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Decoding COMPLEXITY  
 to Deliver SIMPLICITY





## PHENIX CONSTRUCTION TECHNOLOGIES

Phenix Construction Technologies is a trusted name in offering end-to-end solutions for Pre-engineered Building and Structural Steel projects. Synonymous with precision solutions, process expertise and execution excellence – Phenix takes pride in its diversified project portfolio spanning key industries right from infrastructure, automotive and engineering to F&B, pharmaceuticals and power.

The company's progressive engineering approach gets manifested in sophisticated solutions. With an experienced team of professionals, deep understanding of on-ground complexities, multi-domain knowledge complemented by a state-of-the-art manufacturing proficiency and an innate passion for perfection – Phenix is adept at delivering on complex specifications with effortless ease.

### M&B Group

Phenix is a division of the M&B Group, a six-decade old infrastructure giant with an annual turnover exceeding INR 8 billion (USD 112 million). The M&B Group primarily provides large-scale turnkey solutions in the construction and engineering sectors and boasts a portfolio of a plethora of projects in sectors such as Power, Irrigation, Maritime, Industrial Construction, Highways, Railways, Bridges, and Flyovers. An in-depth knowledge of construction, top-notch equipment, technologically advanced prowess, progressive management and a strong execution team has made the Group a reliable name in the Infrastructure Sector.

### Capabilities

- Designing, manufacturing and installation of Light to Heavy Complex Steel Structures and Pre-Engineered Buildings (PEBs)
- Sustainable design initiative to provide cleaner and energy-efficient buildings
- In-house Design & Engineering office at Hyderabad, with a total strength of 91 Certified Designers and Detailers. Experienced in working with institutions such as IIT, IISc, JNTU, RITES and third-party design establishments
- Thorough working knowledge of design codes such as IS 800: 1984 WSD, IS 800: 2007 LSD AISC, MBMA & BS
- ISO 9001 & OHSAS 18001 accredited, RDSO and NABL Certified, member of IGBC and FM global approved
- State-of-the-art manufacturing facility in Gujarat, India with a production capacity of 72,000 MTPA
- Plant located in close proximity to leading ports of Gujarat, India
- Global Footprint - largest exporter of steel construction projects from India
- Experience of working in all major industrial sectors and infrastructure projects, including working with the leading global solar thermal technology provider
- Features among the top 3 steel construction companies of India

## Simplified Offerings

### Pre-Engineered Buildings (PEBs)

- **Primary Structural Members**  
Main Frame - Columns | End-wall Posts | Rafters (i) Solid Web (ii) Open Web | Other Main Support Members
- **Secondary Structural Members**  
Purlins & Girts | Eave Strut | Cable | Angle | Pipe | Builtup | Rod Bracing | Wide Bay Truss Purlins (Cold Formed / HR)
- **Claddings**  
Pre-painted Galvalume (Alu-Zinc) Sheeting is a multi-layer coated profile with environment specific paint coating and is available with or without insulation. PPGL panels are offered with wide range of coatings namely RMP, SMP, SDP, PVDF; commensurate with project location.
- **INTERLOCK 360TM (Standing Seam Roof - SSR)**  
Leakproof | Zero maintenance Interlocking panels
- **Accessories**  
Fasteners | TUF - Dome Lite | Sliding Doors | Mastic Tape | Walk-way Doors | Insulation | Glazing Windows | Roof Curb | Fixed Ventilators | Roof Jack | Turbo Vents | Roll-up Doors | Ridge Vent Sealants
- **Erection and Installation**  
From selection of appropriate structures to economic designs, we monitor and supervise the entire project till completion.
- **Industry Applications**  
Airports | Automobiles | Commercial Buildings | Engineering & Manufacturing | Food Processing | Infrastructure | Pharmaceuticals | Power | Retail | Textile | Warehousing & Logistics

### Structural Steel

#### Hot Rolled Steel Sections

- Universal Beam (UB) / Universal Columns (UC)
- European Section - HEA / HEB
- Indian Sections - ISMB / ISMC
- CHS - Circular Hollow Sections
- RHS - Rectangular Hollow Sections
- PFC - Parallel Flange Channels
- W - Wide Flange Beams
- Equal / Unequal Angles
- ISMB - Beams
- ISMC - Channel

#### Steel Grades Used

A36 | S235 | S275 | S355 | IS 2062 - E250 | E350 | E410 | E450 | E550

#### Industry Applications

Airports | Desalination Projects | Heavy Industries | Hi-rise Buildings  
Oil & Gas | Petrochemicals | Power Projects | Special Projects

### Turnkey Solutions

We provide Turnkey Steel Solutions from initiation to completion. This includes civil, mechanical and electrical work along with design, manufacturing and erection.



## Main Frames

Phenix offers various framing systems depending on requirement and application.

### PHX Rigid Frame



#### Function

Steel frames are made up of two columns and two sloped beams known as 'Rafters', which support the roof of the building. This arrangement provides a stable frame upon which sheeting is placed to form a building.

#### The Phenix Edge

- Ideal system when economical and column free space is required for flexibility in plant layout
- Possible clear span of up to 120mtrs.

### PHX Continuous Beam



#### Function

This system is based on the rigid frame concept with the addition of intermediate support columns hence allowing larger building width and economical designs.

#### The Phenix Edge

- Lowest cost per square metre of space
- Interior column spacing of 20mtrs. or more
- Any width or Eave height possible
- Ideal for large production or storage areas

### PHX Unibeam



#### Function

A Unibeam Frame comprises a single gable clear span with straight hot-rolled sections for columns and built-up sections for rafters. It is designed in accordance with AISI type-II construction.

#### The Phenix Edge

- Facilitates straight side walls and ceiling lines
- Economical for clear spans of up to 20mtrs.

### PHX Lean-to



#### Function

Lean-to consists of a column and one sloping rafter. It is supported at the rafter end by an adjacent building and on the other end by a column.

#### The Phenix Edge

- Open, unobstructed interior space
- Flexible and economical design
- Peaked, single-slopes, slope and lean-to roof configurations
- Spans of up to 30mtrs. possible

### PHX Deck Frame



#### Function

The deck sheet members are provided for multi-storey buildings. A thin layer of cement concrete mixture can be spread over it and any kind of flooring can be done on it as required.

#### The Phenix Edge

- Designed for mezzanine floors and membrane roof applications
- Enhances speed and economy of steel floor construction
- Aesthetically superior

## Secondary Structural Members

Secondary members are load-carrying members suitable to ensure the stability of the building against forces from all directions. These primarily include Purlins and Girts, Eave Struts, Cable Bracing and Open Steel Web Joists.



### PHX-Zees

**Depth** : 165 to 300 mm  
**Thickness** : 1.5 to 3.15 mm

### Purlins and Girts

#### Function

Purlins and Girts are structural members placed under the roof, wall and the perimeter of the building, hence serving as supports to the roof sheeting and wall cladding.

### PHX-Cees

**Depth** : 165 to 250 mm  
**Thickness** : 1.6 to 3 mm

Available in black 180 & 275 GSM

#### The Phenix Edge

- Offer large column spacing
- Surface preparation and superior on-line painting carried out for improved corrosion resistance
- Pre-galvanised members for maintenance-free buildings



### Eave Struts

#### Function

These are structural members located along the sidewall top. Their primary function is to support the gutters along with acting as a junction of the roof and the wall cladding.



### Open Web Joists

#### Function

These are long-span, load-carrying members suitable for direct support of the floors and roof decks in buildings.

#### The Phenix Edge

- Offer larger spans



### Cable / Angle / Rod Bracing Tube (CHS/SHS/RHS)

#### Function

These members are designed to ensure the stability of the building against forces in the longitudinal direction due to wind, cranes, earthquakes, etc.

#### The Phenix Edge

- Can accommodate any length
- Painted or Pre-galvanised

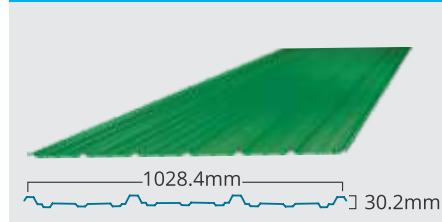


## Claddings

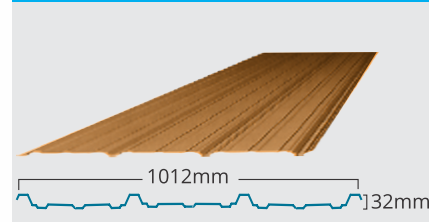
Phenix's Pre-painted Galvalume (Alu-Zinc) sheeting is a multi-layer coated profile to ensure a longer life under different weather conditions and better aesthetics.

Phenix offers the following Claddings as standard:

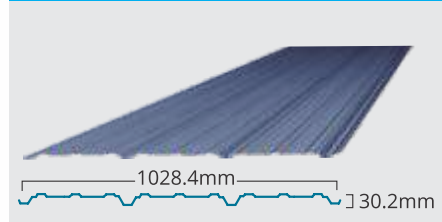
### PHX Rib For Roof



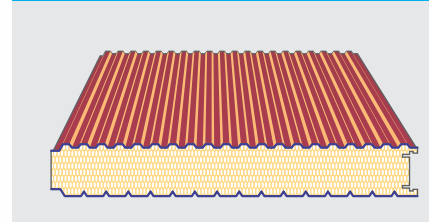
### PHX Deeper Rib For Wall



### PHX Reverse Rib For Wall



### PHX PUF Rib For Roof & Wall



### Function

These Claddings can be used for roofs and wall skins (sheeting) that cover the main steel frame and are available with or without insulation. Sandwich Panels comprise an exterior metal skin, a Polyurethane core and an interior flat skin made of metal. The core thickness is available in 35, 50, 75 and 100mm. The density of Polyurethane is 35-40 kg/m<sup>3</sup>.

### The Phenix Edge

- Roof slopes as low as 1:10
- Width: 1000mm Length: up to 12mtrs.
- Options for energy-efficient roofs
- Purlin-bearing edge improves strength and sturdiness
- Fiberglass / other insulation provision

## Additional Components

### Fascias and Canopies



### Function

Fascias are surfaces, which are placed outside the building to improve its aesthetic look. Canopy is an overhanging structure or projection of roof to provide shelter for any frame opening of the side or end wall. It can be fixed to the sidewalls matching with eave height or below the eave level of the side or end wall.

### The Phenix Edge

- Fascia: 1.2mtrs. to 1.8mtrs. in height
- Canopy: 0.3mtrs. to 10mtrs. in width

### Mezzanines



### Function

Mezzanines serve as intermediate floors between the main floors of the building.

### The Phenix Edge

- Mezzanine can be customised to any size
- Recommended 3-9mtrs. (generally a 6mtrs. x 6mtrs. grid for economy)

### Crane Beams



### Function

Crane Beams are members that support the crane gliders and facilitate the crane movement. These can be supplied to support the overhead cranes, under slung cranes, monorail and wall-mounted cranes.

### The Phenix Edge

- High experience in installing Crane Beam to support more than 300 MT cranes

## Specialty Roofing Systems

### InterLock 360™

This special screw-less system comes with several unique features offered for the FIRST TIME IN INDIA.

### The Phenix Edge

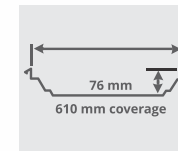
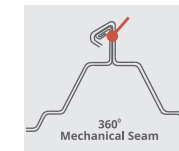
### Fully Seamed Roof

Uniquely profiled & seamed ridge cap for enhanced weather-tightness and rigidity at roof apex



### 360° Mechanical Seam

100% leakproof



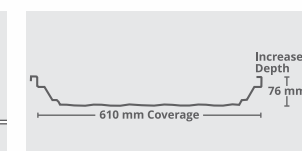
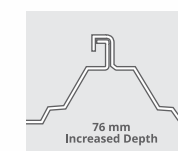
**Interlocking Standing Seam Roof Panels, which provide long-term superior weather-tightness**

**A world-class system with a 10-year leakproof warranty**



### 76mm Increased Depth

High rib of 76mm offering superior sectional properties, which give it a higher strength and ensure quicker drainage of water



### Factory-made InterLock 360™

An on-line sealant application that ensures weather-tightness at the seam after installation



### Movable Clip

A sliding arrangement to allow free expansion and contraction of the roof due to thermal effects



**InterLock 360™ comes with a 10-year leakproof warranty, which makes our Pre-Engineered Buildings last longer than any other.**





## Unique Features of SSR Profile

- High Speed Versatile Profile Former
- 610mm wide, 76mm Depth Profile
- 100% Leakproof Standing Seam
- Field Seam 360°
- Weather Resistant Joint
- Exclusive Slotted Clip allows 2 inch Thermal Expansion

### Profile Drawing



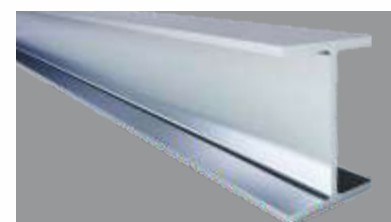
## Structural Steel



### H-Beams

H-beam is named by its H-shaped cross-section. It is convenient and simple to connect, manufacture and install due to its parallel flanges. As a new construction material, H-beam offers a reasonable cross-sectional shape and good mechanical properties. This product includes HW wide

flange, HM medium flange, HN narrow flange, etc. With a very high stability, high plasticity and ductility, they are used for buildings that need to bear a heavy load and to withstand strong vibration and natural calamity, particularly those constructions located in earthquake prone belt.



### I-Beams

Hot Rolled I-beam, also called Steel Girder, is a strip steel product with I-shaped cross-section. I-beam has a reasonable cross-sectional shape, which can improve its load-bearing capacity. I-beam has high stability and high strength. It is mainly used in Plants, Bridges, Ships, Vehicles and

other large-scale structures. This product is available in various categories.



### Hot Rolled Sections

#### T-Beams

- Flange width: Max of 1000mm
- Length up to 12mtrs. without welding joints

#### Box Beams

- Width: max of 1200mm x 1200mm, Length up to 12mtrs. without welding joints

### Plus / Cross Beams

- Maximum weight per section: 35 tonnes
- Maximum size per column: 2500mm x 1000mm
- Range of plate thickness: 6mm to any thickness



### Tapered Columns

Tapered can be increased to reduce the footing size and save floor space.

### Columns and Rafters

Flange thickness 40mm and width up to 600mm. Web depth 2000mm and thickness up to 25mm.



### Phenix Truss System

A lattice structure, ideal for large span roof systems, multiple bay buildings and as mezzanine floor framing. These structures are individually designed to meet the specific requirements of each building and are fabricated utilising high quality efficient

fixtures. The system allows for easy erection, as all connections are field bolted.

## The Phenix Edge:

### Beams and Girders tailor-made to customer's specifications

- Beams fabricated to precise dimensions through automatic / mechanised processing
- CNC programmed flame cutting for high accuracy and precision in plate cutting
- Edge and face mill facilities for precise finishing
- Hole drilling, sawing and marking done on-line on automatic drilling / sawing / marking machines
- Fabricated components shot / slag blasted before painting
- Mechanised handling to eliminate possibilities of mechanical damage
- Beams can be delivered face milled, shot-blasted, painted or primer coated in factory finished condition
- Jumbo size fabricated beams with drilled holes, studs, stiffeners, base plates, splice plates ready to be used at the site
- Custom range of Plate Fabricated Beams, Box Beams, Star Beams and Girders for construction of Bridges (ROBs), Flyovers, Metro Rail Projects, Power Plants and Super Critical Boiler Columns, Industrial Structures, Material Handling Systems, Refineries, Steel Plants, Airports, Shopping Malls, Stadiums, Utility and Multi-storeyed Buildings

### Heavy Fabricated Structure

- Stocking Facility
- Steel Plates purchased directly from all major HR plate manufacturers of India
- Delivered to length with minimum joints
- State-of-the-art, efficient handling equipment
- Welding Bay with Sawing and Drilling Facility
- Automatic submerged arc welding lines
- In-house NDT testing facility\*
- Ongoing inspection and welding quality testing
- CNC controlled as well as manual cutting and drilling options
- Fabricated Sections Production Line
- Sections fabricated from plate
- Automatic material handling
- Automatic twin head welding
- Sections up to 12mtrs. long, 3.5mtrs. deep
- Online Shot Blasting up to SA 2.5 and Painting Line
- Varied project and environment specific paint system

\*NABL accredited Lab. AISC accredited manufacturing facility



# Simply, The Best

We operate from a state-of-the-art manufacturing facility in Gujarat, India, with a production capacity of 72,000 MTPA. Our scale of operation makes us capable of handling large projects, our experience assures timely execution and adherence to quality.

## Plant Machinery

In order to augment the expertise of our dedicated team of engineers and designers, we have invested in the latest and the best technologies and machinery in the Steel Building Industry. Our CNC-enabled machines are programmed to work without any human intervention, which results in an error-free manufacturing process and quality products with shorter cycle times and quicker response.

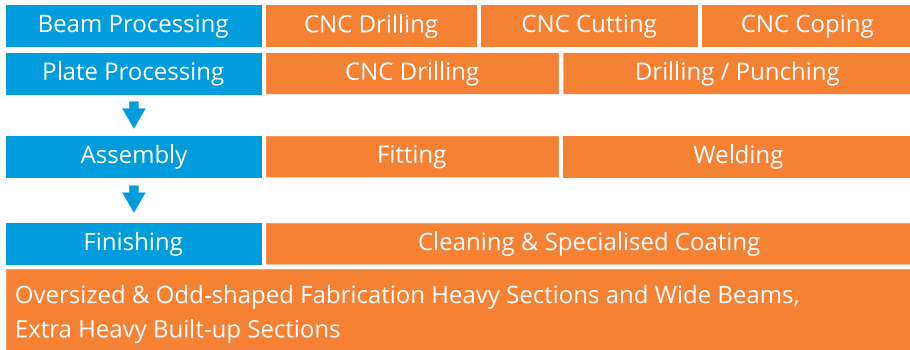
## Production Capacities

- Operating Capacity: 6000 MT/Month
- Built-up / Primary: 3800 MT/Month
- Secondaries: 1200 MT/Month
- Roof / Wall Coverings: 1000 MT/Month

## State-of-the-art Manufacturing Facilities

High precision, CNC-enabled manufacturing equipment for the first time in India  
 Plasma Cutting Torches | Oxy Acetylene Cutting Torches | Flange Lines | Welding Stations | Hydraulic Lifts | Beam Welding Machines (SAW) | Online Shot Blasting & Painting System | Sheet Profiling Machine | Integrated Purlin Forming & Painting Lines | Deck Panel | Profiling Lines

## Manufacturing Process



# SECTOR APPLICATIONS



AIRPORTS



AUTOMOBILES



COMMERCIAL BUILDINGS



ENGINEERING



FOOD PACKAGING



HEAVY INDUSTRIES



HIGH-RISE BUILDINGS



INFRASTRUCTURE



MANUFACTURING



OIL & GAS PETROCHEMICALS



PHARMACEUTICALS



POWER



RETAIL



TEXTILE



WAREHOUSING & LOGISTICS



METROS



PORTS



SPORTS





## CARLSBERG

Sector Food Processing | Location Patna | Area in Sq. Mtrs. 8,900



## BMW

Sector Automobile | Location Chennai | Area in Sq. Mtrs. 50,000



## BHARTI DELMONTE

Sector Food Processing | Location Hossur | Area in Sq. Mtrs. 17,000



## ESENNAR TRANSFORMERS

Sector Power | Location Hyderabad | Area in Sq. Mtrs. 5,500





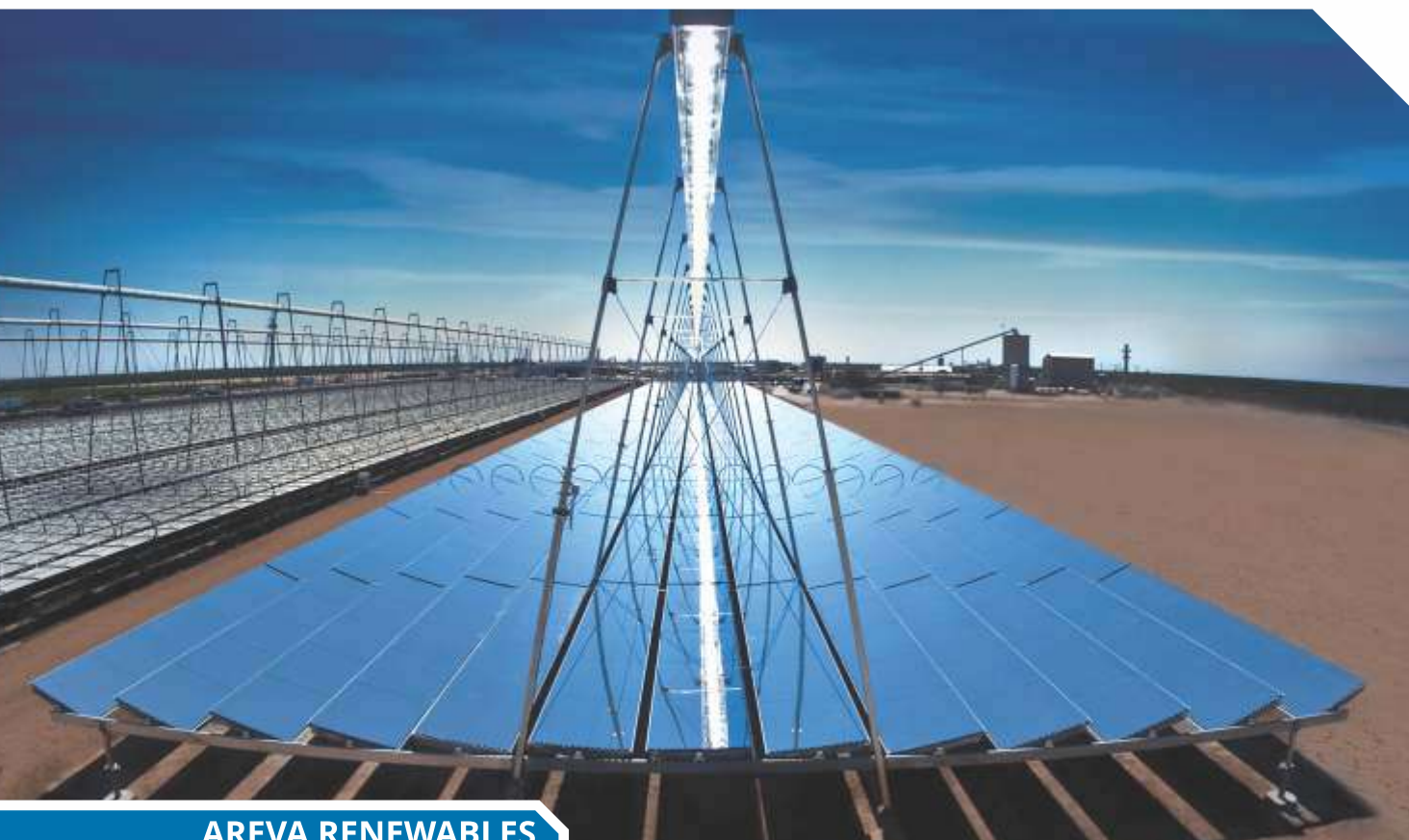
## TATA MOTORS

Sector Automobile | Location Sanand | Area in Sq. Mtrs. 76,000



## NMDC

Sector Power | Location Chattisgarh | Tonnage 4,100 MT



## AREVA RENEWABLES

Sector Power | Location Pokhran | Tonnage 17,550 MT



## BORL

Sector Power | Location Bina | Area in Sq. Mtrs. 21,600





### TRIDENT INDUSTRIES

Sector Textile | Location Budhni | Area in Sq. Mtrs. 1,80,000



### K & D COMMUNICATION

Sector Commercial | Location Gandhinagar | Area in Sq. Mtrs. 45,000



### ASHAPURA GARMENTS

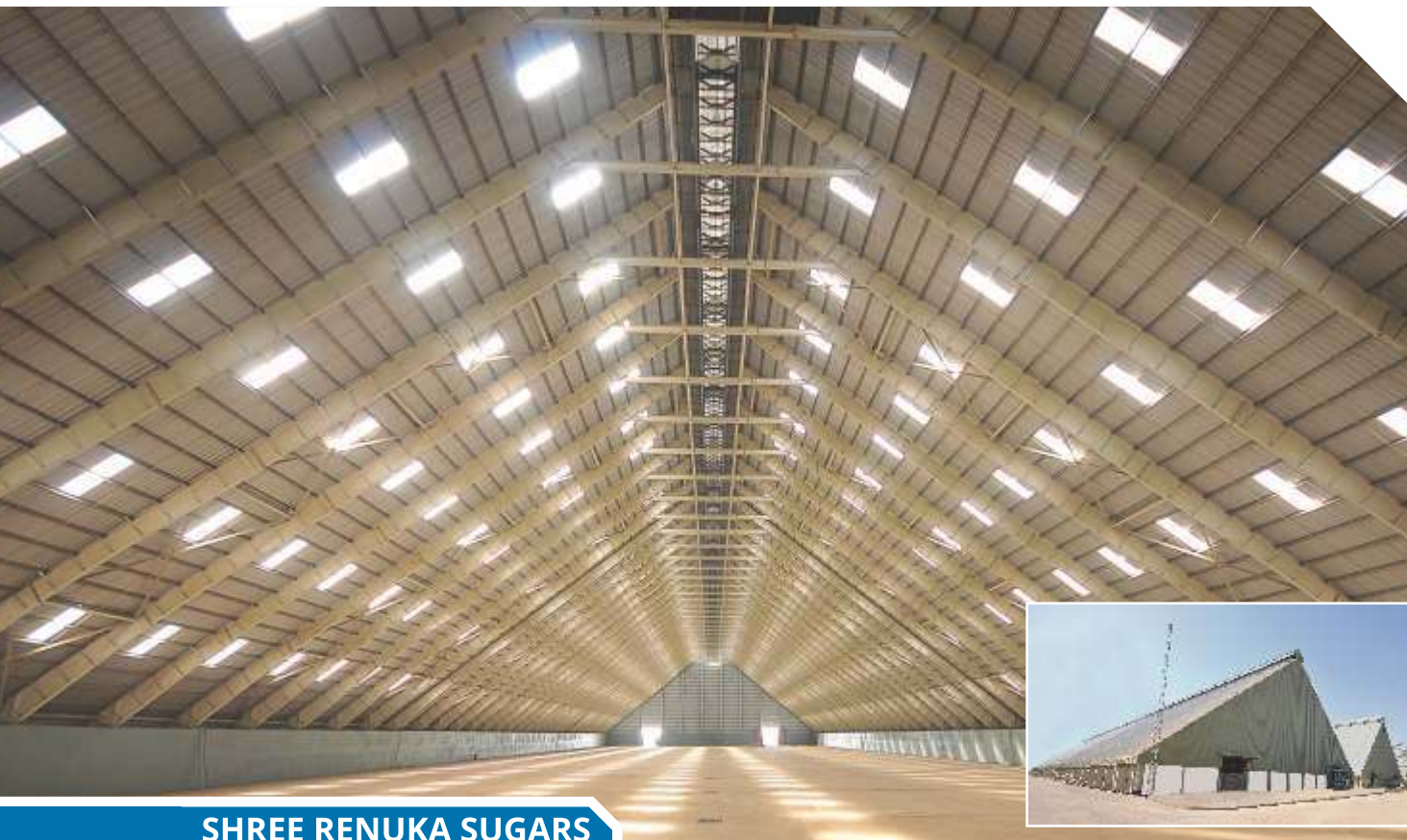
Sector Textile | Location Mundra | Area in Sq. Mtrs. 16,000



### RELIANCE SUPER MARKET

Sector Commercial | Location Ahmedabad | Area in Sq. Mtrs. 11,000





### SHREE RENUKA SUGARS

Sector Warehousing | Location Kandla | Area in Sq. Mtrs. 84,000



### RELIANCE CCPP

Sector Power | Location Hazira | Area in Sq. Mtrs. 82,000



### Uflex

Sector Manufacturing | Location Sanand | Area in Sq. Mtrs. 26,200



### STERLING HOSPITALS

Sector Commercial | Location Vadodara | Tonnage 410 MT





## INDUCTOTHERM

Sector Manufacturing | Location Sanand | Area in Sq. Mtrs. 50,000



## INDUCTOTHERM

Sector Manufacturing | Location Sanand | Area in Sq. Mtrs. 60,000



## GRINDWELL NORTON

Sector Engineering | Location Halol | Area in Sq. Mtrs. 11,700



## L&T SHIPBUILDING

Sector Engineering | Location Chennai | Area in Sq. Mtrs. 40,000



## SIMPLIFIED REACH



## CLIENTELE
