



Emerging Construction Technologies

Material & Solution

US\$ 3.3 bn+

Annual turnover of JSPL

US\$ 30 bn

Future investments
committed across continents

7.50 MTPA

Steel making capacity

22.56 MTPA

Mining capacity

4,532 MW

Power capacity

9 MTPA

Pellet making capacity

29 Countries

Export presence

1,472 Dealers

Ensuring pan-India presence,
covering 400 districts for retail
business

16000+

People strengths

9 Lakh+

Lives impacted by JSPL's
social endeavours

7.4 mn+

Saplings planted



Construction Solutions



Cement



Cut & Bend



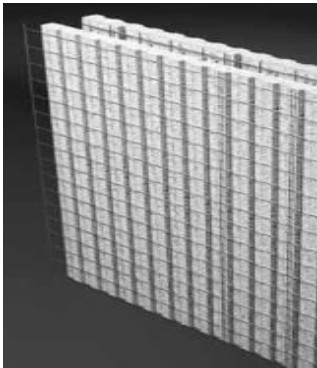
Welded Mesh



Speed Floor



LGS



EPS Panels



Road Stabiliser



Bricks & Pavers



Light weight Aggregate



Precast Panels

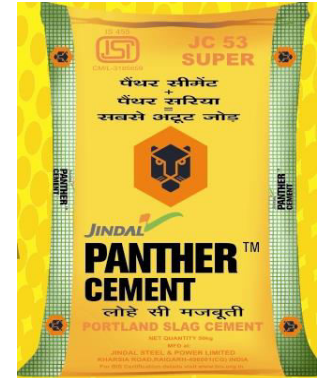
Panther Cement



After proving its mettle in Steel & Power Sectors, JSPL has forayed into Cement with Jindal Panther Cement

Manufactured using high quality Flyash and Slag from its Raigarh plant, Jindal Cement assures '*Lohe Si Mazbooti*'

PORTLAND SLAG CEMENT (PSC)



JSPL produces 100% blended cement i.e. Jindal Panther Portland Slag Cement. The motivation for producing blended cement primarily stems from the intent to conserve limestone reserves along with the environment. JINDAL PANTHER PSC is specially developed composite cement produced by intergrading high quality clinker yield, high quality slag and gypsum in suitable proportions, to give high finesse and better strength. This unique, value added product has hydraulic binding properties which are not found in Ordinary Portland cement.

PORTLAND POZZOLANA CEMENT (PPC)

Jindal Panther Portland Pozzolana Cement imparts unmatched strength and durability to all concrete structures. It is manufactured by grinding Clinker, Gypsum and high quality Fly ash in close circuit mill. Gypsum is outsourced and Fly ash is from Jindal Thermal Power Plant.

WELD Mesh

Use of Weld Mesh eliminates activities like cutting, marking and spacing of bars and binding of wires to the bars. It provides an ideal and convenient solution with practical and functional advantages.

- Immediate and positive savings in costs, labor and time.
- Reduced wastage and scrap.
- Greater accuracy with less manpower.
- Increased output with exact steel areas and spacing.
- Ensures greater structural integrity stress transfer and crack minimization.
- Provides the only practical and easy solution for reinforcing slabs on ground.
- Stronger bonding between rebars due to welding.

PRODUCT SPECIFICATIONS:

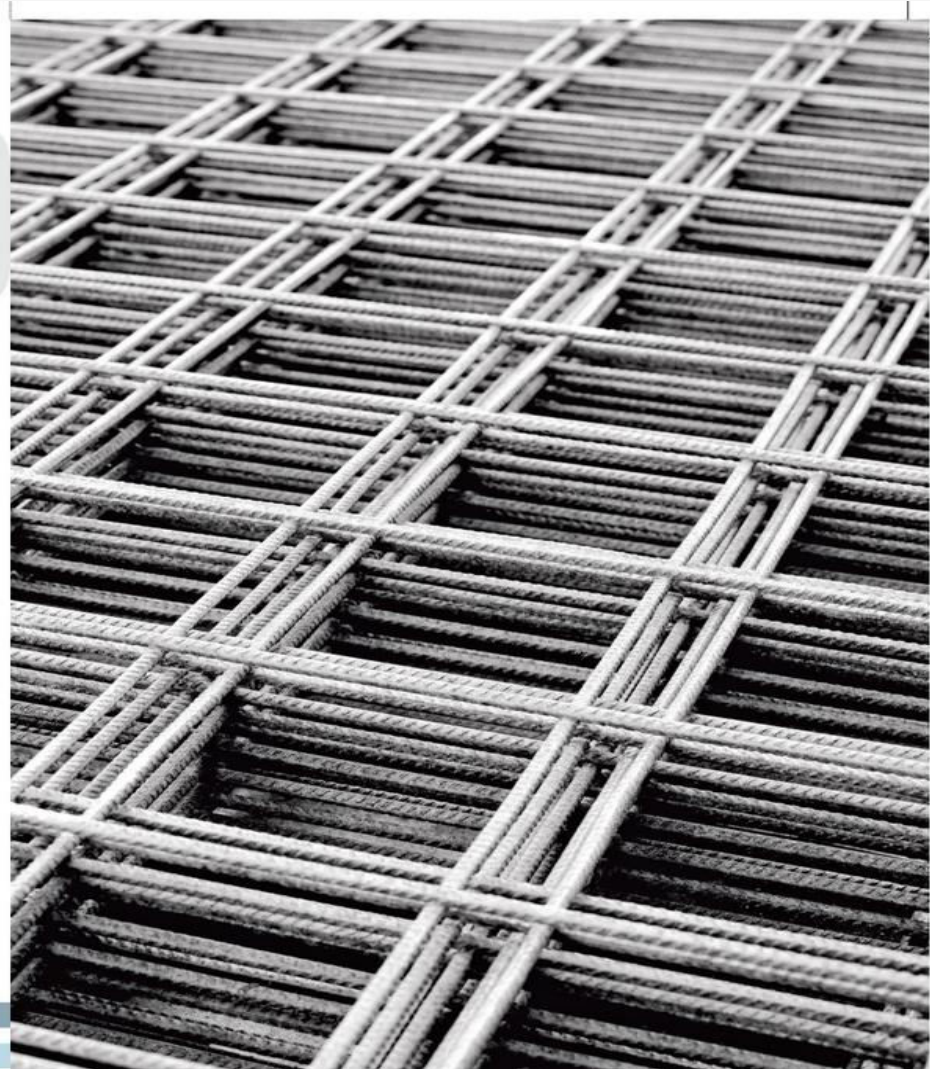
Diameter of bar used: 6mm - 12mm

Aperture: 50mm - 200mm

Width: From 1200mm up to 3200mm

(max 2500mm with 4mm, 3000mm with 5mm)

Length: From 2000mm up to 6000mm



JGRS (Jindal Global Road Stabilizer)

Jindal Global Road Stabiliser (JGRS) is a **highly effective soil stabiliser** from JSPL in powder form developed using cutting edge technology by JSPL.

Manufactured at Raigarh (Chattisgarh) JGRS is a unique **hydration activated soil stabiliser** which re-engineers a wide range of soils from clay, silt to gravelly soils and makes it suitable for construction of embankments and pavements. Incorporation of a JGRS stabilized layer into the road and pavement construction will reduce the need for expensive aggregate or fill material from quarries. JGRS has been tested and certified by reputed institutes such as **CRRI, IIT-Kharagpur and IIT-Roorkee.**

Advantage

- Increase in the bearing capacity of stabilized soils.
- Introduces cohesion, especially later stage of development.
- Reduction in Plasticity index and swell potential of expanding soil.
- Stabilized layer is less susceptible to moisture ingress, hence water –resistant and impermeable.
- Lesser erosion of surface and hence more durability.



JGRS Road -Barbil



Fly Ash Bricks & Pavers

Our state of art brick and pavers plants at Raigarh, Chattisgarh and Angul, Odisha with a combined capacity of approximately 4.5 lakh bricks per day are situated in proximity to our existing steel, power and cement plants.

Jindal Fly Ash bricks are made of fly ash, gypsum, lime and sand with fly ash content being about 30-50% thus making them a boon for the environment.

Advantage

- High compressive strength
- Dimensional Accuracy
- Low Water Absorption
- No Coating Required for Gypsum Plaster
- No soaking time
- Environment Friendly
- Excellent Thermal & Sound Insulation
- Fire Resistance
- No Efflorescence



LWA (Light Weight Aggregates)

Light weight aggregate is low in density i.e. 710 kg. Where as normal aggregate is 1550 kg /cum. Density of LWA concrete is 1400-1800 Kg /cum. Where as normal concrete is 2300 - 2500 Kg/cum.

LWA can be utilized as Blocks and slabs, structural concrete, Floor roof screeds, Bridges, High ways, sound absorption material etc. Plant capacity at JSPL Angul is 300000 cum pa



Advantage

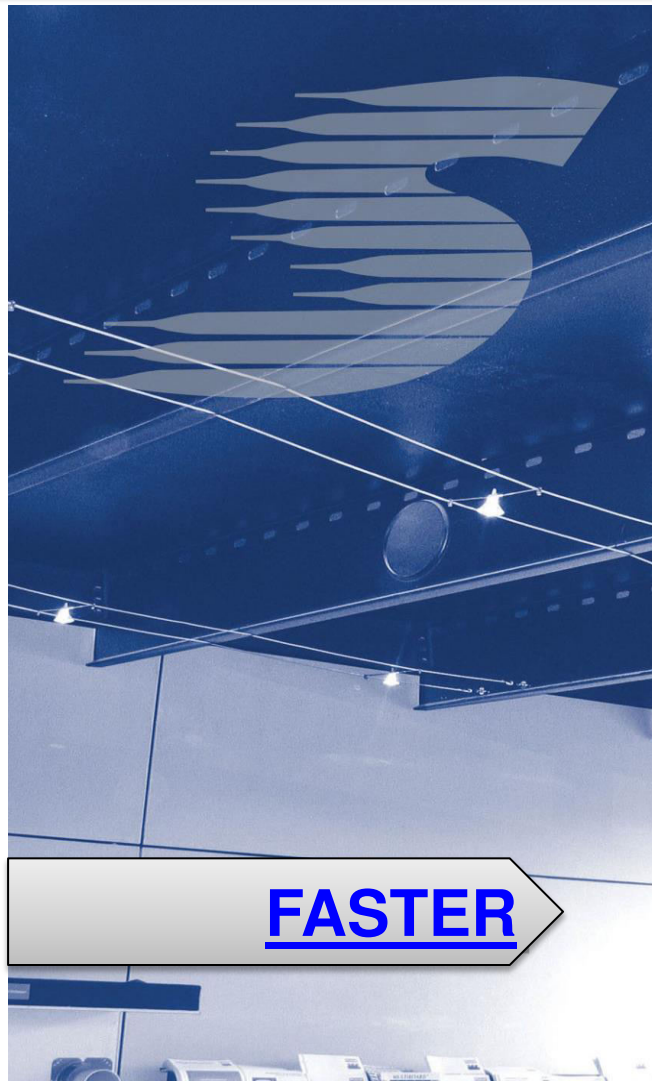
- Reduction in weight - reducing loading
- Improve thermal properties
- Improve fire resistance
- Improve Acoustic Properties
- Improve durability
- Environmental benefits



Jindal > Speed > Floor



LIGHTER



FASTER

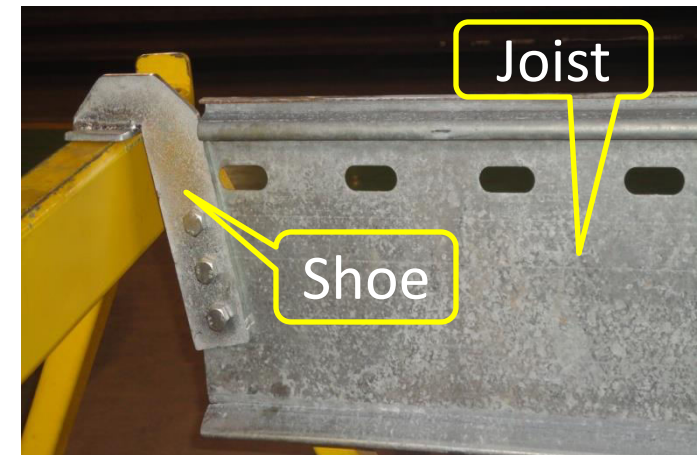


EASIER

About Speed Floor

Is a unique and innovative suspended concrete flooring system.

- ❑ The system is “ Composite Roll-formed steel joist with an in-situ concrete topping”.
- ❑ It is Material efficient and cost effective concrete flooring.



Speed Floor

- [The System](#)
- How it works
- Design
- Applications



Speed Floor Joist

- ❑ The heart of the system is a roll-formed, galvanised (Z275) high tensile (350MPa) steel joist 3mm thick.
- ❑ The joist is manufactured by roll-former in a single integrated operation.
- ❑ The joists are Punched, pressed, pre-cambered and cut to length at a fast production rate.



Joist Roll Forming Line

Speed Floor System:



Average Production Speed : 100 Mtr / Hour

Nominal Coil Width : 400 mm to 600 mm

Gauge : 3 mm

Steel Grade : G350 Mpa

Machine Capacity : 8000 MT / Year

or (1 Million Sq. Mtr / Year Floor Area)

Jindal Speed Floor



LIGHTER | FASTER | EASIER

Speed Floor Joist Stocking & Bundle

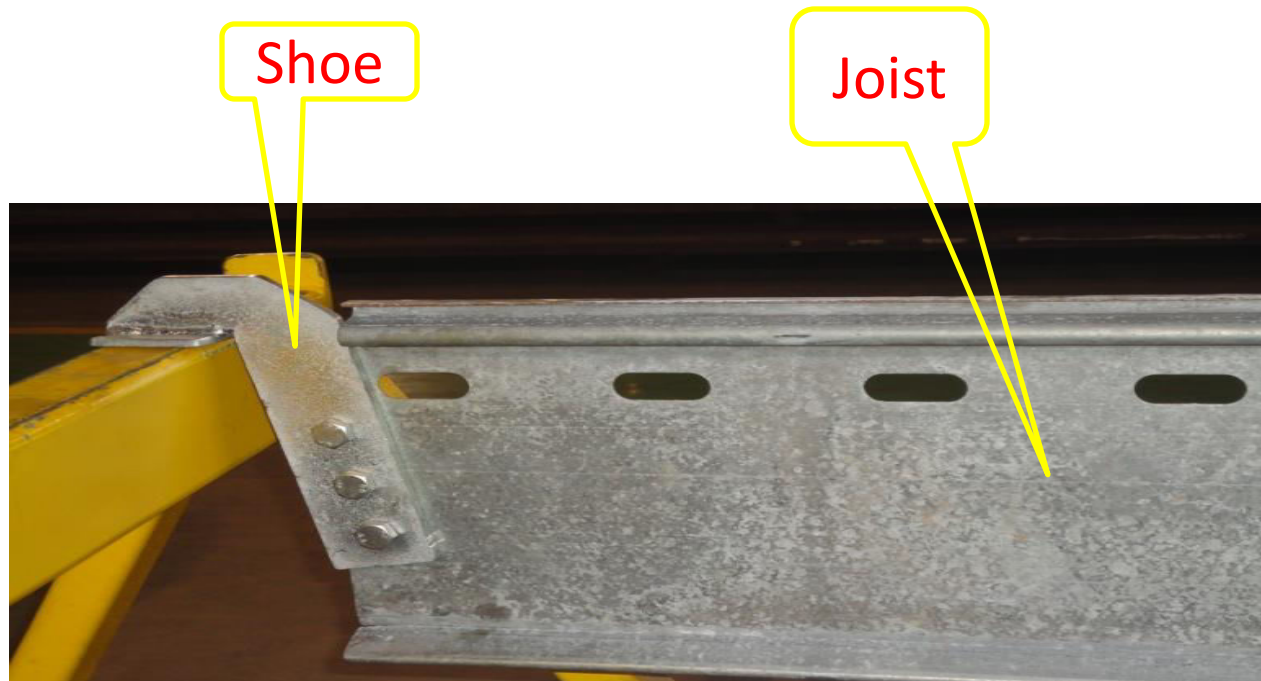


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Components of Speed Floor System



JOIST (Series 200, 250, 300, 350 and 400)



Shoe

Joist

Shoe

Hanging Angle L40 X 75 X 1.8 mm

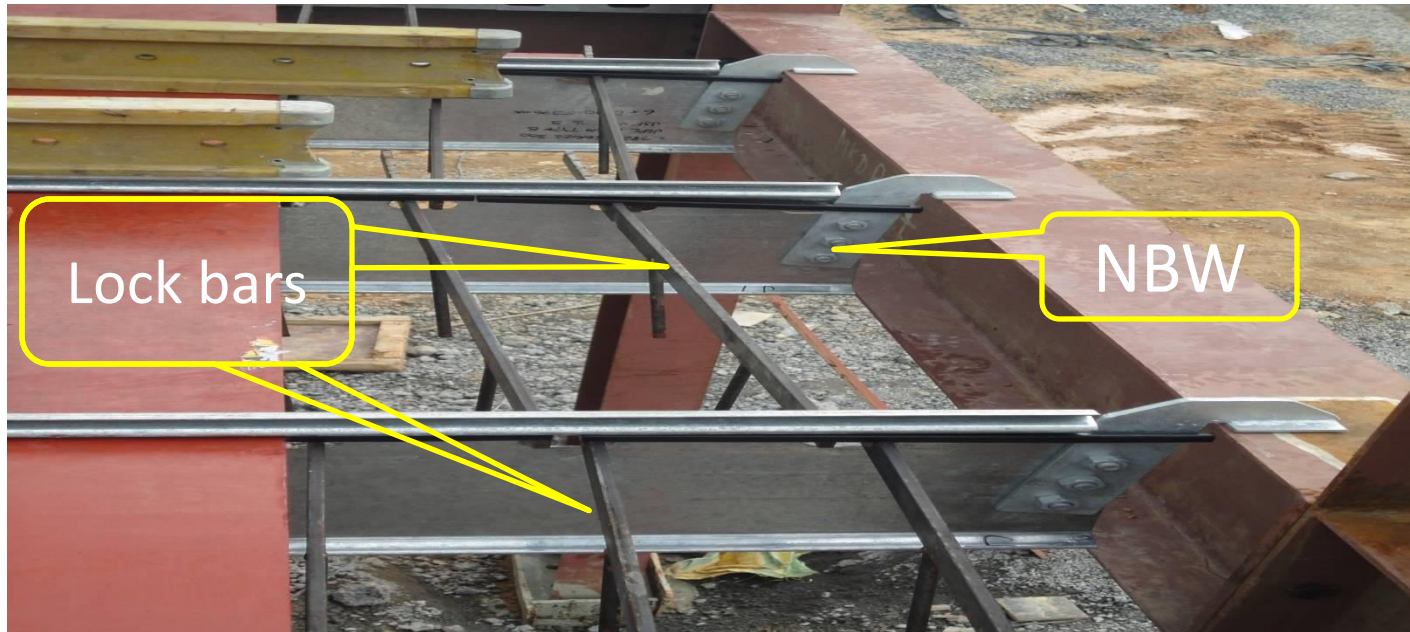


Edge Angle L40 X 90 X 1.6 mm

Plywood 1.2 Mtr X 2.4 Mtr X 12 mm



Lock Bar 630 mm , 930 mm & 1230 mm



Ready to go

- ❑ The shoes are simply bolted to the joists and ready to ship.

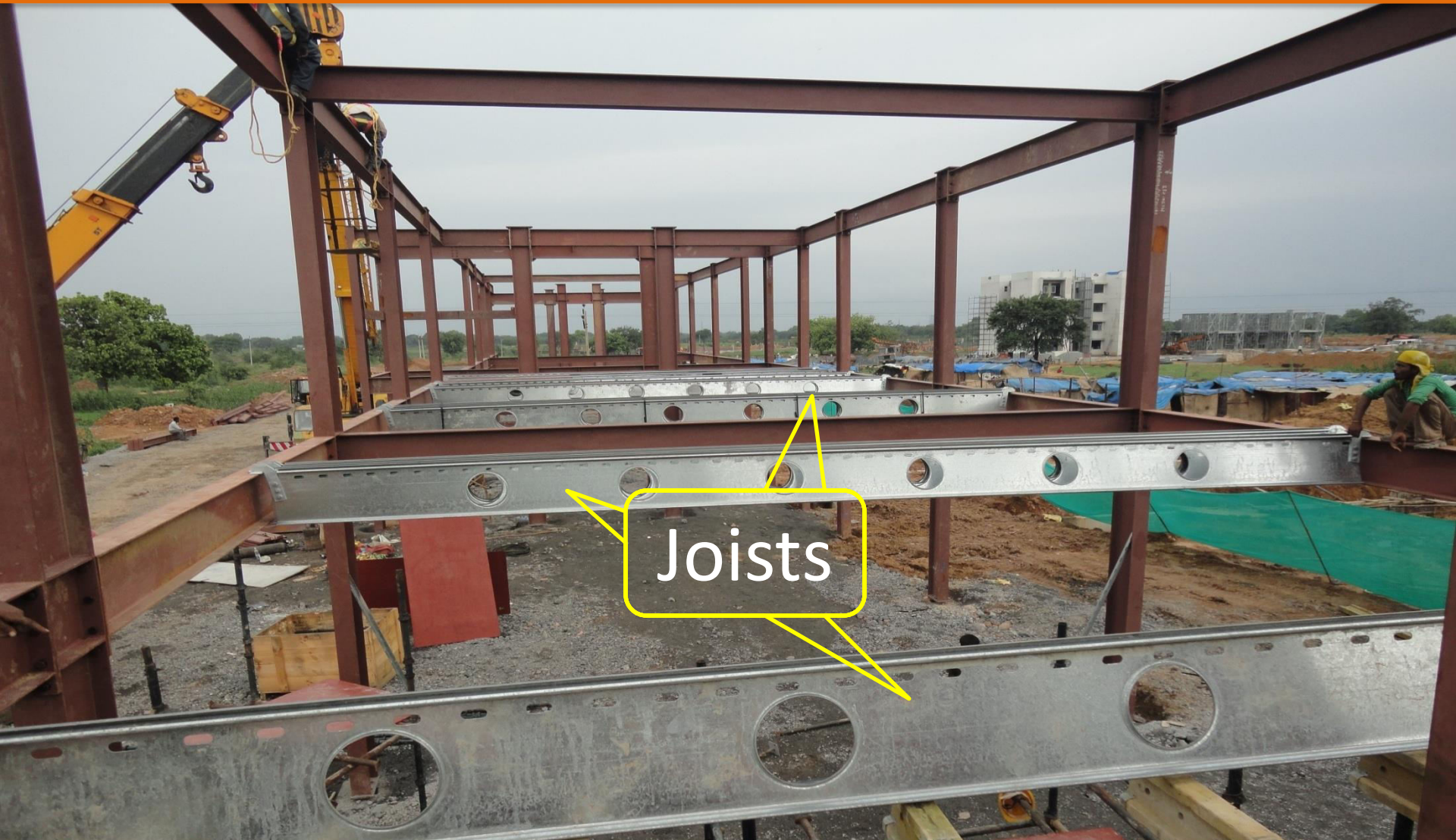
- ❑ Joists can be palletized, containerised or loaded on and transport directly to job site.



Project Example

G+3 : Residential Building at Raigarh

Joists Placement:

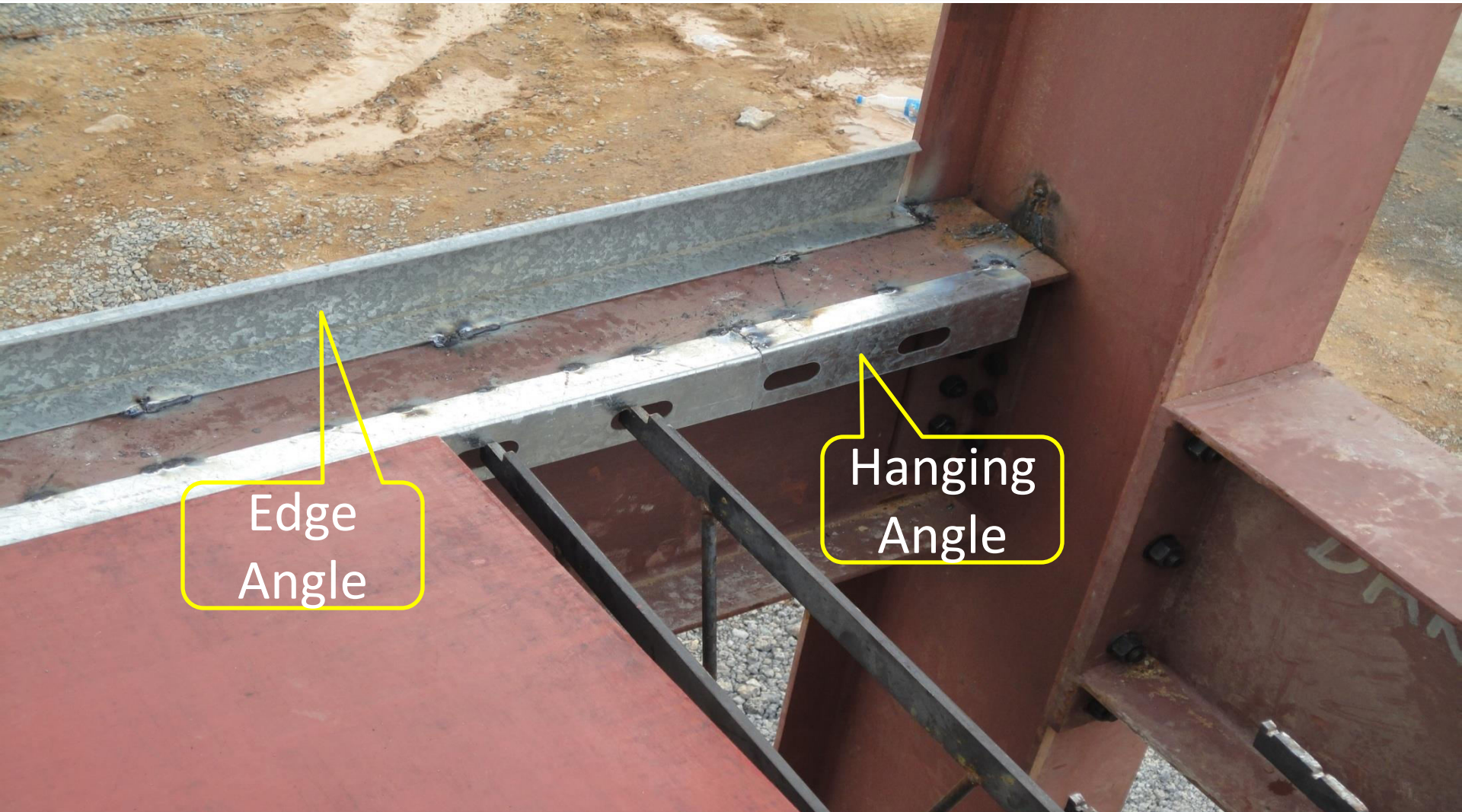


LIGHTER | FASTER | EASIER

Shoes & Lock-bars:



Edge & Hanging Angle:



Edge
Angle

Hanging
Angle

Plywood:



LIGHTER | FASTER | EASIER

Weld Mesh:



LIGHTER | FASTER | EASIER

Concrete Slab Casting:



LIGHTER | FASTER | EASIER

Finished Slab :

No props/staging

- ❑ 3 days after the concrete is poured the shutter system is removed.
- ❑ Services can pass through the pre-punched holes.
- ❑ False ceiling if needed may also be fixed to the bottom of the joist

G+3 Building with Speed Floor :



LIGHTER | FASTER | EASIER

Brick wall House with Speed Floor:

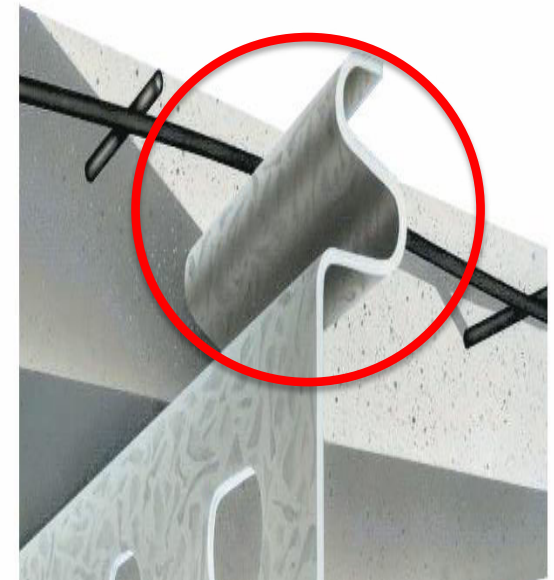


Functions of Speed Floor System

Speed Floor Joist

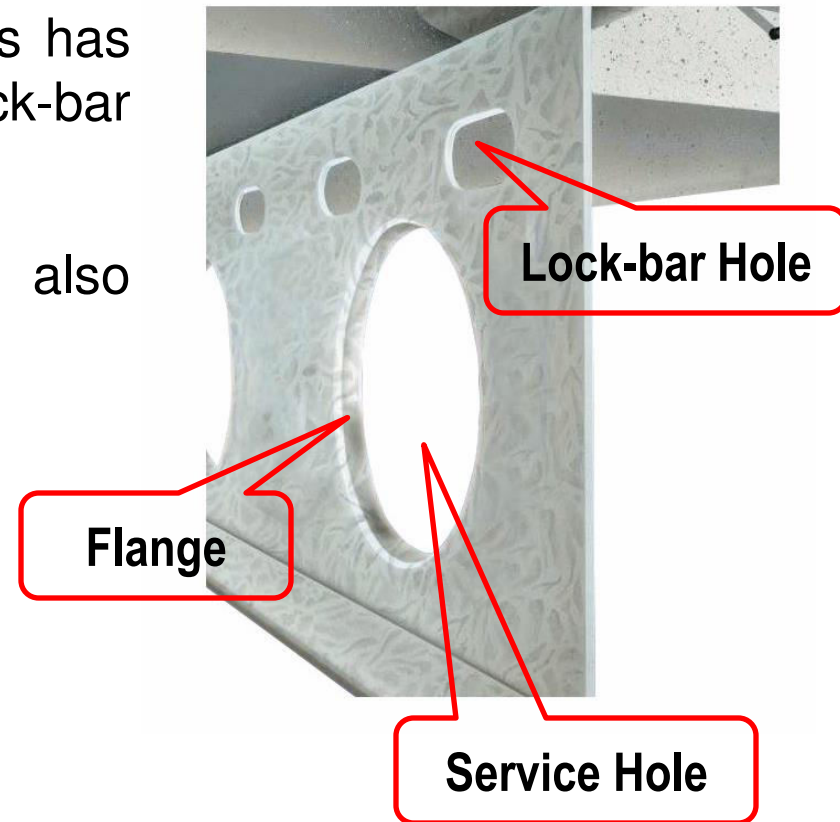
The **top section** of the joist that embedded in the concrete slab has 4 functions :

- ❑ It is the compression element of the non-composite joist during construction
- ❑ It is the chair or stool that supports the weld mesh or the reinforcement
- ❑ It locks in and supports the slab shuttering system (lock-bars and plywood sheets)
- ❑ It becomes a continuous shear connector for the composite system.



The Joist ...

- ❑ The **mid section** or web of the joists has the flanged service hole and the lock-bar hole punched into it
- ❑ The flanging of the service hole also provides stability to the web.



The Joist..

- The **bottom triangular** section of the joist acts as a tension member both during construction phase and when the joist is acting compositely with the slab.



Design Considerations

- The performance of the Speed floor slab is similar to that of a conventional in-situ poured slab.
- To achieve STC 55 or more a false ceiling may be installed under the joist.
- Alternatively the slab thickness can be increased.

Seismic

- ❑ The use of a 'pin-jointed' or 'simply-supported' connection between the concrete floor and the support structure (joist with shoes) allows the Speed floor to flex without shearing.
- ❑ The shoe will remain as a fail-safe mechanism on top of the support medium. Reinforcement bars connected to the structure prevent horizontal displacement of the concrete floor.
- ❑ The Speed floor system generally uses much less concrete than pre-cast or in-situ concrete alternatives and hence has less mass.

- ❑ Under seismic conditions less mass means less inertial forces which can limit the damage
- ❑ As a ductile suspended concrete floor incorporating a relatively high percentage of steel, Speed floor is ideally placed to help dissipate the dynamic shock involved in seismic loading
- ❑ Speed floor has the ability to act as a diaphragm and transfer the lateral forces through the floor to the shear walls located in other parts of the building.

Fire

Speed floor system has 2 hour fire resistance as a total system.

Full scale fire testing has established that the Speed floor system can be fire rated and will meet fire rating requirements set out in the Building Code.

Options for fire protection are numerous but will include :

- False ceiling with gypsum and other cementitious board systems
- Sprayed cementitious products directly onto the Speed floor joist
- Painted with intumescent paints

Affiliations:



- Fire Test** : No.Fr 2392 BRANZ The Resource Centre for Building Excellence, NZ.
- Acoustic Report** : No. 975375ARA by Marshall Day and Associates
- Shear Capacity Speed Floor** : Dr. J W Butterworth, Department of Civil & Environment Engg, University of Auckland, NZ
- Slab Panel Membrane (SPM)** : Analysis by here (Heavy Engineering Research Association) Refer DCB reports No. 70 & 71 (Oct, 2002 – Jan. – 2003).

Comprehensive study by IIT Madras

- Behaviour under Serviceability conditions
 - Max. Deflection: $L/1300$:
 - Behaviour is Completely Elastic
 - No indication of cracks
- Load Deflection/Strain Studies
 - Deflection under 2 time Service load: $L/650$
 - Behaviour is Completely Elastic
- Ultimate load
 - Behaviour is Completely Elastic up to 2.5 times Service Load
- Constructability

Test Report from IIT Madras



Project Completion Report

submitted by

DEPARTMENT OF CIVIL ENGINEERING
IIT MADRAS

for

M/s Jindal Steel & Power Ltd



JULY 2014

Acknowledgements

The project co-ordinator records his gratitude and appreciation for M/s JSPL for sponsoring the project experimental investigations on predicting the strength of prototype speed floor systems for JSPL. All through the journey of the project, IITM received excellent support from JSPL.

It is with deep gratitude the coordinator thanks Mr. Raju Mishra, Mr. Anant Sharma and all the officials of JSPL concerned with this project.

Personally the coordinator thanks Mr. T. Rajkumar, Technical Officer, Structural Engg. Substation, IITM and their lab staff for without their support and understanding, this project would not have been completed successfully.


Dr. S. ARUL JAYACHANDRAN
Assistant Professor
Department of Civil Engineering
IIT Madras
(S Arul Jayachandran)

July 27, 2014

Conclusions Based on the experimental investigations carried out by IITM on the "Speed floor system" of M/s JSPL, IITM confirms that the Speed floor system of M/s JSPL is tested to be safe in strength and serviceability as per Indian standards for the loadings and corresponding spans suggested by M/s JSPL. The system behaves linearly in the design load range. The maximum deflection is within the allowable limits as prescribed in IS:800 (2007). Factor of safety of the Speed floor system has been found to be 2.5 (Ultimate load / Design load), which is more than adequate for building stability.

BMTPC Approval



Speedfloor System

User should check the validity of the Certificate by contacting Member Secretary, BMBA at BMTPC or the Holder of this Certificate.

Name and Address of Certificate Holder: M/s Jindal Steel & Power Ltd First Floor, Tower B, Jindal Centre, Plot No.4, Sector 32 Gurgaon – 122001 (Haryana) Tel: 0124-6689000	Performance Appraisal Certificate No. PAC No 1013-S/2014 Issue No. 01 Date of Issue: 16.10.2014
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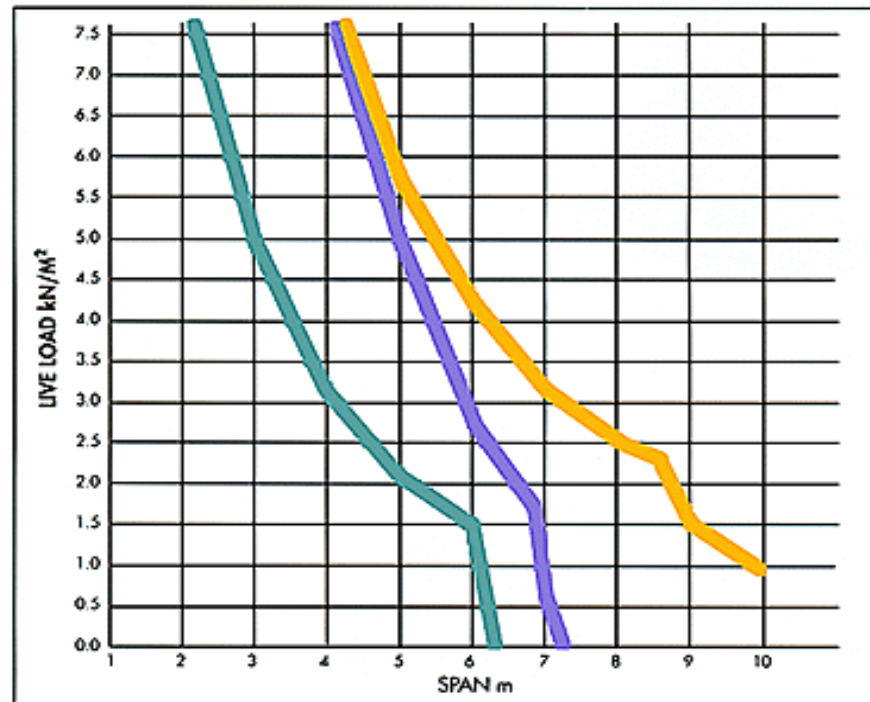
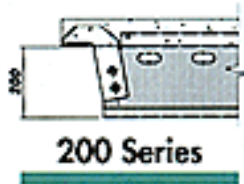


Building Materials & Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation
Government of India
Core 5A, First Floor, India Habitat Centre,
Lodhi Road, New Delhi – 110 003

Tel: +91-11-2463 8096, 2463 8097; Fax: +91-11-2464 2849
E-mail: bmtpc@del2.vsnl.net.in Web Site: <http://www.bmtpc.org>

Load span designs

Load vs span tables are available that will optimise the Joist and concrete topping combinations.



Load span graph – 75mm topping

Projects

Projects

Projects Under Construction	Area (Sq Mts)	Status	Location
Parsada Dormitory (G+3)	5,500	Under Progress	Raigarh (C.G)
JPL- Urja Nager-G Type	267	Completed	JPL-Tamnar
JPL- Urja Nager-D Type	801.4	Completed	JPL-Tamnar
Nalwa Lunch Room (RCC Struct)	211.4	Completed	NSPL, Raigarh
OPJIT Boys Hostel (G+2)	1,155	Completed	OPJIT-Engg. College
G+11 Housing (4 Blocks)	34,100	In progress	Angul- Odisha
OPJCC College (G+1)	1,873.4	In progress	Patratu-Jharkhand
DDD-type (G+3)	294.36	Completed	Angul- Odisha
EEE-Type (G+3)	286	Completed	Angul- Odisha

Projects



Clients	location
Globel Health Pvt Ltd, Medanta- The Medicity,	Gurgaon
Automotive Show Room	Cochin
PGCL, Maneswar	Manes war ,Haryana
G.D Goenka University	Sohna, Haryana
Shri City,	Chennai
Member stand for HRC	Hyderabad
Retail Infra Mall	Hyderabad
Philips Mall,Mfar	Banglore



Commercial Buildings

- 7 storey building constructed using structural steel frame with Speed-floor.



- The ground floor retail complex exposing Speed floor joists



- The store's services, such as electrical cabling, have been accommodated through the exposed joists.



Low rise buildings

- Two storey commercial building with basement car parking



High Rise Apartments

- 12 level, apartment block built at a high susceptible seismic region.



High Rise Towers

- ❑ Twin 12 storey apartment buildings built using a pre-cast concrete core and structural steel frame.
- ❑ Speed of erection is the prime consideration for using Speed Floor in the Towers.



Restaurant Using Speed Floor System



LIGHTER | FASTER | EASIER

Usage of Speed Floor System in Services



LIGHTER | FASTER | EASIER

MULTI STOREY CAR PARK BUILDINGS

Structural Steel Parking Buildings



- ❖ Today, structural steel-framed parking structures are being built in all parts of the world.
- ❖ By using the steel structures as main frame, there are so many advantages.

- ❖ **Cost effective.**
- ❖ **Faster.**

Car park Building with Speed Floor System



LIGHTER | FASTER | EASIER

Multi Storey Car Park



LIGHTER | FASTER | EASIER

Multi Storey Car Park



LIGHTER | FASTER | EASIER

SAMPLE:- Multilevel Car Park



LIGHTER | FASTER | EASIER

SAMPLE:- Multi Level Car Park



National Winner—Less than \$15M
STATION PLACE GARAGE—PORTLAND, ORE.



LIGHTER | FASTER | EASIER

SAMPLE:- Multi Level Car Park



LIGHTER | FASTER | EASIER

Multi Storey Car Park and Residential Building



Speed Floor Applications



The Speed floor composite flooring system is suitable for use in all types of construction including :

- Steel frames structures
- RCC frame buildings
- Poured insitu or precast concrete frames
- Light gauge steel frames
- Conventional Structural brick wall constructions etc

Potential End Uses

The range of end uses include :

- General individual Houses
- Multi-storey residential blocks
- Single and multi-storey retail developments
- Mezzanine floors
- Car parks and storage buildings
- Multi-storey office complexes etc.

Summary



LIGHTER



FASTER



EASIER

- No Propping/No Staging
- Speed of erection
- Cost effective
- Weight saving through structural components
- Lightweight, requiring less crange than other systems
- Easily accommodates services
- Meets fire and acoustic requirements
- Flexible in its application



PLANT FACILITIES Punjipatra (Raigarh)

Fabrication in progress



Plant Details:

Plants	Installed Capacity (MT/Anm.)	Plant area (Acr.)	Covered area* (Sq. Mts)	Manpower (Nos.)
Punjipatra (Raigarh)	120,000	180	60,000	1,800
Angul (Odisha)	60,000	50	32,000	1,000
Total	180,000		92,000	2,800

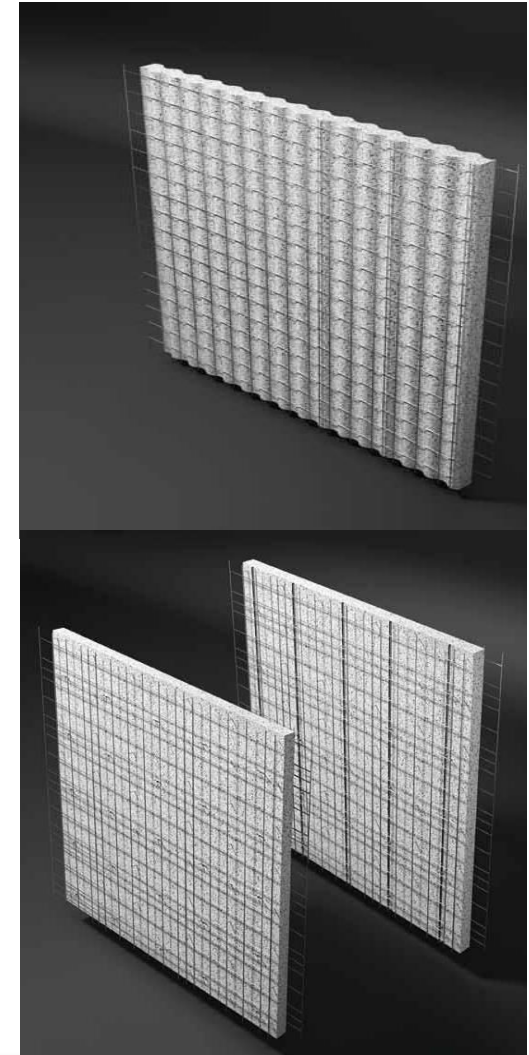
EPS Concrete Panel

Expanded Polystyrene Concrete Wall Panel

EPS Concrete Wall Panel Home is a modern, efficient, solid, safe and economic construction system for the construction of buildings up to 4 storey. It consists of load bearing floor and roof panels made of polystyrene sheet **assembled together with welded mesh and coated with concrete**. EPS Concrete Wall Panel buildings are environment friendly and aesthetically appealing; a system that meets the needs of designers and resolves the difficulties of construction companies. They can be constructed quickly resulting in tremendous savings in time and money. EPS Concrete Wall Panels are manufactured at our plant at JSPL, Angul (Odisha)

Advantage

- Reduction in Construction Time
- Lightness, handling and transportability
- Earthquake & Cyclone Resistant
- Integration with other systems
- Fire Resistance
- Thermal Insulation and Sound Insulation



RCC + EPS Partition Wall Building, JSPL Angul (Under Construction)



Residential Total EPS Wall Panel Building, JSPL Angul



G+11 COMPOSITE STEEL & EPS WALL BUILDING AT ANGUL



Precast Panels

Precast Panels allows for speedy erection which saves lot of time, as well as superb control of quality.

Production Facility

- Column production
- Wall production
- Beam production
- Slab production
- Stair case production

Advantage

- Speedy Construction
- Larger spans (buildings with large column-free spaces)
- Improved quality of structure
- Reduction in self weight resulting in raw material saving
- All weather construction
- Safe and Healthy working environment
- No wastage of material including water
- Low maintenance, longer life cycle
- Ideal technology for High Acreage Projects



Precast – Township, Sonapat





LIGHT GAUGE STRUCTURES



FEATURES

- ❑ Low Project cost due to the reduction material and labour cost. Case study reveals saving of 8.5% with conventional system and 27% with structural steel building. Specimen: Four storied labour dormitory of 28,000 sqft built up area at Raigarh.
- ❑ Faster construction by prefabricated panels. All structural components are precisely pre-manufactured and simply assembled on site. Case study indicate savings of 60%. Specimen: Four storied residential apartment of 13,500 sqft built up area at Raigarh.
- ❑ Easiness in erection due to light weight.
- ❑ Chances of Progressive collapse is marginal.

FEATURES

- Quality construction. Durable and dimensionally stable. Doesn't expand or contract with moisture content, nor shrink, creep.
- Enhanced Thermal & Acoustic insulation with Boarding/Expanded Polystyrene (EPS) /Rockwool/Vapour Barrier. Reducing HVAC load by up to 10%.
- Eco friendly structure. Friendly with Indian Climatic conditions .
- Superior and sustainable performance.
- Minimum Impact on natural resources i.e. Wood, water etc.
- Lesser carbon foot print for pre & post construction

FIRE

- The system can be fire rated and will meet fire rating requirements set out in the Building Code.

- Internal walls covered with gypsum and cementitious board.

- exterior wall Sprayed with cementitious material directly onto the studs for at ground floor.

- Fire rated EPS.

SEISMIC BEHAVIOUR

- The use of a 'pin-jointed' or 'simply-supported' connection allows the joists flex without shearing.

- As a ductile system, it will dissipate the dynamic shock involved in seismic loading.

- The LGS structural weight is less than conventional structure. Under seismic conditions less mass means less inertial forces which can limit the damage

SOUND TRANSMISSION

- The performance of the LGS system is better than that of a conventional construction. Gypsum board with Cement fiber board increases the STC of Rockwool /EPS insulation.

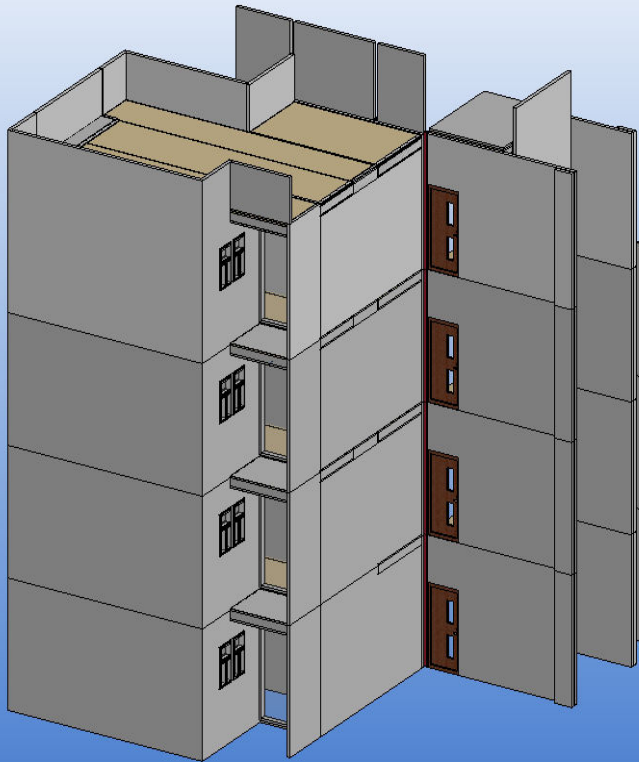
- The false ceiling under the joist provide STC 55.

THE PROCESS

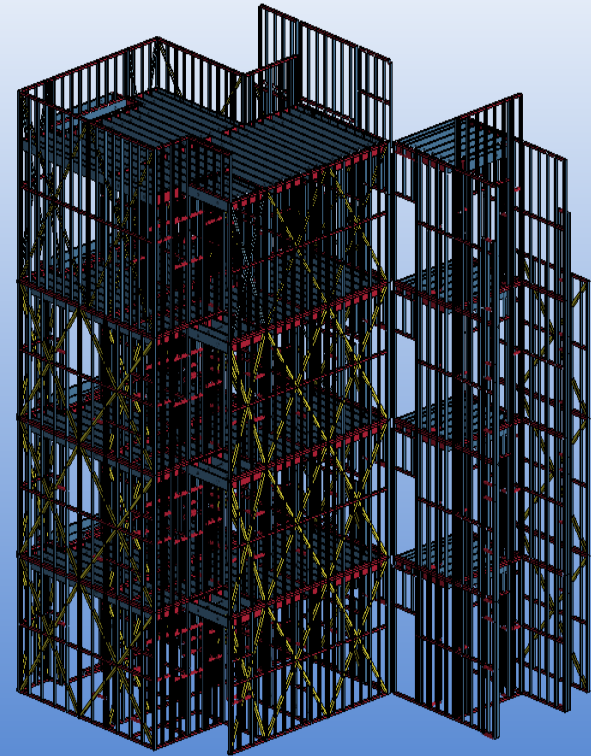
- ❖ Architectural Design
- ❖ Structural Design
- ❖ Manufacturing & Paneling
- ❖ Dispatch
- ❖ Structural erection
- ❖ MEP
- ❖ Finishes



G+3 – Residential Building



Perspective View



Framing View of the
model

Manufacturing & Paneling



Erection



Dispatch



Erection



- Tapcon Screw

Erection





ERECTION – DIFFERENT STAGES



Completed Building.



Staircase Area



Internal Finishes(Quarters)



THE STRUCTURAL



Floor Dead & Live Load Values



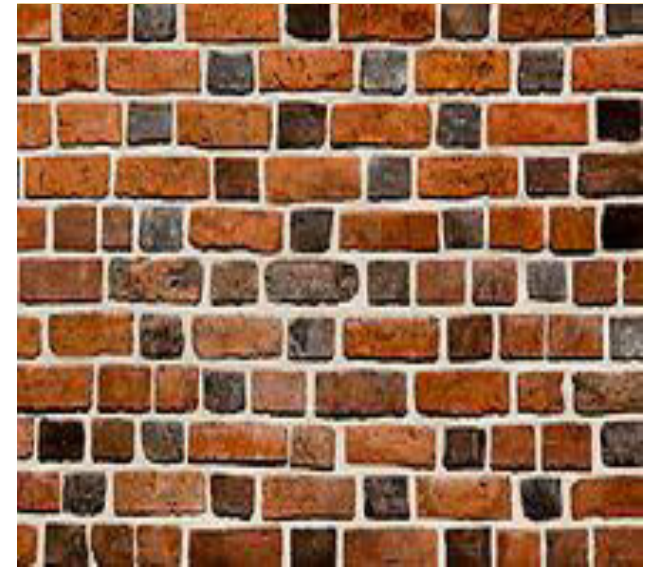
Dead Load : IS 875- Part1
 Live Load : IS 875-Part2
 Wind Load : IS 875-Part3
 Seismic Load : IS 1893-2002
 BS9590 part 5; Euro code 3 part 1.3



Floor Dead Load Values				
Floor Assembly	LGS Floor		Conventional Floor	
	KN/m ²	kg/m ²	KN/m ²	kg/m ²
10 mm Ceramic Tile + 30 mm Mortar	1.015	101.5	1.015	1.015
120 mm Thick Concrete Slab (2500 Kg/cu.m)	-	-	3	300
100mm mineral fibre insulation (10kg/m ³)	0.01	1		
Concrete, 60 mm thick	1.5	150		
Decking sheet,.7mm	0.067	6.7		
Light gage steel joist (2.0 mm Thick)	0.133	13.3		
6mm CP board cassette (density 1350 kg/m ³)	0.081	8.1		
Total Dead Load	2.806	280.6	4.015	401.5
Total Live Load	2		2	

Wall Load

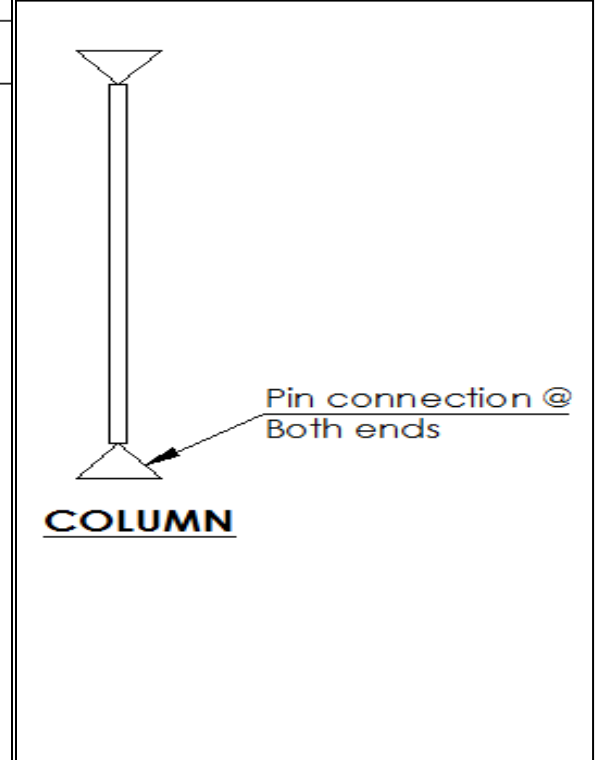
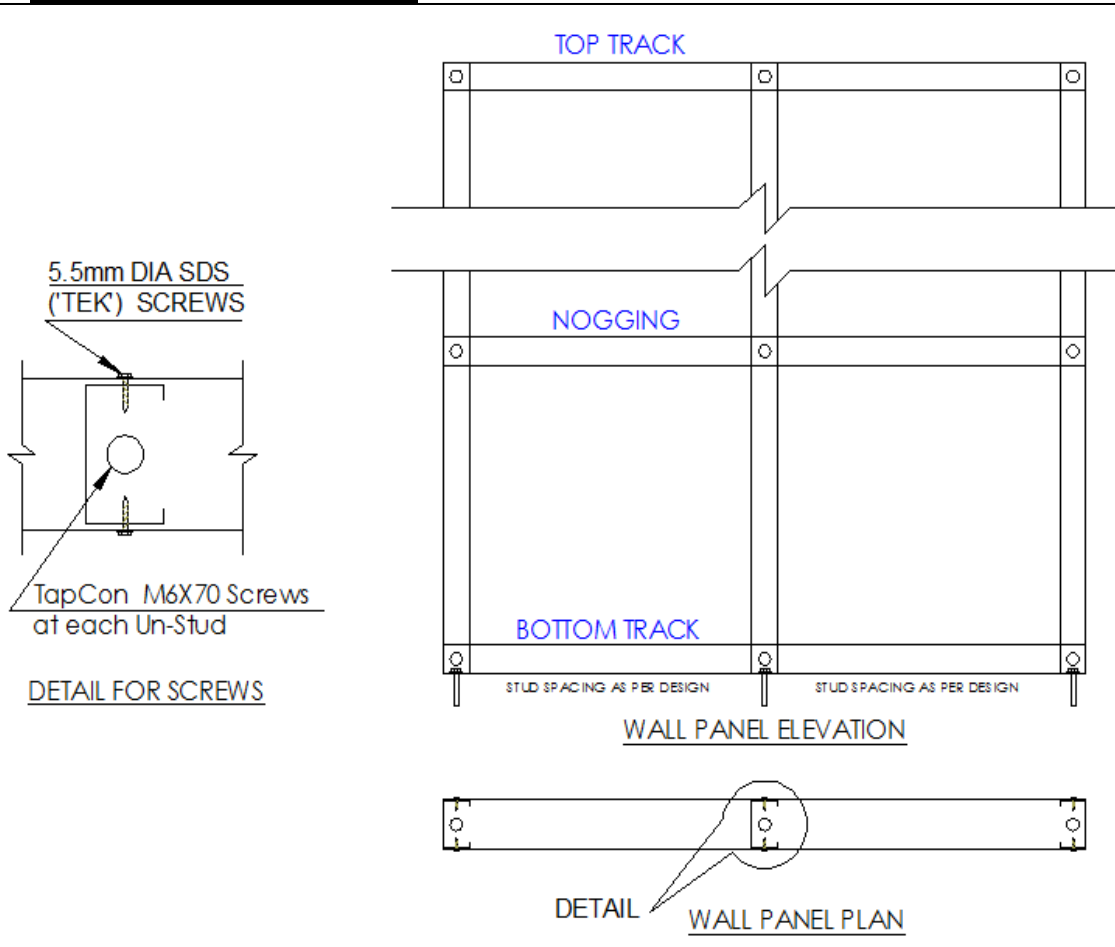
Exterior Load Bearing Wall Load		
External wall Load Bearing Wall Assembly	KN/m²	kg/m²
10 mm Cp Board both side	0.27	27
Light Gage Steel Studs and tracks	0.07	7
Cladding & Finishes	0.1	10
Total Dead Load	0.44	44



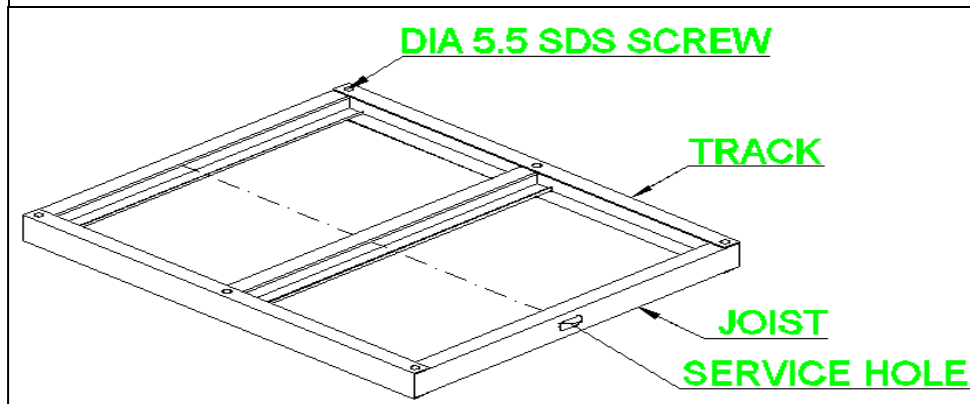
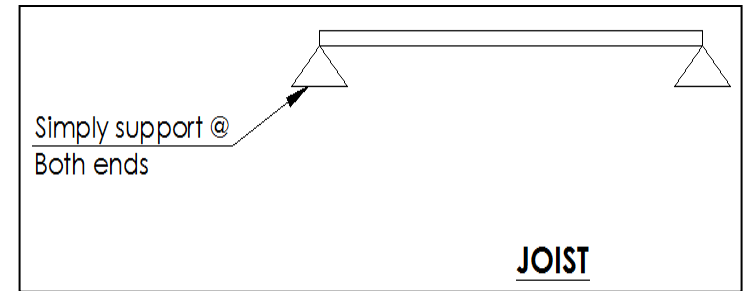
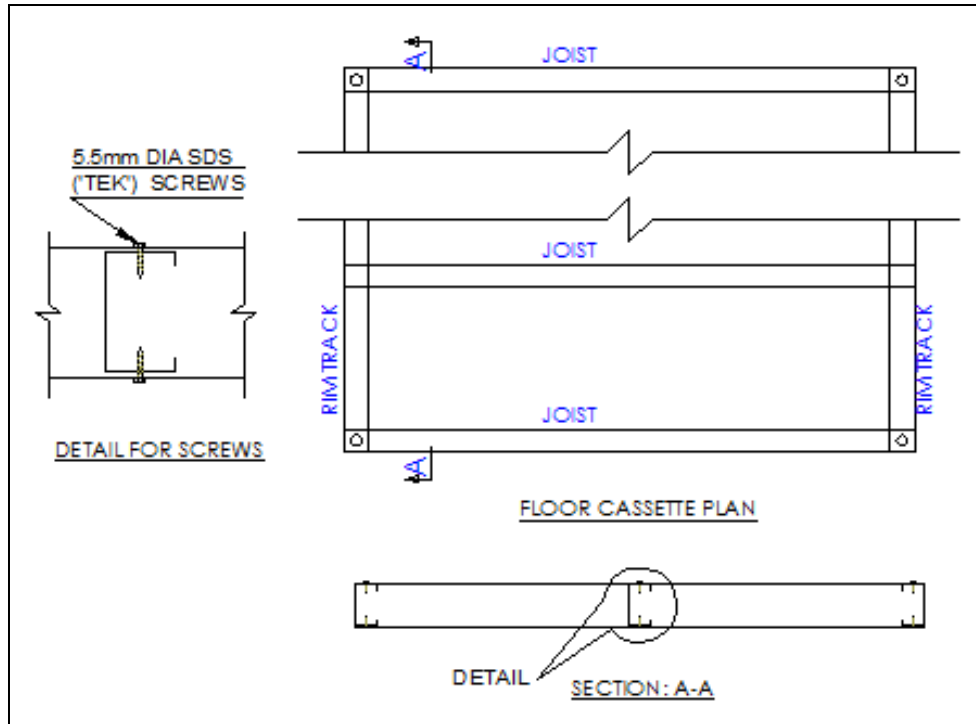
Brick Wall		
	KN/m ²	kg/m ²
230 mm thick wall (density 1900 Kg/cu. m)	4.37	437
20 mm plaster both side (density 1500 kg/cu. m)	0.6	60
miscellaneous	0.1	10
Total Dead Load	5.07	507

Wall Panel

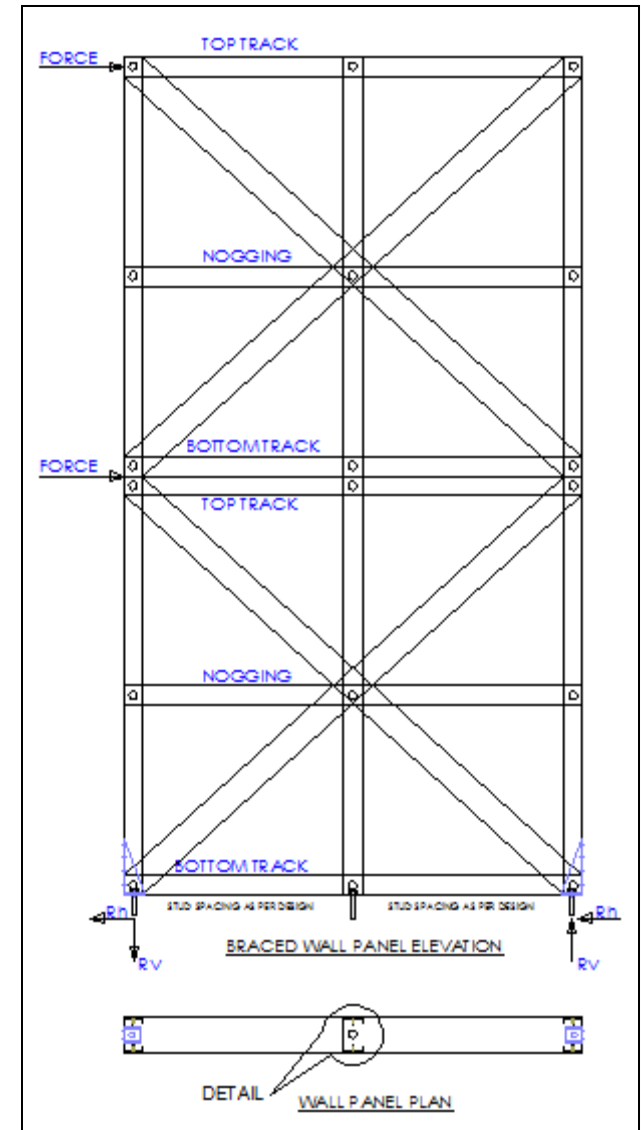
Wall Panel Details



Floor Cassette Details



Braced Wall Panel- Load Transfer Details



Designs Vetted by IIT Chennai .



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Dr. S.Arul Jayachandran
Associate Professor

02/05/ 2012

To
Mr.S V Rao, Executive Director,
Structural Steel Division, Jindal Steel & Power Limited
Raigarh – 496001 (C.G.
T +91 7762 227001 M +91 8827477014 ;svrao@jspl.com

Certificate of structural adequacy of the Standardized (G Type) G+3 residential flats using LGS at Punjipatra, Raigarh, CG by M/s JB Infra Pvt Ltd

The task of proof checking the design of Standardized (G Type) G+3 residential flats using LGS at Punjipatra, Raigarh was referred to IITM.

The following documents were submitted to IITM- (i) the soil investigation report (ii) architectural drawings of the G+3 flats (iii) connection drawings (UBJ-SD-026 to UBJ-SD-026) and (iv) the detailed load and design calculation by Dr. Chunxu Jiang.

IIT Madras carried independent evaluation of loads and design of the LGS G+3 systems as per Indian Code IS:801(1975) and the British code BS:5950 – P5 for design and the IS:875 and IS:1893 codes for loads. All the connection details were checked. Later a visit was made by IITM to the site at Punjipatra for an onsite evaluation of the construction. Based on the independent analysis and design carried out by IITM on the (G Type) G+3 residential flats using LGS at Punjipatra, Raigarh, and also based on the site visit, it is certified that the designs submitted by M/s Jindal Steel & Power Limited is structurally adequate and the G+3 LGS flat system is safe as far as the strength of stiffness requirements.

With warm regards

(S.Arul Jayachandran

Dr. S. ARUL JAYACHANDRAN
Associate Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, INDIA

PROJECTS

SL NO	PROJECT NAME	LOCATION	SCOPE	AREA (SQF)	STATUS OF WORK
1	G –TYPE , G+3 .20 BLOCKS	JSPL HOUSING PARSADHA ,CG	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	250000	ONGOING .04 BLOCKS COMPLETED
2	2 ND FLOOR EXTENSION	JSPL ,GUEST HOUSE AT RAIPUR.,CG .	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	4000	COMPLETED
3	TECHNICAL BLOCK	JSPL, RAIPUR,CG .	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	4500	COMPLETED
4	SITE OFFICE	BRICK PLANT ,JSPL,RAIGARH	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	1500	COMPLETED
5	STAFF HOUSE BUILDING	SITE OFFICE FOR SONIPAT ,JINDAL REALITY LTD .	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	3000	COMPLETED
6	A-TYPE ,G+3 HOSTEL BUILDING	JSPL HOUSING PARSADHA ,CG & BARBIL ,ODISSA .	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	60000	UNDER PROGRESS
7	HOSPITAL BUILDING	HORSE HOSPITAL ,NOIDA FARM HOUSE .	DESIGN ,LGS SUPPLY ,ERECTION AND INTERIOR FINISH .	4000	UNDER PROGRESS
8	2 ND FLOOR EXTENSION	GIRLS HOSTEL , OP JINDAL INSTITUTE OF TECHNOLOGY ,RAIGARH ,CG	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	15000	STRUCTURE COMPLETED,INTERIOR
9	PLANT OFFICE	JB FAB PLANT OFFICE ,PUNJIPATRA ,RAIGARH ,CG .	EPC CONTRACT FOR LGS BULIDING ,INCLUDING FINISHING	1500	COMPLETED

Horse Stable and Member lounge
Hyderabad. Three storey:18000Sft:



Girls Hostel, OPJIT PUNCHIPATRA
Extension of one floor :15500Sft:



Project s

Hostel & Barrack for GMR Chamba
Three storey:16000Sft:



Office Block, OPJCC Pujipatra
Two storey:2500Sft:



Site office for Brick plant, Raigarh

1500Sft:



Project s

Guest house at Raipur
Extension of one floor:4000 Sft



Technical Block at Raipur
Extension of one floor 4500Sft:



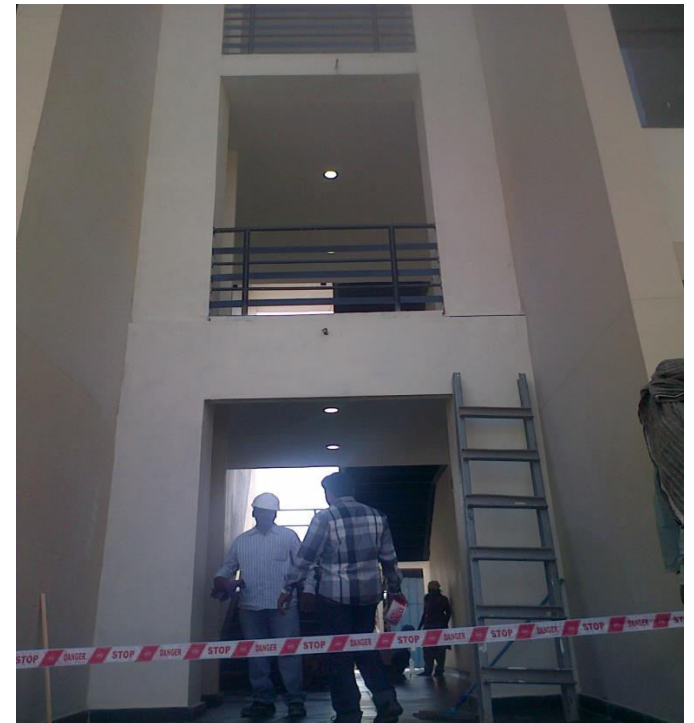
Projects

Residential Block for Staff, Prasada
Four stored building 2,50,000Sft



Dormitory for Workers at Prasada
Four storey:33000Sft:

COMPLETED BUILDING AT PARSADA ,G –TYPE ,G+3



Quarters at Raigarh

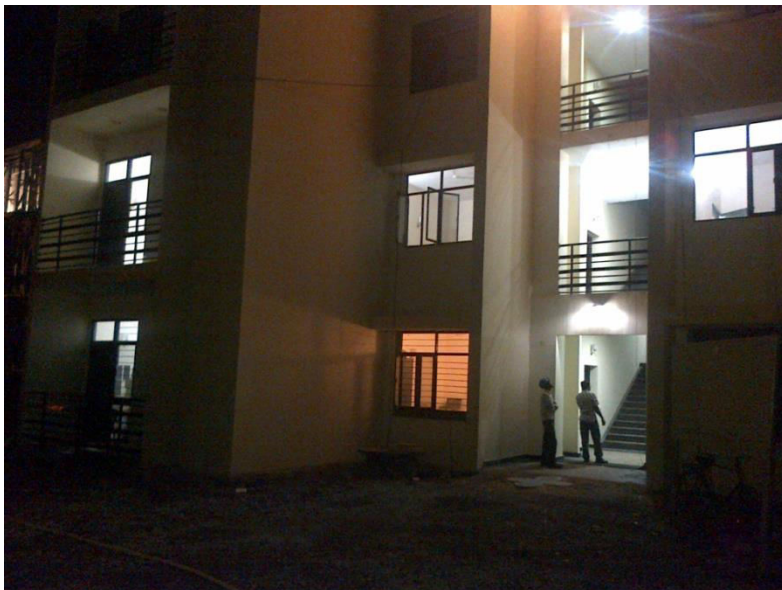


**UNDER
CONSTRUCTION**



**COMPLETED
BUILDING**

Night View of G+3 building.



Internal Finishes(Quarters)



**Kitchen Cooking
Platform**



Bathroom



Wash Basin

Finishing Work (G-TYPE ,G+3)



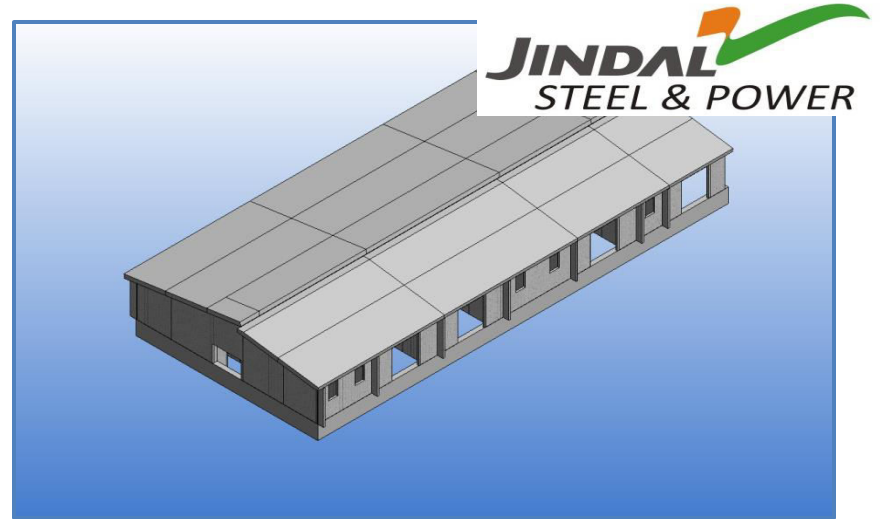
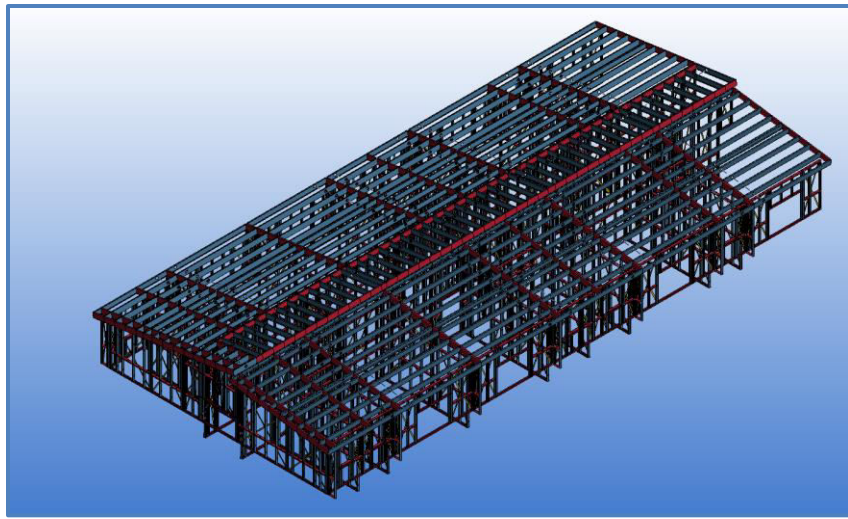
Kitchen

n



Bed Room & Balcony Door

Door

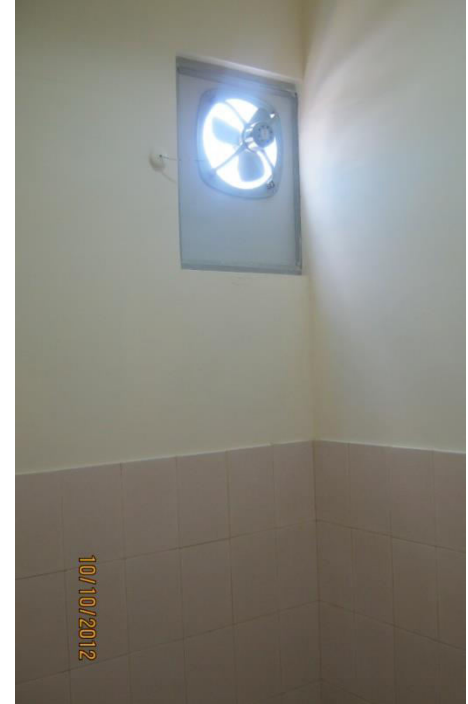
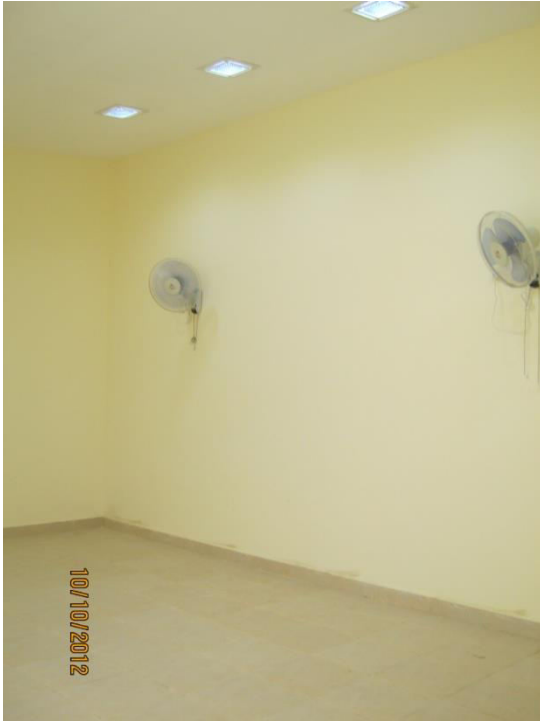


PROJECT OFFICE



PROJECT OFFICE

Interior Finish

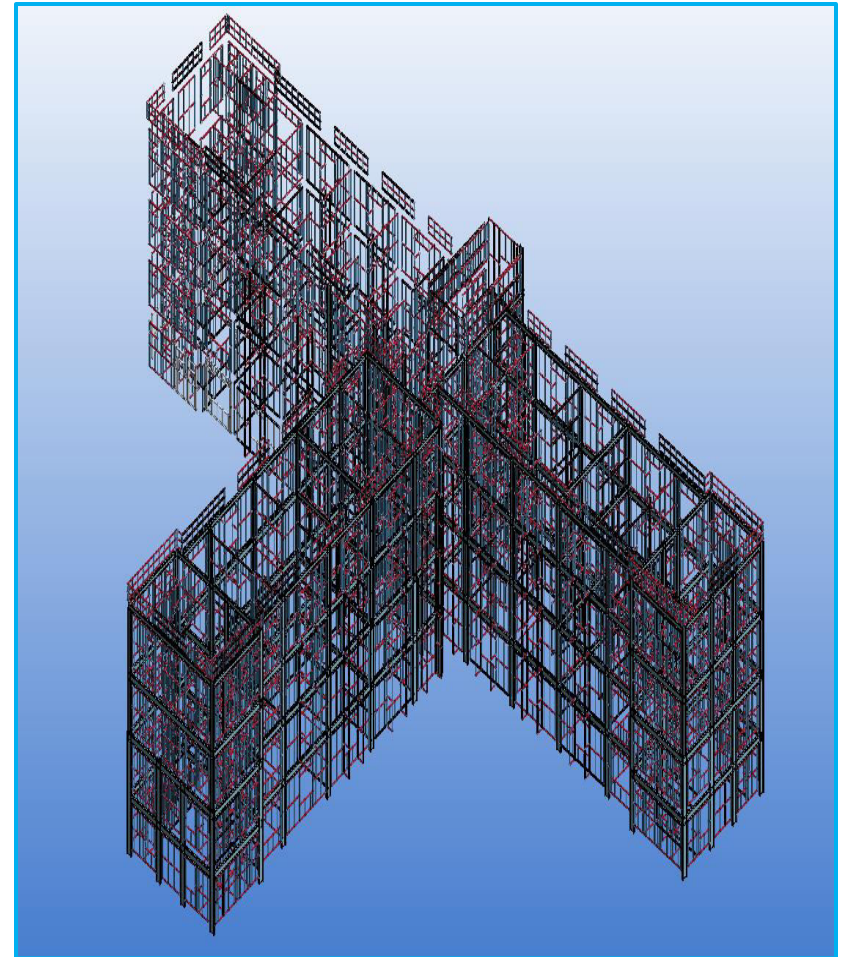
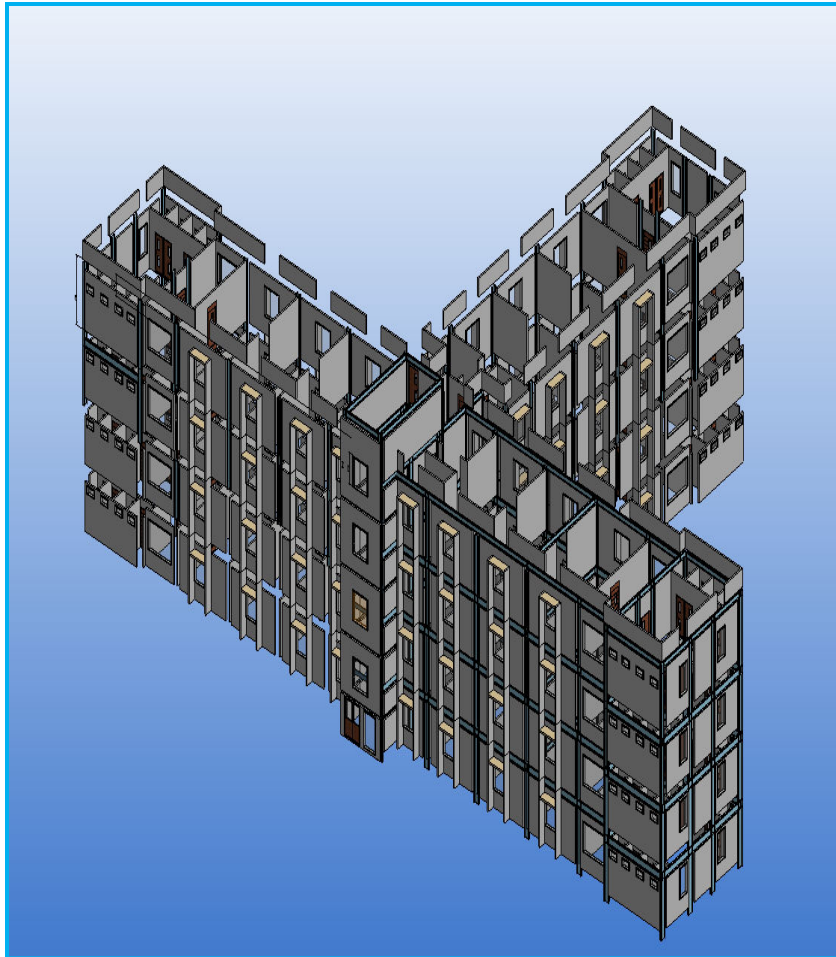


PROJECT OFFICE

Interior Finish

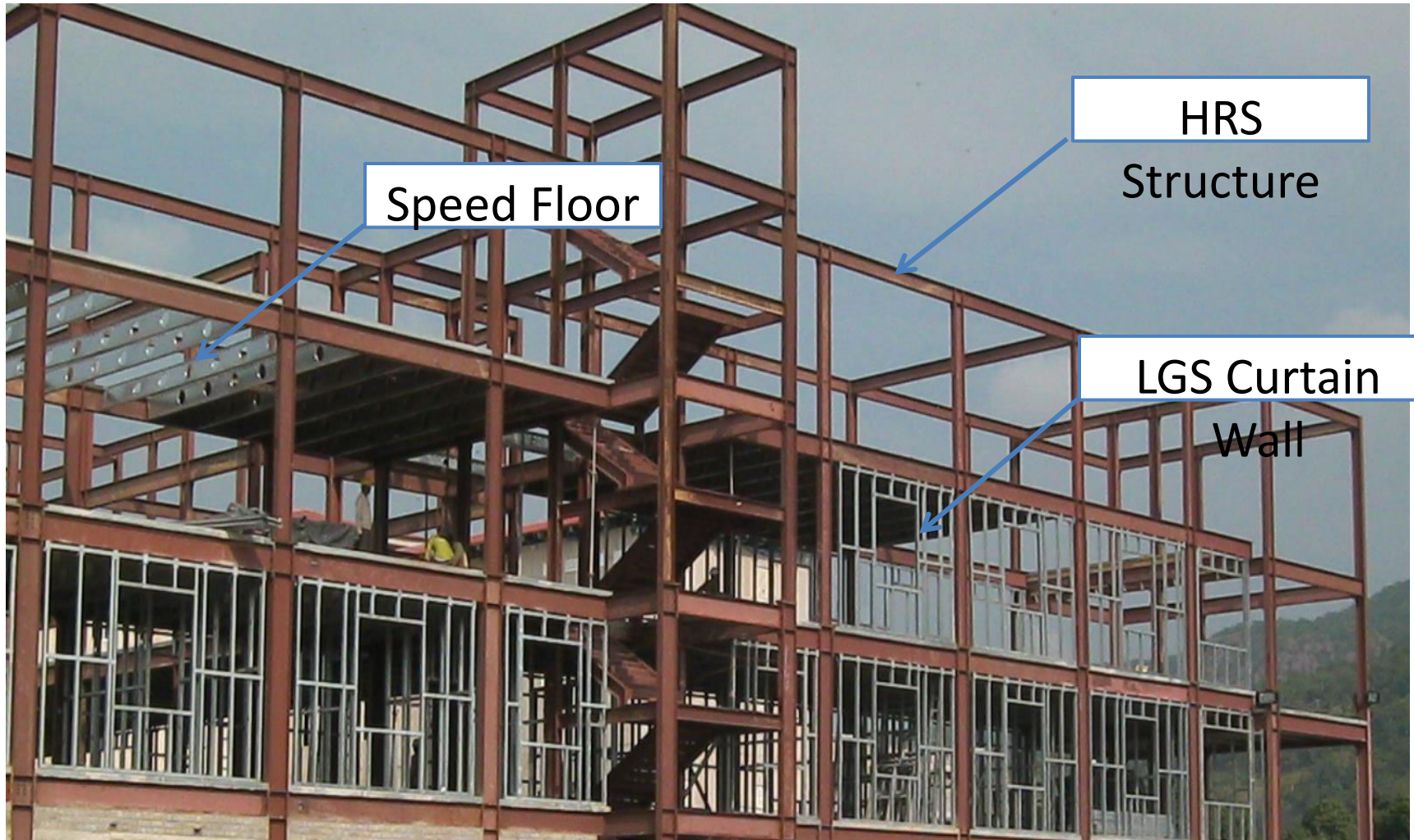


Dormitory Curtain Walls: Four Storied



PERSPECTIVE & FRAMING VIEW

COMBINATION OF HRS ,LGS AND SPEED FLOOR ,FOR DORMITORY BUILDING .



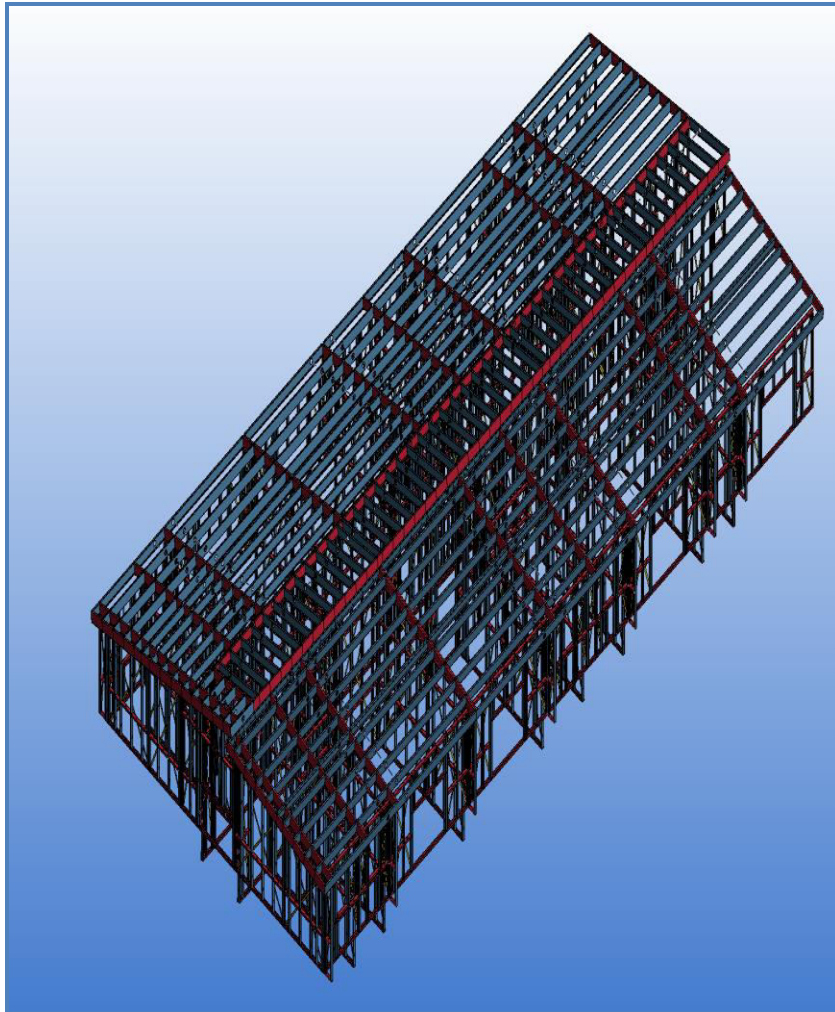
HRS ,LGS AND SPEED FLOOR COMBINATION



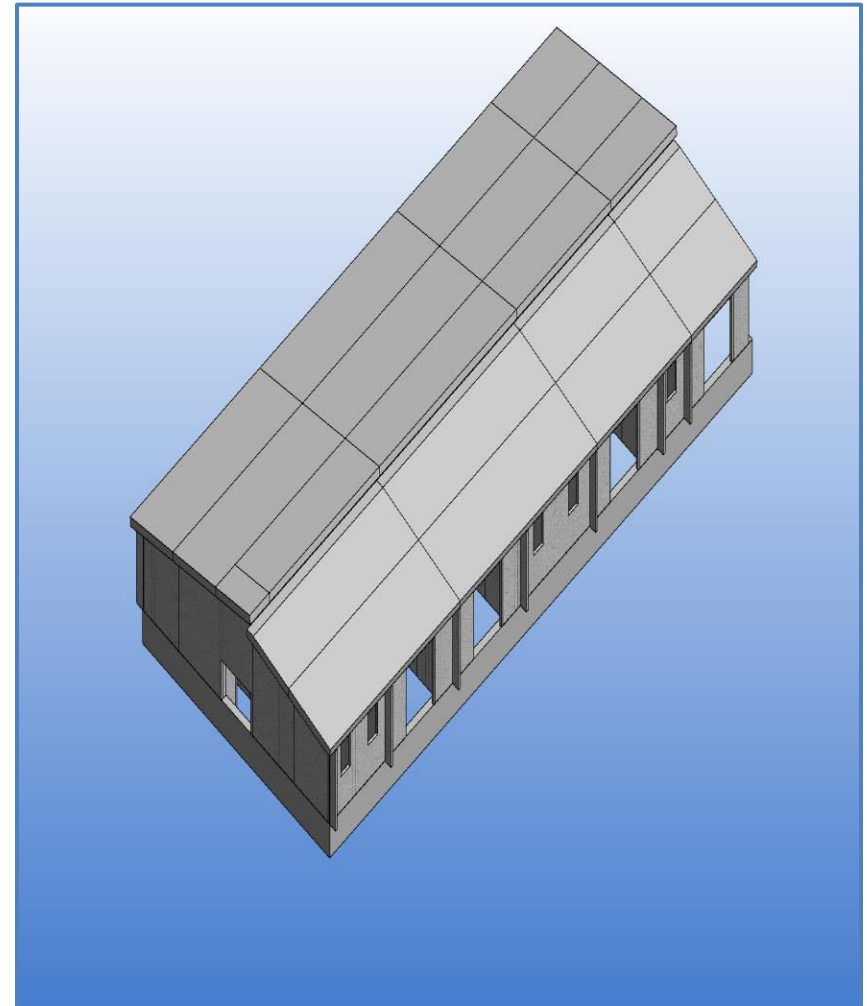
COMBINATION OF HRS ,LGS AND SPEED FLOOR FOR DORMITORY BUILDING



Guest House, Raipur: Single Floor Extension



Framing View of the model



PERSPECTIVE VIEW

Guest House, Raipur: Single Floor Extension ,Erection Work



Guest House, Raipur: Single Floor Extension Matching elevation



Guest House, Raipur: Single Floor Extension Matching Elevation



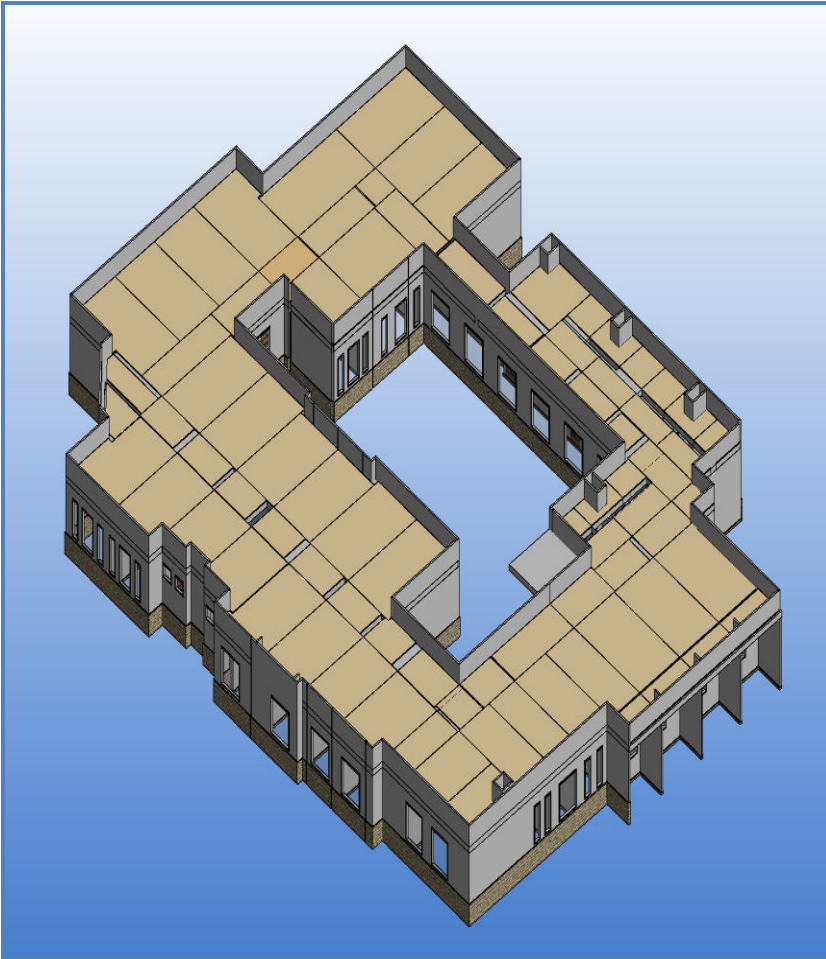
Guest House, Raipur: Single Floor Extension Toilet Finishes



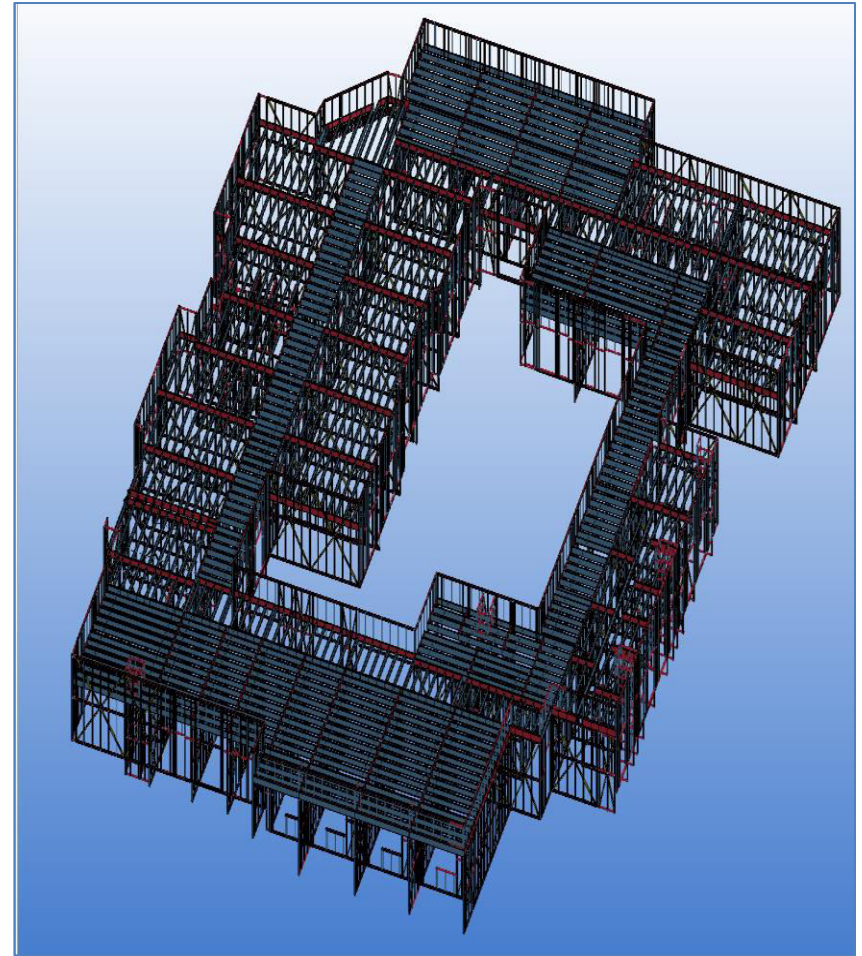
Guest House, Raipur: Single Floor Extension Corridor Area



Hostel: Single Floor Extension



PERSPECTIVE VIEW



FRAMING VIEW

Hostel:-Erection of wall Panel



Hostel :-Roof Panels



Hostel :-Roof decking



Hostel : -Matching Elevation



Hostel :- Fixing CP Board



Matching elevation



Hostel : - Matching Elevation



SURFACE

- External Wall:
 - Guniting -1.5mmx50 mesh above 25mm EPS.
 - Cement Fiber board of 10mm thick
 - PPGL/PPGI sheets

- Internal Wall:
 - 9mm Cement Fiber Board
 - 12.5 mm Gypsum Board
 - 12.5mm Gypsum board above 6mm CB
 - Guniting -1.5mmx50 mesh above 25mm EPS
 - Tiles Above Guniting

SURFACE	
----------------	--

- | | |
|------------------------------------|---|
| <input type="checkbox"/> Flooring: | <input type="checkbox"/> 70mm thick RCC above 0.7mm GI decking sheet. |
| | <input type="checkbox"/> Cement Fiber board of 18mm+10mm thick |
| <input type="checkbox"/> Roofing: | <input type="checkbox"/> 70mm thick RCC above 0.7mm GI decking sheet. |
| | <input type="checkbox"/> 0.45mm thick PPGI/PPGL Roof sheeting |

FINISHES

Architectural:

All Architectural Features like coving, Boxes, Cantilever, Projections, Infill walls, Wall mounted cabinets, wash basins.

Finishes:

- Sand Cement Plaster /Guniting
- Gypsum Based Plasters
- Gypsum Boards
- Cement Boards
- Dry Stone/Panels Cladding
- Texture Paints
- Laminations

❖ Capacity: 16,000 MT/year (15000sqft building/day)



Focused Segments

- Low Cost Houses
- Residential buildings
 - Bus & Truck Terminals
 - Project Office
 - Restaurants
 - Shopping Malls
- Commercial Buildings
- Staff Quarters/Hostel
 - Cabin /Toilets



Provides solution to all segments of B & C Industry



JINDAL

STEEL & POWER



Thank You