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European Journal of Applied Engineering and
Scientific Research, 2021, Volume 9 issue 6



ISSN: 2278-0041

Design and Construction of Civil Engineering

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Civil engineering is that the design and construction of structure , like dams, bridges and other large infrastructure projects. it's one among the oldest branches of engineering, dating back to when people first started living in permanent settlements and commenced shaping their environments to suit their needs.

Early engineers built walls, roads, bridges, dams and levees; they dug wells, irrigation ditches and trenches. As larger groups of individuals began cohabitation in towns and cities, these populations needed reliable sources of unpolluted water, the means to eliminate waste, a network of streets and roadways for commerce and trade, and how to defend themselves against hostile neighbors.

Ancient engineering projects include the roads of the Roman Empire , the good Wall of China, the cliff dwellings at Mesa Verde and Mayan ruins at Copan, Palenque and Tikal. Many early civilizations built monuments to their rulers or gods. These may are simple mounds or truly remarkable achievements, like the Pyramids of Giza and Stonehenge, whose construction by pre-industrial societies remains mysterious. The names of the engineers who designed these wonders are lost to antiquity.

Today, the general public is more likely to recollect the names of great engineering projects than the names of the engineers who designed and built them. These include the Brooklyn Bridge (designed by John August Roebling and son Washington Roebling), the Hoover Dam (John L. Savage), the Panama Canal (John Frank Stevens) and therefore the Golden Gate Bridge (Joseph Strauss and Charles Ellis). One notable exception is that the Eiffel Tower, named after Gustave Eiffel, the French engineer whose company built it.

Civil engineers "design, construct, supervise, operate and maintain large construction projects and systems, including roads, buildings, airports, tunnels, dams, bridges, and systems for water system and sewage treatment," consistent with the U.S. Bureau of Labor Statistics (BLS).

These engineers can also handle site preparation activities, like excavation, earth moving and grading for giant construction projects. Additionally, civil engineers may conduct or write the specifications for destructive or nondestructive testing of the performance, reliability and long-term durability of materials and structures.

The BLS states, "Civil engineers generally work indoors in offices. However, many spend time outdoors at construction sites in order that they can monitor operations or solve problems onsite." Most civil engineers employed within the private sector work for giant construction contractors or as consultants. Government institutions that employ civil engineers include state transportation departments and therefore the military.

Most engineering jobs require a minimum of a baccalaureate in engineering. Many employers, particularly people who offer engineering consulting services, also require state certification as knowledgeable engineer. Additionally, many employers require certification from the American Society of Civil Engineers (ASCE). An academic degree is usually required for promotion to management, and ongoing education and training are needed to stay up with advances in technology, equipment, hardware and software, building codes, and other government regulations.