**BUGE PETER KIRAH**

**CIVIL ENGINEERING**

**17/ENG03/013**

**INTRODUCTION TO AUTOCAD**

**TEST A**

1. **First of all, undergo a very good site investigation to determine the nature of the soil.**
2. Create a proper and a very good architectural drawing plan with details.
3. After, planning and structural detailing completed these details are transferred to the building estimator. The building estimator will estimate the material quantity, quantity of different items of work, and prepare an abstract sheet that shows the cost of building construction. Of course, after getting appropriate permissions from building and construction authorities.
4. Builders or contractors for construction must be chosen carefully as it is a major factor for securing building construction quality and timely construction of work. In the contract document, all the work-related details must be clearly stated. The contract document should cover layout and work details along with the payment methods, time scales and costs.
5. The construction site must is cleaned before the work is executed. This work involves the removal of roots of trees, debris and leveling ground area. Then the foundation of building ground is excavated with the help of excavating machines as per the building dimension specified in drawings.
6. After the foundation work is done ground beam formwork preparation is started and poured with concrete. Over the plinth beam, masonry work is started and space between foundation and plinth beam filled with soil. The columns are built up to slab level and the frame for further construction is prepared.
7. As column and beam framework is completed, masonry work is started with different materials such as bricks, concrete blocks, fly ash bricks, etc. according to building drawing.The lintel is constructed on the door and window to support the masonry work over it.
8. Then the formwork is started to construct slab resting on the column and beam. Over slab formwork, slab reinforcement is placed as per slab detailed drawing, after that door window frames are fixed at their specified position given in drawing.

1. **TYPES OF STAIRS**

The various types of staircase include;

1. **Straight Stairs:**

Straight stairs are stairs without any changes in direction.

1. **L Shaped Stairs:**

The L shaped stair is a variation of the straight stair with a bend in some portion of the stair. This bend is usually achieved by adding a landing at the transition point.

1. **U Shaped Stairs:**

U shaped stairs are essentially two parallel flights of straight stairs joined by a landing that creates a 180-degree turn in the walk line.

1. **Spiral Stairs:**

Spiral stairs follow a helical arc. They usually have a very compact design and the treads radiate around a central pole.

1. **Curved Stairs:**

Like spiral stairs, curved stairs follow a helical arc. However, they tend to have a much larger radius and typically do not make a full circle.

1. **Winder Stairs:**

Winder stairs are a variation of an L shaped stair but instead of a flat landing, they have pie-shaped or triangular steps at the corner transition.

1. **TYPES OF DOORS AND WINDOWS**
* **Types of Doors**;
1. Based on Location
* Exterior doors.
* Interior doors.
1. Based on Materials
* Wooden or Timber doors.
* Glass doors.
* Steel doors.
* PVC doors.
* FRP doors.
1. Based on Operation of Door Shutter
* Swinging doors.
* Folding doors.
* Sliding doors.
* Revolving doors.
* Pivot doors.
1. Based on Method of Construction
* Panel doors.
* Flush doors.
* Louvered doors.
* Wire gauzed doors.
* **Types of Windows**
1. Awning Windows:

Awning windows open out by pivoting from the top of the window sash, operated by a crank.

1. Casement Windows:

[Casement windows](https://www.thebalancesmb.com/triple-glazed-windows-844733) also open out (like awning windows) and usually pivot from side hinges. Many casements have fairly large glass panes to provide ample light that is uninterrupted by muntin bars or other framing.

1. Double-Hung and Single-Hung Windows:

Single-hung has a movable lower sash and a fixed upper sash, while double-hung has two movable sashes; the upper sash slides down.

1. Picture Windows:

They are often large glass expanses occupying the center portion of a wall to provide broad views and ample sunlight.

1. Slider Windows:

Slider windows slide open sideways. Like casements, they can offer clear views and ample ventilation, but they cannot be sealed as tightly as casements.

1. Site Planning;

Site planning in [landscape architecture](https://en.wikipedia.org/wiki/Landscape_architecture) and engineering refers to the initial stage of the landscape and structural design process. It involves the organization of land use, access, climate, privacy, security, shelter, land drainage, and other factors. This is done by arranging the compositional elements of landform, planting, water, buildings and paving in [site plans](https://en.wikipedia.org/wiki/Site_plan). Also, site planning is the design and process of planning for a new development project.

1. **DIFFERENCE BETWEEN ARCHITECTURAL DRAWING AND CIVIL ENGINEERING DRAWING**
* **An Architectural drawing** is a [technical drawing](https://en.wikipedia.org/wiki/Technical_drawing) of a buildingor building project. Architectural drawings are used by [architects](https://en.wikipedia.org/wiki/Architect) and others for a number of purposes, to develop a design idea into a proposal, to communicate ideas and concepts, to convince clients of the merits of a design, to assist a [building contractor](https://en.wikipedia.org/wiki/Building_contractor) to construct it based on design intent, as a record of the design and planned development, or to make a record of a building that already exists,.
* **A civil engineering**  **drawing** is the general term used for [drawings](https://www.designingbuildings.co.uk/wiki/Drawings) that [form](https://www.designingbuildings.co.uk/wiki/Form) part of the [production information](https://www.designingbuildings.co.uk/wiki/Production_information) that is incorporated into [tender documentation](https://www.designingbuildings.co.uk/wiki/Tender_documentation) and then the [contract documents](https://www.designingbuildings.co.uk/wiki/Contract_documents) for the [construction works](https://www.designingbuildings.co.uk/wiki/Construction_works). This means they have legal significance and [form](https://www.designingbuildings.co.uk/wiki/Form) part of the [agreement](https://www.designingbuildings.co.uk/wiki/Agreement) between the [employer](https://www.designingbuildings.co.uk/wiki/Employer) and the [contractor](https://www.designingbuildings.co.uk/wiki/Contractors).
1. **DIFFERENCE BETWEEN BEME AND BOQ**
* **BEME (Bill of Engineering Measurements and Evaluation):** is a description and evaluation of evidence pertinent to a clearly formulated concept that uses explicit scientific methodologies and methods to systematically identify, assemble, critically analyze and synthesize information relevant to the review topic.
* The **Bill of Quantities** (sometimes referred to as **'BOQ'** or **'BQ'**) is a document prepared by the cost consultant that provides project specific measured quantities of the items of work identified by the drawings and specifications in the tender documentation.
1. **DIFFERENCE BETWEEN SECTIONS AND ELEVATIONS**
* A **Section** of an element or a structure is cut through that shows the interior details of how an element/structure/material is made in the inside which reveals more details whereas the elevation is the exterior appearance of the same.
* **Elevation** refers to an orthographic projection of the exterior (or sometimes the interior) faces of a building, that is a two-dimensional drawing of the building's façades.
1. **DIFFERENCE BETWEEN WORKING DRAWINGS AND PRESENTATION DRAWINGS**
* **A Working drawing** is a drawing or blueprint based on explanations. It is completed with a thorough plan and views (details, notes, and dimensions) to ensure the [product](https://knowtechie.com/tag/gadgets) construction or replication without any additional information.it is a scale drawing of an object to be made or structure to be built intended for direct use by the workman.
* **Presentation drawing** is any of a set of design drawings made to articulate and communicate a design concept or proposal such as for an exhibition, review, or publication intended to explain a scheme and to promote its merits.





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