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Types of construction

Agricultural

Typically economical buildings, and other improvements, for agricultural purposes. Examples include barns, equipment and animal sheds, specialized fencing, storage silos and elevators, and water supply and drains such as wells, tanks, and ditches Residential

Residential construction includes houses, apartments, townhouses, and other smaller, low-rise housing types

Commercial

This refers to construction for the needs of private commerce, trade, and services. Examples include office buildings, shopping centers and malls, warehouses, banks, theaters, and larger residential structures such as high-rise hotels and condominiums

Institutional

This category is for the needs of government and other public organizations. Examples include schools, fire and police stations, libraries, hospitals, some military facilities, and governmental buildings.

Industrial

Buildings and other constructed items used for storage and product production, including chemical and power plants, steelmills, oil refineries and platforms, manufacturing plants, pipelines, and seaports.

Heavy civil

The construction of transportation infrastructure such as roads, bridges, tunnels, airports. Dams are also included, but most other water-related infrastructure is considered environmental.

Environmental

Environmental construction was part of heavy civil, but is now separate, dealing with projects that improve the environment. Some examples are water and wastewater treatment plants, sanitary and storm sewers, and air pollution control

Construction management

- The functions of construction management typically include the following:
- Specifying project objectives and plans including delineation of scope, budgeting, scheduling, setting performance requirements, and selecting project participants.
- Maximizing the resource efficiency through procurement of labor, materials and equipment.

Implementing various operations through proper coordination and control of planning, design, estimating, contracting and construction in the entire process.

Developing effective communications and mechanisms for resolving conflicts

Others specialists involved in construction

- Project executive
- Project manager
- Planning engineer
- Project coordinator
- Design manager
- Field engineer
- Office engineer
- Quantity surveyor
- Project engineer
- Area superintendent
- Project superintendent



<u>Responsibilities of a general</u> <u>constructor</u>

- A general contractor is responsible for providing all of the material, labor, equipment (such as engineering vehicles and tools) and services necessary for the construction of the project. The general contractor hires specialized subcontractors to perform all or portions of the construction work.
- Responsibilities may include applying for building permits, securing the property, providing temporary utilities on site, managing personnel on site, providing site surveying and engineering, disposing or recycling of construction waste, monitoring schedules and cash flows, and maintaining accurate records

Building materials

 Bricks were known many thousands of years ago. They are examples of artificial building materials.



 Stone belongs to one of the oldest building materials used by man. It is characteristic of many properties. They are mechanical strength, compactness, porosity, sound and heat insulation and fire-resistance.



Wood is the most ancient structural material. It is light, cheap and easy to work. But wood has certain disadvantages: it burns and decays. Steel has come into general use with the development of industry. Its manufacture requires special equipment and skilled labor



 Concrete is referred to as one of the most important building materials. Concrete is a mixture of cement, sand, crushed stone and water.



 Plastics combine all the fine characteristics of a building material with good insulating properties. It is no wonder that architects and engineers have turned to them to add beauty to modern homes and offices.

Environmental protections

Storm water pollution: As a result of construction, the soil is displaced from its original location which can possibly cause environmental problems in the future. Runoff can occur during storms which can possibly transfer harmful pollutants through the soil to rivers, lakes, wetlands, and coastal waters.

Endangered species: If endangered species have been found on the construction site, the site must be shut down for some time. The construction site must be shut down for as long as it takes for authorities to make a decision on the situation.

Vegetation: There may often be particular trees or other vegetation that must be protected on the job site. This may require fences or security tape to warn builders that they must not be harmed.

Wetlands: The contractor must make accommodations so that erosion and water flow are not affected by construction. Any liquid spills must be maintained due to contaminants that may enter the wetland.

Historical or cultural artifacts: Artifacts may include arrowheads, pottery shards, and bones. All work comes to a halt if any artifacts are found and will not resume until they can be properly examined and removed from the area.