Off-Site Construction Education: Results of a Survey of Prefabrication in Design and Construction Academics Comparing 2014 & 2017 Data

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Off-Site Construction Education: 
Results of a Survey of Prefabrication in Design and Construction Academics
Comparing 2014 & 2017 Data

This survey of Off-Site Construction Education was conducted as a joint effort of the National Institute of Building Sciences Off-Site Construction Council, Associated Schools of Construction and the Association of Collegiate Schools of Architecture through the investigation of researchers from Colorado State University, University of Nebraska and the University of Utah. The 2017 survey follows up on a 2014 survey.

National Institute of Building Sciences Off-Site Construction Council: The National Institute of Building Sciences was established by the U.S. Congress in 1974 to bring the public and private sector together to improve the built environment. In 2013, the Institute established the Off-Site Construction Council (OSCC) to serve as a research, education and outreach center for relevant and current information on off-site design and construction for commercial, institutional and multifamily facilities. Information on the OSCC and the resources it offers are available at https://www.nibs.org/oscc.

Associated Schools of Construction: The Associated Schools of Construction (ASC) is the professional association of construction educators and industry practitioners working together for the development and advancement of construction education. It promotes the sharing of ideas and knowledge and inspires, guides and promotes excellence in curricula, teaching, research and service. The ASC is made up of 8 regions; 7 regions from the United States and Canada and one European region. Information on the ASC and the resources it offers are available at https://www.ascweb.org/

Association of Collegiate Schools of Architecture: Founded in 1912 by 10 charter members, ACSA is a 501(c)(3) nonprofit association of over 200 member schools in several categories. ACSA, unique in its representative role for schools of architecture, provides a forum for ideas on the leading edge of architectural thought. Issues that will affect the architectural profession in the future are being examined today in ACSA members schools. Information on the ACSA and the resources it offers are available at http://www.acsa-arch.org/
Architecture (59 institutions)
Construction Management (33 institutions)
Industry (181 responses)
Off-Site Construction Survey Responses by Discipline

2014 Data

Architecture (53 institutions)
Construction Management (29 institutions)
Industry (313 responses)
Off-Site Construction is More Common in Industry

2017 Data

Industry

Have you used off-site construction in the past 12 months?

- 12% No
- 88% Yes

Education

How often is off-site construction taught?

Architecture (59)

- 60% Never or Sporadically
- 40% Every Year or More

Construction (33)

- 66%
- 33%
Off-Site Construction is More Common in Industry

2014 Data

Industry

Have you used off-site construction in the past 12 months?

- 93% Yes
- 7% No

Education

How often is off-site construction taught?

Architecture (120)

- 66% Never or Sporadically
- 34% Every Year or More

Construction (60)

- 60%
- 40%
How Do You Teach Off-Site Construction?

2017 Data

Architecture

- 59% Design Studios
- 54% Design/Build
- 40% Lecture Courses
- 39% Seminars
- 29% Technical Courses

Construction Management

- 79% Lecture Courses
- 33% Guest Lectures
- 30% Workshop/Lab
- 24% Factory Tours
- 21% Internships
How Do You Teach Off-Site Construction?

2014 Data

Architecture

- 58% Design Studios
- 51% Lecture Courses
- 50% Design/Build
- 33% Technical Courses
- 30% Guest Lectures

Construction Management

- 51% Lecture Courses
- 30% Guest Lectures
- 30% Competitions
- 33% Technical Courses
- 32% Internships
Most Frequently Taught Off-Site Construction Topics
2017 Data

- Materials + products
- Design + engineering
- Project management
- Sustainability + life cycle
- Factory construction
- Commercial construction
- Residential construction
- Installation
- Accelerated schedule
- Automation
- Transportation
- Regulations
- Lean manufacturing
- High-rise construction
- Labor skills / training
- Maintenance

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Most Addressed Off-Site Construction Typologies
2017 Data

- Single Family Housing
- Multi-Family Housing
- Commercial
- Education
- Healthcare
- Industrial
- Hospitality
- Data Center

Architecture
Construction Management
Industry

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Most Addressed Off-Site Construction Product Types
2014 Data

- Prefabricated exterior walls
- Curtain wall assemblies
- Precast concrete
- HVAC, plumbing and electrical
- Steel assemblies
- Cross-laminated timber
- Permanent building modules
- Service pods
- Prefabricated interior walls
- Headwall assemblies
- Equipment skids

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Off-Site Construction Research in Academia

2017 Data

- New products
- Design optimization
- BIM integration
- Testing materials + systems
- Simulation studies
- Project delivery process
- Training + continuing ed
- Lean manufacturing
- On-site efficiencies
- Supply chain integration
- Regulatory accommodation
- Market analysis

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