



## **ARCHITECTURAL ENGINEERING EXAM HISTORY AND UPDATE**

The Architectural Engineering Principles and Practice of Engineering, (P.E.), examination is offered through the National Council of Examiners for Engineering and Surveying (NCEES) to its member state licensure boards. The Architectural Engineering Institute (AEI) of the American Society of Civil Engineering (ASCE) is the sponsoring society which is responsible for the development and maintenance of the AE PE Exam. The Architectural Engineering Exam Development Committee of AEI annually performs the task necessary for the AE PE exam to be offered to candidates seeking licensure as a professional engineer.

The AE PE exam was initially offered in 2003 and is offered annually in April of each year. Each state licensure board is responsible for defining the regulations and requirements for obtaining a professional engineering licensure within their state and they determine which exams will be offered by their state. Currently, 47 of the 55 licensure boards which offer professional engineer exams developed through NCEES provide the architectural engineering P.E. exam as one of the possible P.E. exams available for candidates to select in their jurisdiction. Those same 46 of 55 licensure boards will offer a professional engineering license to a comity applicant who has obtained licensure in another state by taking the AE PE exam and meets the licensure requirements and conditions of their state.

The professional engineering examination and licensure process continues to evolve to provide a fair and justifiable way to licensure engineers. It is important to understand that one of the primary reasons for licensing professional engineers is to ensure that the health, safety, and welfare of the public are properly protected. It is also important to understand that the objective of licensure exams is to determine if a candidate possesses minimum competency in the candidates' engineering field of knowledge and is therefore qualified to be a licensed professional engineer.

Every six to eight years a Professional Activities and Knowledge Survey, PAKS, is performed on each exam to define the tasks and knowledge associated with practicing architectural engineers. Utilizing the results of a nationwide survey of architectural engineers and the analysis of the survey results by a selected focus group, under the direction of a psychometric consultant, an exam specification is developed which defines the contents and makeup of the exam. The most recent PAKS resulted in a new exam specification, and the architectural engineering exam offered in April of 2010 was the first exam under the new specification. The new exam specification resulted in two new major domains for the examination and confirmed the need to maintain three major domains. The new exam specification also resulted in an updated distribution of test items within the five major domains to enable the exam to match up with the evolution of the profession.

The three major domains which repeat in the exam specifications are electrical systems, mechanical systems, and structural systems. Each of these domains covers approximately 25% of the exam. The new major domains which came out of the most recent PAKS are Building Systems Integration which is approximately 17.5% of the exam and Project Management/Construction Administration which is approximately 7.5% of the exam. One of the interesting and exciting aspects of the architectural engineering profession is the interaction and integration of the architecture and engineering of the building systems and components. The Building Systems Integration component of the architectural engineering exam specification covers aspects of the design and construction of buildings which goes beyond the basic nuts and bolts of electrical, mechanical, and structural systems, but involves areas of the architectural engineering profession which we must consider and perform on a regular basis. The architectural engineering P.E. exam covers a unique and diverse blend of topics and knowledge areas associated with the design and construction of buildings. If you are involved in the building design or construction industry and are seeking licensure as a professional engineer, review the exam specification on the architectural engineering exam to see if this exam provides a good match with your areas of knowledge and practice.