

The history of structural engineering dates

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Pyramids were the most common major structures built by ancient civilizations because it is a structural form which is inherently stable and can be almost infinitely scaled (as opposed to most other structural forms, which cannot be increased in size in proportion to increased load). Throughout ancient and medieval history most architectural design and construction was carried out by artisans, such as stone masons and carpenters, rising to the role of master builder. No theory of structures existed, and understanding of how structures stood up was extremely limited, and based almost entirely on empirical evidence of what had worked before.

Knowledge was retained by guilds and seldom supplanted by advances. Structures were repetitive, and increases in scale were incremental. No record exists of the first calculations of the strength of structural members or the behavior of structural material, but the profession of structural engineer only really took shape with the industrial revolution and the re-invention of concrete (see History of concrete). The physical sciences underlying structural engineering began to be understood in the Renaissance and have been developing ever since.

Structural engineering has been applied since mankind commenced building of structures. Structures are designed, with the aim to accomplish the desired functions of creation, ensuring the visualization of all the loads that could be applied on the structures, and adequate safety of structures. * What is Structural engineering is a specialty of engineering that deals with the design and analysis of structures used to support loads in the most economical manner, with maximum element of safety.

The loads applied could be of a varied nature, including the load on bridges due to traffic, effect of strong winds on high buildings, load on structures because of variation in temperatures caused due to changes in weather, and load due to earthquakes. Specialties of structural engineering are building engineering, industrial structures, and pipeline engineering. Structural engineering has a significant influence on the life, healthiness, and goods of people, due to which extra vigilance is required during the construction and inspection of the structures. * History Of Structural Engineering engineering has been in use since ages, and one of the greatest ancient structures was the Pyramid of that was constructed pyramids since the shape of the pyramids is basically stable. Theoretical knowledge about the structures was limited, and construction techniques were based on experience only. The real advancement in the structural engineering was achieved in the century during the industrial revolution when significant progress was achieved in the sciences of structural analysis and materials science. 00 * Modern Growth In Structural Engineering 0 Due to the rapid growth of computer technology and other sciences, there has been a radical advancement in the science of structural engineering. Powerful computers have enabled the use of the finite element analysis, for carrying out the design and structural analysis. Programs of the finite element analysis can now precisely foresee the distribution of stresses in structures, and indicate where the structures may bend or twist due to these stresses.

These programs offer numerous simulation options in the field of modeling and analysis of different systems. Other topics that have been developed in the modern period are composite materials, fatigue, and vibration control.

0000 * Building Structures 0 Structural building engineering is based on the manipulation of materials and the scientific and mathematical theories to obtain structures that are safe when subjected to the applied loads, meet the functional requirements, and are economical.