Presentation on 

EXTENSIVE SURVEY PROJECT 

(18CVEP68) 

for 

Sixth Semester B.E. Students 

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COURSE OBJECTIVES

- Understand the **practical applications of Surveying**
- Use of **Total station** and other Measurement Equipment
- Work in teams and learn time management, communication and presentation skills
COURSE OUTCOMES

✓ Apply the principles of surveying, hydrology, hydraulics and irrigation in new tank project and restoration of an existing tank project

✓ Apply the principles of surveying and environmental engineering in water supply and sanitary project

✓ Apply principles of surveying and highway engineering in highway project
COURSE OUTCOMES

✓ Show a typical town-layout indicating the components such as roads, residential areas, commercial areas, recreational areas as per the regulations of the town planning department.

✓ Demonstrate total station and Application of CAD software in Civil engineering projects.

✓ Function effectively as an individual and as a team member.
PROJECTS FOR THE EXTENSIVE SURVEY CAMP

1. NEW TANK PROJECT
2. WATER SUPPLY AND SANITARY PROJECT
3. HIGHWAY PROJECT
4. RESTORATION OF AN EXISTING TANK
5. TOWN / HOUSING / LAYOUT PLANNING
SURVEYING INSTRUMENTS

Dumpy Level

Levelling Staff
SURVEYING INSTRUMENTS

- Ranging Rods
- Arrows
- Tape
- Flag Posts
- Cross Staff
SURVEYING INSTRUMENTS

Prismatic Compass
1. Fly Levelling

Carrying Levels from PBM to establish TBM.

Only BS and FS are taken.
SURVEY WORK

2. Longitudinal Sectioning (LS) and Cross Sectioning (CS)

- LS at suitable intervals along the proposed alignment
- CS at suitable intervals across the proposed alignment on it's either side.
LS and CS
3. Block Levelling (BL)

Formation of rectangular block of required dimension, dividing them into grids and taking levels at the corners of grids.
4. Bearing of a line

It is taken when there is a change in alignment.
SURVEY WORK

5. Contours

Line joining points of Same RL
1. NEW TANK PROJECT

Survey work includes

a) LS and CS of the proposed bund line
b) Capacity contours (CC)
c) BL for the waste weir
d) BL for the tank sluice
e) Canal Alignment (CA)
Catchment Area

Ridge line

Watershed boundary

Catchment

Runoff

Groundwater flow

Lake Malawi

Catchment Area
Typical View of Valley across which New Tank will be Constructed
Typical View of Earthen Dam
Typical View of Earthen Dam
Typical View of Earthen Dam
Typical View of Earthen Dam
Typical C/S of Earthen Dam
Typical C/S of Earthen Dam
Typical View of Tank Sluice
Typical View of Waste Weir or Surplus Weir
Capacity Contour showing Capacity of a Reservoir
Canal Alignment
Typical Plan of Dam Showing Left Bank Canal and Right Bank Canal
Fig. 9.9. Typical cross-section of canal showing component parts
2. RESTORATION OF AN EXISTING TANK

Survey Work includes

a) LS and CS of the existing bund line

b) Capacity contours (CC)
Restoration of an Existing tank is done by

1. Removing Silt

2. Increasing the height of dam.
3. HIGHWAY ALIGNMENT

Survey work includes

a) LS and CS along the proposed alignment

b) BL at Valley points
Typical Cross Section of Road in Embankment
Typical Cross Section of Road in Cutting
4. WATER SUPPLY AND SANITARY PROJECT

It includes

a) Population Survey

b) BL of water treatment plant near the tank

c) LS from the water treatment plant to village

d) Survey of Village showing mains and sub-mains for distribution of water.

e) BL of Sewage Treatment Plant
Intake Tower
Layout Showing Water Distribution

Note: Pumps and valves are located at a variety of locations throughout the distribution system.
Typical View of Mains and Sub-Mains for Water Supply
Layout Showing Sewage Treatment
5. TOWN PLANNING

➢ “A city should be built to give its inhabitants security and happiness” – Aristotle

➢ “A place where men had a common life for a noble end” – Plato
An art of shaping and guiding the physical growth of the town by creating buildings and environments to meet the various needs such as social, cultural, economic and recreational etc. and to provide healthy conditions for both rich and poor to live, to work, and to play or relax, thus bringing physical, social and economic planning of an urban environment.
Town-planning

- Well-balanced social and economic development
- Improvement of life quality
- Responsible administration of resources and environment protection
- Rational use of land
IF PLANNING WAS NOT THERE?

- **Uneven & Chaotic development** – Contrasting urban scenario.

- **Mixed Land use** – Industries springing up in residential zones.

- **Congested Transportation Network** – Overflowing traffic than expected.
ROLE OF PLANNERS

✓ **Consider** – “Human communities are always in the process of changing”

✓ **Recognize** – “The complexity of communities”

✓ **Concern** – “About the future”
AIMS & OBJECTIVES OF TOWN PLANNING

• To promote healthy conditions and environments for all the people

• To make right use of the land for the right purpose by zoning

• To ensure orderly development

• To avoid encroachment of one zone over the other
• Social, economic, cultural and recreational amenities - open spaces, parks, gardens & playgrounds, town halls stadiums, community centers, cinema houses and theatres

• To preserve the individuality of the town

• To preserve the aesthetics in the design of all elements of town or city plan.
PLANNING PROCESS

IDENTIFICATION & DEFINITION OF PROBLEM

DATA COLLECTION
Studies & Surveys
Identification of trend and direction of growth, Traffic survey, Study on demography, Climate, Resources and other potentials

DATA ANALYSIS
In the form of study maps, graphs, charts, etc and long term & short term objectives are identified

DEFINING THE OBJECTIVES
To regulate growth, to nullify the bad effects of past growth, to improve the transportation facilities, to optimize the resources utilization, to balance population and economic activities, to promote social integration among different categories, to promote a convenient comfortable, beautiful and healthy environment.

FORECASTING
Demographic projection & forecasting based on migration, employment, industrialisation and urbanisation

FIXING THE PRIORITIES
Identification of priorities based on the need, importance and urgency

IMPLEMENTATION
Implementation by the suitable authorities, within time & must satisfy all the required obligations

DESIGN

REVIEW, EVALUATION & FEEDBACK
Monitoring by periodical inspections, feedbacks & review reports.
Thank You