



SUMIT MAITY ARCHITECTS

POINTS OF DISCUSSION / PRESENTATION

TECHNICAL PART :

- HOW IMPORTANT IT IS FOR AN ARCHITECT TO KNOW ABOUT
'FAST CONSTRUCTION TECHNOLOGY'

- ARCHITECTURAL DESIGN AND 'TECHNOLOGY'
NEED TO COMPLEMENT EACH OTHER

- IMPORTANCE OF IDENTIFICATION OF
TECHNOLOGY AT DESIGN STAGE

- OPTIMISATION OF SYSTEM, MODULATION

- KNOWLEDGE OF WORKING DETAILS – KEY TO
ENSURE BUILDING EXPRESSION

ADMINISTRATIVE PART :

WHAT TO BE SET FIRST – SYSTEM ? Or ARCH.
CONSULTANT ? Or STR./TECH. CONSULTANT ? Or
AGENCY ?.....

PROs AND CONS IN DELIVERY / OUTCOME AS PER VARYING ORDER as below -

- NEUTRAL DESIGN / CONSULTANT , SPECIALISED (say,prefab) AGENCY

- DESIGN WITH FAST mode OF CONSTRUCTION / Experienced CONSULTANT,
SPECIALISED (say,prefab) AGENCY

- SPECIALISED (say,prefab) AGENCY / CONSULTANT

PRE FAB HOUSING FOR D D A

In 2008-09, Delhi Development Authority initiated large housing projects to be constructed with pre cast technology.

as per recent practice of DDA, Housing jobs are tendered on Design-build model.

Till date, about 60,000 houses have been built with pre fab technology, and about 13500 houses under construction are nearing completion.

All these projects are executed by B.G.SHIRKE CONSTRUCTION TECHNOLOGY PVT. LTD., the pioneers of prefab technology in India.

E W S HOUSING FOR D D A

**DISTRIBUTED OVER 9 nos HOUSING
POCKETS OF TOTAL SITE AREA OF
APPROX 46 HA**

**TOTAL OVER 20000 DWELLING UNITS
IN A PROTOTYPE G+4 CONFIG. AND A
TOTAL PLINTH AREA OF ~6,50,000 SQM**

**TECHNOLOGY USED : PRECAST RCC
COLUMN, BEAMS, SLABS, STAIRs WITH
AAC BLOCK MASONRY INFILL WALLS**



EW S HOUSING FOR D D A

VERY RIGID TENDER COND. –
carpet area, Bldg config G+4



EWS HOUSING FOR D D A



20000+ DUs
DESIGNED
AGAINST Tender
Stipulated 18600,
still ~20% below
max. perm FAR



**SECTOR G7G8
POCKET -III**



LIG & EWS HOUSING FOR D D A

**DISTRIBUTED OVER (7+3) 10 nos
HOUSING POCKETS OF TOTAL SITE
AREA OF APPROX 67 HA**

**TOTAL OVER 34,000 DWELLING UNITS – EWS cat.
IN A G+4 CONFIG. AND LIG cat. IN G+12 CONFIG. A
TOTAL PLINTH AREA OF ~2,10,000 SQM for ~6200
EWS Dus AND OVER 1.425 M sqm FOR ~27850 LIG
cat. DUs**

**TECHNOLOGY USED : for EWS -
PRECAST RCC COLUMN, BEAMS,
SLABS, STAIRs WITH AAC BLOCK
MASONRY INFILL WALLS**

**TECHNOLOGY USED : for LIG –
Combination OF PRECAST RCC COLUMNS
& WALL PANELS, BEAMS, SLABS, STAIRs
,PARAPETS WITH PARTIALLY BLOCK
MASONRY INFILL WALLS**



LIG & E W S HOUSING FOR D D A



SECTOR G7G8



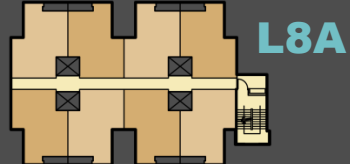
SECTOR G2G6



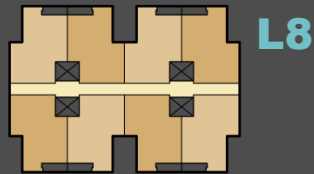
LIG & E W S HOUSING FOR D D A MODULATION OF BLOCKS



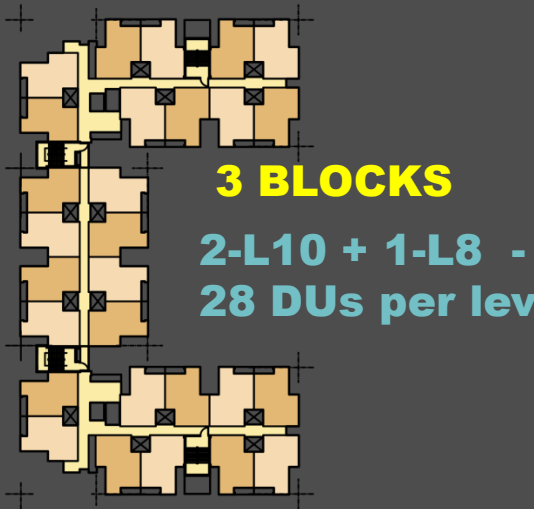
L10



L8A

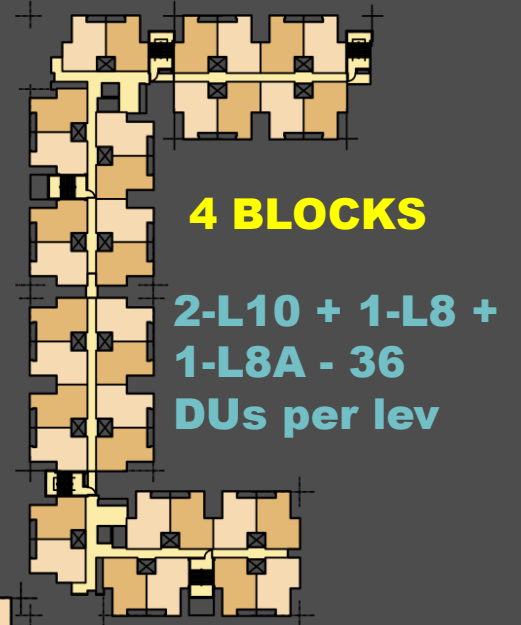


L8



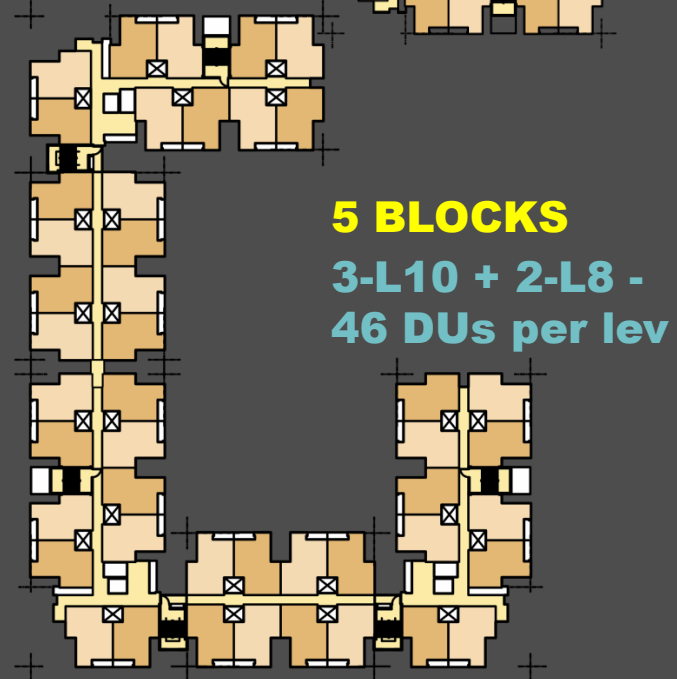
3 BLOCKS

2-L10 + 1-L8 -
28 DUs per lev



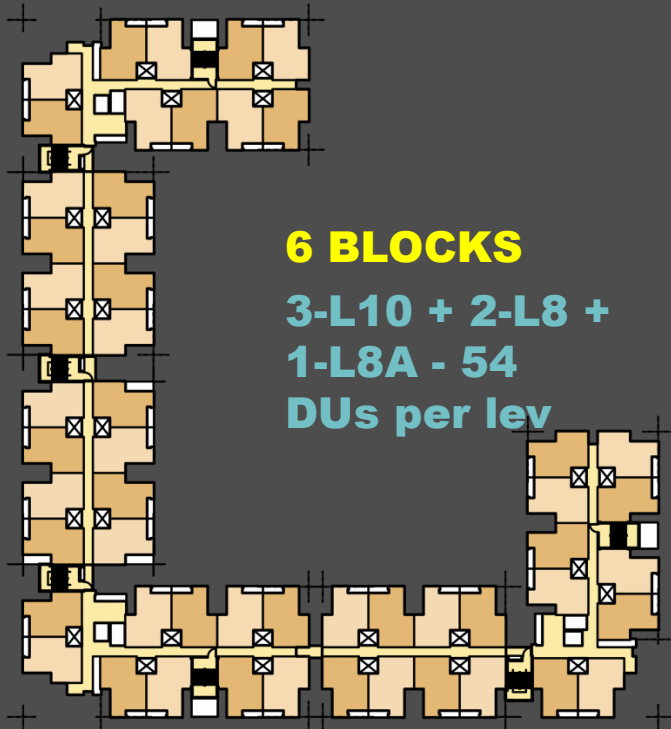
4 BLOCKS

2-L10 + 1-L8 +
1-L8A - 36
DUs per lev



5 BLOCKS

3-L10 + 2-L8 -
46 DUs per lev



6 BLOCKS

3-L10 + 2-L8 +
1-L8A - 54
DUs per lev

RIGID carpet area – however FAR of 200+15% TO BE ACHIEVED IN SITES OF VARYING SHAPE & SIZE

LIG & EWS HOUSING FOR D D A



**POCKET -V
SECTOR G7G8**

**LIG BLOCKS ARE IN A CLUSTERED FORM – G+12
EWS BLOCKS IN G+4
PERIPHERIAL VEH CIRCULATION WITH CUL DE SAC –
PEDESTRIANISED CENTRAL AREA**

LIG & EWS HOUSING FOR D D A



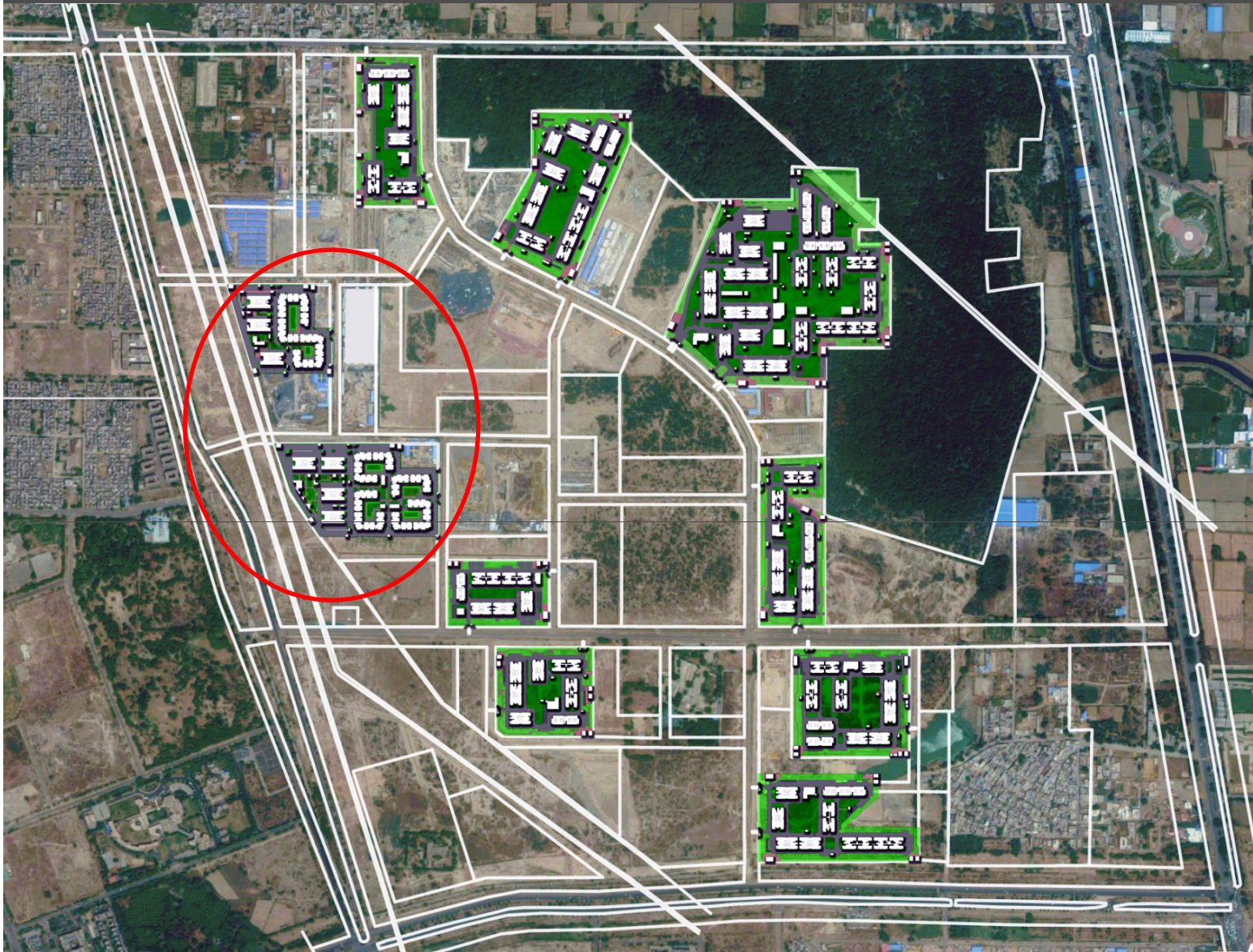
INTRODUCING MINOR VARIATION IN
BALC. MODULE COMPONENT
ACHIEVED VARIATION IN OPEN SPACE
STRUCTURING / CLUSTER
FORMATION, BLDG HETGHTS AND
HEIARCHY

LIG & EWS HOUSING FOR D D A



CAT-II, 3 BHK, 2BHK HOUSING FOR D D A

**SECTOR A1A4
NARELA**



**POCKET 1A & 1B
WITH CAT-II (2BHK) & EWS – AS PER
REGEN. MPD21 norms**

**POCKET 3, 4, 6,
7, 9, 11, 13, 14
WITH 3BHK, 2BHK & EWS**

CAT-II & EWS HOUSING FOR D D A

BUILT OVER 2 nos HOUSING
POCKETS OF TOTAL SITE AREA
OF APPROX 8.75 HA

TOTAL 4900 DWELLING UNITS – EWS cat. IN
A G+15 CONFIG. AND MIG cat. IN 2B+S+13
CONFIG. A TOTAL PLINTH AREA OF ~2,20,000
SQM for ~4200 EWS DUs AND OVER 82,000
sqm FOR ~665 MIG cat-II DUs and BASEMENT
of ~52200 sqm

TECHNOLOGY USED : for EWS –
Combination OF PRECAST RCC
COLUMNS & WALL PANELS, BEAMS,
SLABS, STAIRs ,PARAPETS WITH
PARTIALLY BLOCK MASONRY INFILL
WALLS

TECHNOLOGY USED : for CAT-II(MIG) –
Combination OF PRECAST RCC
COLUMNS & WALL PANELS, BEAMS,
SLABS, STAIRs , PARAPETS WITH
PARTIALLY BLOCK MASONRY INFILL
WALLS



CAT-II & EWS HOUSING FOR D D A



CAT-II REQD TO BE AS ISOLATED BLOCK PAVILLIONS – VARIETY INELEV. COMPONENTS- Balc. /SLIT WINDOWS

DOUBLE BASEM. FOR Cat-II Part , S+13 – AND EWS part is G+15 w/o BASEM.

CAT-II & EWS HOUSING FOR D D A



3 BHK, 2 BHK & EWS HOUSING FOR D D A ON GOING HOUSING PROJECTS

BUILT OVER 8 nos HOUSING
POCKETS at NARELA, AND 1 poc
AT DWARKA OF TOTAL SITE AREA
OF APPROX 51.0 HA

TOTAL 13450 DWELLING UNITS –
3000 nos OF 3 BHK, ~6200 nos OF 2
BHK and OVER 4200 OF EWS UNITS

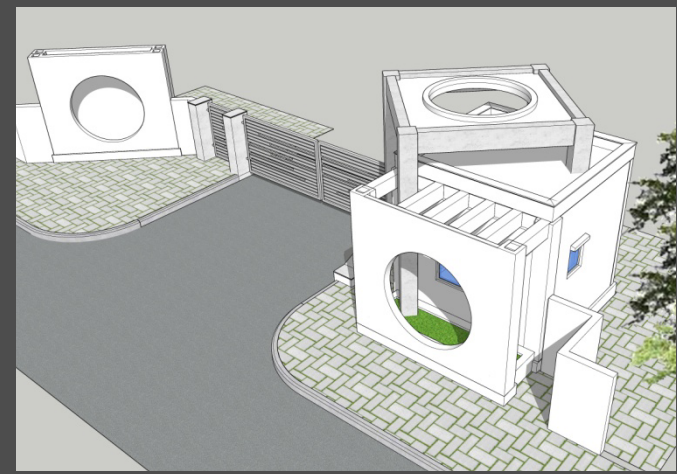
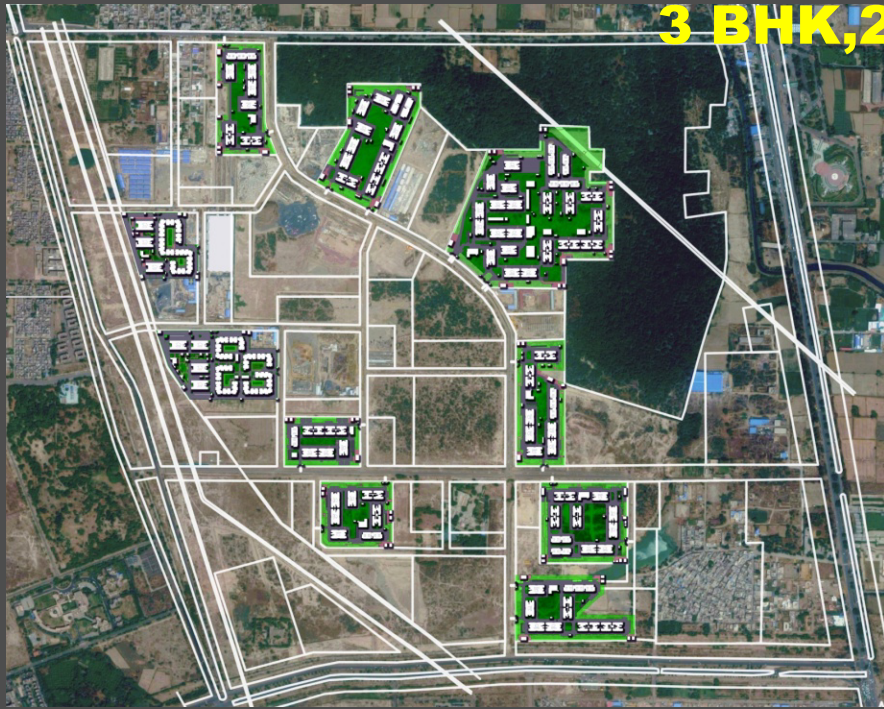
– BLDG CONFIG OF STILT + 12
upto 18 FLOORS, WITH 2 LEV
BASEMENTS ,

TOTAL PLINTH AREA OF ~1.6 M
SQM and BASEMENTS OF ~720,000
SQM

TECHNOLOGY USED : for ALL
TYPES – Combination OF
PRECAST RCC COLUMNS &
WALL PANELS, BEAMS, SLABS,
STAIRs , PARAPETS WITH
PARTIALLY BLOCK MASONRY
INFILL WALLS

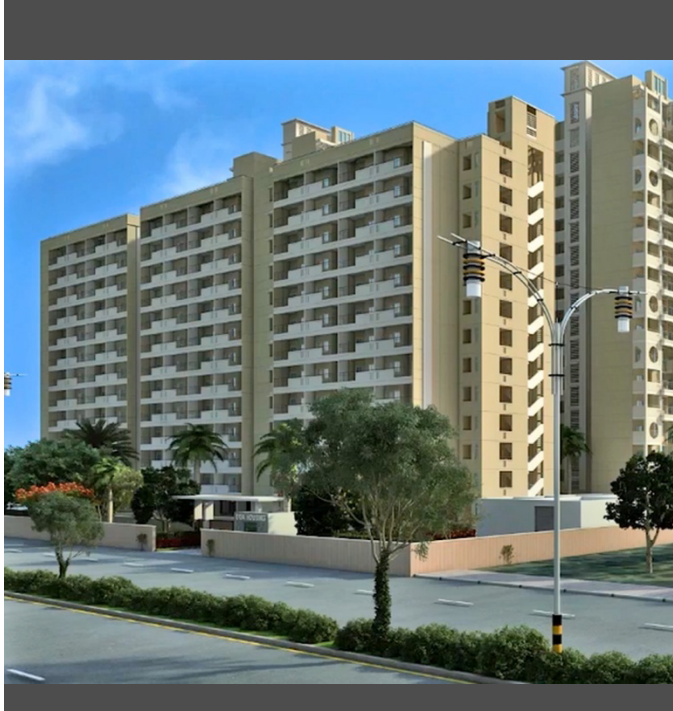


3 BHK, 2 BHK & EWS HOUSING FOR D D A

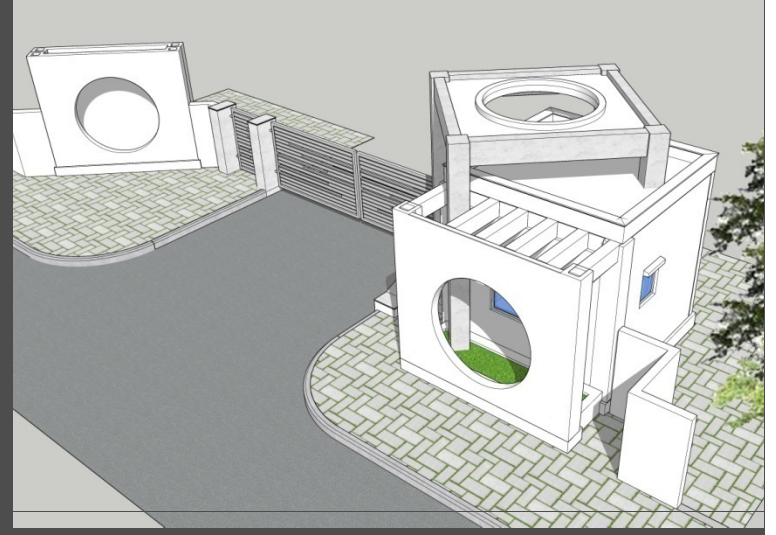


3BHK, 2BHK & EWS

3 BHK, 2 BHK & EWS HOUSING FOR D D A



3 BHK, 2 BHK & EWS HOUSING FOR D D A



PRECASTING FACTORIES / QUALITY ASSU.



PLANTS INSTALLED BY B.G. SHIRKE
CONSTRUCTION TECHNOLOGY PVT LTD.

PRECASTING FACTORIES / QUALITY ASSU.



PLANTS INSTALLED BY B.G. SHIRKE
CONSTRUCTION TECHNOLOGY PVT LTD.

ARCHITECTURE OF PRE FAB HOUSING

Unlike other commercial projects veiled with fancy façade, visual exposure of the 'precast construction' in the low income housing is much higher.

Pre-Fab in India shares barely 1-2% of the real estate market, though as per recent study, it is expected to grow @8.5% pa in the decade of 2016-2026

The low income housing have to be technology-smart with boundary level optimized components without any cosmetic wraps

Among several reasons to 'late blooming' of technology driven constructions in under developed and developing nations – a significant one is prejudice against precast technology.....



ARCHITECTURE OF PRE FAB HOUSING

This situation poses a risk of 'branding' at any sort of faltered outcome

Be it joint failures/leakage ,
Repetitive / monotonous appearance

Issues of non-flexibility.....

Requires Dual service from professionals –

- added responsibility
- Spreading awareness/advocacy

Architects duty would be to look at prefab technology not merely as technological tool for faster construction, quality assurance, early delivery and its related economic gains etc.

Innovative architecture can turn the otherwise 'perceived repetitiveness' of pre-fab into 'rhythmic aesthetic', a rudimentary mechanized product into 'simplistic elegance'.

- Appropriate Stage for deciding about Technology
- Importance of basic Knowledge about pre-casting, component joinery.
- Understanding of potentials and limitations of a 'Technology'
- Understanding the resources and capacity of the agency.
- Architects continued Intervention-structural modulation and component modulation



**A
SUMIT MAITY ARCHITECTS
PRESENTATION**