How You Can Become Registered As An Architectural Engineer

An Online Continuing Education Course for Engineers

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How You Can Become Registered As An Architectural Engineer

J. Paul Guyer, P.E., R.A.

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1. The Opportunity

This is an opportunity for *you.*

This is a career-enhancing opportunity for engineers interested in the design of buildings and related infrastructure. It is an opportunity for *you* to take a leadership position in the enterprise of designing and constructing buildings.

But first, some background.

As we all know, the undertaking of the design of buildings and related infrastructure is one of the most multidisciplinary activities in which engineers engage. It requires the skills, efforts, and involvement of structural engineers, civil engineers, mechanical engineers, electrical engineers, fire protection engineers, and traditionally trained architects. However….there has never existed a "platform" to bring these diverse skills and capabilities together in order to deliver coordinated services to the clients, companies, and agencies needing a cost-effective and efficient mechanism to deliver the buildings and related infrastructure they need.

This course will tell you about a "platform" you can now use to step forward and lead in delivering buildings and related infrastructure to enterprises in need….

2. Some Historical Perspective

The Academic Community

The initial impetus for an Architectural Engineer registration process came from within the academic community in the early 1990s. Prior to 1990, there were 13 ABET-approved four-year programs leading to a bachelor's degree in architectural engineering (Figure 1).

Figure 1	
ABET-Accredited Four-Year Architectural Engineering Programs Prior to 1990	
Institution	Year AE Program Established
California Polytechnic State University, San Luis Obispo	1975
University of Colorado	1936
Kansas State University	1936
University of Kansas	1936
University of Miami	1962
Milwaukee School of Engineering	1988
North Carolina A&T State University	1969
Oklahoma State University	1986
University of Oklahoma	1960
Pennsylvania State University	1936
Tennessee State University	1977
University of Texas	1938
University of Wyoming	1986

Since 1990 four more ABET-accredited programs have been established (Figure 2), bringing the total number of accredited architectural engineering programs to 17. In addition, there are eight ABET-accredited four-year programs leading to a bachelor's degree in architectural engineering *technology* (Figure 3).

Figure 2	
ABET-Accredited Four-Year Architectural Engineering Programs Established After 1990	
Institution	Year AE Program Established
Drexel University	1991
Indiana/Purdue University, Fort Wayne	2003
Missouri University of Science and Technology	2006
University of Nebraska, Lincoln	2004

Figure 3	
ABET-Accredited Four-Year Architectural Engineering *Technology* Programs	
Institution	Year AE Program Established
Bluefield (WV) State College	1992
University of Cincinnati	1983
University of Hartford (CT)	1997
Pennsylvania State University, Fayette (1)	1983
University of Southern Mississippi	1982
State University of New York, Farmingdale (2)	2007
Vermont Technical College	1997
Wentworth Institute of Technology (Boston, MA)	1981

(1) "Building Engineering Technology."
(2) "Architectural Technology."

There are also 15 ABET-accredited two-year programs in architectural engineering technology.

Academic emphasis and program content vary from institution to institution, but in general, course work covers all of the classical architectural engineering disciplines: structural, mechanical, electrical, civil, and architectural, and provides an opportunity to concentrate in one of these disciplines. For example, a student interested in a career in the design of mechanical systems for buildings would take more intensive upper-division courses in HVAC, plumbing, and fire protection systems design.

The graduate of a four-year architectural engineering or architectural engineering technology program thus has a solid understanding of all of the building design disciplines, but with a concentrated emphasis on the one, he or she saw as their career path of choice.

The problem these graduates faced, and which the academic community recognized, is that there was no professional registration path open to them. A graduate of an architectural engineering program who wanted to pursue a career in the design of, for example, mechanical systems for buildings would be forced to take a mechanical engineering registration examination that required knowledge of technical areas for which he or she had received no training and were irrelevant to his or her planned career (for example, aerodynamics, open-channel flow, kinematics, etc.). In addition, in this example, the mechanical engineering registration examination would not cover the structural, electrical, civil, and architectural features of buildings that had been part of his or her training and were essential to his or her planned career.

Professional

In order, largely, to enhance the career paths of graduates of architectural engineering programs, the academic community took the lead in the establishment of the National Society of Architectural Engineers (NSAE). Although intended to provide a professional home for graduates of architectural engineering programs throughout their careers, NSAE developed primarily as a vehicle for student chapters at the colleges and universities that hosted architectural engineering programs.

Independently, the much larger American Society of Civil Engineers (ASCE) began a discussion in the early 1990s of the need for a multidisciplinary home for engineers and traditionally trained architects engaged in the design and construction of buildings and related infrastructure. At that time, ASCE's technical activities were organized into "Divisions," which were focused on technical issues. Somewhat in contravention of that tradition, ASCE established an Architectural Engineering Division intended to focus more on professional and practice objectives than technical issues. Not long thereafter,

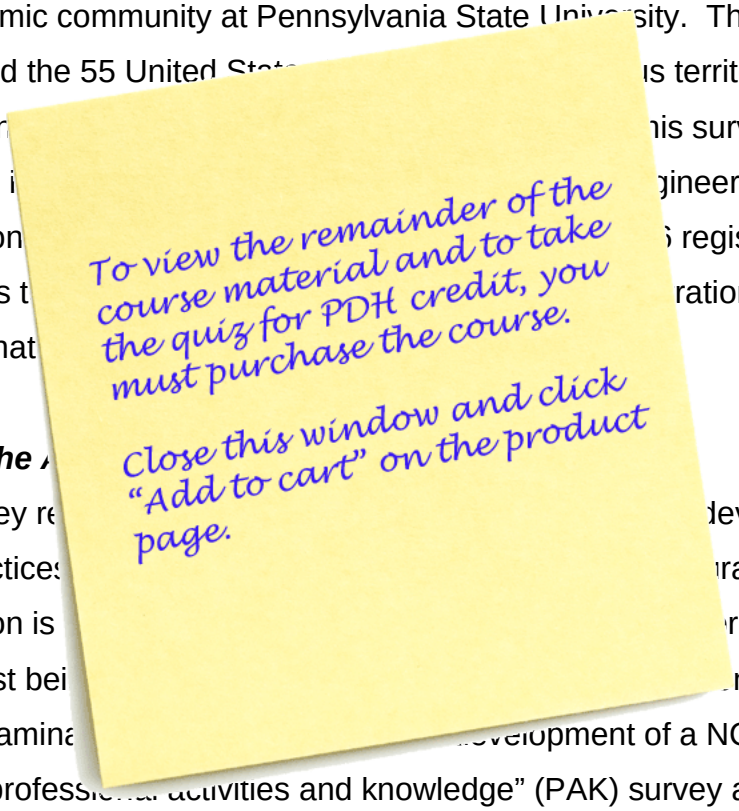
in recognition of the fact, there were important areas in which civil engineers practiced, which were in-fact multidisciplinary, ASCE converted its structure to one of “Institutes.”

NSAE and the ASCE Architectural Engineering Division shared some leaders who were active in both societies, and discussions ensued about their common objectives, which led to their merger on July 25, 1998, into the Architectural Engineering Institute (AEI) of ASCE.

The AEI thereupon became the engine driving the development of a professional Architectural Engineer registration examination.

Registration

In 1992, prior to the merger with AEI, the NSAE initiated a discourse with the National Council of Examiners of Engineers and Surveyors (NCEES), the organization which leads in preparation of engineering registration examinations utilized essentially throughout the United States. The lead in this discussion was the architectural engineering academic community at Pennsylvania State Univ sity. The NCEES thereupon surveyed the 55 United Stat s territories) for which it supplied engineerin his survey, 44 of the 55 registration boards i gineer registration path and the examination 5 registration boards indicated openness t ration if an appropriate examinat



Development of the A

Based on the survey re development of a principles and practices ral Engineering. The PE examination is r professional registration, the first bei n (FE….formerly called the “EIT” examina velopment of a NCEES PE examination is a “profess activities and knowledge” (PAK) survey and analysis.