering High School.

Although the community center will not be built, students will present their plans to several businesses and universities at the end of the year.

"(We're) trying to get these kids exposed to public speaking and promoting what they've done," he said. "They can use these projects as an example for a portfolio."

Meanwhile, Johnson said the scholarships will be awarded based on the students' work throughout the year and their end-of-year presentations.

There are two other ACE mentoring programs in Maine, at Bangor High School and Hampden Academy. The program offers a total of $2,000 in scholarships – $1,000, $500 and two of $250 – at each school.

The goal is to raise $6,000 for scholarships to be distributed equally at all three schools.

"We have to raise money so we have scholarship money and expand our mentor base," Johnson said. "This year, because we have three teams, the money's kind of tight because of the economy."

Anyone interested in learning more about the Deering program – or to make a financial contribution to the scholarship fund – may contact Johnson at Tyler.Johnson@wbrcae.com.

Randy Billings can be reached at 781-3661 ext. 100 or rbillings@theforecaster.net
To Green or Not to Green, that is the question. The answer should be obvious to us by now.

For those of us that experienced the oil embargo of the 70’s with oil shortages and long gas lines it seems like we might have learned something by now. Yet, our government, businesses and yes ourselves have taken the easy route, basing our decisions more on short term monetary savings and gain than on long term conservation with the future in mind. The 70’s were known for some of the worst quality and worst gas mileage cars available, yet following the embargo crisis, many of the manufacturers produced very fuel efficient cars, but they were soon taken off the market due to poor quality and the demand for more Horse Power. How much HP do we really need to go the speed limit?

We are now coming full circle again, with rising oil prices, potential shortages or depletion of oil reserves in the coming generation’s foreseeable future. We are now being forced to maintain our oil reserves by force and it’s costing us a lot more than money in the lives of our service personnel. Do we think, as consumers that we will be able to continue on this path? Do we think there will be an endless supply of oil to fuel our SUV’s and PU Trucks? Do we intend to leave any of these precious commodities (oil) for future generations? Do we think the next generation of oil producing nations will be as friendly? OR: Do we intend to take the bull by the horns and start a movement toward a greener (common sense) approach to building and living our lives using less petroleum products?

A lot of people may have heard of LEED certification, (Leadership in Energy and Environmental Design) which was established in 1993 by the USGBC (U.S. Green Building Council). As a leading organization, USGBC represents the entire building industry on environmental matters providing enormous opportunity to effect change in the way buildings are designed, built, operated and maintained. If you don’t think this has a significant effect on the industry, here are some facts. Buildings consume more than 30% of the total energy annually and more than 60% of the electricity used in the U.S. Five (5) billion, (5,000,000,000) count the zeros; gallons of potable water are used solely to flush toilets, each day. A typical North American commercial building project can generate 2.5 lbs. of solid waste per square foot of finished floor space (40,000 SF office = 100,000 lbs or 50 tons). Are you starting to get the picture? Let’s put it in perspective of your home use of water. Say a family of four averages 16 flushes/day, with an old 4 to 5 gallon tank this adds up to 80 gallons per day or 29,200 gallons/year. We of course know there is a lot more water used when you add in showers, laundry, cooking, irrigation, etc. Now let say that same family uses 16 flushes at 1.5 Gallon per flush that equals 24 gallons or 8760 gallons/year, that’s a 70% reduction. Pretty impressive when you simply replaced your old toilet with a new efficient flushing model. Imagine adding up all the toilets in the U.S., including the ones at our businesses and the amount of water that would be saved. Note, all the water that is used must go to the sewer treatment facility too, and for those of us that pay a sewer and water bill, well you know how much that can cost, not only in environmental impact but our wallets.

How can we change? The authorities tell us it will cost more to build Green right? Who are the authorities? Where are they getting their information? It seems there is a whole lot of common sense involved here, yet no one wants to recognize it. A light bulb that is turned off 50% of the time certainly uses less energy than one that is turned on 80% of the time. Additional glass on the perimeter of a building with an open floor plan will allow daylight to pass through the building, allowing electrical lighting levels to be reduced. Efficient insulation on the outside walls and roof will help maintain a comfortable interior temperature in the cooling and heating season and will allow us to use less fuel or electricity to heat or cool respectively. Use of recycled products or renewable products in our materials (in lieu of petroleum based products) allows us to maintain a cleaner interior (reduction in VOC’s, Volatile Organic Compounds) environment and prevents

(Continued on page 4)
CHRIS BROWN, Project Manager, Consigli Construction, ACE Mentor—Deering High School

From an early age growing up in northern Maine, I was interested in mechanical systems and construction. I started toying with flash light parts in the 3rd grade, started using car batteries and household current when I was in the 4th grade and accidentally set my school desk on fire in the 5th grade. All my school projects involved electricity and I was probably the only kid on the block who not only built several “forts” but also wired a few with residential current.

I enrolled in drafting and construction classes as soon as I got into high school. I had no desire to gain a bachelor’s degree but made sure I took college courses to keep my options open. I attended a technical college in Vermont that was known for architectural engineering. After two years of Cad, basic architectural design and engineering, I knew that architecture was not for me. I decided to pursue a bachelor’s degree in architectural engineering technology with a focus on HVAC and building systems engineering.

Over the next two years I enjoyed the technical nature of engineering over the artistic view of architecture. However, once I got to my senior year of college employment opportunities in New England from an entry level mechanical engineering student were slim. A few of my friends were going into the construction management market which was in full swing in early 2000. I decided to interview with a large construction company in Massachusetts who was looking for a young engineering student that was confident enough to manage several million dollars in mechanical consumption of petroleum based products. Placing our construction waste and building waste stream into a recycling or re-use program, we can save on product waste, prevent land fills from filling up to fast and save, save, save. These are but a few common sense items that can save over the long haul. Start adding up all this saving and energy reduction, times all the new construction in the U.S. alone and begin adding existing structures to this over time and you have a formula for success. All based on some simple “common sense” items.

There are of course numerous other ways that efficient building design can be incorporated into a structure and other procedures building owners can follow to make their waste stream more environmentally friendly, but we all have to start somewhere. As ACE mentors, we hope to instill these principles in the next generation of designers, engineers and constructors so it becomes second nature to design and build efficiently with the long term effects in mind.

As current designers and constructors we are incorporating new technologies and more efficient building systems into our end products. Can we do more? Of course, but we also must recognize our decisions and how they will effect the long term use of the buildings and its occupants. Building products are getting better and will continue to do so with continued research and development. The new push to build Greener is a positive move by the industry, and we all know this is something that needs to stay and grow as the next generation of designers and constructors come into the industry. We are at the forefront of a positive change and the next generation will bring some really exciting ideas and products to the building industry to help improve our way of life and our environment.

For more information about the Maine program 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
tfigura@cianbro.com

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My name is Jessica Brodeur and I am originally from Millinocket Maine. I have been interested in art and architecture since I was a little girl. My family’s creativity and my husband’s encouragement have inspired me to find my niche in the design world. I enjoy problem solving and working with people which is part of the reason why I became interested in Interior design. It is a way to explore many design aesthetics and to create an environment for people that provokes a feeling or reaction.

I attended Endicott College, an accredited four year Interior Design school. Not only was it a beautiful campus, but it had a strong artistic and technical Interior Design program. In 2007, I received a Bachelor of Science Degree in Interior Design. Endicott also offered an internship program which I found very helpful as a way of exploring an anticipated career path. As a freshman I was able to acquire hands on experience working with a high-end residential designer in West Hartford Connecticut. This internship confirmed that I was headed in the right direction; however, I needed to explore commercial design. In 2005, during my junior year in college, WBRC Architects-Engineers offered me an internship position that would allow me to work the summers and school breaks. After graduation, I was hired full time and have been working with WBRC for two years now.

The Interior Design department has most recently been working on healthcare and education projects but we often have the opportunity to work on a wide variety of projects. I have had the privilege of working on the Husson Student Center, the Husson Meeting House, the Brewer K-8 School, and the Ocean Avenue Elementary School, just to name a few. Every day is different as we face a new task or challenge. It has been so nice to do something I love while living so close to family.

There are many reasons why I became an ACE Mentor. Mostly, I wanted to offer students a look into careers that may not be familiar to them. Choosing your future career at age 17 or 18 can be overwhelming and I would have loved the opportunity to see what else was out there. The students all seem excited about their projects and I am looking forward to seeing their designs evolve.
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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* Team Leader
Here's the remaining Hampden Academy / Bangor High School schedule for the 2009 - 2010 school year

Students - remember there are now only **SIX** sessions left before the final presentations!

Parents, sponsors and friends, don’t forget to keep the evening of Friday, June 11th open and plan on attending the 2nd Annual ACE Mentoring Student presentations at which time the scholarship awards will be announced.

The location of the final presentations will be announced.

<table>
<thead>
<tr>
<th>Hampden Academy</th>
<th>March 23, 2010</th>
<th>Featured: All Mentors</th>
<th>Field Trip to UTC</th>
<th>1. Collect buildings orientation on site</th>
<th>Start thinking about Materials</th>
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</thead>
<tbody>
<tr>
<td>April 6, 2010</td>
<td>Featured: All Mentors</td>
<td>Work Session, Critique</td>
<td>1. Select materials for the building and continue developing design</td>
<td>Create a list of Materials used in project both exterior/interior</td>
<td></td>
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<tr>
<td>April 27, 2010</td>
<td>Featured: Tom Figura</td>
<td>Scheduling and Estimating Lecture</td>
<td>1. Collect revised floor plans showing sustainable elements and code corrections</td>
<td>Start Applying Costs to materials list</td>
<td></td>
</tr>
<tr>
<td>May 11, 2010</td>
<td>Featured: All Mentors</td>
<td>Field Trip to AEWC, Orono</td>
<td></td>
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</tr>
<tr>
<td>June 11, 2010</td>
<td>Featured: All Mentors</td>
<td>Final Presentation</td>
<td>1. Full Presentation Due!</td>
<td></td>
<td></td>
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</tbody>
</table>
Thanks to our Sponsors For their 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 sponsor, for their very generous backing. They can be reached through their link on our website www.acementor.org/814.

Special thanks to the Bangor HOME DEPOT and to the Norman Stern and Sara Stern Foundation for their generous support.