

Construction Technologies and Architectural Drawing students tour NVR Manufacturing at Thurmont, Maryland and are briefed on state of the art building products in residential construction.



Career Technical Education

A Good News Story from Virginia High Schools

By Joan Ozdogan

Today's high school experience is different from what many of us recall. There has been a major transformation and there is a great story that needs to be shared with our local communities.

At a Back to School Night at Chantilly High School Academy, parents participated in a briefing on Career and Technical Education (CTE) programs offered by the school's CTE academy program. Parents were asked at the beginning of the presentation if they recalled the vocational education of their high school experience. Many parents raised their hands only to be quickly informed that the Voc-Ed of their high school memories is not the Career & Technical Education program of today.

So what is Career and Technical Education?

Today's CTE program is for all students. Participants range from a student aspiring to get early admissions to the College of Engineering at the Massachusetts Institute of Technology to students who aspire to earn a high school diploma and admission to an apprenticeship in residential or commercial construction, or a two-year community college program.

A vast array of CTE program areas are offering students unlimited opportunities to explore their passions, potential careers and post secondary/higher education interests. These opportunities are or-

ganized into career clusters such as architecture and construction, business management, law and public safety, and health sciences just to name a few.

CTE classes combine lectures and lab experiences in a multitude of applications from their core high school courses and technical skill sets that are established according to industry standards. The hands-on experience they gain in the classroom positions them for job shadows, externships and mentorships with professionals in targeted careers; these enhancements to classroom and lab instruction increase their ability to handle real world situations.

Student returns on investment in CTE courses include industry certifications, state licensures, professional credentials, dual enrollment and college credits as well as the acquisition of technical knowledge and work readiness skills that foster bright prospects beyond high school graduation.

Credentials earned in high school add tremendous value to a student's resume for obtaining entry-level positions in today's technical and skilled job market. In fact, there are many stories in the business community about the employment rates of high school graduates with industry certifications and professional credentials comparing more favorably than the first-time job placement experiences of recent college graduates.

CTE students are preparing for high-skilled, high-demand and high-salaried employment in today's market. According to the U.S. Department of Labor Bureau of Labor Statistics' Occupational Outlook Handbook, "The employment of civil engineers is expected to experience 18 percent employment growth during the decade of 2006-2016, faster than the average for all occupations. Spurred by general population growth and the related need to improve the Nation's infrastructure, more civil engineers will be needed to design and construct or expand transportation, water supply, and pollution control systems and building complexes. They also will be needed to repair or replace existing roads, bridges, and other public structures."



Construction Technologies students apply their technical skills in the construction of storage buildings for school and community customers.

In addition, the coming retirement of the baby-boom generation is a major challenge the engineering workplace will face in the coming years. Some employers are preparing to lose hundreds of Boomers. Consider the fact that there are 76 million Americans born between 1946 and 1964 and among

them are thousands who have changed society through their careers in engineering, architecture, residential and commercial construction. Another staggering thought is that Boomers make up a third or more of our Nation's workforce. They fill many of its most skilled and senior jobs.

CTE is working to be part of the solution to this national challenge of assuring that a qualified competent workforce is under construction to replace those who will be retiring in the next decade. Today's students are provided opportunities that are impressive by any measure. CTE students

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can actually begin their career paths in pre-collegiate engineering or architecture education as high school freshmen. The CTE courses our high school and academy offer include Basic Technical Drawing, Engineering Design, Architectural Drawing, Advanced Drawing, Engineering Systems 1, Girls Exploring Engineering (an all-girls section of Engineering Systems 1), Engineering Physics, Engineering Systems 2, Engineering Mathematics and a senior capstone course, Independent Research in Engineering. Add to this impressive array Construction Technologies and at another local CTE Academy; Electrical Construction and Engineering, Heating, Ventilation AC & Refrigeration and Landscape Architecture and Turf Management.

Some of our graduates enter the workforce directly from high school and nearly 80 percent enter two year and four year col-

leges and universities; they pursue undergraduate degrees in engineering disciplines, engineering technology and construction management. CTE students graduate high school with advanced knowledge and familiarity in MatLab, MSPProject, Solidworks, LabView, the entire AutoDesk Suite, Inventor, VIZ, Revit and 3DS Max; they can also move on to pursue professional certifications in CAD.

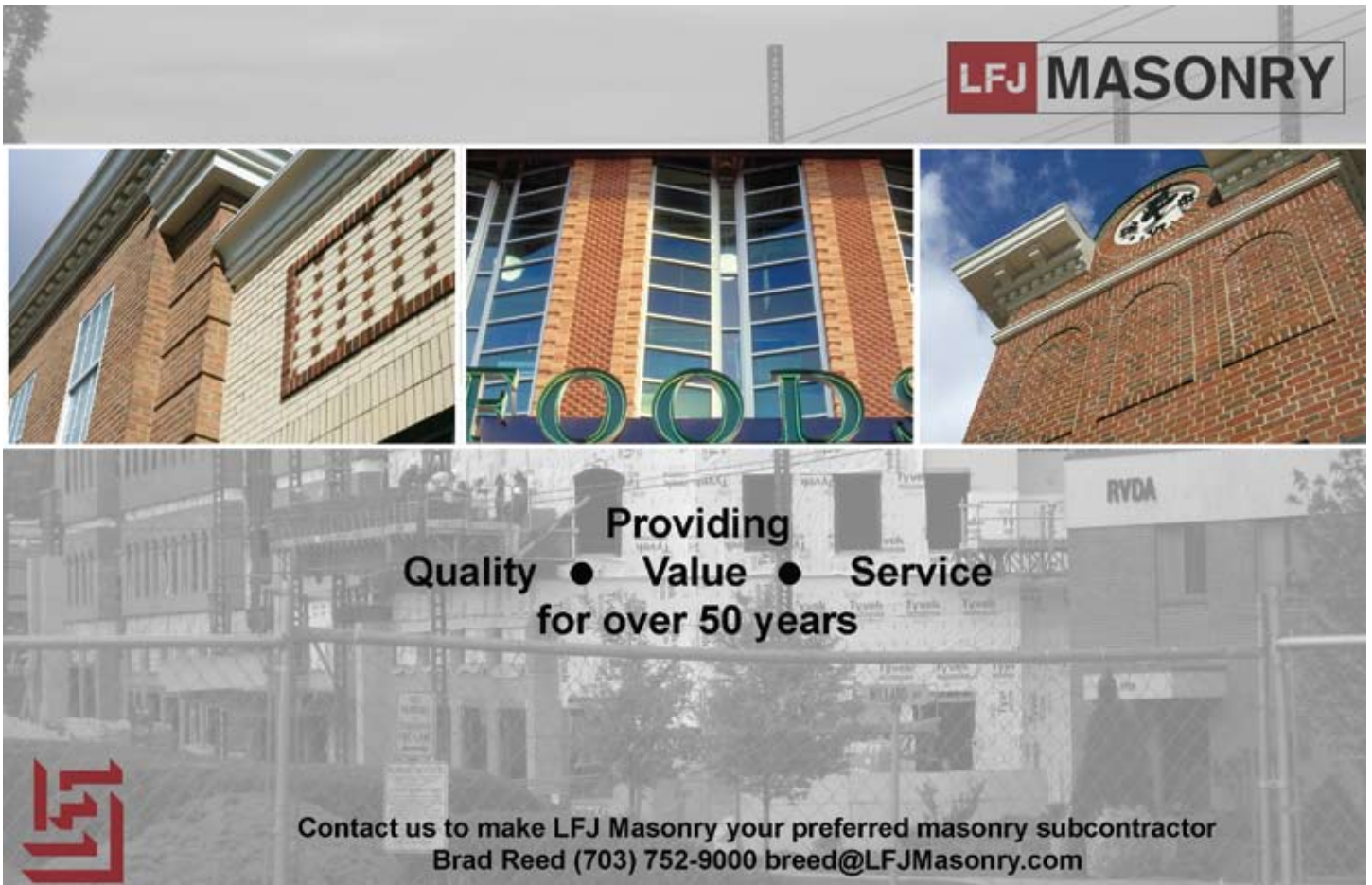
So how does an organization or business support CTE and local high school programs? The following initiatives are working today.

Lectures and workshops presented by career professionals enhance classroom instruction and help students connect the dots to continuing education, post-secondary/higher education and future careers in the construction industry.

Career fairs highlight the myriad of professional and technical careers in the industry. Last year, nearly two dozen member companies of Associated Builders and Contractors-Virginia Chapter showcased their organizations and 21st century careers in commercial construction. Students and parents need to be educated on today's careers in the continuum of specialties in development, engineering, architecture, construction and management.

Internships provide great practical experience for students. Two years ago, in a more favorable economic climate, ABC-VA member organizations offered competitive paid summer internships to juniors rising to their senior year and graduating seniors heading to college or entry-level employment opportunities.

Mentorships provide students the opportunity to work on real world projects along-



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side industry professionals. Professionals in engineering, architecture and construction specialties may sign on as mentors for individual students or small groups of students on projects that last weeks or the entire academy school year.

Apprenticeship and employment are what some CTE students seek directly out of high school, while others head to higher education institutions. There are invaluable opportunities for an organization to bring new talent to the industry through apprenticeship and entry-level employment. Schools routinely accept employment opportunity announcements; work with students on resumes and applications that inventory their work readiness and competencies, and support on-campus interviews.

CTE is making a difference in the lives of all students. Take the time to reach out to your local high school CTE program and

share our commitment to bright futures for our youth and the construction industry's future workforce.

Joan Ozdogan is the Career Experience Specialist for Chantilly High School Academy, Fairfax County Public Schools.



Engineering student members of Chantilly Robotics 612 prepare their robot for competition using mechanical, electrical, software and systems engineering knowledge and skills.

An advertisement for LFJ CONCRETE. At the top, the company name "LFJ CONCRETE" is displayed in a bold, black, sans-serif font within a white rectangular box. Below this, there are four small photographs showing various concrete construction projects: a concrete pump truck at a site, a large concrete structure under construction with wooden formwork, a worker in a blue shirt and white hard hat working on a wall, and a large circular concrete structure. Below the photos, the text "Structural Concrete • Hardscapes • Retaining Walls" is written in a bold, black font. To the left of this text is a list of four bullet points: "Quality Workmanship", "Competitive Pricing", "Relationship Oriented", and "High Bonding Capacity". At the bottom left, there is a red logo consisting of the letters "LFJ" in a stylized, blocky font. At the bottom center, the contact information is provided: "Contact us to make LFJ Concrete your preferred concrete subcontractor: Dan Bacher * (703) 241-1200 * dbacher@lfjconcrete.com". The background of the advertisement is a faded image of a construction site with rebar and formwork.