

# CHAPTER 8

## PLANT LAYOUT

### 8.1. Plant location:

A general consensus as to the plant location should be obtained before a design project reaches the detailed estimate stage, and a firm location should be established upon completion of the detailed-estimate design. The choice of the final site should first be based on a complete survey of the advantage and disadvantage of various geographical areas and ultimately, on the advantage and disadvantage of available real estate. The following factors should be considered in selecting a plant site:

1. Raw materials availability
2. Markets
3. Energy availability
4. Climate
5. Transportation facilities
6. Water supply
7. Waste disposal
8. Labor supply
9. Taxation and legal restrictions
10. Site characteristics
11. Flood and fire protection
12. Community factors

### 8.2. Plant layout:

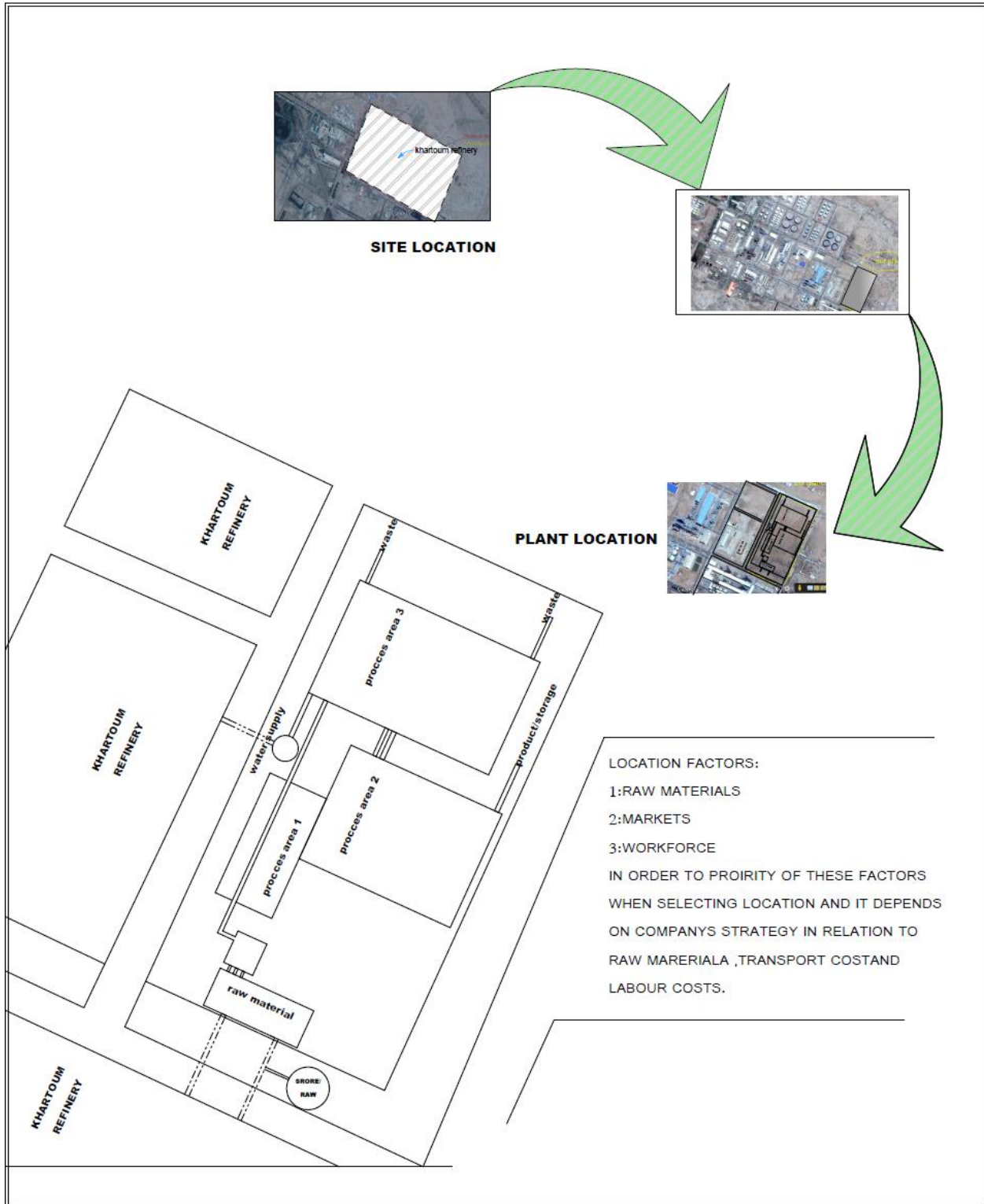
After the process flow diagrams are completed and before detailed piping, structural, and electrical design can begin, the layout of process units in a plant and the equipment within these process units must be planned. This layout can play an important part in determining construction and manufacturing costs, and thus must be planned carefully with attention being given to future problems that may arise.

Since each plant differs in many ways and no two plant sites are exactly alike, there is no one ideal plant layout. However, proper layout in each case will include arrangement of processing areas, storage areas, and handling areas in efficient coordination and with regard to such factors as:

1. New site development or addition to previously developed site.
2. Type and quantity of product to be produced.
3. Type of process and product control.
4. Operational convenience and accessibility.
5. Economic distribution of utilities and services.
6. Type of buildings and building-code requirements.
7. Health and safety considerations.
8. Waste-disposal requirement.
9. Auxiliary equipment.
10. Space available and space required.
11. Roads and railroads.
12. Possible future expansion

### **8.3. Proposed location for MTBE:**

Khartoum refinery, as showing in figure below.



**Figure 8.1.Proposed location for MTBE plant in Khartoum refinery.**