

Skilled Labor Shortage | Trimble Education & Outreach Programs

Working to help create industry-ready Tekla detailers,
designers, engineers, fabricators & production technicians

TEKLA BASECAMP

AUG. 27 - 29

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9



Allyson McDuffie
Director of Education & Outreach
Trimble Buildings
arch, struc, mep, cm, rews

Education & Outreach Programs
Research & Innovation Engagement
Education Product Offerings
Community & NGO Partnerships

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The Trimble Education & Outreach Team



Allyson McDuffie
Director, Education &
Outreach Programs



Ersen Firat
Senior Program
Manager (Buildings) &
Structures Lead



En Xue
EDU Program
Manager (Structures)



Chris Brashar
EDU Program
Manager
(Architecture)



Joy Tennenbaum
EDU Product
Manager
(Architecture)



Steve Griffin
EDU Program
Manager
(Architecture)



Jan Warner
Senior
Product
Manager
(ITG)



Carl Taylor
Business
Director
Tekla US



Rob Gittens
US
Trainer/Edu
Tekla



Houston, we have a problem.

Process - Complex building projects, generally unique



85%
of projects
exceed budget



92%
of projects
exceed schedule



AGC
THE CONSTRUCTION
ASSOCIATION



63%
have quality
deficiencies



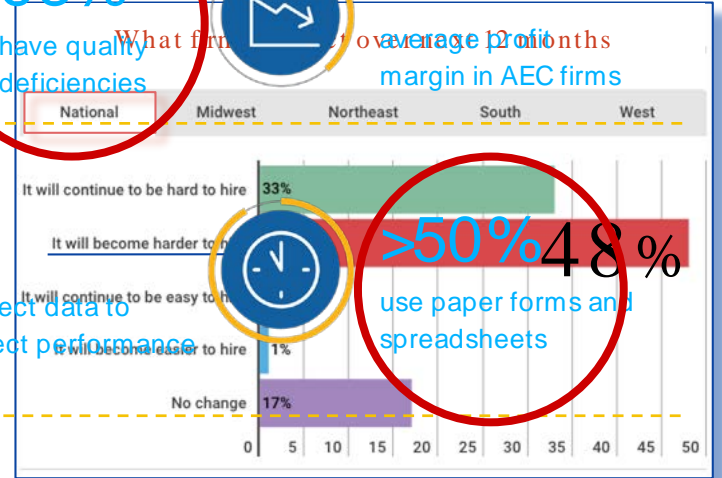
4%
average profit
margin in AEC firms

Technology - Investment is low

- Level of digitization (21 of 22)
- R&D Investment (7 of 7)
- IT Spending (19 of 20)



90%
critical to collect data to
improve project performance



People - Skilled labor is a top priority



90%
face talent
shortages



30%
decrease in workers less
than 24 years of age



What Happened to the Once Robust Construction Education Pipeline?

Dismantling of public vocational and technical education programs

Federal Funding over 8 years

-29%

2015 = \$1.12B

Operations + costly equipment needed to provide meaningful skills training leads to seeking private-sector funding and donations.

An increasing focus on college prep programs at the high school level

As the U.S. economy shifts from manufacturing to knowledge-based, there's a corresponding shift in interest in establishing educational programs designed to prepare students for college.

Despite these facts:

4-year college grads VoTec grads

75% 90%

Declining participation in union apprenticeship training

Construction workers who chose union representation

-19%

1.195 million in 2008
968,000 in 2014

Federal antitrust and state rules make it difficult for open-shop contractors to create similar apprenticeship training programs

Many firms are hesitant to pay the cost of training on their own, knowing other firms may hire away their newly-trained staff and underbid them for new projects.

Outlook

“Using constructible BIM should lead to more efficient operations in the field > reducing the demand for craft workers. BIM can also make more pre-fabrication possible as we can be confident that ‘it will fit’ when brought to site.” - Carl Taylor, US Director, Trimble Tekla

The global population is projected to reach **9.7 billion by 2050** and up to **13,000 new buildings will need to be erected every day** to meet the needs of such a rapidly growing population. ([ConstructionDive](#))



Employment of **civil engineers**, including structural engineering, is **projected to grow 11 percent** from 2016 to 2026, **faster than the average for all occupations**. ([BLS](#))

Technology is helping change industry culture and tired stereotypes, attracting young professionals while also **making many established jobs significantly easier**. ([ConstructionDive](#))

E&C industry has been **slow to adopt new technologies** and is due for a major transformation. **Sustained success require an in-depth understanding of technological developments and their effects on a worksite**. ([BCG](#))

“Today...**structural fabrication has focused on precision and speed**. Today’s youth are **more comfortable with a virtual 3D model than a blueprint**. A fabricator no longer needs as many welders, but the welders they do employ need to be very good - same goes for machine operators and other key shop floor personnel.” Robert Mohan, production manager at Haas Metal Engineering (HME Inc.) ([TheFabricator.com](#))



Call to Action



Government needs to **double funding** for training programs and **facilitate immigration** for skilled workers.

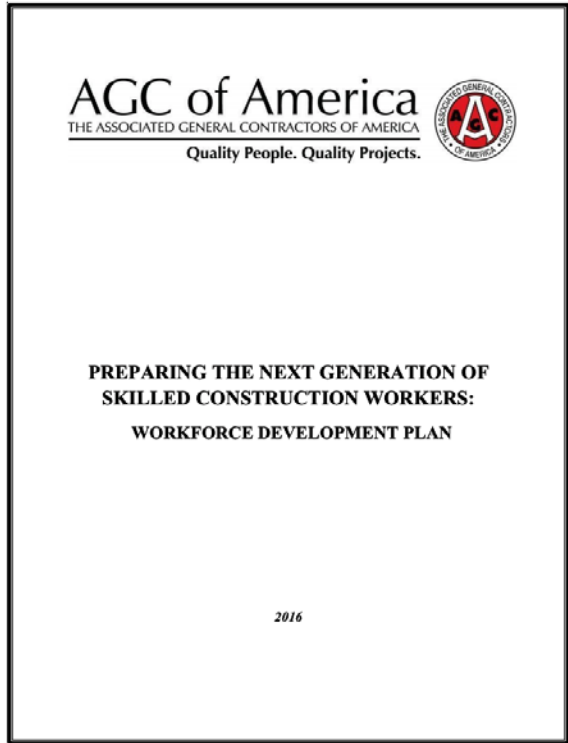


Federal, state and local officials need to **enact measures to expand construction-focused career and technical education opportunities**, and **make it easier** for all firms **to establish** construction training programs.



If elected officials fail to make the necessary investments and reforms needed, **then the industry** is likely to use labor-saving technology and techniques **to meet demand, leading to fewer construction jobs in the future.**

AGC Development Plan: 8 Recommendations



1. **Reform and Reinvigorate the Perkins Act** – the primary federal funding vehicle for career and technical education programs.
1. **Offer Community College Career and Technical Programs to High School Students for Free.**
1. **Encourage Private Funding for Craft Training Programs.**
1. **Encourage Partnerships Between Registered Apprenticeship Programs and Community Colleges.**
1. **Expand Federal Apprenticeship Resources and Collect More Comprehensive Data on All Apprenticeship Programs.**
1. **Enact Immigration Reform** - to ensure that the millions of undocumented workers who have been participating in the domestic economy for years have a way to attain legal status.
1. **Make It Easier to Establish Public Schools Focused on Career and Technical Education.**
1. **Implement Workforce Innovation and Opportunity Act** - WIOA streamlines much of the workforce development system, gives states greater flexibility to address the most crucial local worker shortages, and strengthens employer engagement.

The Good News - Edu uses Tekla®



In Focus: UVU Eng Graphics/ Design Tech

Certificate,
2 & 4 year
programs

43
course offerings

UTAH VALLEY UNIVERSITY

UVU CATALOG

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CATALOG KEY

The following descriptions may include other important information regarding each course, such as general education (GE) code, terms offered (Fall, Spring, Summer), or pre- and/or co-requisite requirements.

This sample course is modified after an actual course, but has been modified for demonstration purposes.

Degrees and Programs

Bachelor Graduate **Associates** Certificate Minor Other

Course Descriptions

Page PDF

Search All Courses

<p>EGDT-Eng Graphics/Design Tech</p> <p>EGDT 1000 Introduction to Engineering Drawing and Technical Design 2:2:0 Fall, Spring Covers basic sketching, instruments and their use, lettering, geometric construction, dimensioning, multi-view drawings, and section views, using CAD (computer-aided drafting) and traditional hand tools. Teaches introductory skills required in several first-year crafting technology courses. Software fee of \$18 applies. Lab access fee of \$35 for computers applies.</p>	<p>EGDT 2100 Advanced Architectural 3:3:0 Fall, Spring Prerequisite(s): EGDT 1100 and EGD 1020 both with a grade of C- or higher Covers the layout, detailing, dimensioning, and room identification of a commercial floor plan in a 3D Architectural software. Includes completing a door and window schedule, a furnishing plan, a reflected ceiling plan, building sections, a roof plan, and exterior elevations. Covers the sketching of common details along with discussions on the various methods and materials used in commercial construction. Software fee of \$18 applies. Lab access fee of \$35 for computers applies.</p>
<p>EGDT 1010 Electrical Electronic Drafting 3:3:0 Fall, Spring Prerequisite(s): EGDT 1000 or equivalent and EGD 1040 both with a grade of C- or higher Introduction to several types of electrical-electronic drawings such as Block, Connection, Logic, Schematic, Wiring, and Panel Diagrams. Introduction to basic DC theory, electricity and electrical terms, including Ohm's law, Watt's law, Logic Truth Tables, Series and Parallel Circuits, and Printed Circuit Board Design, using lectures, projects, worksheets, labs, and drawing assignments. Prepares students for advancement to EGD 2010. Software fee of \$18 applies. Lab access fee of \$35 for computers applies.</p>	<p>EGDT 2200 Advanced Mechanical 3:3:0 Spring Prerequisite(s): EGDT 1200 and (EGDT 1070 or EGD 1071) all with a grade of C- or higher Employs 3D modeling software to enhance design processes, including sketching, parametric modeling, 3D assemblies, and producing 2D working drawings. Includes sheet metal.</p>
<p>EGDT 1020 3D Architectural Modeling 3:3:0 Fall, Spring, Summer For Engineering Graphics and Design Technology and Construction Management majors. Utilizes a Building Information Modeling system (BIM) to design 3D architectural models. Covers model design theory, parametric modeling methods, generation of detailed commercial construction plans and details, building components and systems, and manipulation of model information. Software fee of \$18 applies. Lab access fee of \$35 for computers applies.</p>	<p>EGDT 2300 Advanced Structural CAD 3:3:0 Spring Prerequisite(s): EGDT 1300 and (MATH 1050 or EGD 1610) both with a grade of C- or higher A second year class for students who have completed first year structural drafting and want to enhance their knowledge of structural steel detailing. Includes the proper views and dimensioning practices for columns, stairways, handrails, cross-bracing, anchor bolt layout, erection drawing, and field bolt lists.</p>
<p>EGDT 1040 Fundamentals of Technical Engineering Drawing 3:3:0 Fall, Spring, Summer Introduces fundamental technical engineering drawings, practices, and standards used by various engineering disciplines. Provides basic sketching, computer-aided drafting (CAD) tools, geometric construction, drawing layout, standard dimensioning, multi-view drawings, sections, stating, checking, correcting, and other CAD and drafting skills. Software fee of \$18 applies. Lab access fee of \$35 for computers applies.</p>	<p>EGDT 2400 Structural Steel Modeling 3:3:0 Spring Prerequisite(s): EGDT 1040 and EGD 1300 both with a grade of C- or higher Teaches Tekla Structures modeling software. Includes modeling of structural steel buildings, hoppers, stairs, piping, and miscellaneous steel projects. Prepares students for detail and erection drawings which are produced for fabrication and erection of structural steel projects. Software fee of \$18 applies. Lab access fee of \$35 for computers applies.</p>
<p>EGDT 1050 Introduction to 3D Printing 2:2:0 Spring Introduces basic knowledge and skills related to 3D printing. Covers the acquisition of 3D print files and teaches basic 3D computer modeling skills using common 3D modeling software.</p>	<p>EGDT 2400 Surveying Applications and Field Techniques II 3:3:0 Fall</p>

struction SkillsUSA
Spring

Engineering Graphics and
Leadership training
New skills, preparation,
and organization
and leadership skills

EGDT 285R
AEC Design Lecture Series
5:5:0 Fall

Provides student opportunities to network and collaborate with industry professionals. Provides exposure to career options within the architecture and other related design industries. Emphasizes the importance of professional ethics and communicating with others.

SCHOOL OF ENGINEERING

Higher Nitec in Civil & Structural Engineering Design



2 year program,
certificate, short
courses, train-the-trainer,
workforce skills, FT/ PT
with
18
engineering
tracts



Learn

- Civil and structural design
- Land and quantity survey
- Production of civil and structural layouts
- Detailed drawings with Building Information Modelling technology (BIM)



Do

- Create 3D BIM model for buildings
- Prepare civil and structural layout plans and detailed drawings



Become

- Civil & Structural Junior Designer and Draughtsman
- Computer Aided Design (CAD) Specialist
- Project Supervisor
- Site Coordinator
- Technical Officer

SCHOOL OF ENGINEERING
Higher Nitec in Precision Engineering



Learn

- Identify materials and determine mechanical properties
- Apply design and drawing skills to process plant piping system
- Plan and perform design
- Plan and perform layout design
- Plan and perform structural design

Do

- Perform engineering design calculation
- Produce working drawings in accordance with the standards and manufacturing specifications
- Plan and perform layout design
- Plan and perform structural design

Become

- Process Plant CAD Specialist
- Assistant Designer

Learn

- Assist in design and drawing
- Prepare working drawings
- Plan and perform layout design
- Plan and perform structural design

SCHOOL OF ENGINEERING
Higher Nitec in Mechatronics Engineering



Learn

- CAD and create mechanical profiles
- Identify electronics
- Programme and administer PLC and robot control systems
- Assemble manufacturing systems
- Assemble and maintain PLC and robot control systems
- Maintain and troubleshoot PLC and robot control systems
- Maintain and troubleshoot PLC and robot control systems

Do

- Install, maintain and service pneumatic and electric systems
- Assemble and maintain PLC and robot control systems
- Assemble and maintain PLC and robot control systems
- Assemble and maintain PLC and robot control systems

Become

- Automation Technician
- Engineering Assistant
- Industrial Engineering Technician
- Instrumentation Technician
- Production Supervisor
- Production Supervisor

Learn

- Quality engineering
- Quality engineering
- Quality engineering
- Quality engineering

Do

- Marine machinery maintenance and repair
- Equipment quality control and assurance
- Site setting and working under offshore systems
- Site setting and working under offshore systems

Become

- Assistant Supervisor
- Supervisor
- Technician Supervisor
- Supervisor

SCHOOL OF ENGINEERING
Higher Nitec in Process Plant Design



Learn

- Identify materials and determine mechanical properties
- Apply design and drawing skills to process plant piping system
- Plan and perform design
- Plan and perform layout design
- Plan and perform structural design

Do

- Perform engineering design calculation
- Produce working drawings in accordance with the standards and manufacturing specifications
- Plan and perform layout design
- Plan and perform structural design

Become

- Process Plant CAD Specialist
- Assistant Designer

Learn

- Assist in design and drawing
- Prepare working drawings
- Plan and perform layout design
- Plan and perform structural design

SCHOOL OF ENGINEERING
Higher Nitec in Robotics & Smart Systems



Learn

- Assist in design and drawing
- Prepare working drawings
- Plan and perform layout design
- Plan and perform structural design

Do

- Install and program industrial and collaborative robots
- Develop and debug applications
- Develop and debug applications
- Develop and debug applications

Become

- Robotics Technician
- Robotics Supervisor
- Robotics Supervisor
- Robotics Supervisor

Learn

- Quality engineering
- Quality engineering
- Quality engineering
- Quality engineering

Do

- Marine machinery maintenance and repair
- Equipment quality control and assurance
- Site setting and working under offshore systems
- Site setting and working under offshore systems

Become

- Assistant Supervisor
- Supervisor
- Technician Supervisor
- Supervisor

SCHOOL OF ENGINEERING
Higher Nitec in Mechanical Engineering



Learn

- CAD and engineering design
- Quality engineering
- Mechanical systems integration
- Electrical and control development
- Plan and perform layout design
- Plan and perform structural design
- Plan and perform structural design

Do

- Engineering design and development
- Perform quality assurance functions
- Mechanical systems and equipment
- Plan and perform layout design
- Plan and perform structural design
- Plan and perform structural design

Become

- Engineering Assistant
- Industrial Engineering Technician
- Quality Assurance Technician
- Process Technician
- Maintenance Supervisor

Learn

- Quality engineering
- Quality engineering
- Quality engineering
- Quality engineering

Do

- Marine machinery maintenance and repair
- Equipment quality control and assurance
- Site setting and working under offshore systems
- Site setting and working under offshore systems

Become

- Assistant Supervisor
- Supervisor
- Technician Supervisor
- Supervisor

SCHOOL OF ENGINEERING
Higher Nitec in Marine & Offshore Technology



Learn

- CAD and engineering design
- Quality engineering
- Mechanical systems integration
- Electrical and control development
- Plan and perform layout design
- Plan and perform structural design
- Plan and perform structural design

Do

- Engineering design and development
- Perform quality assurance functions
- Mechanical systems and equipment
- Plan and perform layout design
- Plan and perform structural design
- Plan and perform structural design

Become

- Engineering Assistant
- Industrial Engineering Technician
- Quality Assurance Technician
- Process Technician
- Maintenance Supervisor

Learn

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- Site setting and working under offshore systems

Become

- Assistant Supervisor
- Supervisor
- Technician Supervisor
- Supervisor

SCHOOL OF ENGINEERING
Higher Nitec in Marine Engineering



Learn

- CAD and engineering design
- Quality engineering
- Mechanical systems integration
- Electrical and control development
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- Plan and perform structural design

Do

- Engineering design and development
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Do

- Marine machinery maintenance and repair
- Equipment quality control and assurance
- Site setting and working under offshore systems
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Become

- Assistant Supervisor
- Supervisor
- Technician Supervisor
- Supervisor




University of Massachusetts Amherst

Vail Apply Give Q

BCT BUILDING AND CONSTRUCTION TECHNOLOGY
UMass Lowell Department of Environmental Engineering

HOME ABOUT US ACADEMICS FOR STUDENTS PEOPLE RESEARCH



THE FUTURE OF HEAVY TIMBER
Advanced uses of a traditional material and our own research are at the heart of the Design Building.

BCT News
We're Hiring: Lecturer in Sustainable Construction (at UMass Lowell)
Congratulations to BCT's Class of 2019
2019-2020 BCT Awards and Scholarships Handout Due

BCT Calendar
15 Fall and PhD Defense, Fall Thesis
16 Fall and PhD Defense, Fall Thesis
21 Fall and PhD Defense, Fall Thesis

Welcome to BCT!
Building and Construction Technology provides students with an unparalleled university education, which prepares us for leading careers in construction-management, sustainable building systems, and building materials technology. We offer a B.S. major, as well as a thesis M.S., professional M.A., and a Ph.D. degree.
BCT is a program in the Department of Environmental Engineering, the School of Natural Sciences, and the School of Civil and Sustainability at UMass Amherst.

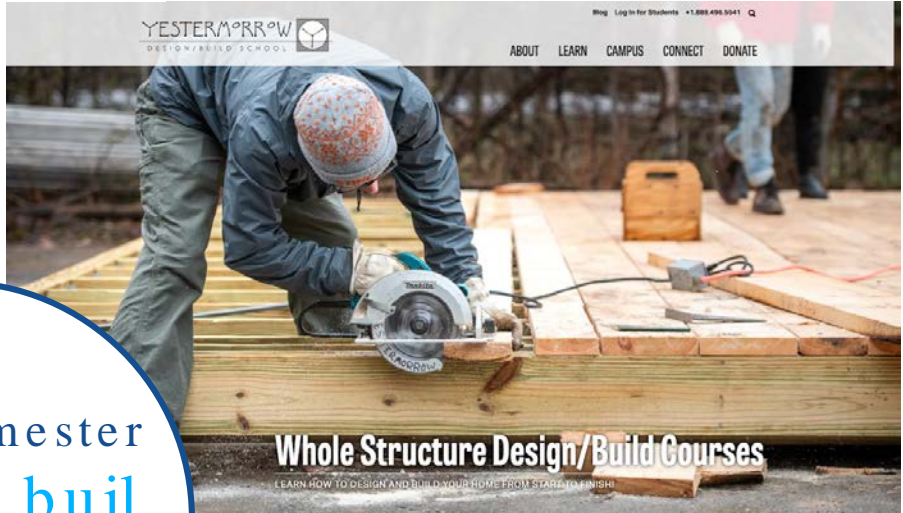
Contact Us

Spring semester
design/ build
collaboration

YESTERMORROW DESIGN/BUILD SCHOOL

Blog Log In for Students +1.888.496.3541 Q

ABOUT LEARN CAMPUS CONNECT DONATE



Whole Structure Design/Build Courses
LEARN HOW TO DESIGN AND BUILD YOUR HOME FROM START TO FINISH!

Yestermorrow Design/Build School teaches over 100 hands-on workshops a year in design, construction, working, and architectural craft and offers a variety of courses concentrating in sustainable design. Our intensive, hands-on courses are taught by top architects, builders, and craftspeople from across the country. For people of all ages and experience levels, from novice to professional.

Study in BCT:

- MAJOR IN BCT (BS)
- MINOR IN BCT
- PROFESSIONAL MS
- RESEARCH MS AND PHD
- CONTINUING EDUCATION


UNDERGRADUATE MAJOR: B. S. IN BUILDING AND CONSTRUCTION TECHNOLOGY

Building and Construction Technology graduates combine a passion for sustainable and resource-efficient building with a solid background in construction, building science, and sustainable business and project management. During their studies at UMass, BCT students enjoy an applied, project-based learning environment while tackling the required technical and scientific foundation for their future careers. This major provides courses centered around sustainable building in the areas of construction technology, material performance and engineering, building systems and energy, estimating, business and project management, marketing, digital tools, as well as written and oral communication.

More Information



YESTERMORROW DESIGN/BUILD SCHOOL IS CURRENTLY OFFERING OVER 100 WORKSHOPS



YESTERMORROW/UMASS SEMESTER IN DESIGN/BUILD

ARCHITECTURAL STAINED GLASS

CARPENTRY FOR WOMEN

What about Trimble?



11

Ways we're working to reach students & educators

1

Tekla Campus @ campus.tekla.com

- Portal redesign: 4 easy steps
- Vastly improved engagement: **144k registrations**; US is 3rd largest region (after India and Vietnam)
- **Download Tekla Structures 2019 for free** - students, educators, and pros 4-mo license **note: will not allow export to production - will corrupt your model; for training & upskilling only**
- Learn, News, & Forums pages
- Monthly Campus newsletter sent (opt-in)
- Driving Edu audience via student targeted FB ads and regular FB page posts



Register to create your free account.



Once registered, activate your account from the email link you received.



Download your Tekla Structures software for learning.



Start learning with our step-by-step video tutorials.

Some of the schools using Tekla

Are you an educator? See options for institution licensing.



Free Learning Tutorials @ campus.tekla.com/ learn

2

- New video tutorials
 - Start where you left off
 - New online **certificate** of completion
 - More learning paths coming
- TS free tutorials at Tekla User Assistance: [https:// teklastructures.support.tekla.com/ tutorials](https://teklastructures.support.tekla.com/tutorials)

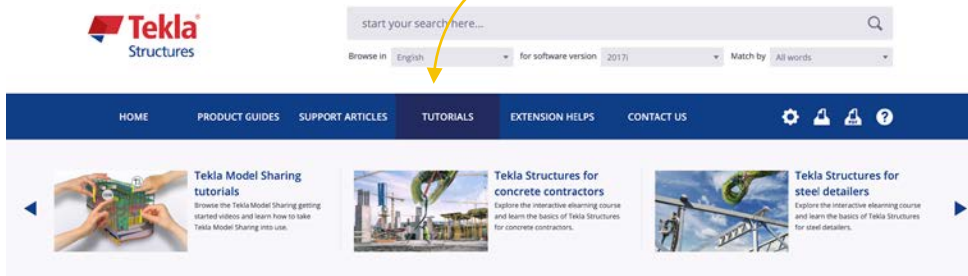


Start learning the basics of structural engineering, detailing, and construction management with the best BIM tool in your software portfolio, Tekla Structures.

Watch series of step-by-step video tutorials, answer prompted questions, and build your own model. Return to continue a lesson exactly where you left off.



Are you an educator? See options for institution licensing.



Subscribe to our newsletter and follow us on social media:



3

Tekla Educational Lab License



- **Bundled products - Tekla Structures, Tekla Tedds, Tekla Structural Designer, Connect**
 - \$1,000 annually, unlimited licenses via local partner
 - TS only for \$600
 - Localized in **15 languages**
 - Note: will not allow export to production
- **Free interactive tutorials at:**
 - [teklastructures.support.tekla.com/ tutorials](http://teklastructures.support.tekla.com/tutorials)
 - [campus.tekla.com/ learn](http://campus.tekla.com/learn)



4

Tekla Student Ambassador Program

- Just launched as a **pilot** in Finland
- Metropolia and Aalto Universities, **Helsinki**
- **Kickoff** meet and greet + bowling
- August Tekla **training** at HQ
- Expected **campus/ outreach activities:**
 - Sages on Tekla Campus forum
 - Create tips & tricks videos to share out
 - Promote Tekla during campus events
 - Quarterly check-ins
- Q1-2 **2020** assess and **scale** either regionally/ start Sketchup student ambassador program

PROMOTION | NETWORKING | TEKLA EXPERTISE

TRULY CONSTRUCTIBLE.



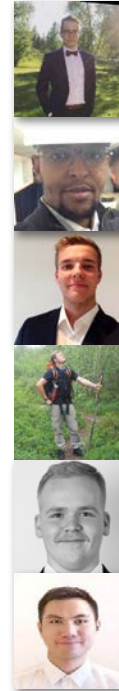
Become a Tekla Student Ambassador

Did you know engineering and design firms can't find enough skilled Tekla users?

Apply to become a Tekla Student Ambassador (TSA) within your university while advancing your Tekla engineering and design skill sets that help you stand out to future employers and land your dream job.

Tekla Student Ambassador Benefits

- ▶ Professional Tekla training to all Tekla Student ambassadors
- ▶ Tekla Student Ambassador hoodies plus other branded items
- ▶ Trimble-sponsored student ambassador team activities
- ▶ A signed TSA certificate after one full academic year as a Tekla Student Ambassador
- ▶ An opportunity to work as a summer trainee in Trimble offices



Trimble

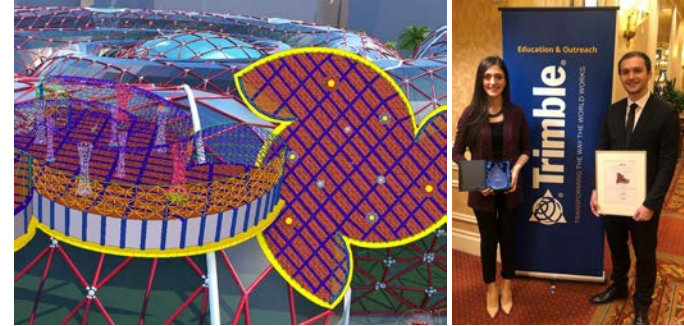
Learn more and apply at tek.la/q8



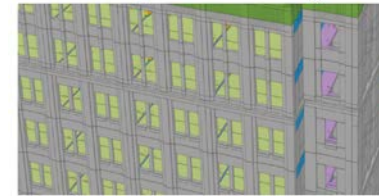
5

Tekla BIM Awards Student Category

- Regional and worldwide winners
- Area offices push out locally
- 2018 winners from Karadeniz Tech (Turkey)
- Attended Trimble Dimensions to receive award from Paul Wallet, Director ME&India, and Denis McNelis, Engineering Manager, BAM Higgs & Hill (Museum of the Future, Dubai project)
- NA BIM Awards 2019 included entry from Stanford University project
- Need entries from US students!



Stanford Escondido Village Graduate Housing



Project name: Escondido Village Graduate Housing
Project category: Precast
Project location: U.S.

Stanford University is a private research institution with over 16,000 students including 8000 post-graduates. To help meet its housing needs, Stanford decided to replace several of its current low-rise wood frame graduate apartments and with high-quality mid- to high-rise buildings.

The project, Escondido Village Graduate Residences is a collection of four residence halls of Type I construction, that range from 16, 8 and 6 stories providing 2,434 beds. Today, Stanford only houses about 55 percent of its 16000 graduate students in on-campus housing. When complete, Stanford estimates the project will increase its on-campus graduate housing rate to approximately 75 percent.

This project had challenges that were overcome by the use of Tekla Model Sharing. First, managing the scale of this project and the repeatability between buildings required everything to be within one model. Without being able to split just changes, the model size would have been too large to work efficiently. Secondly, with over 3,000 unique cast units, which required offshore resources, required important coordination and communication. Tekla model sharing enabled multiple people to work on the model at the same time all while

of Buildings
4

Project
80,000 CY

Weight
24M lbs

of Forms
79



Share: [f](#) [t](#) [in](#)

Precast Winner

6

Trimble Visiting Professionals Program

Tekla Pros



Past Visits



- 25 AEC+Geo industry pros
- Trimble-sponsored visits to campuses
- Inspiring students on what it's like to work day-to-day as an architect, engineer, or construction manager
- Informing students and educators on the tools they use to get their work done (Tekla, SketchUp, TBC, Realworks)

- ~20 visits per year
- 1-hour lecture
- Hands-on workshops
- Software tips & tricks



Upcoming Visits



Trimble Technology Labs

- Named space on campus in architecture & design, civil engineering, construction management, or geomatics/ geo sciences dept - named & branded as the *Trimble Technology Lab*
- Multi-year **gift agreement** - mostly **software**, sometimes hardware
- **Faculty champion required** to drive integration of Trimble solutions
- **Tekla** is always in the gift - regional partners help to support with training

Established



Next Onboarding



TECHNOLOGY LAB



8

Trimble Tech Talks, Bootcamps, Demo Days

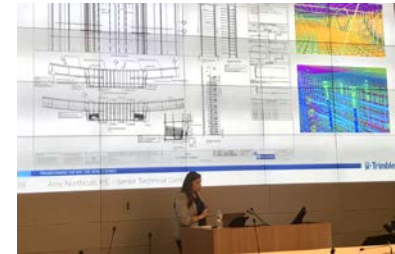
● Most recent Tech Talks UCLA & LMU

- Covered topics:
 - AECO and the Trimble Constructible Process
 - 3D Visualization and Communication with SketchUp
 - **Building Information Modeling (BIM) with Tekla Structures**
 - Take BIM to the Field with Robotic Layout Technologies
 - Capturing 3D Digital Models: The Latest in 3D Scanning Technologies
 - AR/ VR and Mixed Reality for AEC Industries
 - IoT and Remote Monitoring for Water and the Environment



● ASC Conference - Denver

- Sponsor, Attend, Exhibit
- Trimble Field Trip to CO HQ - Tech Talk and CSU Prof
- Regional ASC competitions - students use Tekla heavily



● Fall semester 3rd Bootcamp class at Colorado State University in CM

- 1 credit hour elective course covering Trimble CM/ Civil tech

● Demo Days

- Ongoing via Trimble team +partners
- CSU, Cal Poly, UMASS, CU, Georgia Tech, KState...



9

University Research Centers

- Working with key universities and research institutes to help guide in identifying and solving industry problems
 - Stanford** Center for Integrated Facilities Engineering
 - Georgia Tech** Digital Building Lab
 - University of Cambridge** Trimble Fund - Dept Civil Engineering
 - All use Tekla

The screenshot shows the University of Cambridge Trimble Fund website. The page is titled "Trimble 2019" and lists the following funding purposes and principal investigators:

Title	Principal Investigator
Point Clouds for Machine Learning	Dr Ioannis Brilakis
The Seismic Performance of Sustainable Tile-Vaulted Structures	Efthychia Dichoeru
Monitoring Slope Stabilities with Novel Imaging Techniques	Dr Dongfang Liang
3D Printing Buildings using Wood	Dr Sebastian Pattinson
Computational and Sensing Vitamins for Construction and Infrastructure	Dr Phillip Stanley-Marbell



New Trimble Education & Outreach Website

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education.trimble.com

- First ever Trimble AEC comprehensive Edu site
- Tekla highlighted on many pages
- Learn about products & programs in addition to Tekla
- Events, Resources, About Us, Contact Us

The screenshot shows the top navigation bar with 'Education' selected. The main content area features a large image of a presentation titled 'Trimble Education & Outreach' with a subtitle 'Our mission is to transform the Architecture, Engineering, Construction, and Operations industries by investing in existing professionals using the Trimble Constructible Process.' Below this is a section titled 'The Trimble Constructible Process' with a diagram showing 'CONNECTED' and 'CONNECTED' stages. Further down is a section for 'Trimble Technology Labs' with an image of a lab setting. At the bottom is a 'Research Centers' section with an image of a building.

This screenshot shows two columns of content. The top right column features 'Construction Management Tools for Your Classroom' with an image of a construction worker and a 'Learn More' button. Below this is a section for 'Trimble Educational Grants' with an image of students at computers and a 'Learn More' button. The bottom right column is titled 'Learning Resources' with an image of a construction site and a 'Learn More' button. At the bottom of the page is a '© Trimble' section with a list of products and services including 'Higher Education Products', 'AEC Products', 'Research Center', and 'Academic Center'. Social media icons for Twitter, Facebook, and LinkedIn are also present.

Trimble & PAIRIN

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pairin.com

- Vision: Further enable the transformation of the AECO industry by supporting students with demonstrating Construction Industry career path possibilities.
- We will:
 - **Create** curated site for visitors to learn about exciting careers in Construction
 - **Increase** the # of graduates in the AECO majors
 - **Increase** the # of applicants for open jobs in the AECO industry

Trimble Careers in Construction

About Interactive Map Your MyPath For Engineers Pathways

It's a New Age in Construction

These are not your dad's careers in construction. Modern construction jobs require a range of skill sets that are transferable from other jobs like IT, operations, project management, and design, just to name a few.

START EXPLORING

The High Tech World of Construction

Explore career options by reviewing national job outlook data for construction jobs or discover how you can take your existing skills and apply them to a job in high tech construction.

Click on a state in USA for info

Total job postings

- 123 - 500
- 500 - 947
- 948 - 1,265
- 1,266 - 2,016
- 2,017 - 3,026
- 3,027 - 10,425
- 10,426 - 15,434

For the top 100 cities, click on the city name to view the number of jobs for the position. Click on the city name to view the location.

View career path

SUPPLY OF CYBERSECURITY WORKERS GEOGRAPHIC CONCENTRATION TOP CYBERSECURITY JOB TITLES

Your Action Items (because it's never a real meeting without action items, huh?)



“BANDWIDTH”





Be Like These Folks. Power Users. Edu Evangelists.



- **Greg Luth** - Gregory P. Luth & Associates
- **Steven Harris** - Appalachian Drafting
- **Alyssa Schorer & Daniella Castro** - DNA Detailing & BIM
- **Kristen Erickson** - Pepper Construction
- **Jerry Gaston** - Nucor
- **Renzo di Furia & Sean Beatty** - Turner Construction
- **Taylor Maggert** - Barton Steel



- Let us know about schools with which you're already engaged - school contact names and emails so we can reach out
- Hold a Tekla demo or training day at a local campus
- Become a Trimble Visiting Professional - esp pre-cast concrete, detailers, fabrication pros
- Refer higher ed schools to us for Visiting Professional Program visits
- Inspire early on. Visit a primary or secondary school for career day and show off what you do - firefighters got nothing on you!
- Tell us how you're getting Tekla users?
 - Recruiting new graduates? Upskilling existing employees?
 - Hiring unskilled workers and providing onsite training?
 - Recruiting from other firms? Santa?

My new high-school grad!

- Contact us:
 - Your Tekla Account Manager!
 - Buildings Edu Team education@timble.com
 - Tekla Edu Team education@tekla.com
 - VPP Team education@sketchup.com





Questions?