

Q1. Major Types of Construction

The four major types of construction include residential building, institutional and commercial building, specialized industrial construction, infrastructure and heavy construction.

1. Residential Building

The first type of construction is residential housing construction which involves building, repairing, and remodeling of structures for the purpose of housing people, supplies, or equipment. It includes apartments, townhomes, condos, nursing homes, dormitories, etc. Also, garages and outbuildings like utility sheds are considered as residential constructions. As mentioned above, residential construction also involves repair and installation of utilities like water as electricity around the structure.

The design of residential housing projects is usually done by engineers and architects and the construction itself executed by construction companies who hire subcontractors to do the mechanical, structural and electrical work of the project. But for single-family houses, builders usually do all of the phases, both the design and the construction.

2. Institutional and Commercial Building

This type of construction encompasses projects schools, sports arenas, shopping centers, hospitals, stadiums, retail stores, and skyscrapers. Like the residential housing construction, institutional and commercial building involves both putting up of new structures and repair and maintenance of existing structures. Typically, a project like a retail store is usually commissioned by a company or private owner. Other projects such as stadiums, schools, and medical facilities are often paid for and managed by both the local and national government.

3. Specialized Industrial Construction

The third type of construction is specialized industrial construction which entails building structures that require a high level of specialization as well as technical skills in planning, construction, and design. Typically, this type of construction is carried out by for-profit or

industrial corporations. For instance, a chemical industry can build oil refineries, and power generation industry can build structures nuclear power plants and hydroelectric power plants, which are examples of specialized industrial constructions.

4. Infrastructure and Heavy Construction

The last type of construction is infrastructure and heavy construction which encompasses building and upgrading of railways, communications, and roads, railways to the surroundings of a city or existing building construction. This type of construction usually done due to the public interest and is often executed by government agencies and large private corporations.

Some other projects that fall under this type of construction include tunnels, bridges, highways, transit systems, drainage systems, and pipelines.

Q2.What is Project Life Cycle and its Main Characteristics?

A project life cycle is the sequence of phases that a project goes through from its initiation to its closure. The number and sequence of the cycle are determined by the management and various other factors like needs of the organization involved in the project, the nature of the project, and its area of application. The phases have a definite start, end, and control point and are constrained by time. The project lifecycle can be defined and modified as per the needs and aspects of the organization. Even though every project has a definite start and end, the particular objectives, deliverables, and activities vary widely. The lifecycle provides the basic foundation of the actions that has to be performed in the project, irrespective of the specific work involved.

Project life cycles can range from predictive or plan-driven approaches to adaptive or change-driven approaches. In a predictive life cycle, the specifics are defined at the start of the project, and any alterations to scope are carefully addressed. In an adaptive life cycle, the product is developed over multiple iterations, and detailed scope is defined for iteration only as the iteration begins.

Characteristics of the Project Life Cycle

Although projects are unique and highly unpredictable, their standard framework consists of same generic lifecycle structure, consisting of following phases:

The Initiation Phase: Starting of the project

The Planning Phase: Organizing and Preparing

The Execution Phase: Carrying out the project

The Termination Phase: Closing the project

1. The Initiation Phase: The initiation phase aims to define and authorize the project. The project manager takes the given information and creates a Project Charter. The Project Charter authorizes the project and documents the primary requirements for the project. It includes information such as:

Project's purpose, vision, and mission

Measurable objectives and success criteria

Elaborated project description, conditions, and risks

Name and authority of the project sponsor

Concerned stakeholders

2.The Planning Phase: The purpose of this phase is to lay down a detailed strategy of how the project has to be performed and how to make it a success.

Project Planning consists of two parts:

Strategic Planning

Implementation Planning

In strategic planning, the overall approach to the project is developed. In implementation planning, the ways to apply those decisions are sought.

3.The Execution Phase: In this phase, the decisions and activities defined during the planning phase are implemented. During this phase, the project manager has to supervise the project and prevent any errors from taking place. This process is also termed as monitoring and controlling. After satisfaction from the customer, sponsor, and stakeholder's end, he takes the process to the next step.

4.The Termination Phase: This is the last phase of any project, and it marks the official closure of the project.

This general lifecycle structure is used when dealing with upper management or other people less familiar with the project. Some people might confuse it with the project management process groups, but the latter contains activities specific to the project. The project lifecycle, on the other hand, is independent of the life cycle of the particular outcome of the project. However, it is beneficial to take the current life-cycle phase of the product into account. It can provide a common frame of reference for comparing different projects