



WELCOME TO ALL AT PEPSCON

Navaz C Malikakkal
Vice President – Sales & Marketing
Kirby Building Systems India Ltd.

Contents

- Introduction to Kirby
- Pre Engineered Buildings (PEB) –Timelines
- Advantages of PEB
- Development
- Established Market
- Future of PEB

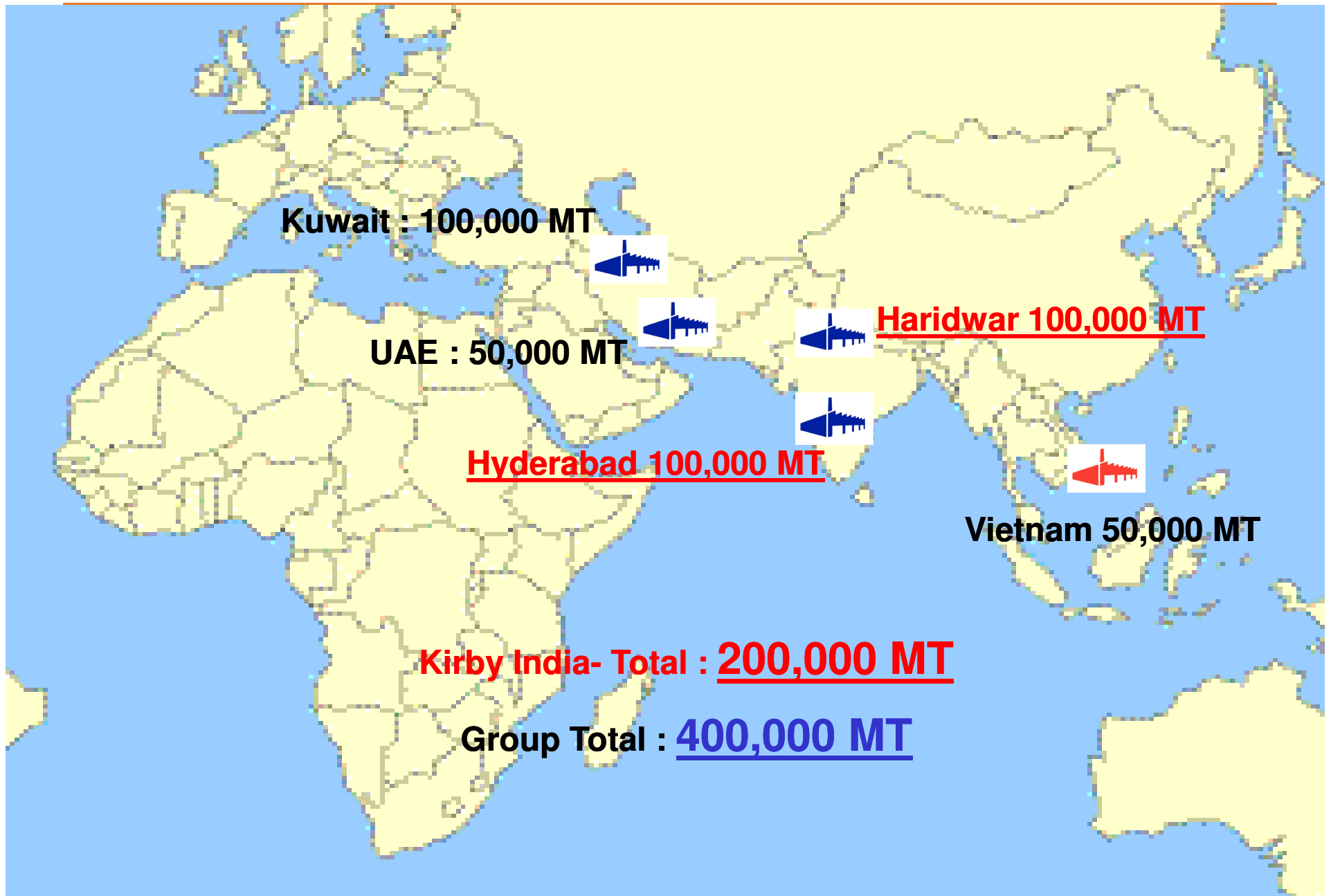
KIRBY - GLOBAL OVERVIEW

- ❑ 100% owned subsidiary of Alghanim Industries – a Kuwait based US\$2 Bn business conglomerate with diversified business interests such as Retail, Automotive, Industrial, etc.
- ❑ Kirby is in operation since 1976
- ❑ One of the world's **top 3** leading Pre-Engineered Steel Buildings (**PEB**) manufacturers in the world with **400,000 MT / pa** capacity.
- ❑ 5 - State of the art manufacturing facilities at Kuwait, Ras Al Khaimah (UAE), **Hyderabad** (India), **Haridwar** (India), and HCMC (Vietnam).
- ❑ 70 Sales offices and more than 250 builders strategically spread across the world.
- ❑ Over **50,000** landmark projects across the globe.

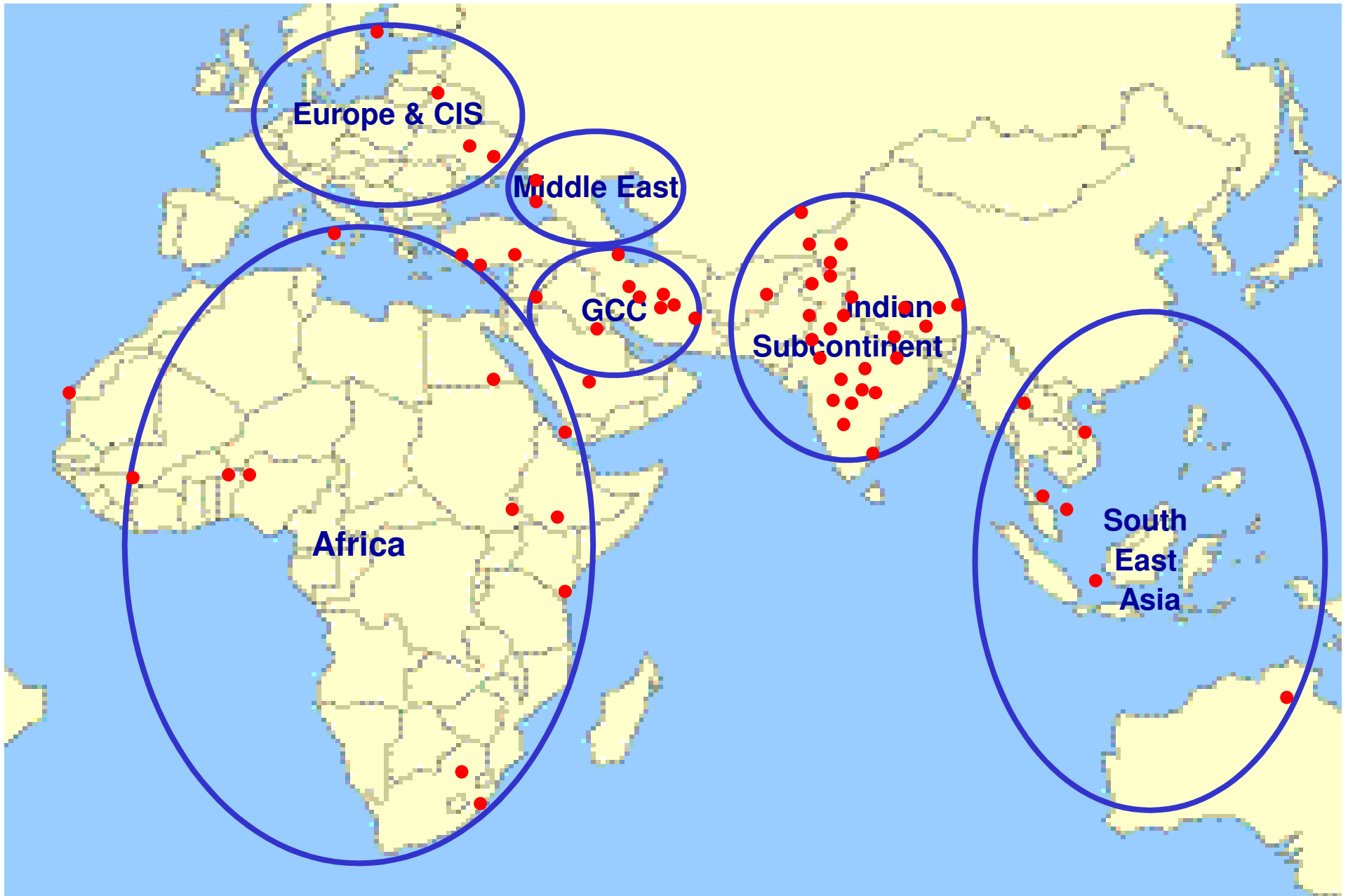


Committed to Excellence

5 - Manufacturing Facilities Worldwide



GLOBAL SALES NETWORK



KIRBY INDIA – CORPORATE OFFICE @ HYDERABAD



- ❑ OVER 3500 LOYAL CUSTOMERS TILL DATE.
- ❑ MORE THAN 10,000 BUILDINGS ALREADY DELIVERED IN INDIA.
- ❑ OVER 100 BUILDERS TRAINED AND CERTIFIED ON KIRBY'S ERECTION PROCEDURES.



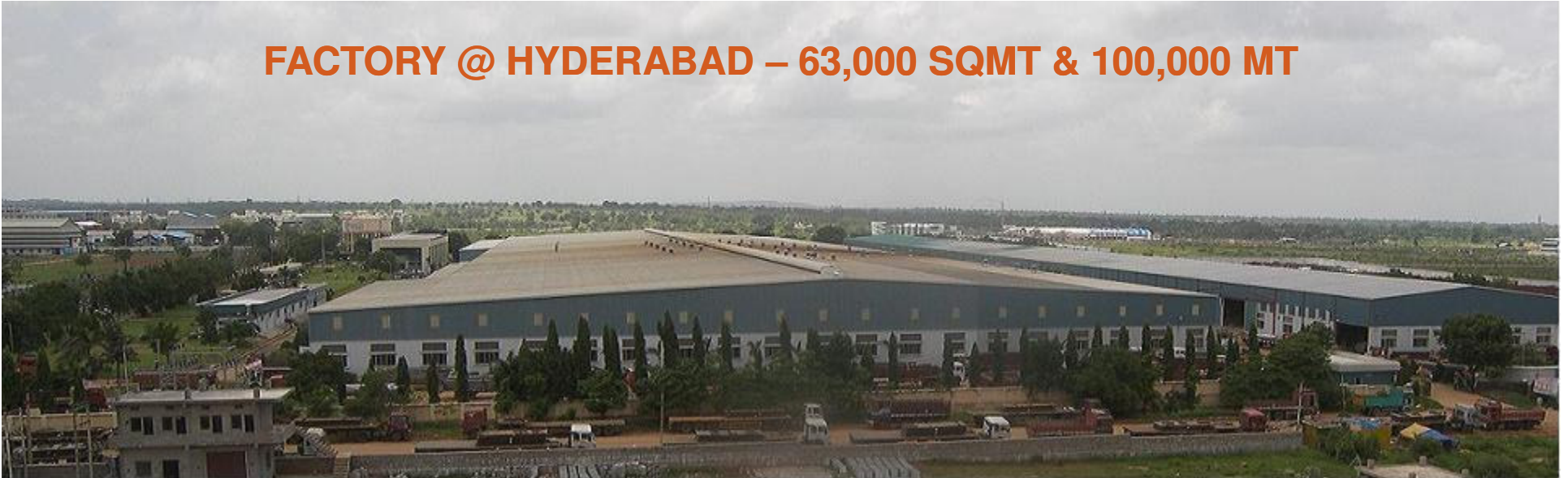
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KIRBY INDIA - SALES NETWORK



LARGEST CAPACITY IN INDIA

FACTORY @ HYDERABAD – 63,000 SQMT & 100,000 MT



FACTORY @ HARIDWAR – 47,000 SQMT & 100,000 MT



(ISO 9001 : 2008 CERTIFIED FACTORIES)

ENGINEERING FACILITIES

- ❑ STATE-OF-THE-ART COMPUTER FACILITIES TO DESIGN AND QUOTE FOR ANY KIND OF COMPLEX BUILDINGS WITHIN 2 TO 4 DAYS).
- ❑ STATE-OF-THE-ART COMPUTER FACILITIES TO PREPARE DESIGN AND DRAWINGS FOR ANY KIND OF BUILDING.



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SOFTWARES

- **LATEST SOFTWARE FOR DESIGN & ESTIMATION:**
 - **PACE – II, SMARTEST, STAAD – PRO**
- **DRAFTING FACILITY: X-STEEL, AUTOCAD**
 - **KADS (KIRBY'S AUTOMATED DRAFTING SYSTEM)**
 - **KAPS (KIRBY'S AUTOMATED PROPOSAL SKETCHES)**

RESULT OF ABOVE FACILITIES:

- **DESIGN AND DETAILING TIME MINIMUM - OFFERS TO CUSTOMERS IN THE SHORTEST TIME**
- **OFFER QUICKER DELIVERIES**

LARGEST STATE-OF-THE-ART FACILITIES

Built-up

- ✓ 5 Lines with wide range of product sizes
 - Flange - 6-60mm (Thick) / 130-800 (Width)
 - Web - 4-32 (Thick) / 188-2000 (Width)
 - Taper 0-15 Degree, Curve, Castellated
- ✓ Shot-blasting facility
- ✓ Spatter less FCAW welding
- ✓ Multiple coat paint application at factory

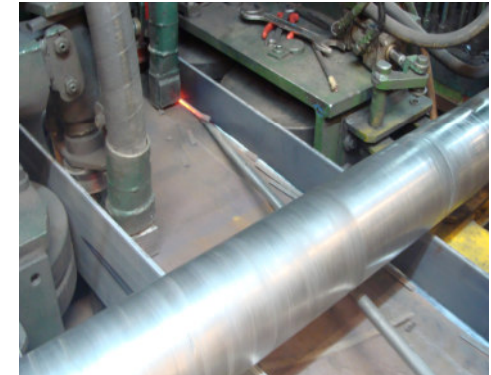


Multi Torch

Shearing



CNC-Drilling



H Beam Welding

Kirby



Shot Blasting



MULTI-TORCH PLATE CUTTING M/C



AUTOMATIC SUBMERGED ARC WELDING



AUTOMATIC ROLL FORMING - PURLINS/GIRTS



AUTOMATIC CLADDING LINE ROLLING



EXLUSIVE INTERNAL QUALITY LABORATORY

- ✓ Strict Check on Raw Materials & Finished Goods
- ✓ Mechanical properties testing (Destructive & non-destructive)
- ✓ Welding (DPT, MPI, Ultrasonic)
- ✓ Paint (DFT, CHS, WFT, Viscosity, Impact)



AWARDS & RECOGNITIONS



- EPC World Awards 2011 for the “Outstanding company in PEB”.

- Infrastructure Excellence Award – 2011 for M/s. Renault Nissan Automotive India Pvt. Ltd. – the World’s single largest PEB building involving over 23,000 MT of steel spread over an area of 300,000 sqm. in Chennai.



- Greentech Environment Award 2011.

- Greentech Safety Award 2012.



A member of the
**BRITISH
SAFETY
COUNCIL**

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WHY KIRBY?

***R&D
Practices***
Continuous
in-house
product
development

***Customer
Centric***
Fast & efficient
response,
ontime delivery
and speedy
project
execution

Expertise
Rich industry
experience
with more
than 50,000
buildings
across diverse
applications

***Local
Support***
Wide
distribution
network. Local
Kirby certified
builders



Engineering
Latest design
codes &
advanced
software tools

***Quality
Assurance***
ISO 9001:2008
Certification.
Latest
equipment to
monitor
quality

***Global
Sourcing***
To get the
best quality
product at
right value

***Manufactur
-ing***
Strategically
located plants
with large
capacities and
state-of-the-
art facilities

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SOME OF OUR CUSTOMERS



TIME LINES

Early 1900s Concept of metal buildings originated in U.S and gained momentum after the world war.

1940s Mass production of Defence buildings in steel using pre-fabricated concept became popular.

Metal building systems was recognized as a favorable method of construction over conventional methods.

1960s Computerized designs allowed buildings to be tailored to individual customer requirements.

Roll forming lines allowed continuous span cold rolled z-purlins.

Color coated panels and factory insulated panels improved architectural appearance

The term **Pre-Engineered Buildings** came into existence



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TIME LINES

1990s Pre engineered metal buildings dominated the low rise building market in the developed world.

MBMA statistics show, about 60% of industrial and commercial bldgs. in the developed world, use PEB.

2001 PEB concept widely accepted in the developing countries like India.

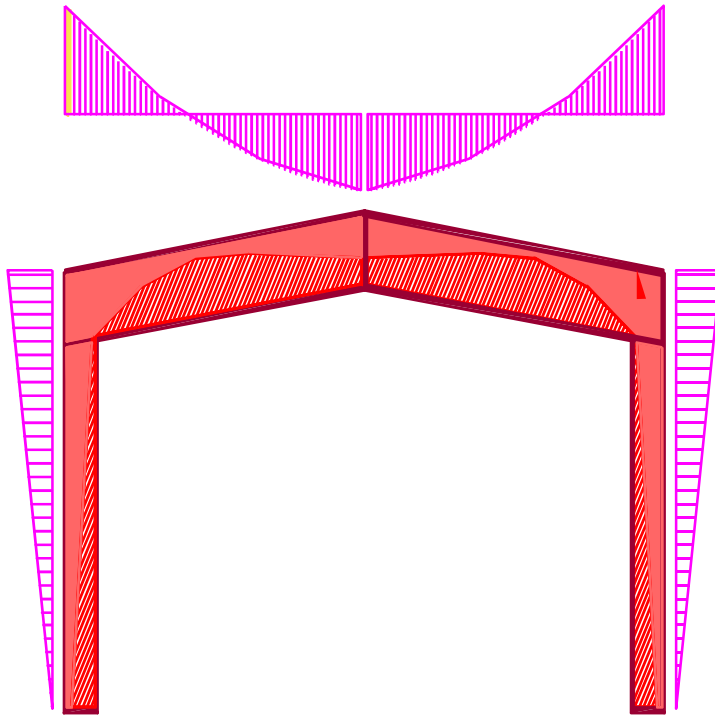
The PEB Advantage

Responsibility

Single source of supply results in total responsibility

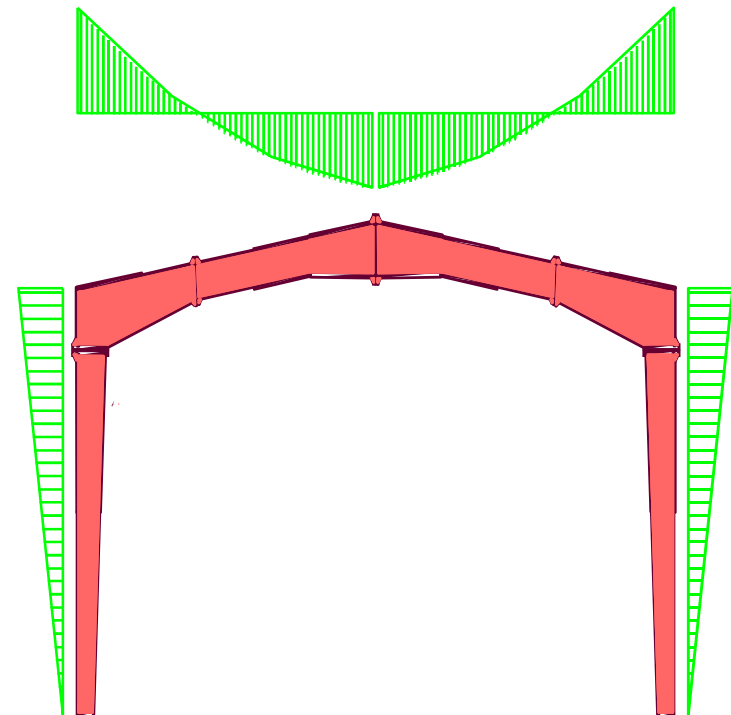
The PEB Advantage

21



Conventional steel uses straight members designed for the maximum internal stress in the member.

The shaded area shows parts of the member which could be optimized



The frame geometry matches the shape of the internal stress diagram

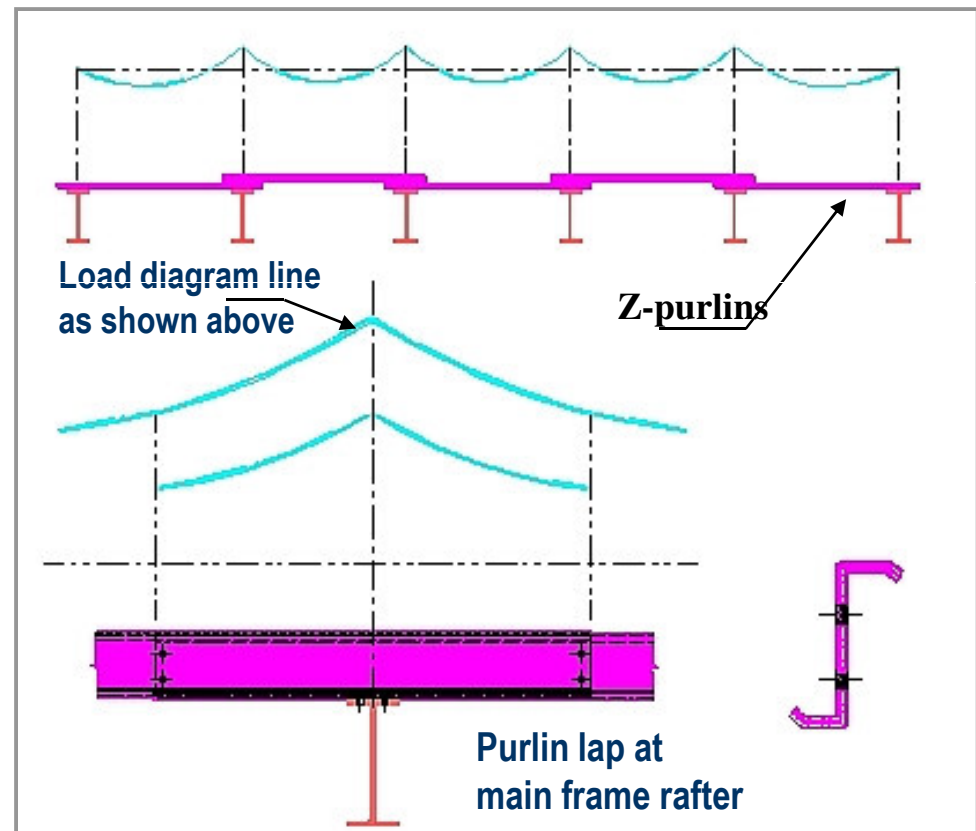
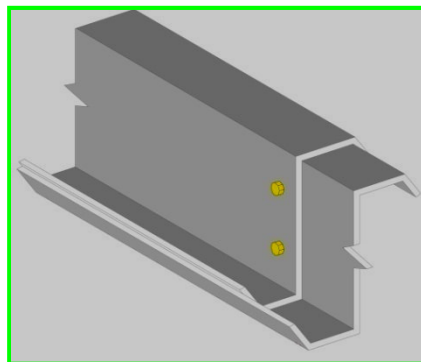
PEB frames are tapered and flanges and webs often have variable thicknesses

Minimizes material use and reduces the total weight.

The PEB Advantage

22

Nesting Z-shaped purlins and girts allows them to act as continuous members along the length of the building.



Design

Standardised methods, specialized
computer analysis and design
Programmes optimize material usage;
Quick and efficient.

Structure Weight

Lighter thru efficient use of Secondary members that are light gage cold Formed 'Z' or 'C' shaped members and optimization of sections

The PEB Advantage

25

Delivery

Average 6 to 8 weeks



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Erection simplicity

Since PEB use simple bolted connections erection is much simpler and faster

Erection Cost

Both costs & time of erection are accurately known based upon extensive experience

Appearance

Aesthetically very appealing and nice

Environmentally Friendly

All the materials used are recyclable

ESTABLISHED MARKET FOR PEB APPLICATIONS

Industrial Buildings

Warehouses

Supermarkets

Auto Agencies

Offices

Ports

Low Cost Housing

Aircraft Hangars

Workshops

Agricultural Buildings

Community Buildings

Recreational Buildings



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Development of the Industry

PETROL STATIONS



RUCHI INFRASTRUCTURE - INDORE



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HINDUSTAN UNILEVER - ASSAM



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H V EXPORTS, NEW DELHI



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RENUKA SUGARS - HALDIA



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RENUKA SUGARS - HALDIA



METRO CASH & CARRY - HYDERABAD



IMTMA - BANGALORE



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AIRCRAFT HANGARS- DELHI



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FACTORY BUILDING



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ARJUN TECHNOLOGIES - CHENNAI



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HEAVIER & MORE INTENSE STRUCTURES



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L&T SHIPYARD - CHENNAI



Kirby

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SE FORGE - COIMBATORE



150/60/50 MT- EOT/SEMI GANTRY CRANES



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SUZLON WIND ENERGY - MANGALORE



❑ Worlds largest rotor blades manufacturing facility for wind turbines.

❑ PEB structure with area of 150,000 sqm & 12,500 MT of steel.

**130 MT
CRANE**

SIEMENS LTD. - BARODA



150 TON CRANE STRUCTURE



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THERMAX - BARODA



200 MT- EOT GANTRY CRANES



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ABB LIMITED - BARODA



- 120 MT/80MT- EOT TWIN GANTRY CRANES
- 120 MT CRANE @ 12M + 80 MT CRANE @ 8M.
- 61 BC-2 X 76M X 13.7 CLEAR



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AESTHETICALLY SENSITIVE



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SRI SAI CARS (SHOWROOM) – JAMSHEDPUR



AEGIS LTD - NAGPUR



CRICKET STADIUM - VIZAG



CALVARY TEMPLE - HYDERABAD



DELHI METRO – NEW DELHI



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DELHI METRO – NEW DELHI



Railway Station



Inspection & Workshop Buildings



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**4500MT /
55000 m2**



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BANGALORE METRO – BENGALURU



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SGL CARBON - PUNE



MEGA ONES



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MRF LTD - TRICHY



**7500MT /
82,000 m2**



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RENAULT – NISSAN - CHENNAI



TATA MOTORS (NANO FACILITY) – SANAND, GUJARAT

TCF BUILDING



ENGINE SHOP



SE FORGE - COIMBATORE



- ❑ Worlds largest foundry under one roof supplying forgings for Gear Box manufacturers
- ❑ PEB structure with area of 62,000 sq.m & 8000 MT. 30 mts module BC2 building with cranes from 60 to 120 MT capacity.



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NOKIA - CHENNAI



**2500MT /
28,000 m2**

PIPAVAV SHIPYARD - GUJARAT



- Largest shipbuilding facility in the country
- Tallest PEB Manufacturing facility in the country with cranes from 20 MT to 150 MT.
- 60,000 Sqm involving steel > 9000 MT with crane beams of 25 m span without support.

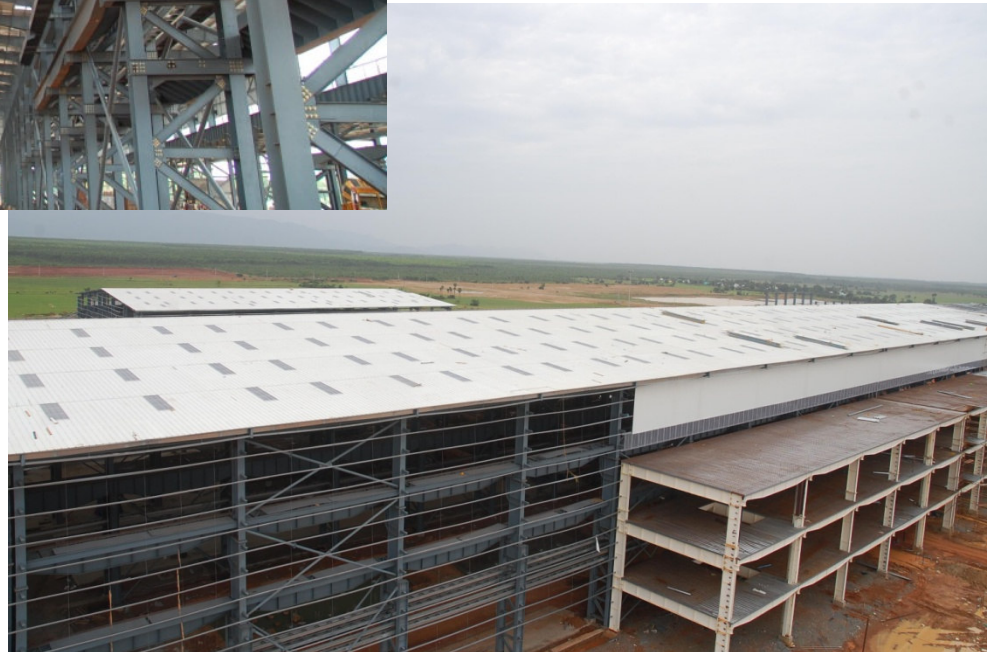


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DANIELLI - AP



**8000MT /
40,000 m2**



GAMMON INDIA (STEEL BRIDGE GIRDER) – NEW DELHI



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HANSEN DRIVES - COIMBATORE



- ☐ Worlds largest Gear Box manufacturing facility for wind turbines acquired by Suzlon
- ☐ PEB structure with area of 110,000 sqm & 19,500 MT. Bldg spans vary from 12 to 32 mts & ht 11 to 22 mts.



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HANSEN DRIVES - COIMBATORE



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HINDUSTHAN NATIONAL GLASS - NELLORE

**5200MT /
20,000 m2**



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KALYANI GLOBAL - KUTCH



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KALYANI GLOBAL - KUTCH

- Project conforming to strict code : IS 7215
- 3 Coat PU Paint System Combined with manufacturing complexity



Crane Beam with web depth of
2.2 Metres



Intermediate Coat Painted Structures Stacked

12.01.2012 15.13

DONGYANG (POSCO) - PUNE

- Heavy structures with stringent tolerances
- High capacity crane beams
- NDT welding quality
- Multiple coat painting at factory
- 2.5 mtr. x 12 mtr. Structures



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DONGYANG (POSCO) - PUNE



**Next Growth Curve for
PEB Industry**



MADHUCON PROJECTS (TG BLDG) - NELLORE



Heavy structural columns weighing 17 MT each with 40mm thick flanges

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STERLITE INFRATECH – AURANGABAD



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PHYTO LIFE SCIENCES – HALOL



L&T SHIPYARD - CHENNAI



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TOSHIBA-JSW – CHENNAI



TOSHIBA-JSW – CHENNAI

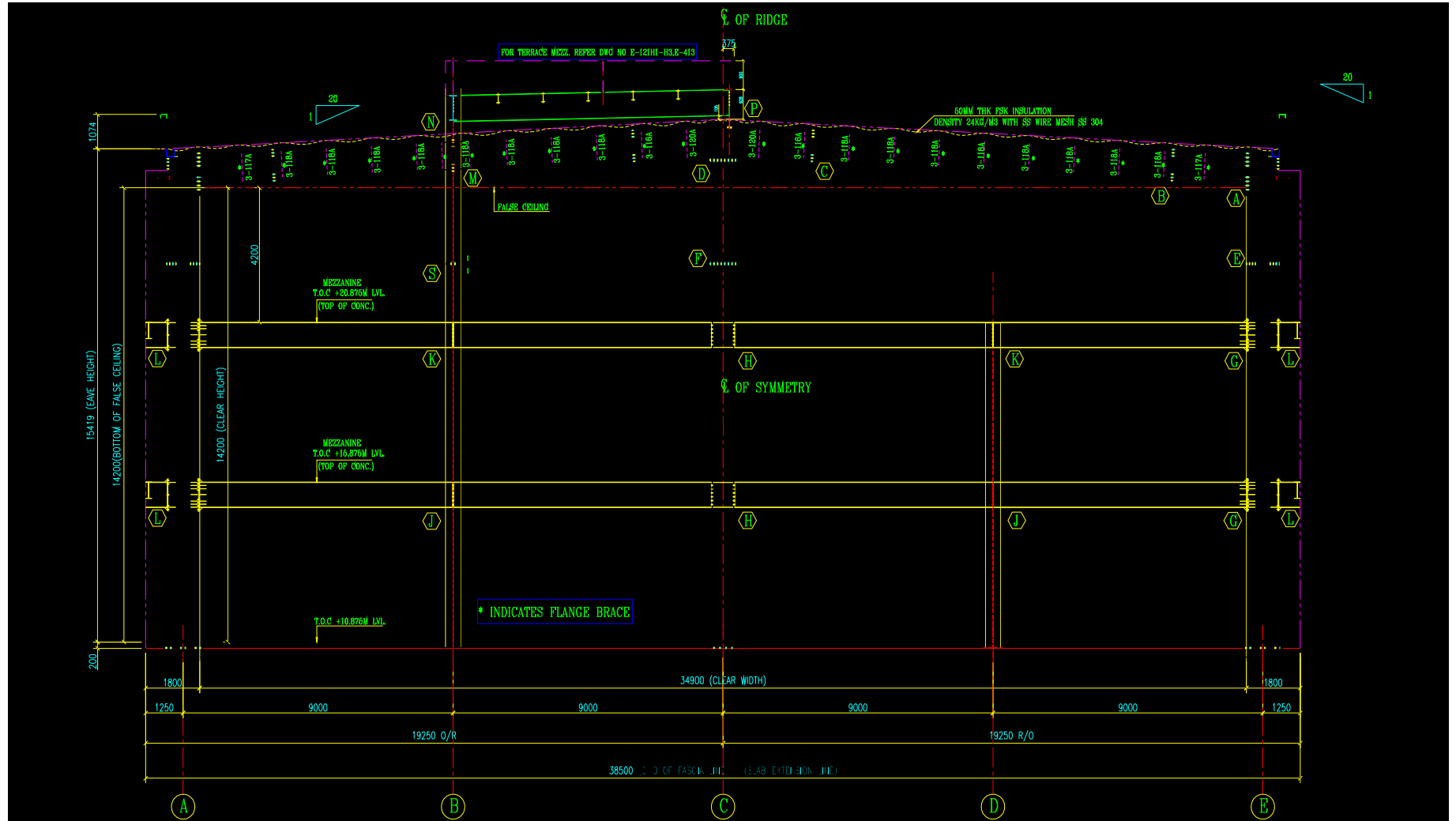


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RELIANCE INDUSTRIES LTD - MUMBAI



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RELIANCE INDUSTRIES LTD - MUMBAI



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NORTH EASTERN COUNCIL - SHILLONG



NORTH EASTERN COUNCIL - SHILLONG



SPECIAL PROJECTS



**AL SHA'AB MEDICAL
CENTRE - KUWAIT**

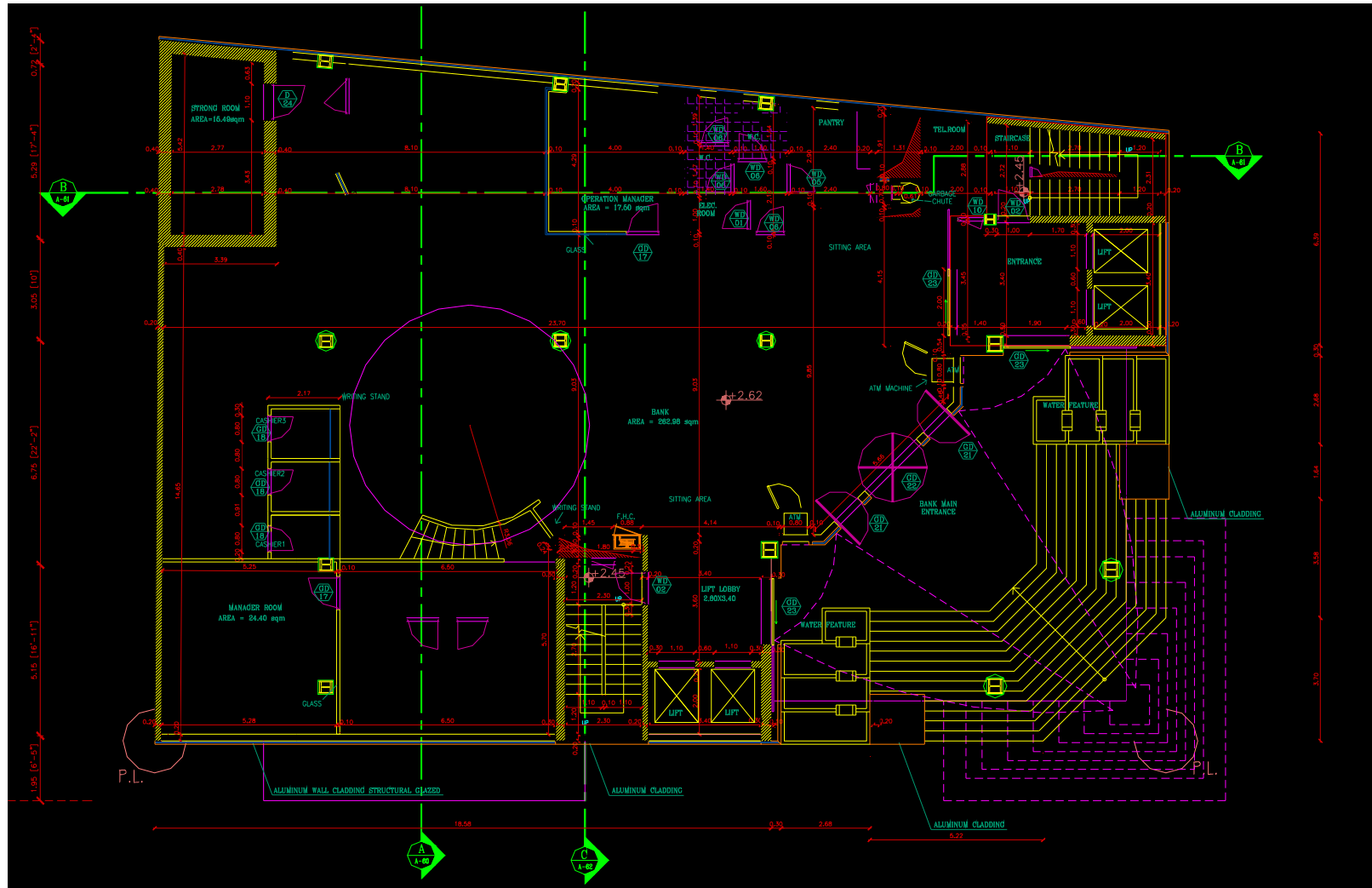


JAHRA HOSPITAL - KUWAIT



UNION PROPERTIES OFFICES - DUBAI, UAE

BANK SADIRAT

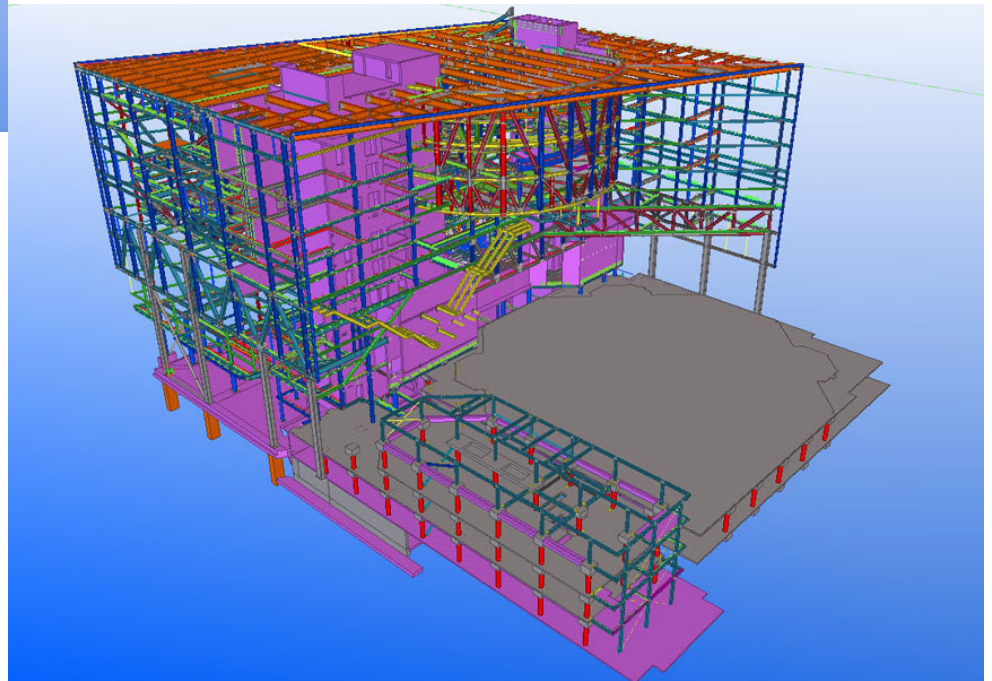
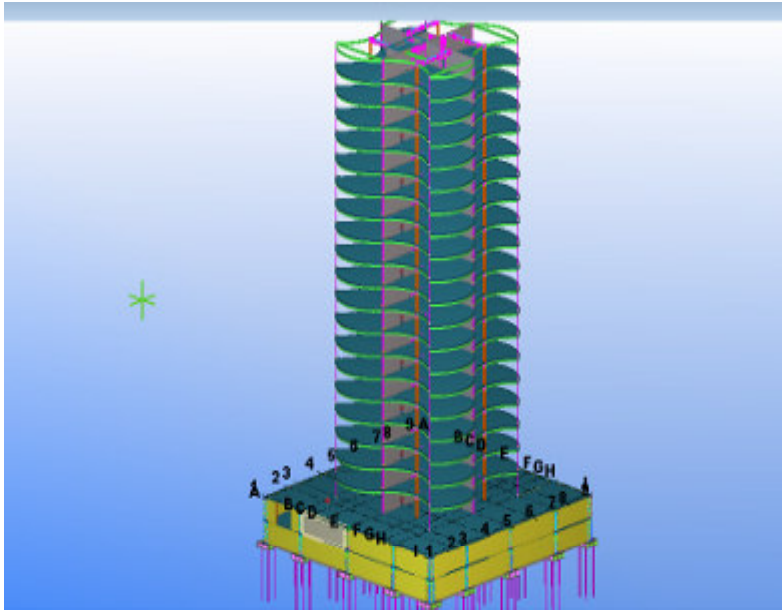


BANK SADIRAT – DUBAI, UAE



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SPECIAL SOFTWARES FOR DESIGN AND DETAILING



AL-FAHIM CAR PARK - ABU DHABI, UAE



QAIS ALGHANIM RES.BUILDING - KUWAIT





ENMA MALL, BAHRAIN

EMERGING TRENDS IN PEB INDUSTRY

- PEB industry has grown leaps and bounds in the last 10 years in India.
- PEB industry in India in the last 10 years has outpaced the growth of existing 100 years of PEB industry in developed countries like U.S especially in the areas of diversification and offering steel building solutions.
- PEB industry in the developed countries still restrict themselves and operate within the barriers of low rise building category (buildings with height $\leq 20\text{m}$).
- PEB in India have successfully ventured beyond this barrier and demonstrated that PEB's are the most preferred future steel building systems.
- Sophisticated software packages have been developed interlinking design, detailing and fabrication enabling faster deliveries.
- The composite decking design philosophy will go a long way in high rise steel building having number of floors.

EMERGING TRENDS IN PEB INDUSTRY

- Diversification of PEB industry into major conventional steel areas such as shipyard structures, power plant structures, stadiums, high rise steel buildings and buildings with very heavy cranes etc.
- “Time is money”, “Value for money”, “Life cycle time saving cost”, “Milestone penalties” are some of the most important terminologies that have become the talk of the town, thanks to PEB.
- Customer perception and mindset have totally changed and is able to exercise better control on PEB manufacturers on all fronts, thanks to PEB industry concepts.
- Speed, quality, design optimization, aesthetics have really taken PEB industry a long way.
- Green building concepts such as eco friendly, energy efficient systems have already got imbibed into the pre engineered building design, production and construction concepts.
- PEB industry is able to penetrate into other diversified areas with above mentioned advantages.

THANK YOU !



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