



FEEL THE PRIDE



MEET THE STRUCTURAL ENGINEER

BECOME A STRUCTURAL ENGINEER

develop their designs by performing calculations using computer-based 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 designed 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:

National Council of Structural Engineers Associations:
www.ncsea.com

Your local Structural Engineers Association (SEA):
www.ncsea.com/members/organizations

These organizations can arrange for you or your group to meet and speak with a structural engineer.

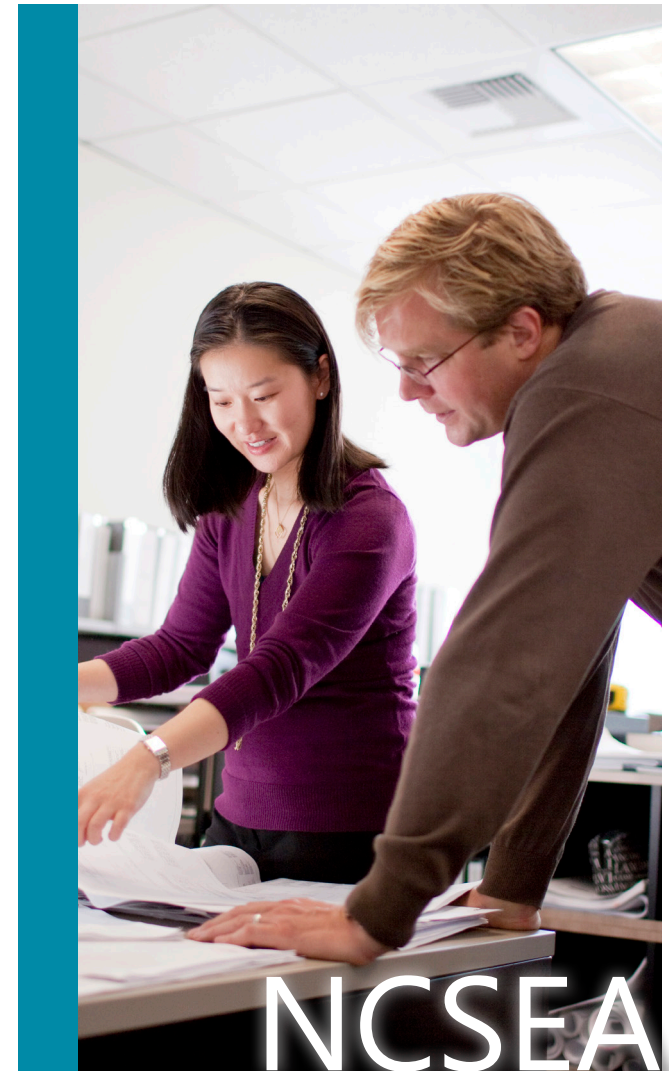


NCSEA

National Council of Structural Engineers Associations

Advancing the Practice of Structural Engineering

ENGINEER THE BUILT ENVIRONMENT



NCSEA

NATIONAL COUNCIL OF
STRUCTURAL ENGINEERS ASSOCIATIONS



COLLABORATE



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. 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?

As global population expands so does the size of our cities and their infrastructure. The existing infrastructure requires intermittent restoration as it ages. All the while, SEs strive to make buildings more efficient, sustainable, and resilient against the forces of nature and human-caused threats. All of this points to a continued, strong demand for structural engineers in the world's workforce.



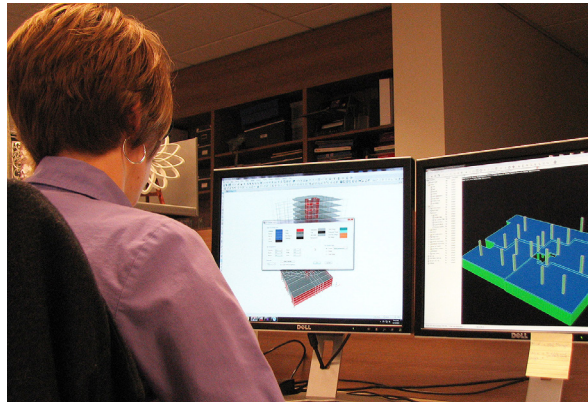
DESIGN

WHAT EDUCATIONAL BACKGROUND IS REQUIRED?

In the U.S., SEs earn a bachelor's degree in Structural Engineering or (more commonly) in Civil or Architectural Engineering with an emphasis on structures, and many earn a master's 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. A recommended course curriculum for structural engineering is available from the Basic Education Committee on the NCSEA website.

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



CONSTRUCT

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's 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 steps involve obtaining post college work experience and 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 due to gravity, earthquakes, wind, snow, water, soil and blast. SEs