York County (Pa.) School of Technology students stand, holding their Certificates of Achievement, outside the press box they constructed near the school's football field.

ICC INTERNATIONAL CODE COUNCIL®

People Helping People Build a Safer World®

High School Technical Training Program

In 2009, a pilot program was started at Harford Technical High School in Bel Air, Maryland that introduced students to the *International Residential Code*® (IRC®). They applied the code requirements to the construction of a Habitat for Humanity home. As instructors and students progressed through the construction of the home, the concepts of the IRC were taught, ensuring proper construction and compliance to the building codes adopted within the jurisdiction. During this process and under the guidance of their instructors, students reviewed the IRC code book along with the accompanying *IRC Study Companion* and started taking the practice exams.

Using this technique of hands-on construction paired with the review and understanding of various codes involved with residential construction, students were introduced to the building codes and obtained a better comprehension of how building construction and building codes work hand in hand to produce a strong, durable and safe structure.

www.iccsafe.org/hsttp

Why Should a School Join the High School Technical Training Program (HSTTP)?

The construction industry is experiencing a mass retirement of skilled professionals; one study indicates that over the next 15 years the industry will experience a loss of 80 percent of the existing skilled workforce. Employers are seeking qualified building trade professionals to fill the positions of retiring employees and will be vying to hire the best of the best to reinforce their decreasing workforce.

ICC realizes that with the loss of so many skilled personnel in the construction community, development of new materials and technologies, and advancements made in the codes, it is more important than ever to have a code-knowledgeable workforce ready to enter the construction profession directly out of school.

HSTTP offers schools a framework to help students understand how codes and regulations are used in the design and construction of residential, commercial, federal and military facilities. Schools participating in the HSTTP provide students with up-to-date code knowledge and technical code training that fits hand in hand with practical training leading to a skilled workforce. From any building trade, students may transition into active participants in code administration, including inspection in the fields of building, electrical, plumbing, mechanical, fire, solar, public works and property maintenance. Because the majority of workers in the construction trades learn on the job, this program incorporates a hands-on component to allow students the opportunity to directly apply what they learn in the code book to an actual construction project. This educational combination allows students to enter the construction trades with an advantage that will expand their career growth opportunities anywhere in the country.

Students from Spotsylvania Career and Technical Center (Va.) listen as Jim Ellwood explains the benefits of a career in construction.

Carpentry students from Winfield High School (Kan.) apply their learned work skills to this Habitat for Humanity house, the health center's storage shed and the Winfield Public Library Children's Bookmobile.

The Certificate of Achievement (COA)

ICC's Certificate of Achievement program is based on the IRC and its accompanying study companion. The study companion is the syllabus providing a section-by-section study program with 35 practice questions after each section. The IRC is divided into four disciplines: building, electrical, mechanical (HVAC) and plumbing. Each discipline has a correlating COA, enabling students the opportunity to earn up to four COAs during their school career.

To prepare for the COA final exam, students in each discipline are required to know their specific discipline's chapters along with the first three chapters of the IRC (administration, definitions and building planning). The exams are 1-hour long pencil-and-paper open book exams administered by the instructor. Students achieving a score of 70% or higher will receive the Certificate of Achievement from the ICC for each discipline exam they pass.

Local code officials, code mentors and instructors team with DEWALT/Stanley and Netcoh to present tools of the trade to Warwick Career and Technical High School (R.I.) students who completed the HSTTP.

To learn more about HSTTP, please contact Jim Ellwood (jellwood@iccsafe.org) or Robert Sale (rsale@iccsafe.org)

This two-piece modular home was built by students at Harford Technical High School (Bel Air, Md.) for Chesapeake Habitat for Humanity. Additional green features were installed such as window shading, solar panels, a rain capture pillow under the unit, recycled insulation, and a foam baffle fit into the roof truss to create required air space and provide R-49 insulation at the top plate and roof truss connection. Local master electricians, plumbers and HVAC contractors reviewed the work with instructors, and Harford County inspectors completed the inspections. The home was constructed in a warehouse on school grounds then moved to the site where licensed MEP contractors did the field connections.

An Educated and Professional Workforce

ICC recognizes and acknowledges the incredible value provided by high schools to the construction industry. ICC has designed a flexible program to enhance current vocational curricula, further educating future workforces about building codes by encouraging and supporting the instructor to customize the use of the code book and study companion to correspond with their daily lesson plan. ICC recognizes the technical school instructor is a professional educator and tradesman and does not restrict or require the instructor to seek additional education or obtain ICC certification to teach the course. Participation in the program starts when the school becomes an annual HSTTP/ICC Member and continues for as long as the school remains active in the program.

- Technical High School Annual Membership: $150
- Technical High School Student Membership: $25
- Technical College Annual Corporate Membership: $425 *(includes six additional code books)*
- Technical College Student Annual Membership: $50

Benefits of Student Membership

Student Memberships include the IRC code book, final exam, Certificate of Achievement for students receiving a score of 70% or better, as well as many additional benefits of ICC Membership: an ICC Membership Card, member access to the ICC website, access to ICC Evaluation Service Reports, the ability to contact ICC for clarification on codes, access to training events and webinars, discounted pricing on code books (including the *IRC Study Companion* for $47), PDF versions of code materials, job postings, online training and more.

About the International Code Council® (ICC®)

The International Code Council is a member-focused, nonprofit association dedicated to helping the building safety community and construction industry provide safe and sustainable construction through the development of model codes and standards used in the design, build and compliance process. Many of its Members represent federal, state and local governmental jurisdictions and include architects, engineers, designers, builders, contractors and others from the public, private and corporate sectors.

ICC develops model construction codes (known as the International Codes® or I-Codes®) and standards that address commercial and residential buildings, safety and sustainability, fire prevention, solar and energy conservation, plumbing and water efficiency, mechanical and fuel gas systems, existing buildings, and swimming pool and spa safety. All 50 states, the District of Columbia and U.S. Territories enforce the I-Codes at either the state or jurisdictional level.

ICC trains and certifies our nation's code enforcement officials, builders and building trades to ensure effective code compliance is achieved. ICC's Certification Program was established to provide Members an extensive array of certifications in virtually every field of construction and has awarded more than 500,000 certifications. Many employers require code officials to have gained experience in the construction trades, completed an apprenticeship program, studied engineering or architecture, or have an Associate's degree in construction technology, blueprint reading, building inspection, etc. ICC Certification enhances the chances for higher paying jobs with higher levels of responsibility.

To become an HSTTP sponsor, please contact Sara Yerkes (syerkes@iccsafe.org)

HSTTP: Benefiting Students and the Community

In partnering with high schools, ICC aims to forge an advanced workforce knowledgeable about building codes. The participating schools will be viewed by the construction community not only as providing instruction on proper techniques, but also going a step further and educating individuals to better understand and navigate a code book. Students receive the self-assurance and confidence that can only be gained from hands-on education and together our community is stronger and safer.

East Career Technical Academy (Las Vegas) students proudly display their Certificates of Achievement.

This home in Fredericksburg, Va. is the 23rd residence built by students from Stafford County Technical High School in the BOOTS (Bringing Occupational Opportunities to Schools) Program. Students completed all exterior and interior construction with the exception of the footing, poured foundation walls and the basement concrete slab. Their quality work was performed under the guidance of BOOTS instructors who are experienced tradespeople. An architectural class developed the approved plan and local code officials completed all of the inspections.

The project was funded by the Stafford County Vocational Education Foundation. Proceeds from the sale of this house will be used to purchase the lot and materials for the next BOOTS project house.

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