***Objective***

The primary objective of drawing a civil plan in AutoCAD is to create a comprehensive and accurate representation of the proposed construction or land development project. This digital rendering serves as a visual and technical guide for architects, engineers, and other stakeholders involved in the planning, design, and execution phases. The objective is to enable adaptability and flexibility in design, utilizing AutoCAD tools for easy modifications, revisions, and updates as project requirements evolve. Ultimately, the AutoCAD civil plan aims to be a dynamic and comprehensive resource that enhances project understanding, promotes accuracy, and contributes to the successful execution of civil engineering endeavors.

The primary objective of this project is to design a comprehensive civil plan for a hospital facility utilizing AutoCAD 2007 software, with an approximate total space of 8000 square feet. The design aims to efficiently allocate space for essential functional areas, including a minimum of 10 rooms designated for employees and staff, and incorporate facilities such as a kitchen, toilets, and a prayer room.

***Introduction***

A civil plan serves as the foundational blueprint for translating the vision of a civil engineering project into a tangible and structured reality. It is the graphical representation that encapsulates the intricate details of site development, infrastructure, and architectural design. In the realm of civil engineering, the importance of a meticulously crafted plan cannot be overstated. This introduction sets the stage for the exploration and understanding of a civil plan, delving into its multifaceted role as a communicator, coordinator, and catalyst for the successful execution of engineering endeavors.

Designing a civil plan for a hospital is a meticulous and critical process that requires careful consideration of both functionality and spatial efficiency. This AutoCAD 2007 project aims to create a comprehensive civil plan for a hospital with an approximate total space of 8000 square feet, addressing the specific needs of the facility. The design includes the allocation of at least 10 rooms dedicated to employees, staff, and essential facilities such as a kitchen, toilets, and a prayer room.

***Instructions which are followed while designing***

* **Switchboard Placement**: while Considering Door Openings.
* **Strategic Location**: Place SBs for 'Toilets,' 'Stores,' and 'Kitchens' outside the rooms to align with the limited occupancy in these areas.
* **Lighting and Fan Allocation**: enough lights and fans for each room.
* **Exhaust Fans:** Install exhaust fans in every toilet and kitchen. strategically placed for efficient ventilation.
* **Switched Socket Outlets:** Sufficient switched socket outlets are provided on both SBs and at a distance from them, catering to various electrical needs.
* **Television Connectivity:** Enhanced Living Room Setup: Each living room is outfitted with distant switched sockets at skirting level, facilitating convenient TV connectivity.
* **Calling Bell** **set up:** (CB) position should be allocated strategically. It should be placed near the common place and distant from the bedroom.
* **SDB and MDB positioning:** MDB needs to be monitoredby the meter reader so, it should be placed in an easily accessible place where sufficient lighting arrangement is ensured.

***Tools***

**Drawing Toolbar**

1.Line

2.Ellipse

3.Circle

4.Text

5.Arc

6. Rectangle

7. Hatch

8.Text

**Modify** **Toolbar**

1.Trim

2. Move

3. Erase

4.Mirror

5.Offset

6.Rotate

**Useful commands**

**1**.Unit

2.Dimensions

3.Limit

4. Drafting Setting

**Set up**

1. Unit (Inches) select.
2. Drawing limit
3. Change dimensions.
4. Layer set up

***Procedure***

* Open AutoCAD 2007 and start a new drawing.
* Set the units to the appropriate scale (e.g., feet).
* Use the "Rectangle" tool to draw the outer walls of the hospital. Ensure the total area is approximately 8000 square feet.
* Use the "Line" tool to create internal walls to divide the space into rooms.
* Designate areas for at least 10 rooms. Consider including offices for employees, staff rooms, a kitchen, toilets, and a prayer room. Use the "Rectangle" tool to outline each room.
* Label each room with its purpose, e.g., "Employee Room 1," "Staff Room 1," "Kitchen," "Toilets," and "Prayer Room."
* Add dimensions to define the size of rooms and distances between objects. Use the "Dimension" tool for accurate measurements.
* Ensure that the plan complies with local building codes and regulations.
* Divide the building into rooms using the LINE and OFFSET commands.
* Assign objects to appropriate layers for better control and organization.

**A blueprint of a house

Description automatically generated**

**Figure: a Civil Plan of a Hospital**

***The symbols to be used for Fittings:***

F – Fan

L – Light

T – Tube Light

K – One Kind of Light

TV – Television

TE – Telephone

M – Motor

CH – Hanging Light

ML – Multiple Light

CB – Circuit Breaker

SB – Swich Board

SS – Swich Board Socket

ST – Two Pin Socket

SL – Skirting Level Socket

TS – TV Socket

15\_1 – 3 Pin Socket (15 A)

TJB – Telephone Junction Board

AJB – Antenna Junction Board

C1, C2…. – No of Cables

1,2,3……… - no of SB

SDB – Sub Distribution Board,

MDB – Main Distribution Board,

***Discussion***

**precautions**

1. Use layers properly.
2. Double-check before finalizing.
3. Be mindful of precision.
4. Check the drawing Units and Scale.

**Errors**

1. Drawing at the wrong scale.
2. Ignoring units settings in AutoCAD.
3. Allowing an uncontrolled increase in the number of layers.
4. Neglecting Annotation Standards.

***Conclusion***

At the end, creating a civil plan for a hospital with approximately 8000 square feet of space using AutoCAD 2007 involves meticulous planning and attention to detail. The design must consider the specific needs of the facility, including at least 10 rooms for employees and staff, a kitchen, toilets, and a prayer room. Throughout the process, adherence to local building codes, regulations, and healthcare standards is crucial to ensure a safe and functional environment.

In essence, civil drawing is a visual language that facilitates the planning, communication, and execution of complex construction projects, contributing significantly to the success and efficiency of the entire engineering process.