

Specifications,Details and sequence of activities during construction , construction co-ordination. Site clearance,Marking,Earthwork

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Specifications

Specifications of construction refer to a detailed description of the materials, workmanship, and performance required for a construction project. These specifications are typically included in the project plans and are used by contractors and builders to ensure that the project is completed to the desired quality and standards.

The specifications of construction may include the following information:

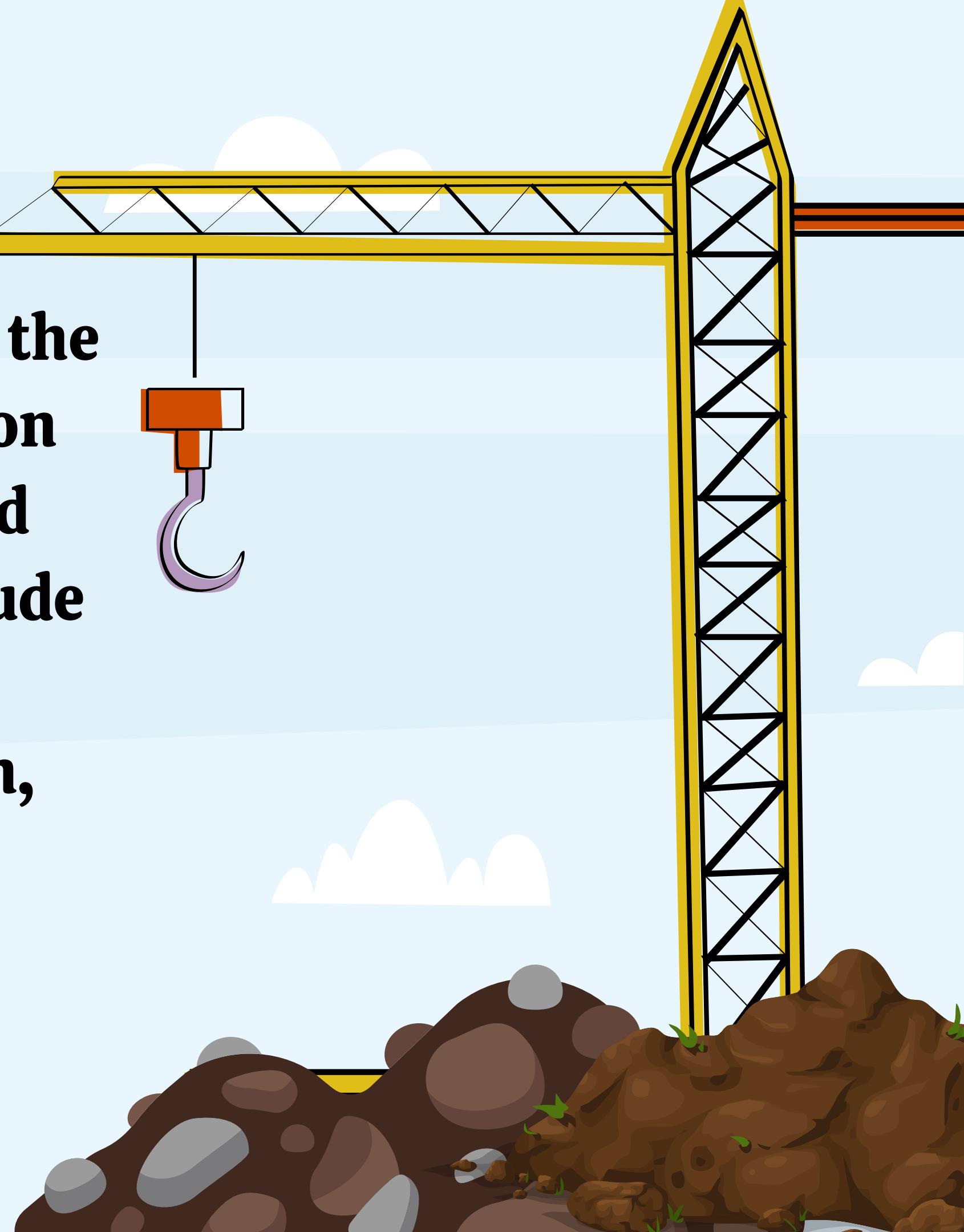
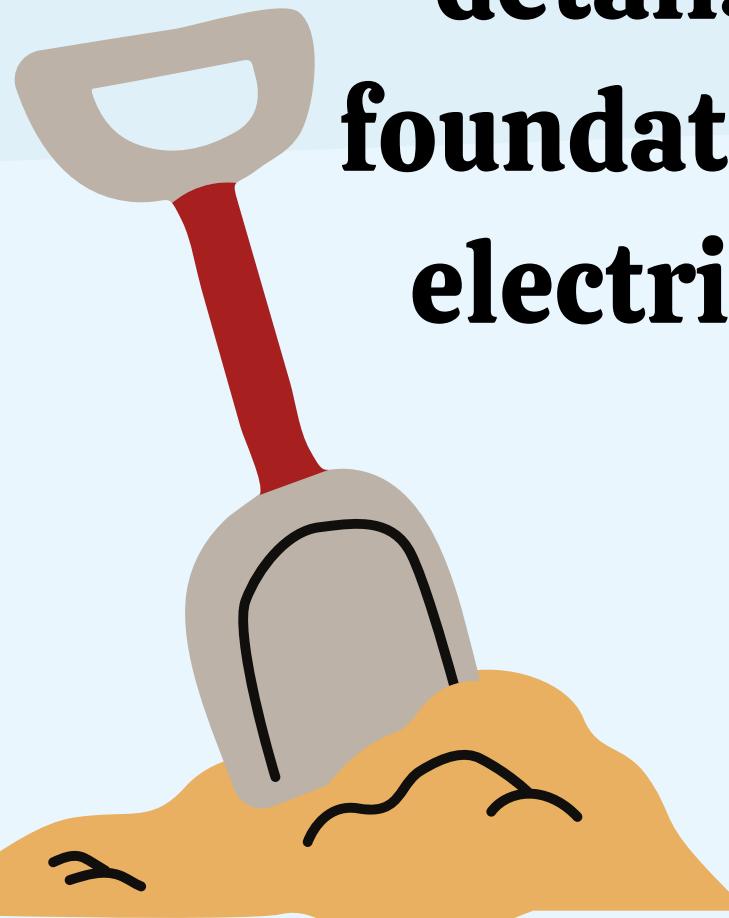


**Material
Workmanship
Performance
Standards
Testing
Inspection
Documentation**



Materials:

The specifications may provide a list of the materials to be used in the construction project, including the type, grade, and quality of the materials. This may include details about the materials for the foundation, walls, roofing, insulation, electrical, plumbing, and finishing.



Workmanship :

The specifications may provide details on the required workmanship for the construction project. This may include details about the installation, assembly, and finishing of various components of the project.



Performance :

The specifications may provide details on the required performance of the construction project. This may include details on the structural requirements, energy efficiency, acoustics, and other factors that affect the performance of the building.

Standards :

The specifications may also provide details on the standards that must be met for the construction project. This may include local building codes, safety standards, and other regulatory requirements.



Testing and Investigation :

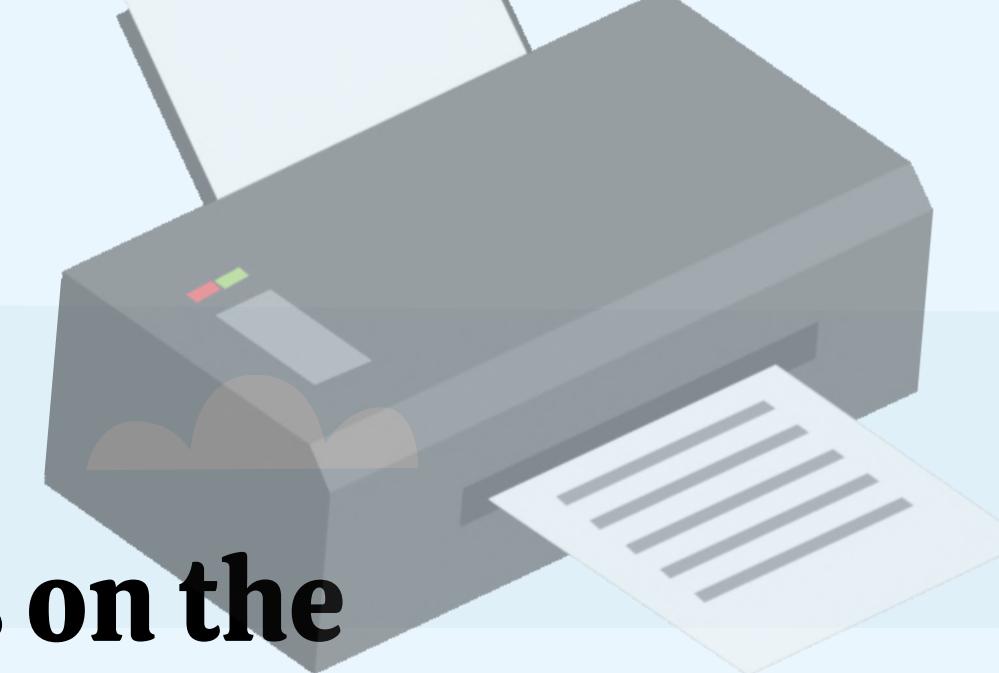
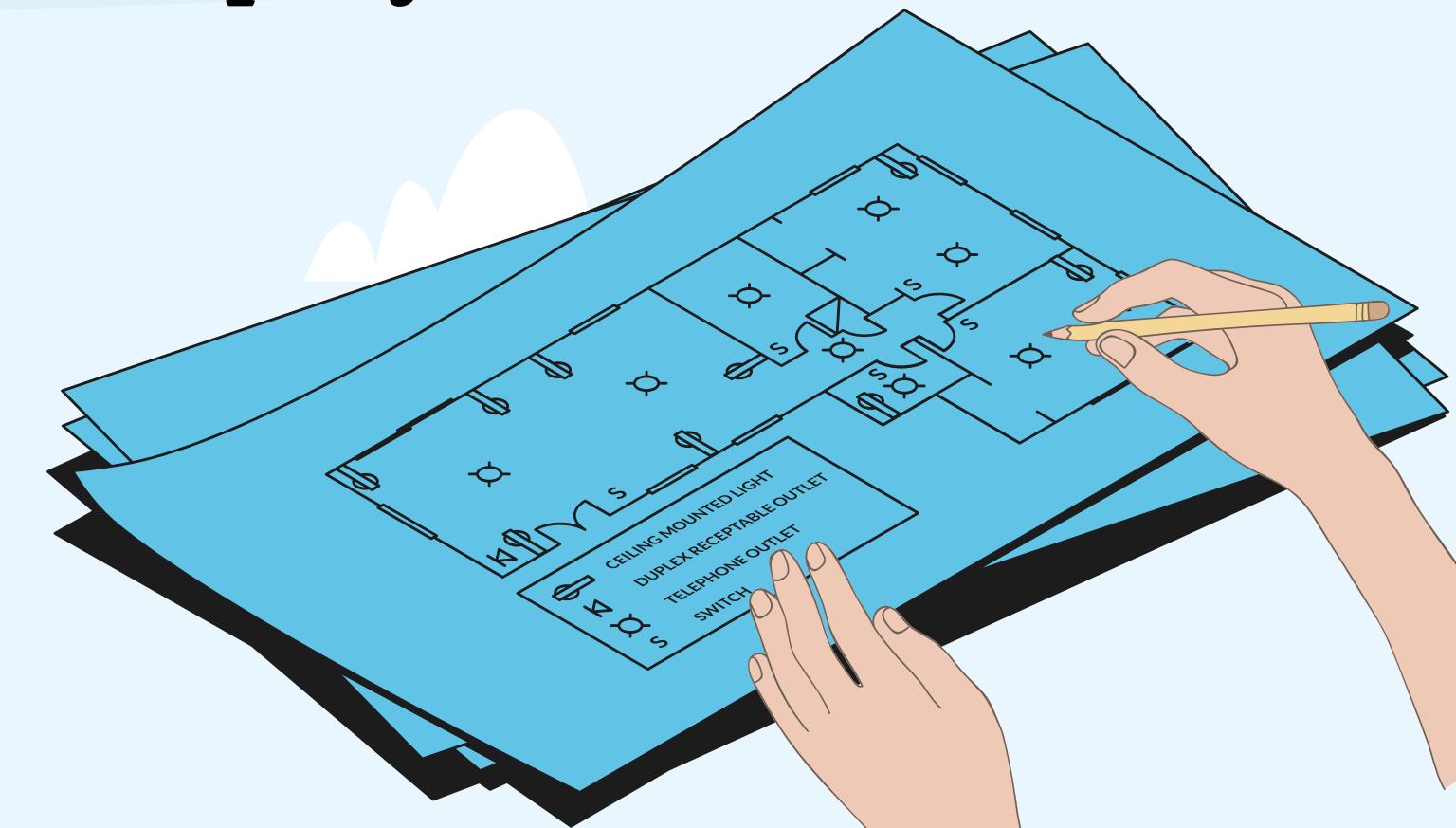
The specifications may provide details on the required testing and inspection procedures for the construction project. This may include details on the type of testing and inspection, the frequency of testing and inspection, and the documentation required for testing and inspection.



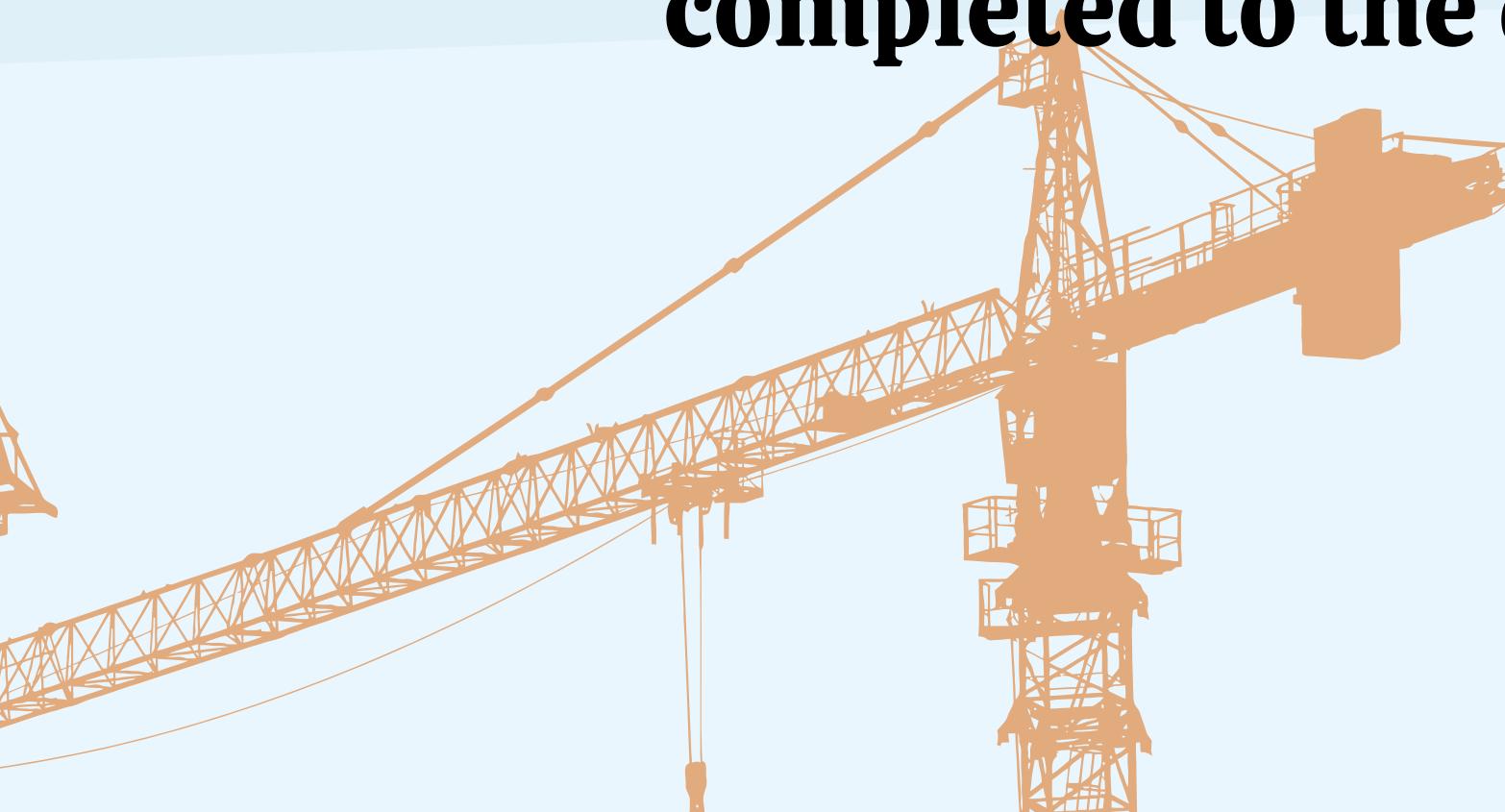
Documentation :

The specifications may also provide details on the required documentation for the construction project.

This may include details on the project plans, permits, inspection reports, and other documentation required for the project.



IN SUMMARY, the specifications of construction provide a detailed description of the materials, workmanship, performance, standards, testing, inspection, and documentation required for a construction project. These specifications are critical to ensuring that the project is completed to the desired quality and standards.



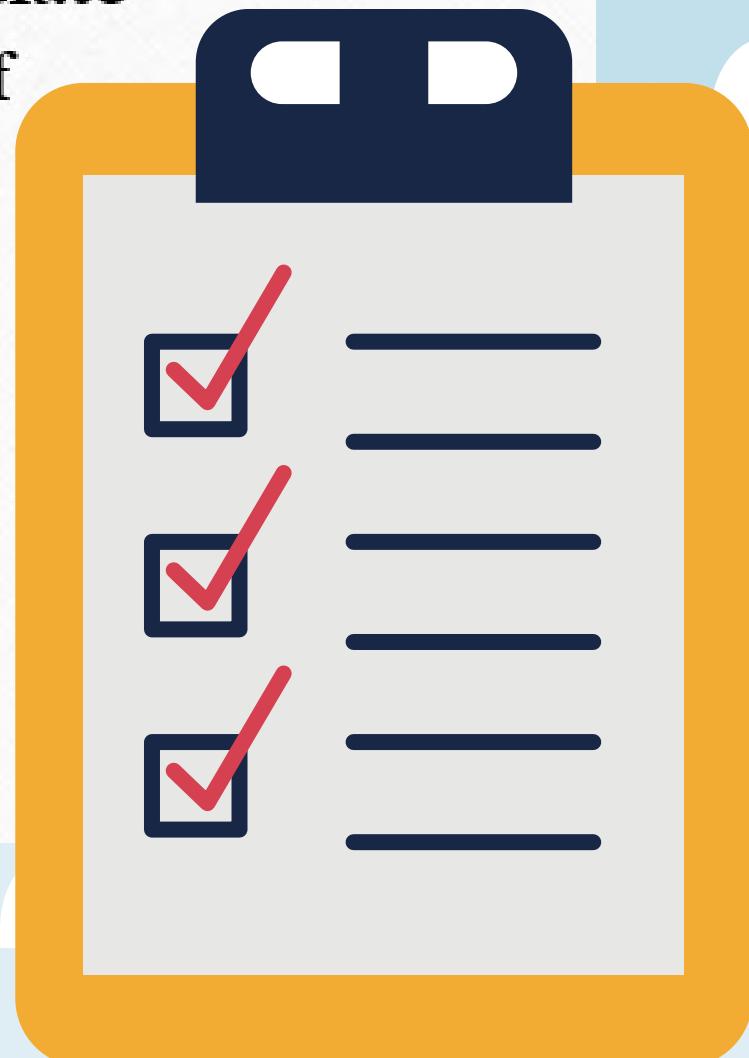
Purpose Of Giving Specifications :

- The cost of an unit quantity of work is governed by its specifications.
- Specification of a work is required to describe the quality and quantity of different materials required for a construction work and is one of the essential contract documents.
- This also specifies the workmanship and the method of doing the work. Thus specification of a work serves as a guide to a supervising staff of a contractor as well as to the owner to execute the work to their satisfaction.

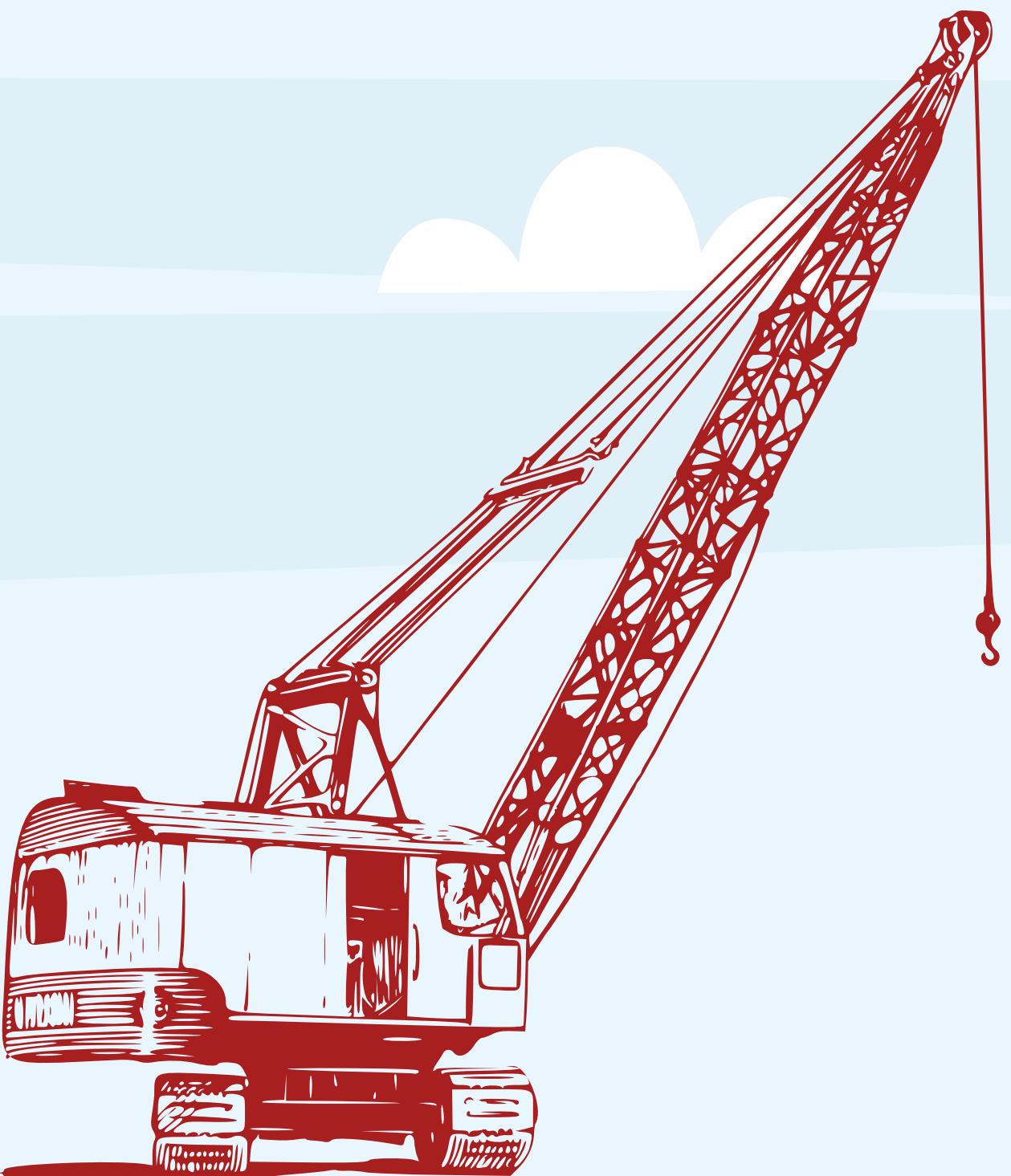


Purpose Of Giving Specifications :

- A work is carried out according to its specification and the contractor is paid for the same. Any change in specification changes the tendered rate.
- As the rate of work is based on the specification, a contractor can calculate the rates of various items of works in tender with his procurement rates of materials and labor. Thus tender rate without specification of works is baseless, incomplete and invalid.
- The necessity of specification is to verify and check the strength of materials for a work involved in a project.



Details and Sequence of activities during construction



**Design
Permitting
Site preparation
Excavation
Foundation work
Column casting
Construction of wall
Lintel
Roofing
Finishing and Curing**



Design:

The first step in any construction project is the design phase, which involves creating plans and blueprints for the project. Architects and engineers work together to design the structure, including the layout, dimensions, materials, and other details.



Permitting:

Once the design is complete, the necessary permits must be obtained from the local government. This may involve submitting plans for review, obtaining approval from various agencies, and paying fees.



Site preparation:

Before construction can begin, the site must be prepared. This may involve clearing the construction site, grading the land and compacting the soil.

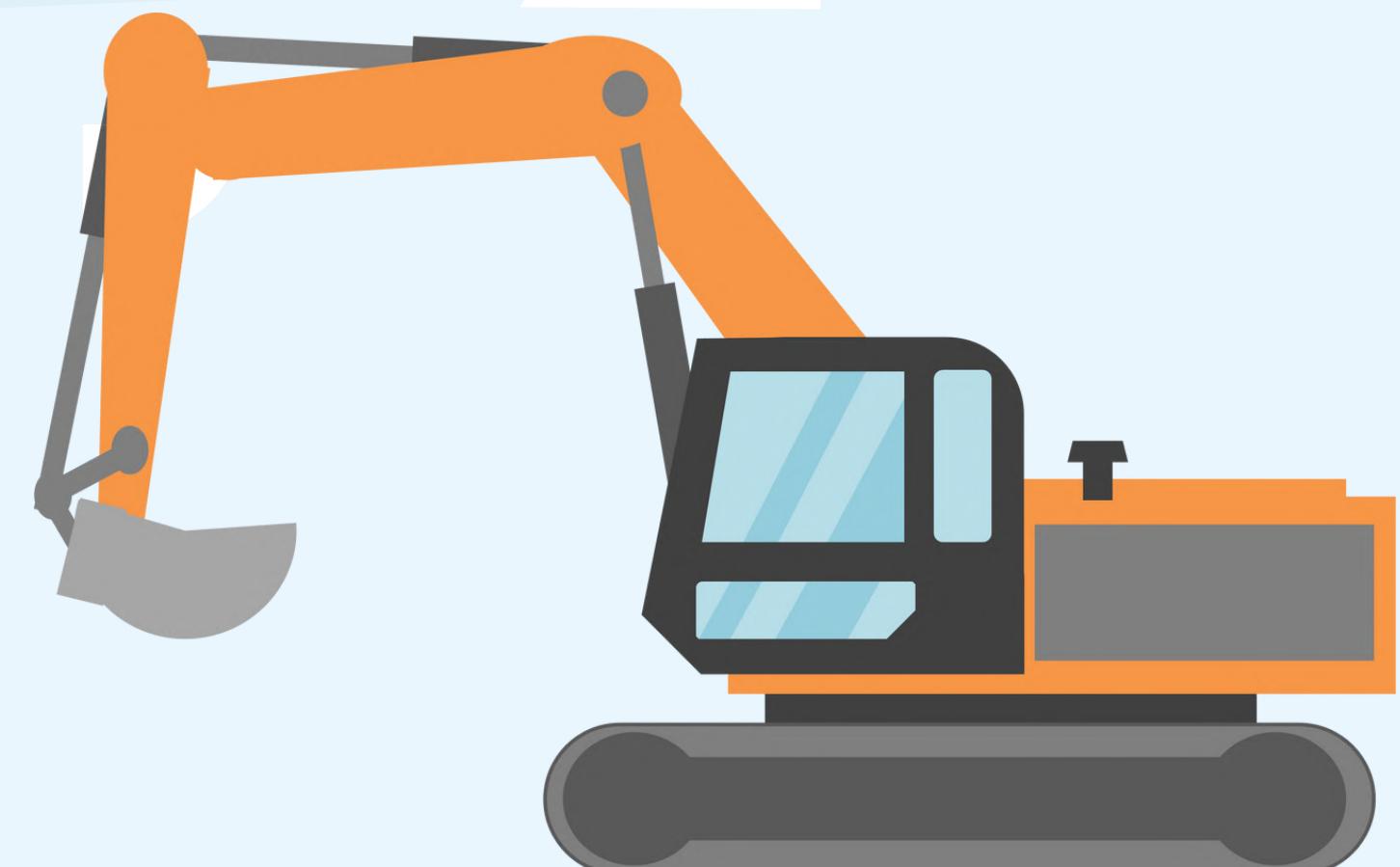
This allows us to identify site complications upfront and address them for construction begins.



Excavation :

Generally excavation is carried out for the construction of wall foundations.

Excavation should be carried out as per the drawings defined lengths & widths. Suitable machines are used to excavate the the earth for the making of foundation.



Foundation work :

Foundation work consists of many sub works which are as follows:

1. Compacting the ground

The excavation pits are trimmed and dressed as per the requirement and the bottom is compacted using hand compactors.

2. PCC

To form a solid bases on which the reinforcement can be tied and footing can be placed. Plain cement concrete of the mix 1:4:8 or 1:3:6 is laid on the compacted soil in varying depth as required.

3. Footing Reinforcement

Reinforcement steel bars are tied together and placed on the PCC to form a skeleton in which the concrete is poured and the column rods are taken from them.

4. Shuttering

To achieve proper shaped concrete, shuttering is done as per the dimensions mentioned in the drawing. It is also done so that the concrete doesn't come in contact with the soil.

5. Footing Concrete

It is very necessary to check the levels of foundation before concrete work. There are patches where excavated depth slightly exceeds and vice versa. Concrete is poured as per drawing specs.

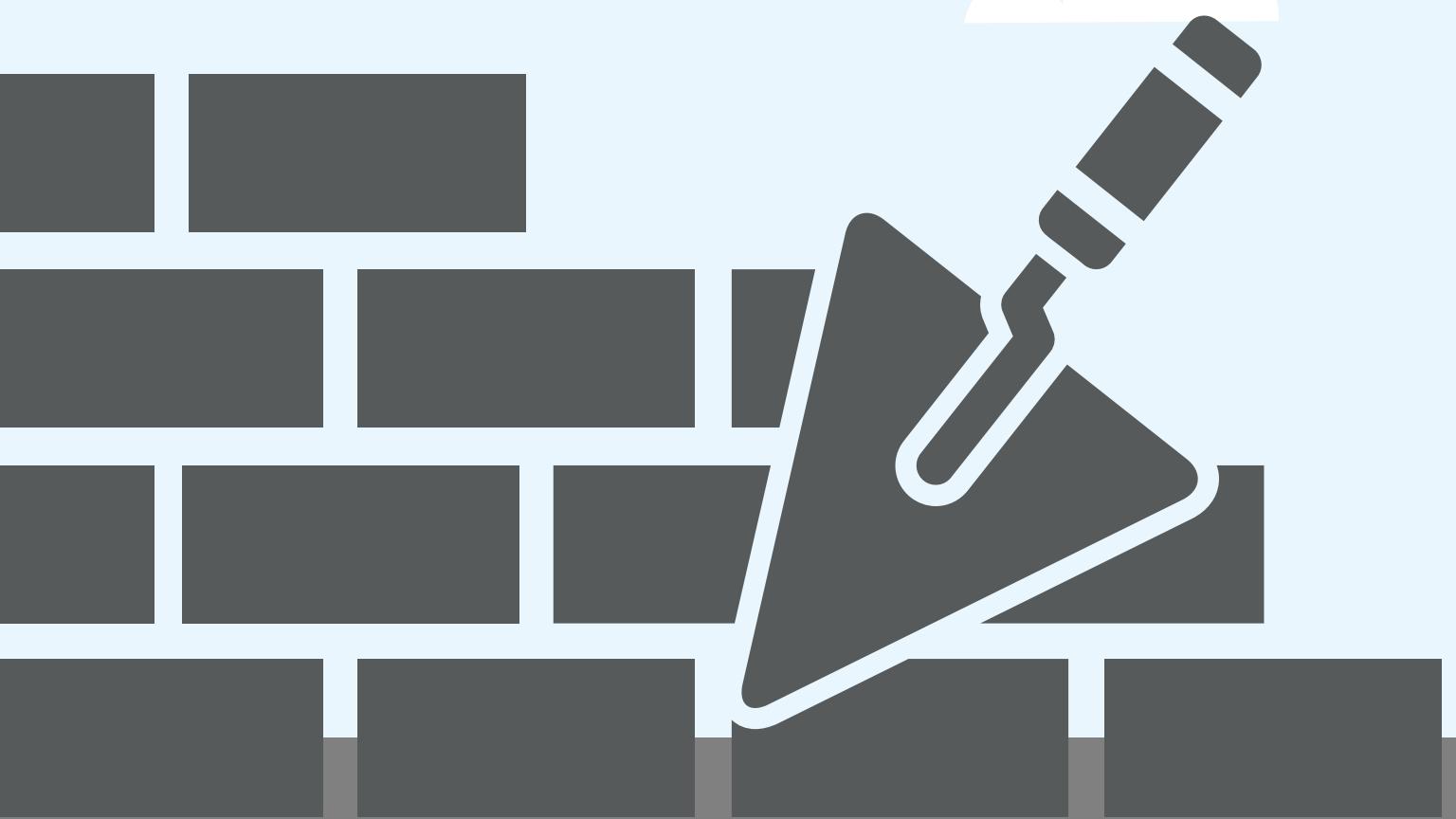
Column casting :

Casting of columns is made by fixing the shuttering framework and concrete is poured in the formwork. The shuttering is usually removed after 24hr of casting and curing is done



Construction of walls :

Walls are constructed using many materials such as brick, wooden, precast concrete and many other. Before starting the wall construction the base of wall is constructed first using concrete or size stone masonry. The height of the walls depends upon the floor height. Necessary opening are to given for doors, windows and ventilators.



Lintel :

Masonry work of buildings is carried out in one go till roof. Openings for windows & doors are left during masonry works. Reinforced cement concrete beams are laid down on the top of openings. So, those loads of structure above openings not directly come on to the door frames.



Roofing :

Roof slab of building is poured after completion of masonry works. Now a days, roofing is of reinforced cement concrete slab. Slab thickness & reinforcement details should be according to approved drawings.



Finishing :

"Finishing" refers to the final stage of a construction project, where the building or structure is given the final touches and details to complete its appearance and functionality.

Finishing can include several different processes, such as:

- Painting
- Flooring
- Electrical and plumbing fixtures
- Fixing doors and windows



Curing:

Once the finishing work is complete, the building is ready for "curing." Curing is the process of allowing the building materials to dry, settle, and harden. This is a crucial step in construction, as it ensures that the building will be structurally sound and will not shift or settle over time. Curing can take several weeks or even months, depending on the type of materials used and the size and complexity of the building. Once the curing process is complete, the building is ready for occupancy or use.



Site clearance :

Site clearance refers to the process of removing all obstacles, debris, and unwanted materials from a construction site to make it ready for building. It is an essential initial stage in construction that requires careful planning and execution to ensure that the site is clear and safe for construction workers and equipment.



The site clearance process typically involves the following steps:

- **Surveying the site:** Before starting the clearance process, the site needs to be surveyed to determine the location of any underground utilities, such as gas or water lines, that may be present.
- **Removing vegetation:** Vegetation, including trees, shrubs, and other plants, may need to be cleared to make way for the construction project.
- **Demolishing existing structures:** If there are any existing structures on the site, they need to be demolished and removed before construction can begin.
- **Clearing debris:** All debris and waste materials, including rocks, rubble, and soil, need to be cleared from the site.



- **Clearing debris:** All debris and waste materials, including rocks, rubble, and soil, need to be cleared from the site.
- **Disposing of waste:** The waste materials generated during the site clearance process need to be properly disposed of in accordance with local regulations.
- **Grading the site:** The site may need to be leveled or graded to create a smooth surface for construction.
- **Marking boundaries:** The boundaries of the construction site need to be clearly marked to prevent encroachment by unauthorized personnel or vehicles.

Site clearance is an important step in the construction process, and it needs to be done carefully and thoroughly to ensure a safe and efficient construction site.



Marking:

Marking refers to the process of demarcating areas on a construction site for various purposes such as excavation, drilling, piling, and construction. The marking helps to identify the limits of the construction area and prevent any unauthorized entry or accidental damage.

Site marking is typically done using coloured spray paints or flags, and it is essential to ensure that the markings are visible and clearly understandable. The markings are usually made according to the plans and drawings of the project, and they provide crucial guidance to the workers on the site.



Site marking is essential for several reasons, including:

- **Safety:** Site marking helps to prevent accidents and injuries by clearly identifying hazardous areas such as excavation sites, electrical cables, or gas pipelines.
- **Compliance:** Site marking is a legal requirement in many jurisdictions, and failure to comply can result in fines or penalties.
- **Efficiency:** Site marking helps to streamline the construction process by providing clear guidance to workers and reducing the likelihood of errors or misunderstandings.
- **Quality control:** Site marking can help to ensure that the construction work is carried out to the correct specifications and standards.

In summary, site marking is a crucial aspect of construction projects, and it helps to ensure safety, compliance, efficiency, and quality control

Earthwork :

Earthwork refers to the process of manipulating the earth's surface to create a level or graded area suitable for building construction. Earthwork is a crucial part of the construction process, as it lays the foundation for the rest of the construction work to be carried out.

it involves excavating, moving, or grading earth. This can include activities like digging trenches or holes, filling in low-lying areas, or levelling off a site.



The process of earthwork typically involves the following steps:

- **Site clearing:** This involves removing any trees, rocks, or other debris from the construction site to prepare it for grading.
- **Excavation:** This step involves removing soil and rock from the site to create a level area for building construction. Excavation may also involve the creation of basements or other below-grade structures.
- **Grading:** Grading is the process of creating a level surface by adding or removing soil, gravel or other material from a natural slope. this is often done before construction beings to build a structure or improve drainage.
- **Compaction:** Once the site has been graded, the soil is compacted using heavy equipment to ensure it is stable and capable of supporting the weight of the building.

- **Drainage:** Proper drainage is essential to prevent water from pooling on the construction site, which can lead to erosion and other problems. Drainage systems may involve the installation of pipes or the creation of swales or other natural drainage features.
- **Backfilling:** Once the foundation has been constructed, backfilling involves replacing any soil or other materials that were removed during excavation around the foundation to provide additional support.

Overall, earthwork is a complex and crucial process in construction that requires careful planning, skilled workers, and heavy equipment to complete successfully.

Construction coordination :

Construction coordination refers to the process of managing and organizing different aspects of a construction project to ensure that they are properly aligned and executed. This involves coordinating between different parties involved in the construction process, such as architects, engineers, contractors, subcontractors, suppliers, and regulatory authorities.

Effective construction coordination is essential to ensure that the project is completed on time, within budget, and to the desired quality standards.



The following are some key aspects of construction coordination:

1. Planning: This involves creating a detailed construction plan that outlines the project's scope, timeline, budget, and resources needed. The plan should also identify potential risks and develop strategies to mitigate them.

2. Communication: Effective communication is critical in construction coordination. Regular meetings should be held between the different parties involved in the project to ensure that everyone is on the same page and any issues or concerns are addressed promptly.

3. Resource management: Managing resources, including labor, equipment, and materials, is crucial to ensure that the project progresses smoothly. Construction coordinators should ensure that the resources are available when needed, and any delays are addressed promptly.

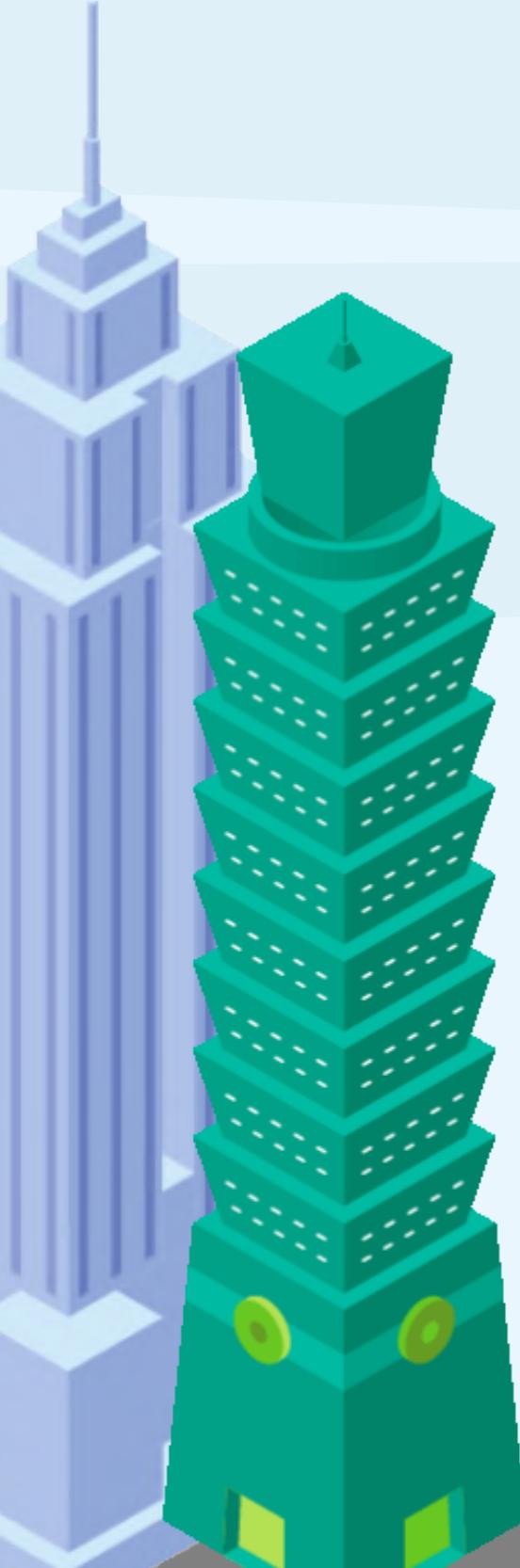
4. Quality control: Quality control ensures that the construction work is executed as per the design specifications and industry standards. The coordination team should conduct regular inspections to identify any defects or deviations from the plan and take corrective actions.



Overall, effective construction coordination is crucial to ensure the success of any construction project. By properly managing the different aspects of the project, construction coordinators can ensure that the project is completed on time, within budget, and to the desired quality standards.

Questions :

- 1. Why Grading is essential before construction?**
- 2. what is the function of the lintel ?**
- 3. What is the usual time of column deshuttering ?**
- 4.Why Backfilling is done for the foundation earthwork ?**
- 5. Why construction co-ordination is essential ?**





THANK
YOU