1.1 NEED FOR PREFABRICATION

1. Prefabricated structures are used for sites which are not suitable for normal construction method such as hilly region and also when normal construction materials are not easilyavailable.

2. PFS facilities can also be created at near a site as is done to make concrete blocks usedin plane of conventionalbrick.

3. Structures which are used repeatedly and can be standardized such as mass housing storage sheds, godowns, shelter, bus stand security cabins, site offices, Fool over bridges road bridges. Tubular structures, concrete building blocks etc., are prefabricatedstructures

prefabricated systems

The first three types are mainly classified according to their degree of precast elements used in the construction. For example brick is small unit of pre casted material and used in buildings. This is called as small prefabrication and the degree of precast element is very low.

Medium prefabrication:

Suppose the roofing systems and horizontal members are provided with pre casted elements. These constructions are known as medium prefabricated construction. Here the degree of precast elements is moderate.

Large prefabrication:

In large prefabrication most of the members like wall panels, roofing / flooring systems, beams and columns are prefabricated. Here the degree of precast elements is high. One of the mainfactors which affect the factory prefabrication is transport. The width of the road, mode of transport vehicles are the factors which determines the prefabrication which is to be done on-site or in factory. Suppose the factory is situated far away from the construction site and the vehicle needs to cross congested traffic areas with heavy weighing elements the cast in- site prefabrication is preferred. Even though the same condition as the cast in site prefabrication is preferred only when umbers of houses are more for small

elements the conveyance is easier with normal type of lorry and tractors. We can adopt factory or off-site prefabrication for this type of construction.

Open system of prefabrication:

In the total prefabrication systems, the space frames are casted as a single unit and erected at the site. The wall fitting and other fixing are done on site. This type of construction is known as open system of prefabrication.

Closed system of prefabrication:

In this system the whole things are casted with fixing and erected on their position.

Partial prefabrication:

In this method of construction, the building elements required are precast and then erected. Since the casting of horizontal elements (roof / floor) often take more time due to erection of frame work, the completion of the building is delayed and hence this method is restored. In most of the building sites, this method is popular, so in industrial buildings where the elements have longer spans. Use of double tees, channel units, cored stabs, slabs, hyperboloid shells, etc, are some of the horizontal elements used.

This method is efficient when the elements are readily available and the building has reached the roof level. The delay caused due to erection of framework, delay due to removal of framework is eliminated completely in this method of construction suitable for any type of building provided lifting and erection equipment's are available.

Total prefabrication:

Very high speeds can be achieved by using this method of construction. The method can be employed for frame type of construction or for panel type; the total prefabrication is done on-site or off-site. The choice of the two methods depend on the situations when the factory produced elements are transported and erected on site, we call it off-site prefabrication. If this method is to be adopted we should have a very good transportation facility for the products to be transported to the site of construction. If the elements are cast

near the building site and erected, the transportation of elements can be eliminated, but we have to consider the space availability for establishing such facilities though it is temporary.