

Decoding **COMPLEXITY**
to Deliver **SIMPLICITY**

PHENIX CONSTRUCTION TECHNOLOGIES

Phenix Construction Technologies is a trusted name in offering total envelope solutions for Pre-engineered Buildings and Structural Steel Projects. Synonymous with precision solutions, systems thinking 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 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 supply 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 U.S. recognized institutions, with a total strength of 91 Certified Designers and Detailers
- Thorough working knowledge of design codes such as AISC, MBMA, AISI & ASCE-07
- ISO 9001 & OHSAS 18001 accredited, RDSO and NABL certified, member of IGBC and FM Global approved
- State-of-the-art manufacturing facility AISC accredited, with a production capacity of 80,000 Tons
- Global Footprint
- 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 Inter-locking 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
- **Industry Applications**
Airports | Automobiles | Commercial Buildings | Engineering & Manufacturing | Food Processing | Infrastructure | Power | Retail | Textile | Warehousing & Logistics

Structural Steel

Hot Rolled Steel Sections

- Universal Beam (UB) / Universal Columns (UC)
- CHS - Circular Hollow Sections
- RHS - Rectangular Hollow Sections
- Equal / Unequal Angles

Industry Applications

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

Turnkey Solutions

We provide Turnkey Supply Steel Solutions. This includes design, detailing, manufacturing and one source procurement services.



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 395 feet

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 feet of space
- Interior column spacing of 66 feet 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 AISC type-II construction.

The Phenix Edge

- Facilitates straight side walls and ceiling lines
- Economical for clear spans of up to 66 feet

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 100 feet 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
- Esthetically 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, Rod Bracing and Open Steel Web Joists.



PHX-Zees

Depth : 6-1/2" to 11-1/2"
Thickness : 8 to 16 Ga

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.

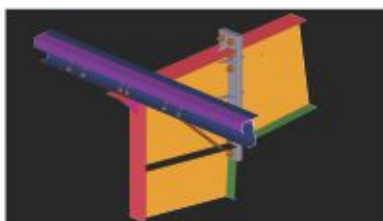
PHX-Cees

Depth : 6-1/2" to 10"
Thickness : 10 to 14 Ga

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-galvanized members for maintenance-free buildings



Eave Struts

Function

An eave strut is a structural member located at the eave of a building that supports the roof and wall paneling and may act as a strut to transfer bracing loads to frames.



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

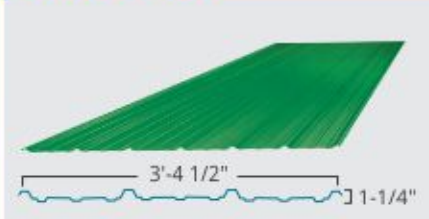
- Can accommodate any length
- Painted or Pre-galvanized

Claddings

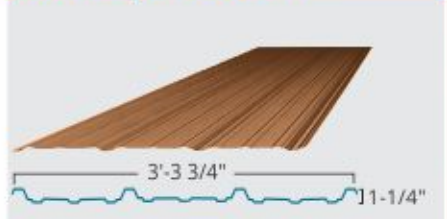
Phenix's Pre-painted Galvalume (Alu-Zinc) sheeting is a multi-layer coated profile to ensure a longer life under different weather conditions and better esthetics..

Phenix offers the following Claddings as standard:

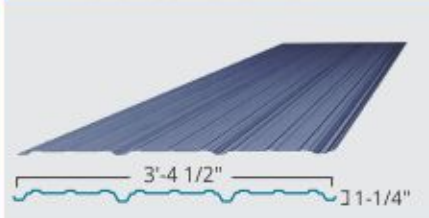
PHX Rib For Roof



PHX Deeper Rib For Wall



PHX Reverse Rib For 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.

The Phenix Edge

- Roof slopes as low as 1:10
- Width: 3'-3 1/3" Length: up to 40'.
- 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 esthetic look. Canopy is an overhang-ing 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: 4' to 6' in height
- Canopy: 10' to 33' in width

Mezzanines



Function

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

The Phenix Edge

- Mezzanine can be customized to any size
- Recommended 10' to 30'. (generally a 20' x 20' 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 detailing and supplying Crane Beam to support more than 300 Tons cranes

Specialty Roofing Systems

InterLock 360™ Hidden Fastener

This special system comes with several features

The Phenix Edge

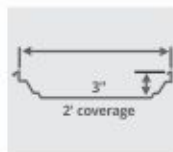
Fully Seamed Roof

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



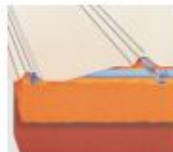
360° Mechanical Seam

100% leakproof



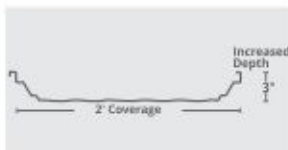
Interlocking Standing Seam Roof Panels, which provide long-term superior weather-tightness

A world-class system with up to 20-year leakproof warranty



3" Increased Depth

High rib of 3" 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 up to 20-year leakproof warranty, which makes our Pre-Engineered Buildings last longer than any other.



Unique Features of SSR Profile

- High Speed Versatile Profile Former
- 2' wide, 3" Depth Profile
- 100% Leakproof Standing Seam
- Field Seam 360°
- Weather Resistant Joint
- Exclusive Slotted Clip allows 2 inch Thermal Expansion

Profile Drawing



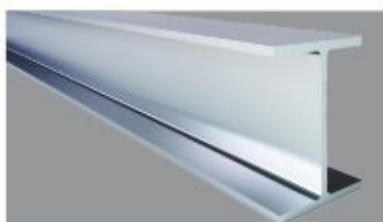
Structural Steel



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 3'-3"
- Length up to 40' without welding joints

Box Beams

- Width: max of 4' x 4',
Length up to 40' without welding joints

Plus / Cross Beams

- Maximum weight per section: 35 tons
- Maximum size per column: 8'-3" x 3'-3"
- Range of plate thickness: 1/4" to any thickness



Tapered Columns

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

Columns and Rafters

Flange thickness up to 1-1/2" and width up to 24". Web depth 80" and thickness up to 1".



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 utilizing 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 customers' specifications

- Beams fabricated to precise dimensions through automatic / mechanized 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
- Mechanized handling to eliminate possibilities of mechanical damage
- Beams can be delivered face milled, shot-blasted, painted or DTM 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
- 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 40' long, 11-1/2" 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, with a production capacity of 80,000 Tons. Our scale of operation makes us capable of handling large projects and 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: 7000 Tons/Month
- Built-up / Primary: 4200 Tons/Month
- Secondaries: 1300 Tons/Month
- Roof / Wall Coverings: 1100 Tons/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

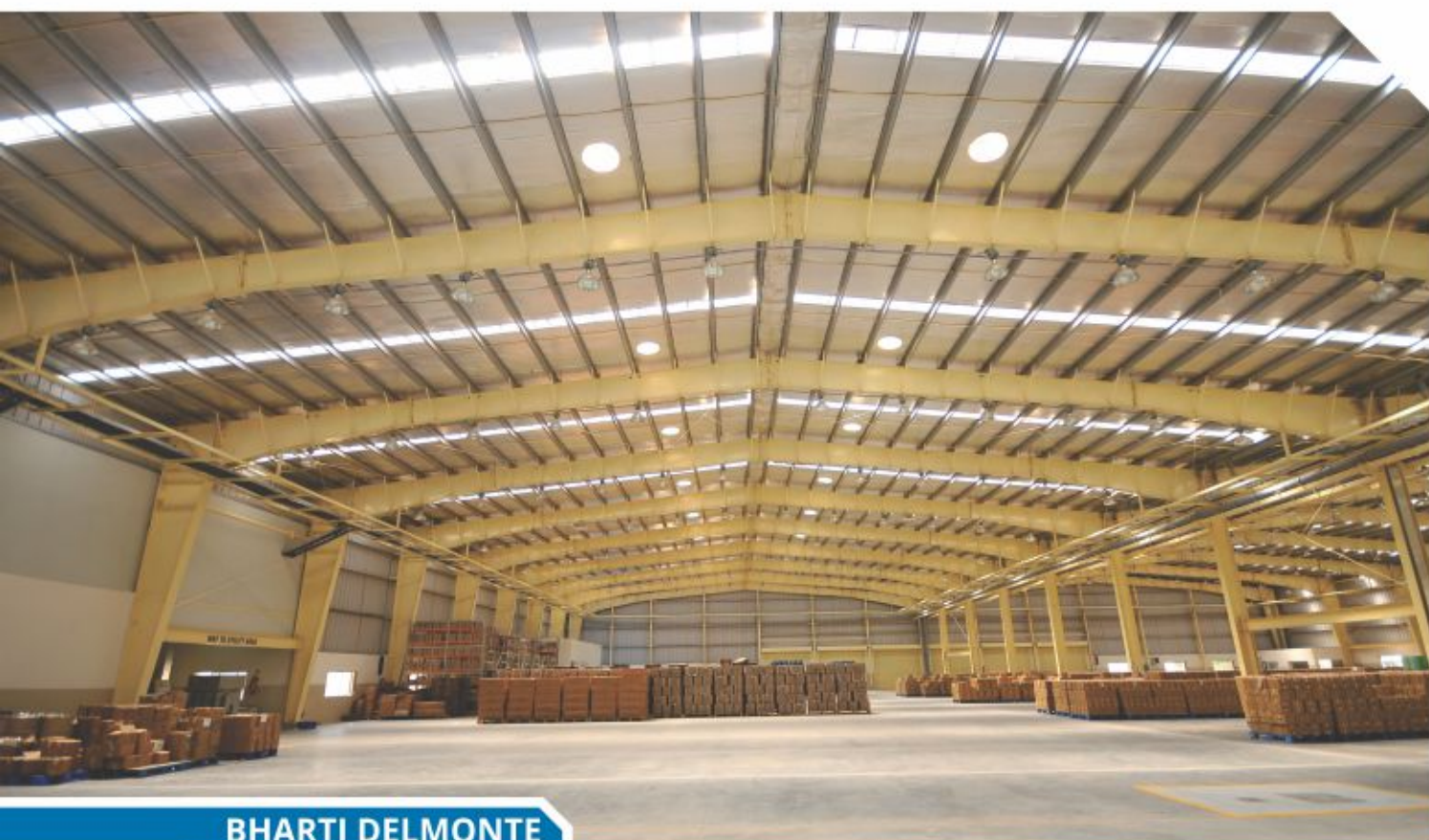


SPORTS



CARLSBERG

Sector Food Processing | Area in Sq. Ft. 96,000



BHARTI DELMONTE

Sector Food Processing | Area in Sq. Ft. 183,000



BMW

Sector Automobile | Area in Sq. Ft. 538,000



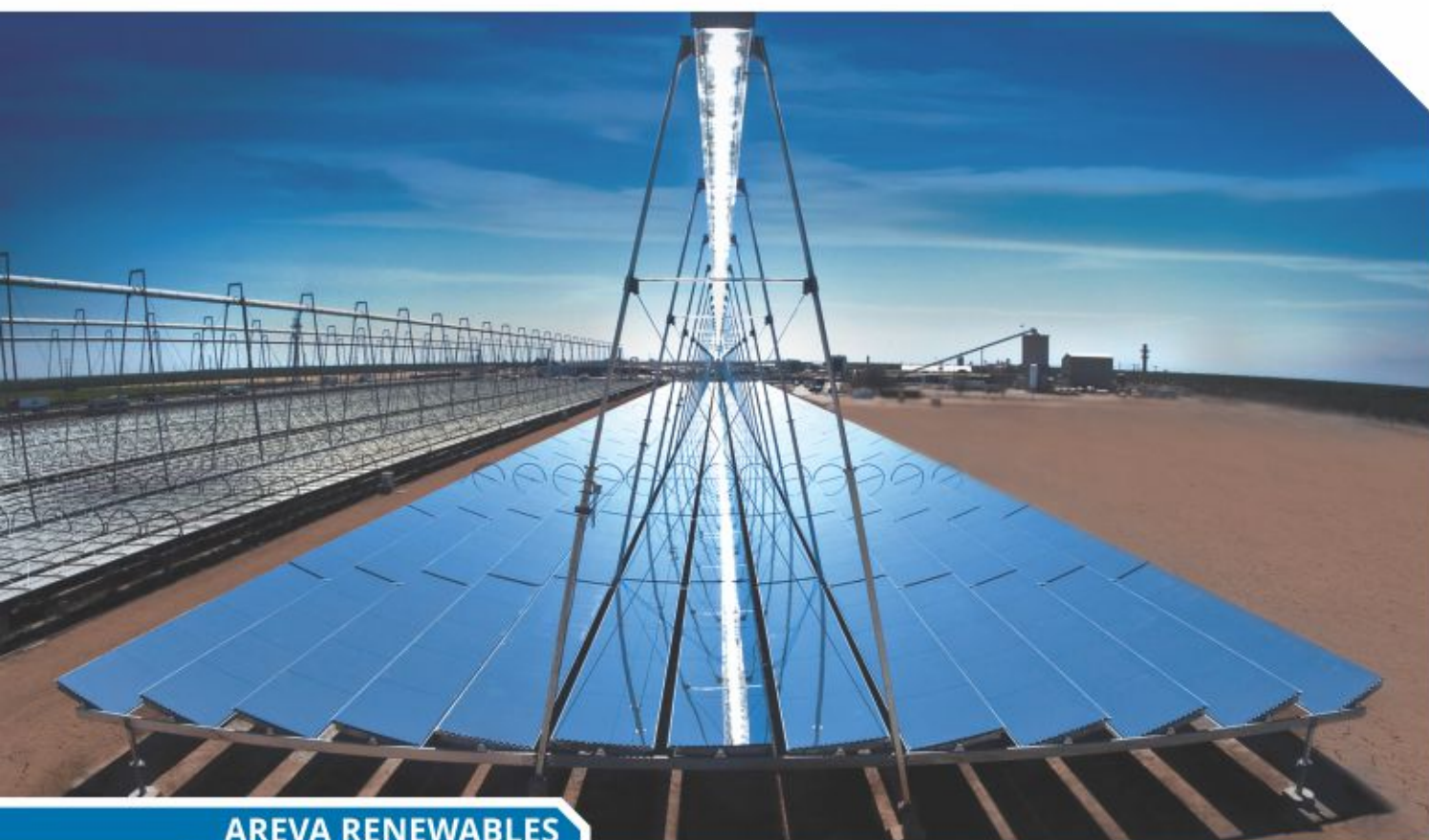
ESENAR TRANSFORMERS

Sector Power | Area in Sq. Ft. 59,000



TATA MOTORS

Sector Automobile | **Area in Sq. Ft.** 818,000



AREVA RENEWABLES

Sector Power | **Tonnage** 19,345 Tons



NMDC

Sector Power | Tonnage 4,519 Tons



BORL

Sector Power | Area in Sq. Ft. 232,000



TRIDENT INDUSTRIES

Sector Textile | Area in Sq. Ft. 1,937,500



ASHAPURA GARMENTS

Sector Textile | Area in Sq. Ft. 172,000



K & D COMMUNICATION

Sector Commercial | Area in Sq. Ft. 484,000



RELIANCE SUPER MARKET

Sector Commercial | Area in Sq. Ft. 118,000



SHREE RENUKA SUGARS

Sector Warehousing | Area in Sq. Ft. 905,000



UFLEX

Sector Manufacturing | Area in Sq. Ft. 282,000



RELIANCE CCPP

Sector Power | Area in Sq. Ft. 883,000



STERLING HOSPITALS

Sector Commercial | Tonnage 451 Tons



INDUCTOTHERM

Sector Manufacturing | Area in Sq. Ft. 538,000



GRINDWELL NORTON

Sector Engineering | Area in Sq. Ft. 126,000



INDUCTOTHERM

Sector Manufacturing | Area in Sq. ft. 646,000



L&T SHIPBUILDING

Sector Engineering | Area in Sq. Ft. 431,000

SIMPLIFIED REACH



CLIENTELE

Automobiles



Food & Beverages



Warehousing & Logistics



Oil & Refineries



Power



Appliances



Textile



Consumable & Retail



Sugar



Pharmaceuticals



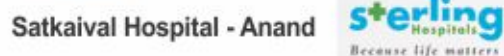
Japanese



Coal & Cement



Hospitals



Shipyard & Ports



Aviation





PHENIX[™]
Construction Technologies

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