

By Lindsay Minard

# HIGHER EDUCATION Construction Programs

## What They Really Mean to Virginia's Commercial Construction Industry

*“When I was 16 years old I worked as a foreman of a driveway paving crew; it was hard work and when I went to college the last thing I thought I wanted to do was go into construction. I went to Virginia Tech to become a bridge designer; it did not take long for me to realize that working in a lab designing bridges was not for me. I realized that I loved being a part of the actual building process. So in 1971 I told my professors that I wanted to get back into the construction industry. They looked at me like I was crazy and told me that contractors lacked intelligence and integrity. When I left, I hoped to return one day and change the school’s mind about construction. There are so many opportunities for young people in this industry and I believed a fine institution like Virginia Tech should have a construction program; for that matter any institution of higher learning,” says Ross Myers, president of American Infrastructure and co-founder of the Myers-Lawson School of Construction at Virginia Tech.*

The fact that the construction industry suffers from an image problem is not news. Even the owners of the most successful construction firms probably disappointed their parents with the news they wanted to pursue careers in construction. “Construction professional” just does not have the same ring as “doctor,” “lawyer,” “accountant,” “dentist” and dare it be said, “stock broker.”

Despite the fact that we trust construction professionals to be trained and educated in the building processes that result in the safe structures in which we live, work and play, the industry’s lack of a strong presence in higher education communities has undoubtedly contributed to its historical lack of promotion and popularity amongst parents, educators and teens.

While this lack of positive marketing has not been an issue in the past, today’s construction industry has changed, along with its workforce needs. Today construction is innovative and complex and needs present and future leadership that is not only educated in the construction process, but in the business of constructing; skills best learned through formal education.

Luckily for Virginia’s construction industry, many of the state’s colleges and universities have taken notice of not only the need but also the opportunities that exist for young people in construction. These institutions are developing programs and departments di-

rected at the industry, placing such programs squarely in the career pamphlets of today’s college-bound youth and opening new eyes to careers in construction.

“The engineering and construction management programs out there today are attracting some of the brightest minds coming out of high school. As a result there are people entering the construction business who have the aptitude to become doctors, lawyers or rocket scientists, but obviously have an interest in building. These programs give them an educational ‘leg up’ in our industry,” says Steve Smithgall, vice president at Balfour Beatty Construction.

### The Meaning of a Degree

#### *The Image*

“I have seen the impact of what a college construction program means just within my own family. I graduated from Virginia Tech with a degree in building construction and down the road, two of my nephews also got degrees in building construction. I believe they saw that I was able to get a degree and make a good living in this industry that I love. It is a small example of what I think is happening on a larger scale as young people observe the successes and hear about the programs developed for our industry,” states Bill Fairchild, chairman of R.W. Murray Co.

Construction has provided opportunities not only for those with degrees, but for anyone willing to work hard, learn a trade and climb the ladder one rung at a time. Over time that inclusive nature has backfired in the form of a growing shortage of qualified employees. And while college degrees have become mainstream and associated with desirable careers and industries, they have not typically been associated with careers in construction. Today a degree brings value not only to an individual, but also to an industry. The construction programs being developed by state colleges and universities are helping parents and students replace existing stereotypical images of hard hats, dirty boots and heavy machinery with college degrees and are helping to facilitate the new image construction desperately needs to recruit its future leaders.

“Construction programs at the college and university level bring professionalism to the industry. These programs are changing the image of the industry and letting people see that a career in construction can be many different things. For me it was the engineering as well as business side of the industry that attracted me; so I got my degree in building construction at Virginia Tech,” explains Aimee Alix, estimating engineer for Turner Construction Co.

### ***The Benefits***

In the past, the path of the construction professional has more often than not begun in the field, not the classroom; a path that has been test driven for decades and has proven to lead to success. However, as the industry continues to utilize available technologies, streamline business practices and become generally more complex, the need to be knowledgeable about the construction process and the business of constructing becomes critical.

“The higher education component for the construction industry is improving the image and quality of professionals entering it. The industry’s evolving nature, from BIM to LEED and other technical aspects, re-

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quires more education. The most successful students are those who are well-rounded and recognize that being successful in the industry takes both technical and people skills. Today’s construction industry has a complex management structure and requires a wide range of skills; and we are looking to provide the industry with young professionals that are up to the challenge,” states Scott Reichle, assistant professor at Old Dominion University.

What higher education construction programs provide is finger-tip access to the latest and greatest technologies, an intense foundation of a wide range of applications and the problem solving skills necessary in daily operations. Graduates entering the industry provide big picture perspective and the people skills necessary to understand the entire building process and communicate with clients and project teammates to get the job done.

“The reality is a brick is still laid today much the way it was laid 100 years ago, but the way the processes surrounding it are handled is entirely different. What a degree provides is a background and basics in all the technologies that are surfacing in the industry today,” explains John Doran PMP, president of Doran Consulting and an adjunct professor at Old Dominion University.

### ***The Big Picture***

“Most of the students at Westwood have field experience and have come back to a classroom environment because of that fact; they want to get to the next step in their career and they see that the credentials are needed to get to the step,” states Kapres Meadows, program director at Westwood College in Arlington, Virginia.

So what do higher education programs directed at the industry mean in the long run? That inclusive nature of the industry has become its trademark; will it change? Will a degree be necessary in order to hold a management or executive position at a construction firm? Will clients look at a project team’s education level on their resumes before agreeing to work with them?

For now, the verdict is still out. Most agree the industry is headed in a direction that places significant value on a degree, while some believe it is already there. “I think we are already in a place where an educated workforce gets you the job. Already we are asked to submit resumes for the entire project team on most of our projects in the pre-bid selection process. With the increasingly steady shift of risk to the contractor and construction manager, the need for a sophisticated project leadership team grows,” explains Myers.

What does this new direction mean for the tradesperson’s career path? For now, most construction businesses are sticking to their roots and not excluding anyone, but fusing both the college model and trades model into their company cultures.

“I think we will continue to see individuals working their way up through the crafts into leadership positions. The historical employee model in the industry has been the craft person who has worked his or her way up. Today college graduates are moving up because the business has become more sophisticated and there is more technology to deal with versus hammers and screwdrivers. However, I do not believe the opportunity for the craft professional is going to go away; I think they are just going to get better training and become more technically savvy,” contemplates Fairchild.

## Utilizing the College Experience

### *You Hired the College Grad. Now What?*

Your company just hired a 22-year-old college graduate with a degree in building construction from a fine institution of higher learning. You throw him or her on the jobsite in an assistant project manager role and he or she botches the construction schedule. What went wrong?

“There still needs to be an apprenticeship period. Spending several years under the mentoring of seasoned professionals gives you the real world experience, then you have the best of both worlds. I was fortunate to spend my first eight years in the field under some very seasoned construction professionals which gave me the real world perspective. With the project schedule as the instrument to help manage and defend the project, it needs insight and in-depth project knowledge to be successful. Without this mentoring, I see construction schedules that have some technical merit, but lack real world application. So why was there little confidence in the project schedule?” ponders Doran.

Cynics of the college career path for the construction professional mostly complain about the lack of practical, hands-on experience a formal education provides. Sure a college grad knows the newest technology; but do they know how to apply all those book smarts to real world situations?

Probably not. Higher education institutions are not supposed to and are not capable of providing all the practical training necessary for a construction professional to be successful. What college graduates should have is a basic foundation to build upon and an open mind that can be utilized by exposing them to real jobsite situations and the way the construction industry actually operates.

“At American Infrastructure we have the Career Track Program. It is a two-year training program for graduate construction professionals. During that two-year period, individuals are given at least four rotations.

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For example, the first six months they spend on a crew, building the work; we believe that experience is necessary in order to realistically estimate, lead and be a part of a project team. It is critical that companies do not shelter new hires by placing them on a computer in a trailer on some jobsite. They will not learn the nuts and bolts of the business in that environment,” explains Myers.

### *You Get What You Give*

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When industry and higher education meet and cooperate, the result is the best construction program that produces the best potential leaders. Colleges and universities offering construction programs are eager to communicate with the industry and receive input. It is up to the industry to get involved and provide the guidance and feedback to make these programs successful as well as the hands-on experience opportunities they want and expect from graduates.

“We try and make the program as hands-on as possible. Historically people in this industry have worked their way up through the trades; and while we try and incorporate that into the curriculum through lab situations, field visits and mock bid competitions, teaching the practical side of the industry in a classroom is challenging,” asserts Reichle.

Accepting interns, paid or unpaid, providing job shadowing opportunities and getting students on jobsites to see the processes and

technologies in action will help produce the type of graduates the industry needs.

Another way to get involved is to reach out to the various educational institutions and investigate serving in an advisory role. Virginia Tech’s advisory board, established over 10 years ago, provides curriculum that keeps the school up-to-date on the latest real world industry trends so that the school can prepare its students appropriately. “In addition to its advisory council, Tech’s Building Construction Department has a committee solely dedicated to faculty and making sure they have the tenureships and assistant professors as well as committees that focus on curriculum and getting alumni involved,” explains Alix.

### *Something for Everyone*

While going to a four-year college or university may be the route that young people entering the industry today and in the future take more frequently, for those already in the industry or unable to attend a four year institution there are bachelor’s, associate’s and master’s degree programs that can help fill the educational gap for those realizing the growing value of a degree or for those who want to better understand the industry and get a leg up on the competition.

Twenty-five percent of Westwood College’s students have 10 or more years of practical experience in the industry and are coming back to school to get a formal education because they have hit the glass ceiling and need the educational experience. “We are not teaching the trades; a lot of them already have that experience. What they are interested in is the accounting knowledge, management and communication skills. The trades are best learned through

the company; our students want to learn the communication and business-focused skills,” explains Meadows.

George Mason University was recently approached by members of NAIOP Northern Virginia (Commercial Real Estate Development Association) about developing a master’s program in real estate. The catalyst for the program was the growing need for an educated labor pool. The program is targeted at existing and potential industry professionals and educates them in the basics of commercial real estate including zoning, procurement, entitlements, purchase, leasing, financing, architecture, engineering and construction management.

“This is our first semester and we have 24 students enrolled and that just proves there is demand. I think in the long run you are not going to be able to just walk into the industry without some kind of professional training like the one at George Mason. Programs such as this will provide individuals with the necessary stepping stones and companies with an educated labor pool at their disposal,” explains Jon Peterson, president of The Peterson Companies.

**Conclusion**


The business and face of construction is undoubtedly changing. Only time will tell whether or not higher education construction programs will simply mean a facelift for the industry’s image or eventually will lead to an extreme makeover that changes the entire look and feel of the construction business.

“This industry is not always about the big companies. There are a lot of successful construction businesses that are run by people who may or may not have had the opportunity to go to college. Just because someone’s high school years did not afford them the opportunity to get a bachelor’s degree at a fine university does not mean that the doors are closed,” ponders Smithgall.

What is certain is that the expectations of construction team members are steadily increasing as the industry continues to take advantage of new technologies and industry trends. “If you are a contractor and your site guy has a general knowledge in industry trends, he becomes a lot more appealing as a teammate. A requirement for a basic understanding of all aspects of the business may not be a requirement today but it is heading in that direction,” says Peterson.

The growing trend in higher education construction programs means that the education community has realized what those in the industry have always known; the opportunities and career fulfillment it provides. The programs are paving the way for the term “construction professional” to make its debut (perhaps take the place of “Wall Street stock broker”) in parents’ top 10 career lists.

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