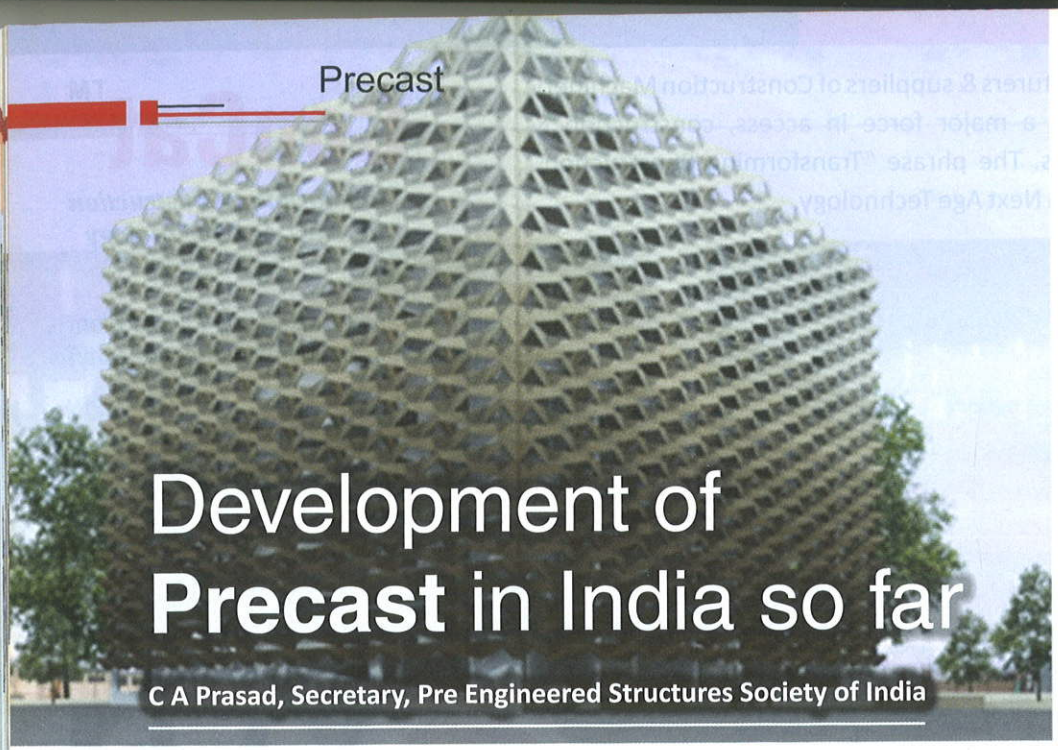


Development of **Precast** in India so far

C A Prasad, Secretary, Pre Engineered Structures Society of India

A number of precast manufacturing units have been set up in India. The demand for precast systems is rising day by day as the developers and Govt. institutions have felt the necessity of completion of projects faster and pass on benefits to the customers early as well.

Spirol from UK has set up a facility in south India to supply steel plates required for beds, duly tying up with a local firm.

Bianchi from Italy has set up a facility near Mumbai and is supplying tilting moulds for making walls, as well as for forms for columns, and beams. It has already supplied to a number of precast manufacturers in India.

Precast construction is establishing itself as the construction technology of the future.

Table 1. gives information on the number of precast Industries set up in India and the suppliers from abroad.

Table 1:

S.No	Client	Equipment supplied from	Unit
I	**Hyderabad**		
1	Janapriya Developers,	Elematic, FINLAND	Battery Mould
2	PRECA	Prensoland, Spain Bianchi	4 beds HCS, Single / Double Tee units Tilting panels
3	Skill promoter	Nordimpianti, Italy	HCS Units
II	**COIMBATORE**		
	TEEMAGE PRECAST	ECHO, from NETHERLANDS, & WECKENMANN, Germany	5 bed HCS plant Battery Mould
III	**CALICUT**	Weckenmann, Germany	Battery Mould
IV	**Chennai**		
	VME PRECAST	Elematic, Finland	HCS & Tilting Table wall unit
V	**PUNE**		
1	Precast India infrastructure (Bhate & Raje Construction, and Panchshil group)	Echo, Netherlands Vollert, Germany	6 bed HCS Plant Battery Mould Single/ Double Tee units,
2	Best I precast	Bianchi & Nordimpianti, Italy	HCS & Battery Mould
3	I Build (IBS) Pune		8 bed HCS plant
VI	**Mumbai**		
	L & T (Khopoli near Mumbai)	Echo Netherlands	6 bed HCS Plant
	Spancrete	Spancrete USA	HCS Plants and wall panels
	Sintex		HCS Plant
VII	**Bangalore**		
	Gauri Infrastructure	Moore living, New Zealand	Battery Mould
	Shapoorji and Pallonji, constructions	Ebawe	Carrousel system (Fully automatic)
	KEF INFRA	Elematic, Finland	HCS & Tilting Table wall unit
VIII	**Calicut**	Weckenmann	Battery Mould
IX	**Noida**		
	Supertech	Echo Netherlands	8 bed HCS plant, Carousel Wall panel production
	Amrapali Precast	Installed capacity of 8 Lakh sqm/year for Precast HCS Installed capacity of 1,00,000 cum per year for walls, columns, stair cases and beams	
X	**Gurgaon**		
	Teemage Precast	Echo, Netherlands	4 Bed HCS plant Tilting tables
XI	**Amaravati**		
	Hyderabad Batteries Ltd.	Ultraspan, USA Indegenous Innovation	2 Bed HCS plant Precast spun piles

Planning for Precast

For any project, precast needs to be planned right from the beginning by involving all the consultants involved in designing and planning viz., architects, structural engineers, and MEP. In precast, after the design is finalized, elements will go for production. So, there is a distinct advantage of design finalization for the builder and developer.

Challenges in implementation

- Understanding the Technology of Precast
- Affordability
- Setting up cost of Precast units and Payback period
- Viability of Precast Industry
- Entrepreneurs to set up
- Demand for Precast and Customers for absorbing/using the Precast units
- Precast awareness amongst builders and developers
- Resistance to change from conventional construction.

Tax on precast elements is also one of the main retarding factors in precast development, compared to conventional construction.

By opting for precast, builders and developers should consider that the time for completion of projects will be reduced by 40 to 50%. This will, in turn, reduce overheads on men and machinery. The building could be leased out early and revenue accruals on early leasing will give a lot of savings as compared to conventional construction.

Awareness of Precast in Design community in India

There is a big need for creating awarenss of precast products amongst architects and structural engineers in India. They need to imbibe this technology, and start implementing it in their projects and thereby, help clients reap the benefits.

Precast projects in India by different precast companies

Brigade Orchards Basement + Stilt + G +7 Upper floors
Residential Apartment; 256 flats of 2BHK & 3 BHK.
The sub-structure is cast-in situ and superstructure fully built using precast elements like wall panels, slabs, beams, staircase flights, landing and parapet walls.

Precast Multi-Level Car Park, Terminal 1B, Domestic Airport, Mumbai
Multi-level Car Park (MLCP) was a unique project that has been successfully completed by L&T despite the challenges of being situated at the busy junction of Domestic Airport and Western Express highway and surrounded by many live line underground services.
Built up area – 30,497sqm 8 Level car parking comprising, 2 basements, ground floor, 4 floors above ground level

PSI (Pre Engineered Structures Society of India, www.pessi.in) is conducting workshops in the name of PEPSCON every year in Hyderabad and other cities to create awareness of precast buildings and disseminate knowledge amongst Design Engineers, Entrepreneurs, and Developers. Engineering associations like ACCE(I), ICI, and other agencies in Mumbai and Delhi are also conducting workshops on precast.

This time, PEPSCON is being held on 21 and 22 Feb 2017, at Hotel Dwarka, New Delhi, with the main theme as Housing for All (HFA) by 2022, and precast requirement for HFA, besides other technologies suitable for HFA.

Details of projects constructed so far using precast, composite construction and other technologies will be presented at the conference giving information related to their design aspects, execution, costing, etc.

Future of Precast

From the conventional construction of framed structure type, the Industry has moved to monolithic construction. Precast is fast catching up, and more and more developers are looking to precast as a way forward. Precast has established itself as a strong technology for quicker deliverables along with high quality and strength.

DDA, Bangalore Development Authority, Bhubaneshwar Development Authority, Chattisgarh State Govt., and various other state govt organisations have been calling for tenders for construction of houses based on precast, so as to construct the projects faster.

Brigade, Shobha and Supertech have constructed multi-story residential towers in Bangalore and Noida. Shapoorji Pallonji & Contracting are building multi-story residential towers for Peenya project to Tata housing which is totally precast.

Even the MES / Defence establishment has opted for construction of precast. VME has recently delivered a structure for DRDO in Bangalore covering an area of 1,20,000 sq.ft in a very short time.

There is a need for precast companies in Mumbai and Delhi, and in other cities to meet this demand for speedier construction.

Precast is the solution to meet the demands of HFA mission too. Government should promote the precast industry in a big way to achieve the HFA mission and remove the excise duty on precast products for construction of houses for EWS and LIG, such that the cost of unit comes down.

Precast India Infrastructures Pvt. Ltd, Pune

has been doing the precast structures and some of their projects are as follows:

Bharat Forge Research and Development Centre (BFRD):

Total Project Area: 1.1 lakh sq.ft ; Total No. of Floors: G+L1+L2+L3+Terrace Delivered in 7.5 months

Infosys Multi Level Car Parking

Total Project Area = 4.5 Lakh sq.ft;
Total No of Floors =Basement+10 Floors

Schmersal India
Built up area – 8880 sq m

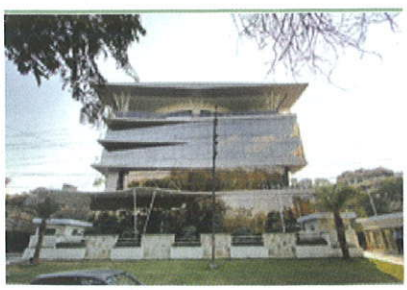
WTC-WORLD TRADE CENTRE
Built up area : 16.5 Lakh Sq.Ft
Total No of Floors: Basement+Podium+10 Floor

Bangalore Development Authority (BDA) B+S+18 floor housing project Doddabanahalli, Bangalore
B+S+18 Floor Housing Project
M/s. B.G.Shirke Construction Technology Pvt Limited, Pune built the structure using Prefab technology

International School Building: Delivered in 40 days

Precast Structures built by PRECA, Hyderabad

Office Building: Stilts- 2no's + G +4; 1,65,000 sft – Delivered in 4.5 months



Hospital Building: G+4 – 1,20,000 sft: Built in 4 months

Precast elements used are Precast Prestressed Hollow core slabs, Prestressed beams, Precast Retaining walls, Precast Stairs, Precast Lift walls, Precast Architectural elements, Precast ducts



Industrial Building- Cadbury's project- 2,20,000 sft – Delivered in 5 months


Office Building built in 3 months

IT SEZ Office Building: Stilt+ G+4 – 1,65,000 sft – built in 4 months

Precast elements used are Precast Prestressed Hollow core slabs, Prestressed beams, Precast Retaining walls, Precast Stairs, Precast Lift walls

Industrial Wagon loading building delivered in 4 months

VME Group, Chennai

D.R.D.O, CABS Hanger & Offices, Bangalore

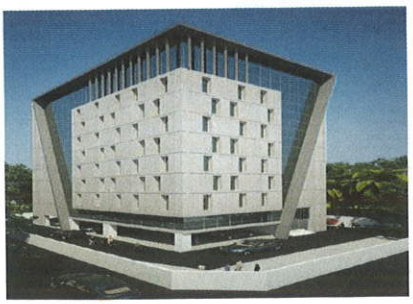

Novotel IBIS Combo Hotel, Chennai

Khivraj Motors – Car Showroom, Chennai

Chennai Silks Showroom, Tirunelveli

Office Building – Guindy, Chennai

Few of the projects carried out by TEEMAGE, Coimbatore



Lakeside, Chennai

M/s TSM Canteen Block
Built-up Area : 13,500 Sq.Ft
Scope : Beams, Columns, Hollow core slabs, Wall panels, Solid Slabs and Staircase
Time: 38 days

M/s. Rotary School: Tirupur, Tamilnadu
Duration: 28 Days, Built-up Area: 19,000 sq.ft
Scope : Beams, Columns, Hollow core slabs, Wall panels, Solid Slabs and Staircase

M/s. SCM Silks (P) Ltd : Tirupur, Tamiln
Duration : 30 Days
Built-up Area : 52,300 Sq.Ft
Scope : Beams, columns, Hollow core sla
Wall panels and staircase