

## **Abstract**

Precast Segmental construction is thought of as being economically viable only for large projects because of the high investments required in launching girders and precasting plants. Also bridges in urban environments are often the cause of traffic dislocation, construction delays and noise & visual pollution. They are the bane of the residents of the neighbouring area during their implementation and not always a welcome addition to the surroundings after their completion. This paper discusses how these problems were obviated in the four recent flyovers in Delhi. These landmark bridges herald a new construction technology in India, and with their successful completion, Delhi and its citizens have been presented with architecturally appropriate structures at low cost, constructed in a short span of time with minimum disturbance to existing traffic. The neighbouring environs have truly benefited from these constructions and have taken pride in the new acquisitions.

A design competition for the flyovers, with a definite and clear set of terms of reference was floated by the Delhi PWD for which 20 entries were received. After a three-stage evaluation, the assignment was awarded to the winning entry of Tandon Consultants Pvt Ltd. The terms of reference framed for the design competition is summarised below:

- Speedy construction
- Minimum site concreting
- Use of precast construction including that for the main span
- Minimum disturbance to traffic during construction
- Minimum re-location of underground services
- Cost effectiveness of construction period
- Innovative design concepts and use of latest but accessible construction technologies
- High priority to aesthetic appeal
- Durability

Of the many flyovers planned for the city, four prestigious sites prominently in public view located on Ring Road and Outer Ring Road of Delhi were included in the competition, viz:

1. Africa Avenue-Ring Road Crossing
2. Rao TulaRam Marg-Ring Road Crossing
3. Hansraj Sethi Marg-Outer Ring Road crossing (near Nehru Place)
4. T-Junction near Savitri Cinema on Outer Ring Road.

Each of the four flyovers have a length of about 500m. The ramp slope is 1 in 30 except for Savitri flyover wherein it is 1 in 25, which had to be adopted because a flatter gradient resulting in longer flyover length would have interfered with a number of important junctions. All the flyovers have 9m wide dual carriageways except for Savitri wherein it is a single carriageway because of traffic considerations. The open length of each of the flyovers is 158m with a five span continuous structure.