



## **DEPARTMENT OF CIVIL ENGINEERING**

NHCE/CV/2019-20/Industrial Visit/Rep/

Date: 10/02/2020

### **A BRIEF REPORT ON CONSTRUCTION SITE VISIT**

Department of Civil Engineering had organized an Industrial Visit to a Construction Site for the students of third year on 07<sup>th</sup> and 8<sup>th</sup> February 2020. A total number of 110 students visited the site, Provident Park Square at Kanakapura main road Bengaluru in two days in two batches assisted by two faculty members, Mr. Yogesh K S and Dr. Natchimuthu Subramini.

Provident Park square is a society of apartments consisting of 19 towers each of G+14 floors. Construction practice carried consists of conventional method including shear wall construction up to ground floor, thereafter, the remaining floors followed are precast construction methodologies. The visit enriched the practical knowledge in Design and Detailing of RCC structures. Students were able to understand advanced construction techniques like precast construction practice.

Precast construction is a process to build concrete structures using prefabricated components which are manufactured on/off-site and assembled into their final position at construction site, instead of the conventional method to form the structure using formworks and in situ placed wet concrete. This is a more mechanised construction method which is faster, neater and uses much less site labour. In particular this type of construction requires re-structuring of entire conventional construction process to enable interaction between design phase and production planning in order to improve and speed up construction.

Precast construction delivers significant cost savings by reducing formwork by up to 70% and reliance on wet trades by up to 90%. The need for access scaffolding can be reduced by anything up to 90% and site supervision by the main contractor is also greatly reduced. Other advantages include reduced construction programmes, greater project control, greater accuracy and quality of finish and larger clear spans.

Advantages of precast construction technologies are as follows;

- Production in controlled environment results in high quality precast units.
- Repetition of standard precast elements will lead to cost reduction.
- Plastering on precast walls and floor slabs is not needed because of smooth finishing.
- Production can continue in any weather condition.
- Better health and safety standards compared to conventional construction methods.
- Project can be better planned, managed and controlled. High speed can be achieved.
- Fast construction, less manpower required on site, and no shuttering required on site.
- Door and window frames can be installed in the wall panels before erection.
- Electricity conduits, pipes and boxes can be embedded in the precast panels.
- Large span floor system leads to more flexibility as internal columns are avoided.. etc

The components can be casted and stored in a yard and later transported as per the construction sequence. The quality control department in precast plants can ensure that the concrete products will exhibit high standard of quality and uniformity. Precast concrete products are manufactured due to which project time is not lost waiting for ideal weather conditions. Precast plants can provide organised construction industry where engineers, technicians and labours can be stationed at one place and production can be delivered at large distances from the location of plant. To increase the infrastructure in a developing country like India in the next decade, there will be a requirement of 4-5 such plants in each state which can help build the required infrastructure. Erection crew needs to be aware of correct erection sequence; welding and bolting process to keep the structure stable when it is in erection phase.

The visit provided an opportunity to students to get an exposure to site conditions and practical experience which facilitated them to enhance their skills and better understanding of the subjects. Overall, the visit was very fruitful.



**Students of 6<sup>th</sup> B section on 07/02/2020**



**Students of 6<sup>th</sup> A section on 08/02/2020**



**Site Engineer explaining the construction methodology of precast construction technique.**

**Signature of Faculty**

**Sign of HOD**