Profession of Civil Engineering and Carrier Opportunities

Civil Engineering Profession: Civil engineering includes the planning, designing, construction, and maintenance of structures and altering geography to suit human needs. Some of the numerous subdivisions are transportation (e.g., airport, railroad facilities, and highways); hydraulics (e.g., river control, irrigation, swamp draining, water supply, and sewage disposal); and structures (e.g., buildings, bridges, and tunnels). Although essentially a practical profession, civil engineering is founded on applied science, and training is based on the appropriate courses in engineering as well as in ecology and public safety.

Carrier Opportunities: The profession of civil engineering can be divided into three broad categories, which may be described as consulting, contracting, and municipal engineering.

The consulting civil engineer is the technical adviser to the client, who may be an individual, a commercial firm, or a government department. The consulting engineer is the designer of projects, and the duties generally include the outline preparation of a project and an estimate of cost; surveys and site investigation; the detailed design of the project, including drawings, specifications, schedules of quantities, and forms of contracts; advise to the client on which construction bid to accept; and administration of contracts and supervision of the execution of the work.

The task of actually building the project is the responsibility of a firm of contractors, and firms that handle many government projects employ professional civil engineers capable of interpreting the design and of devising methods for carrying out the work. It is they who control both labor and machines.

The municipal engineer serves local or state government directly in planning and supervising the construction and management of water supply and sewage disposal systems, roads and bridges, public transport systems, public buildings, and many other significant features of modern life.