ing frame components using computer-based finite element analysis. They then prepare construction documents used to build the structure.

SEs educate themselves throughout their careers, adapting to new roles, new materials and construction methods, and to evolving tools of the “trade” such as structural design and analysis software.

**WHAT BENEFITS DO SEs ENJOY?** In addition to competitive salaries, SEs often “grow” into business ownership positions becoming principals or shareholders in a firm. This high profile opportunity can deliver substantial personal satisfaction and financial gains. Other SEs find fulfilling careers in government agencies that design or supervise public-works projects or enforce building construction regulations such as city or state building codes.

The profession is naturally challenging, but also offers tangible job satisfaction. You can point to buildings or structures you’ve worked on and take pride in their enduring legacy.

**WHAT ELSE CAN SEs DO?** Many SEs enter the profession because they simply love the essence of structural design. Others may move out of the design field, choosing to work directly with builders, material suppliers, government agencies or even the legal profession. The SEs’ analytical and project management skills make them natural problem solvers, attractive to a variety of industries and business enterprises.

**WANT TO KNOW MORE?**
For more information about the field of structural engineering, contact the:

* Structural Engineers Association (SEA)
* ASCE- Structural Engineering Institute: www.asce.org/sei/
* National Council of Structural Engineering Associations: www.ncsea.com

These associations can arrange for you or your group to meet and speak with a structural engineer.
WHY CONSIDER A CAREER AS A STRUCTURAL ENGINEER? If you think about it, nearly every part of the built environment, from a skateboard park to a high-rise building, relies on structure to help fulfill its function. Determining the structure’s strength, toughness and flexibility is the job of the structural engineer (SE). Through analysis and design, SEs specify the frameworks for things that rest on land, operate in water, and fly in air and space. SEs are entrusted with the responsibility for maintaining public safety within the built environment and earn a high degree of public respect as consequence. The work of SEs helps shape the world in which we live and offers opportunities for rewarding and satisfying careers.

IS THERE A STRONG JOB MARKET FOR SEs? Absolutely. As global population expands so does the size of our cities and their infrastructure; and, the existing infrastructure requires constant restoration as it ages. All the while, SEs strive to make buildings more efficient, sustainable, and improve resiliency against forces due to earthquake and wind.

WHAT EDUCATIONAL BACKGROUND IS REQUIRED? In the U.S., SEs earn college degrees in Structural Engineering or Civil Engineering (with an emphasis on structures) or an Architectural-Engineering degree. Colleges and universities in the U.S. and around the world offer a range of accredited programs. Many students pursue graduate degrees and some obtain PhD’s. Recommended course curriculums for structural engineering majors are available from the NCSEA.

HOW DO SEs WORK? SEs may work independently as sole proprietors or with a handful of skilled staff. Or, they may join large corporations with several hundred technical staff—sometimes combining the services of architecture and construction under one roof.

SEs will often collaborate with teams of professionals from other disciplines including mechanical, geotechnical, electrical and civil engineering as well as urban planners and architects. Public and private construction projects employ such teams to develop plans for municipal buildings, dams, bridges and a myriad of other structures ranging from single-family housing to high-rise buildings.

DOES A STRUCTURAL ENGINEER NEED LICENSING? Yes, because the public health and safety depend on the quality of the SE’s work. Each state regulates the amount of experience and testing required for licensure.

Typically, just prior to or after completing a bachelor degree, engineering majors take the “Engineering Fundamentals” exam. Once passed, the individual earns the designation of “Engineer-In-Training” (EIT). The next step involves passing the Professional Engineers (PE) exam for professional licensure, demonstrating the engineer’s competence in the field.

Many states, especially those having more frequent earthquakes and windstorms, also require specialized “Structural” licensure in addition to the PE for designing certain classes of projects—hospitals, for instance.

WHAT IS THE STRUCTURAL ENGINEER’S ROLE? In the building industry, SEs design structures to resist vertical and horizontal forces from gravity, earthquake, wind, water, soil and blast. SEs develop their designs by performing calculations on build-