



Building Bridges Summary

A condensed version of *Building Bridges: Solutions and Alternatives to Maryland's Persistent Deficit in Built Environment College Degrees*



MCCEI

The Deficit

Through 2020, Maryland's built environment industry is anticipated to hire **8,700** more bachelor degree holders than will be produced by in-state institutions.



9,715 construction managers and engineers with bachelor's degrees will be needed.



All else being equal, Maryland will produce only **1,020** construction managers and engineers.



Demand in excess of supply by **8,695** degree holders.

Source: RESI/ HR&A

MCCEI Recommendations

- **Expand** existing bachelor's degree programs in construction management at Morgan State University (MSU) and the University of Maryland, Eastern Shore (UMES).
- **Create** new bachelor's degree programs at four-year institutions throughout the state in majors not currently offered in Maryland. For example, a major in Construction Engineering should be added at University of Maryland College Park.
- **Establish** temporary taskforces to examine and evaluate the following:
 - The creation and strengthening of current and proposed articulations between community colleges and four-year institutions.
 - The potential for creating a technological or apprenticeship-based university modeled after successful institutions such as Pennsylvania College of Technology in Williamsport, PA, and Ferris State University in Big Rapids, MI.
 - The potential of creating a centralized coordination body for internships specific to the built environment industry.

About Building Bridges

Building Bridges is a call to action for Maryland's industry, education, and government to expand existing educational assets, create new assets, and simplify pathways to careers.

Prior to *Building Bridges*, numerous reports revealed that the default labor pools of Maryland's built environment companies were out-of-state schools, given perceptions that Maryland lacks adequate built environment degree-granting programs. To address that trend, MCCEI conducted industry interviews and commissioned independent research involving three components:

- Verifying and quantifying the gap between skills demanded by built environment companies and skills produced in-state institutions;
- Identifying reasons for the gap; and
- Conducting qualitative analysis on possible actions Maryland can take to close the gap.

Key Findings

- **3:1** - Three out of every four graduates hired by Maryland Industry comes from an out-of-state institution.
- **\$73 million per year** is the cost of Maryland's built environment industry's relying on graduates from out-of-state schools. Please see suggestions in full report on p. 10, Table 4.
- **\$24 million** is lost per year in potential in-state tuition, room and board, and books and supplies by Maryland residents attending out-of-state construction and related programs, though later returning to Maryland to work in the industry. Please see suggestions in full report on p. 10, Table 4.
- **Equal** - The built environment industry sees no difference between a 2 + 2 combination and a traditional four-year degree. There are several existing articulations that need broad-based promotion, as well as numerous, potential combinations to be made that would provide more options for Maryland residents.
- **Awareness** - Businesses and students in Maryland are generally unaware of both the many career options in the built environment industry and the programs offered in the state. A larger campaign to spread awareness of both points among businesses and students is therefore needed. Please see suggestions in full report on p. 15.

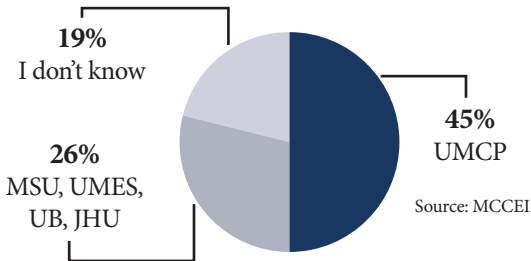
Awareness of Career Options

77% of interviewees felt that high-school students have little or no awareness of careers in the built environment industry. By extension, they expressed no shortage of opinions regarding the reasons why, including the elimination of shop classes in middle and high schools, the push for all students to attend college, the lack of attention paid to the field by school counselors, and the industry's dismal marketing of itself. When asked what should be done to increase awareness of the many career options in the built environment industry:

- **48%** suggested direct exposure via internships, field trips, and industry engagement would yield the best results.
- **39%** indicated that direct marketing, outreach, and recruiting at the postsecondary level would result in increased awareness.

How Maryland Stacks Up

A significant portion of the industry itself is also unaware of in-state programs or holds a less-than-positive opinion of Maryland's academic programs in the field. When asked which of Maryland's programs have the best reputation for construction-related degrees, the interviewees offered some eye-opening responses:

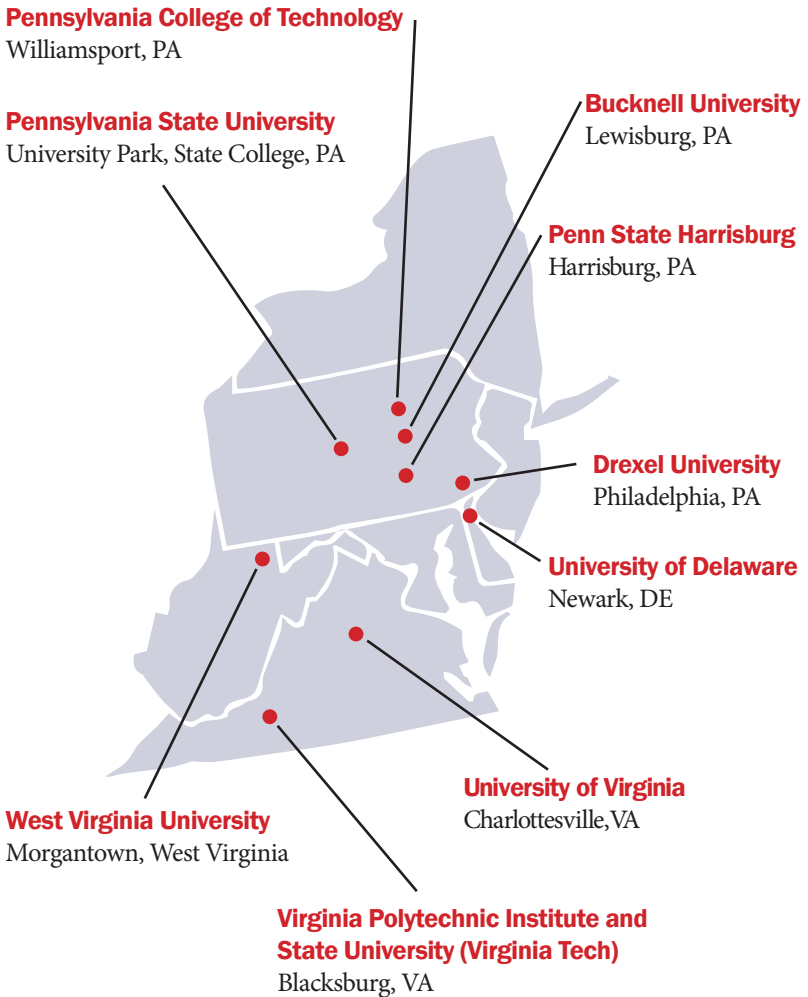


Benchmarking Programs

Collected in Phase 1 of the study, hiring data indicated that Maryland-based businesses hire from out-of-state institutions instead of in-state ones at a **3:1** ratio. Notably, those businesses hire only **26%** of their workforce from in-state schools, but **74%** from schools in surrounding states.

Maryland is surrounded by institutions that have good reputations and are hiring sources for its built environment industry.

In Phase 1 research, MCCEI determined that the institutions shown below provide a significant amount of graduates hired by Maryland based businesses.



How Maryland Schools Compare in Reputation Perception

We asked interviewees how they thought graduates from Maryland schools compared to graduates of out-of-state schools. **45%** felt that graduates from Maryland programs were equal to those from programs in other states, **15%** felt that graduates from UMCP were equal to those from out-of-state schools, and **27%** felt that overall graduates from Maryland schools were not as good.

Maryland Industry Speaks on Needed Improvements

The built environment industry is based on solving problems. In that sense, we asked interviewees what should be done to improve degree-granting programs in Maryland and received the following top suggestions:

Improve and Expand Program Content

- A broad-based curriculum, including hands-on experiences;
- Mandatory internships or co-op experiences;
- Communication and soft skills;
- Business and real estate-based courses;
- Technology including BIM, IPD, and VDC.

Teaching

- Use industry professionals as teachers; and
- Embrace and invite the industry into the classrooms.

Create More Graduates In Maryland

- Improve marketing and promotions to recruit students; and
- Expand or create new programs to increase the numbers of graduates.

For both engineers and construction managers, field experience, communication, familiarity with technology, and people skills are critical to success. Interviewees agreed that colleges and universities excel in producing technically proficient graduates who, however, are not necessarily ready for the workplace. Construction is a business of relationships, and ways to nurture those relationships cannot be taught in the classroom. In that sense, field experience becomes a critical element of the educational experience, demonstrating that technical proficiency goes only so far.

About MCCEI

Established in 2009, the Maryland Center for Construction Education and Innovation (MCCEI) partners industry, education, and government in addressing workforce development issues facing Maryland's built environment industry.

About the Building Bridges Full Report

Building Bridges was funded entirely by industry donations. No public dollars were used in the research or in the compensation of consultants or MCCEI staff. Results and recommendations should be considered to represent an unbiased reflection of Maryland's built environment industry.

Building Bridges is based on interviews with 90 industry leaders and expands on independent, third party research and benchmarking visits to four construction related programs in Pennsylvania and Virginia.

This report is a summary of the findings of these three phases of research. To find out more information, please visit MCCEI.org and download the following works:

- 1.** *The Critical Path* – Positioning Maryland as an Innovation Leader in the Global Construction Industry (MCCEI, December 2012).
- 2.** *Digging Deeper* – Aligning Skills, Technology and Attainment Between Industry and Education (MCCEI, October 2014).
- 3.** *State of Maryland Industry Bachelor's Degree Demand Analysis* (RESI and HR&A Advisors, June 2015).

The *Building Bridges* full report is available for download online at www.mccei.org.

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