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NEXT GEN RACKING FOR ROBUST OPERATIONS



**RACKS &
ROLLERS**
STORAGE TECHNOLOGIES AND AUTOMATION



ABOUT US

Racks and Rollers is one of the most influential leaders and a coveted name in the Storage, Warehousing and Automation industry. Following our passion for developing state of the art, economically efficient storage systems for the past three decades, our company has gathered a pool of extensive experience, expert staff and valuable knowledge by challenging ourselves with some of the most demanding projects across the world.

QHSE STANDARDS

QUALITY MANAGEMENT



ISO 9001:2015

HEALTH & SAFETY



OHSAS 18001:2007

ENVIRONMENTAL



ISO 14001:2015

DESIGN STANDARDS

OUR DESIGN STANDARDS ARE COMPLIANT WITH EN 15512



Leading consultant in warehousing, shelving, racking, structural works, automation and avant-garde stainless steel works.

Offices setup across India & the Middle East.

Seamless Integration of Sales, Design, Production and Commissioning.

Hard-Set focus on Growth and Development.

Team includes experts specialized in Supply Chain Optimization & Business Performance Development.

Projects Backed by thorough research & comprehensive analysis.

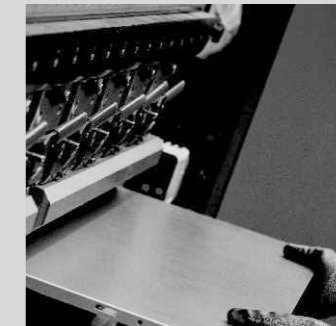
Projects Executed Pan India, Middle East, Turkey, Russia, South East Asia, South Africa and more.

Industries Served: Automotive, Aerospace, Food & Beverage, Cold Storage, Oil & Gas, Chemicals, Pharmaceutical, Fragrance & Incense, Electronics, Retail & E-Commerce, Textile & Apparel, FMCG, Manufacturing, Education.

RACKING SOLUTIONS

Our racking solutions comprise of recommendation and provision of exceptional quality racks of all kinds and structures. Industrial storage racks are typically recommended in case of palletized goods or inventory.

Our approach towards racking solutions is based on an exhaustive study of the client's challenges and requirements like workflow dynamics, budget and required capacity among many others. Once the in-depth analysis is concluded, our team works on building a holistic racking solution that encompasses all the client's requirements seamlessly.



SELECTIVE PALLET RACKING



PROS

- Complete and direct accessibility of all stock
- Super easy to install
- No special lifts or trucks are needed
- Highly adaptable and scalable

CONS

- Lowest storage ratio per square metre
- Larger volume of stock will lead to larger capital costs
- Expensive for warehouses with limited range of SKUs



Selective Pallet Racking (SPR) is the most widely used storage system all over the world. Thanks to its flexible and economical aspects, SPR is the best choice for huge volumes of palletized goods and wide range of fast-moving SKUs. It is quite easy to construct the SPR system for different pallet sizes and weights like light, medium or heavy loads. The design of SPR can also be modified according to different variants of material handling equipment (MHE).

SPR allows for FIFO i.e. First in First Out inventory control system which means that the first item to go in will be the first one to come out. Selective Pallet Racking is not just exceptionally simple, but it also offers 100% accessibility to every single pallet location. In other words, it enables a user to select a pallet for loading or unloading without affecting the other pallets. The structure is usually made up of two racks placed back to back with the rack depth of one pallet.

To utilize more space, the system can be customized for **Double Deep pallet racking** or **Very Narrow Aisle Racking** as well. Aisles in this storage system may vary from 1600 mm to 4200 mm relying on the type of MHE used. Although the utilization of storage space is low in SPR system, it saves any additional expense by eliminating the need of special trucks & lifts.

To sum up in a few words, **SPR is a simple, flexible, economical, and easy-to-use system** that allows complete access and control of the inventory. Being highly versatile and extremely easy to install, we can say that the SPR system is undeniably the most popular solution for bulk storage of goods.

MAIN FEATURES

- **EASE OF ACCESS**
Every pallet can be directly accessed by an MHE.
- **SUPPORTS EXTENSIVE SKU'S**
Pallets can be stored at any location unrestricted by SKUs.
- **MODULAR**
The system is absolutely modular. Beams can be configured to adjust the height as required.
- **SCALABLE**
The simple design allows for simultaneous expandability with the scaling of your SKUs.
- **EXCELLENCE**
Years of evolution of the product ensures superior quality and design showcasing excellent workmanship.
- **SAFETY**
Safety implementation is emphasized, and a comprehensive assembly of all the necessary safety accessories is provided.

BEST SUITED FOR

Warehouses with wide range of Stock Keeping Units (SKUs) and high SKU's turnover.

NOT RECOMMENDED FOR

Warehouses with high volume of storage and limited number of SKUs (Bulk Storage).

DRIVE-IN PALLET RACKING



PROS

- Maximum space utilization
- Very cost effective
- Ideal for heavy pallets
- Least damage of goods

CONS

- LIFO inventory management
- Inconvenient for warehouses with many SKUs
- No selective access to all pallets
- Not suitable for small batches of goods



Drive-in Pallet Racking System is one of the most space effective and economical bulk storage system. With a minimum aisle to rack ratio, this is a highly compact system with a storage density shooting up to as high as 70% Floor Space Area. Pallets are stored deeply in front of one another on racks with no aisles in order to enable maximum utilization of space. If you have a large number of identical items, **DPR** proves to be the best possible choice. Since pallets are placed from back to front, allowing you to drive your forklifts in the racks, not letting select specific pallets and hence **follows Last in First Out (LIFO) inventory management principle.**

With impressively robust frames that are fully secured in place for maximum safety and sturdiness, the racks of this system are very well suited for heavily loaded goods especially those which are unstable or pressure sensitive. The same entry and exit points are used by conventional forklifts to drive inside the lanes of the racks to load/unload pallets. This system is usually 3 to 15 metres deep and can be easily customized. The height of the racks can be up to 10 meters high depending upon the MHEs.

Unlike Drive-in pallet racking, **the Drive-thru pallet racking follows First in First Out (FIFO) inventory management principle** because it is open from two ends, which means you can store pallets from one end and retrieve them from another. The DPR system proudly makes the most optimum use of space, thus saving huge amounts of costs on floor space. Warehouses with many pallets and few SKUs prefer this kind of racking system. You will often find the DPR system in cold storage installations because of its cost effectiveness factor.

MAIN FEATURES

- **MULTI DEEP STORAGE**
For Drive in Pallet Racking, there are multi-deep storage corridors which open up to aisle for access.
- **ROBUST**
Focus is on the robustness of the material used to ensure stable structure with improved endurance.
- **MINIMISED AISLE SPACE**
High capacity storage is achieved by cutting down on aisle space, making it optimal to store voluminous products.
- **SIDE RAILS**
Drive-In and Drive-thru racking have pallet support rails on either side of the pallet placed perpendicular to the aisle.

BEST SUITED FOR

Warehouses with cold storage, bulk storage, seasonal goods or high rotation products that are time or date sensitive.

NOT RECOMMENDED FOR

Warehouses with more SKUs and small quantity of goods per SKU.

RADIO SHUTTLE PALLET RACKING



PROS

- Highest space utilisation
- Speedy shuttles save loads of time
- Least damage of racks and forklifts
- Less operational costs

CONS

- No direct access to individual pallets
- Network downtime can affect operations
- Higher maintenance costs
- Higher installation costs



Radio shuttle is nothing short of a magical device when it comes to high intensity palletized storage. **It is a highly compact and semi-automated storage solution for palletized goods and does not require loading and unloading using forklifts.** There is no extra space between racks for forklift manoeuvring, hence the lanes of the racks are known as channels. One radio shuttle can be used for multiple channels. One channel should contain only one SKU. If one pallet is stored in one channel and the next pallet has to be stored in another channel, then the radio shuttle is unloaded by using a forklift and moved to the other channel. Then, the next pallet is placed. The forklifts place the pallets at the mouth of each rack's channel and the shuttle carries the pallets to the first empty placement and then comes back to the front of the channel. The same process is applied in reverse for the unloading of pallets.

The shuttles are specially designed to bear loads up to 1500 kgs with swift yet controlled motion and they make sure that the least amount of space is left between pallets. This is what makes this system the most compact and space effective system among others. Multiple shuttles can be controlled via a single remote and can fill up or empty a whole channel on receiving a single command.

While no aisles lead to maximum space consumption, no forklifts lead to no damage of equipment and racks. The automatic to and fro movement of the pallets without using forklifts results in lower operation costs, more productivity, faster loading/unloading and worrisome storage cycles. **The radio shuttle system can be based on both FIFO and LIFO inventory management principles.**

MAIN FEATURES

- **MORE DIVERSE SKU'S**
One SKU can be stored per channel as compared to One SKU per lane as is the case with drive-in.
- **LOWER ACCIDENT RISK**
MHEs are not permitted to enter the structure, thereby minimizing the chances of accidents to a great extent.
- **INCREASED PALLET LOCATIONS**
Offers more storage depth by stacking the pallets one after the other with min. clearance. The space between levels is also minimised due to elimination of MHE operation.
- **NEGLECTIBLE MAINTENANCE COSTS**
Minimised accidents lead to almost negligible maintenance costs.
- **HIGHER PERFORMANCE**
Lesser time of operation increases warehouse efficiency.
- **HIGHLY COST EFFECTIVE**
Fuel and energy costs are lowered.

BEST SUITED FOR

Warehouses with huge amount of pallet storage with few SKUs and high intensity loading and unloading. ✓

NOT RECOMMENDED FOR

Warehouses with less number of pallets and more SKUs. ✗

CANTILEVER PALLET RACKING



PROS

- Great support for loads with longer sizes.
- Quick to adjust
- Accessible stock
- Customizable as per load requirements
- Stable and safe
- Easy to install

CONS

- Costlier than normal racking
- Not suitable for pallets



Cantilever racking is a highly ideal storage system for products of varying length materials. From light duty goods to heavy duty goods, from PVC pipes to heavy steel coils, goods of all variety of loads and lengths can be conveniently and safely stored in this system. Cantilever system is specially designed for storing long items like pipes, beams, wooden planks, metal sheets, furniture and other things.

The cantilever system has a robust and sturdy structure that is made of horizontal and vertical beams, that aim at providing stability to long and heavy goods, and horizontal arms that support the weight of the load after it is placed on them. This system comes with very few components which makes it extremely easy to assemble. The multiple number of accessories that make the cantilever system enables you to customize it for different load (**Light, Medium or Heavy**) requirements.

Not only is it highly versatile, but it also forms a safe and organised form of storage. Equipped with safety components such as safety pins, safety stops, braces etc., cantilever storage is an assured way to store uneven long and heavy goods. The columns used in the system are of fine quality and possess immense load bearing capacity. Cantilever racks can be used as single sided or double-sided racks.

For more space saving, **the cantilever system can be turned into a mobile based system** with high density storage. A mobile based system is when the racks are mounted on a wheel-based structure that allows the racks to smoothly slide on rails installed in the floor. By removing all aisles except one, mobile cantilever system ensures maximum utilization of space.

MAIN FEATURES

- **DESIGNED FOR VARIABLE LENGTH GOODS**
Ideal storage for long and bulky goods, especially of varying length.
- **POWERFUL BUILT**
Robust structure made of high-quality profiles provides strength and protection against damages.
- **ACCOMODATING**
Adjusts to different load weights and heights.
- **HIGHLY VERSATILE SYSTEM**
Can be integrated in any warehouse and can also be turned into mobile rack.

BEST SUITED FOR

Goods with lengths and loads like beams, metal sheets, plastic sheets, pipes, wooden boards, pipes and tubes.

NOT RECOMMENDED FOR

Pallet or Box Storage.

PALLET FLOW (LIVE) RACKING



PROS

- Maximum use of storage
- Reduces labour
- Cost effective
- Fast access to needed products
- Highly time efficient

CONS

- Crowded space which is not appropriate for Cold Stores
- High Capital Cost



Pallet Flow Racking (PFR) is a highly compact storage system that helps in superb stock rotation all thanks to gravity. The rack structure of PFR is made of rollers placed on a slanted surface that let pallets smoothly slide over them. The pallet loads are stored from one end and retrieved from another end which means this system follows **First In First Out (FIFO)** inventory management principle.

The PFR makes an excellent use of a free natural resource i.e. gravity to save a much costlier resource i.e. energy. In our system, the pallets are loaded from the highest point of a lane at the rear end of the rack. The pallets then slide over to the lowest point of the lane at the front under the influence of gravity. It is like a conveyor system that works solely on the free force of gravity. The pallets that are loaded from the back are the first ones to be removed from the front. Once a pallet has been picked off the rack, the next one automatically takes its place.

The greatest advantage of this racking system is the amount of turnaround time being saved. Also, this system is highly efficient and productive as there are two separate aisles for loading and unloading. This clear separation of aisles leaves no room for interruptions between loading and unloading operations and thus maximizes productivity. By eliminating the need of other unwanted aisles, PFR also opens up 60% more storage space and proves to be exceptionally cost effective.

Pallet flow racking is **efficient, safe and reliable and gives easy access to all your stock**. Warehouses with perishable goods or quick turnover goods prefer this kind of storage system.

MAIN FEATURES

- **INHERENT ROTATION OF GOODS**
It is designed primarily to incorporate fast rotation along with racking.
- **MITIGATED COSTS**
Minimised need of high-end material handling equipment, eliminates unnecessary internal transport and saves costs.
- **HIGHEST STORAGE CAPACITY**
Removal of aisle space between racks makes the system extremely storage compact.
- **DOWNSIZED MANPOWER**
Reduction in loading and unloading operation scales down the manpower necessary for operation.
- **VERSATILE**
Easy to integrate in any type of storage solution.
- **CUSTOM DESIGN**
Can be customised to suit any requirement, for example, storage, intermediate warehouse or dispatch area.

BEST SUITED FOR

Warehouses with heavy throughput. ✓

NOT RECOMMENDED FOR

Warehouses with small area and low throughput. ✗

MOBILE PALLET RACKING



PROS

- Maximum use of storage due to fewer aisles
- 100% stock accessibility
- FIFO
- Minimises expenditure on floor space

CONS

- Requires more attention
- High initial costs
- Storage height is limited to 12 metres
- Turnaround time increases compared to SPR



Combine the 100% stock accessibility of SPR and the storage compactness of drive-in pallet racking and you will get the remarkable Mobile Pallet Racking System.

Unlike the static SPR system, this type of racking has movable racks that slide laterally on rails to open up aisles as and when required. Imagine a conventional pallet racking system installed on a mobile base that creates collapsible aisles only when you need to access them. Thanks to this excellent dynamic feature, MPR doubles the storage capacity of the warehouse by eliminating the need of numerous fixed aisles which stay unused.

Each shelf is installed on a mobile carriage resembling a racks-on-wheels kind of setup. The system can be manually controlled by a switch or can be controlled by a remote. It also comes with maximum security and safety features to ensure safe & productive operations.

Although it is a compact, high density storage solution, **MPR does not let you compromise on individual pallet accessibility.** The whole system is electronically controlled enabling you to open and close aisles according to your needs and letting you store or retrieve any pallet directly without affecting the other ones.

MPR is aimed at maximising the use of storage space while keeping the whole pallet arrangement highly selective. It follows the FIFO inventory management principle and is ideal for heterogeneous goods. The reduced costs in floor space make this system a favourite for expensive storage facilities like cold storage installations.

MAIN FEATURES

- **COLLAPSIBLE AISLES**
Aisles can be created on the spot and collapsed when not in use.
- **ELECTRONICALLY OPERATED**
The mobile pallet racking system is operated by a remote control.
- **ULTRA-DENSE STORAGE**
Diminishing the aisle space opens up an ultra-dense storage capacity.
- **SAFETY FORWARD**
The built-in safety measures such as safety barriers, emergency buttons and reset button are up to the standard and ensure safe warehouse operations.

BEST SUITED FOR

Warehouses with expensive storage space and warehouses with wide range of Stock Keeping Units (SKUs).

NOT RECOMMENDED FOR

Warehouses with limited number of SKUs.

PUSH BACK PALLET RACKING

PROS

- Increased upper warehouse space.
- Meets International Safety Standards
- High-speed loading and unloading leads to greater productivity.
- Can support the storage of different items for each storage channel.
- Economic system

CONS

- Less no of SKU's / batch can be stored
- Require trained professional for loading/unloading pallets.
- Increase in depth reduces the height utilization.

In Push Back Pallet Racking, a set of rails and a pair of trolleys are placed for each pallet that needs to be stored excluding the last one which is supported by rails. Depending upon the nature of the operation, variable height trolleys can be installed. Push back pallet racking is a system which increases storage capacity and handling capacities, without utilizing much space. It is a compact storage system which can manage 2 to 5 pallets deep. These systems are capable of storing items of different sizes of payload on a standard pallet. The whole systems work on the concept of the accumulation connected to an array of trolleys. The pallets are deposited on the trolleys and then pushed over a rail.

Push back pallet racking is a great storage solution for applications which demand speed and agility. The Last in First Out methodology applied here also helps in keeping things manageable under high volume high-stress logistics operations. Generally, all the pallets excluding the last one are deposited on a set of trolleys. A stark difference here is that, unlike live racking, here only one aisle is engaged in both operations. What that means is you would require only one aisle for loading and unloading. This system is used for homogeneous inventory which can be stored together, and operationally selecting the first or last pallet on the rail level is theoretically same.

All in all a very effective storage solution system for batch storage of products, usually suggested for high throughput of fast moving goods, like pharmaceuticals, food & beverages, FMCG, Cold Storage of perishables.

MAIN FEATURES

- **HIGH DENSITY STORAGE**
Requires common aisle for loading and unloading.
- **FAST MOVING GOODS**
Storage of high consumption goods owing to high-speed loading and unloading of goods.
- **LIFO STORAGE**
Homogenous pallet storage system.
- **ECONOMICAL**
Simple automation process to increase speed of handling inventory.
- **SAFETY**
Comes with a high degree of safety, due to self moving trolleys.

BEST SUITED FOR

Warehouses with High Throughput & less number of Stock Keeping Units (SKUs), having batched receipts and dispatches.

NOT RECOMMENDED FOR

Warehouses with high number of SKU's and low throughput.

PRE-SALES SERVICE

At **Racks and Rollers**, we begin with an in depth understanding of our client's requirements right from the root level, overseen by a proficient team that holds an expertise in designing excellent storage solutions.

Diligent scrutiny of all the crucial factors **for example**,

- layout of the area available,
- number of Stock Keeping Units,
- required storage capacity,
- material handling equipment,
- throughput of the warehouse,
- required optimisation of operation time in order to minimise storage and retrieval time,
- contraction of labour

A viable and fitting solution is recommended to the client based on all the factors that play a decisive role

These system solutions emerge from a vision to help each business grow as a whole on a macro level and a process that includes rigorous study of the client's business, the product in question, and all the aforementioned warehouse factors.

Every solution recommended by us comes from the collaborative effort of members of a highly dedicated team who are united by a passion for making innovative economical storage solutions available to everyone in the world.

AFTER-SALES SERVICE

Our after sales services stem from the core mission that is at the heart of our organisation- **the mission of delivering value in the form of service**. These after sales services are a precursor to forging long lasting relationships with our clients based on a strong foundation of trust and goodwill. .

Another key factor for the timely completion of a project is its smooth execution. Throughout the project, right from the beginning of work to its completion, we grab every opportunity to vest our clients with absolute transparency of what is happening, be it the delivery of materials, merchandising, after sales safety audits, or system installation, by exceptionally qualified personnel.

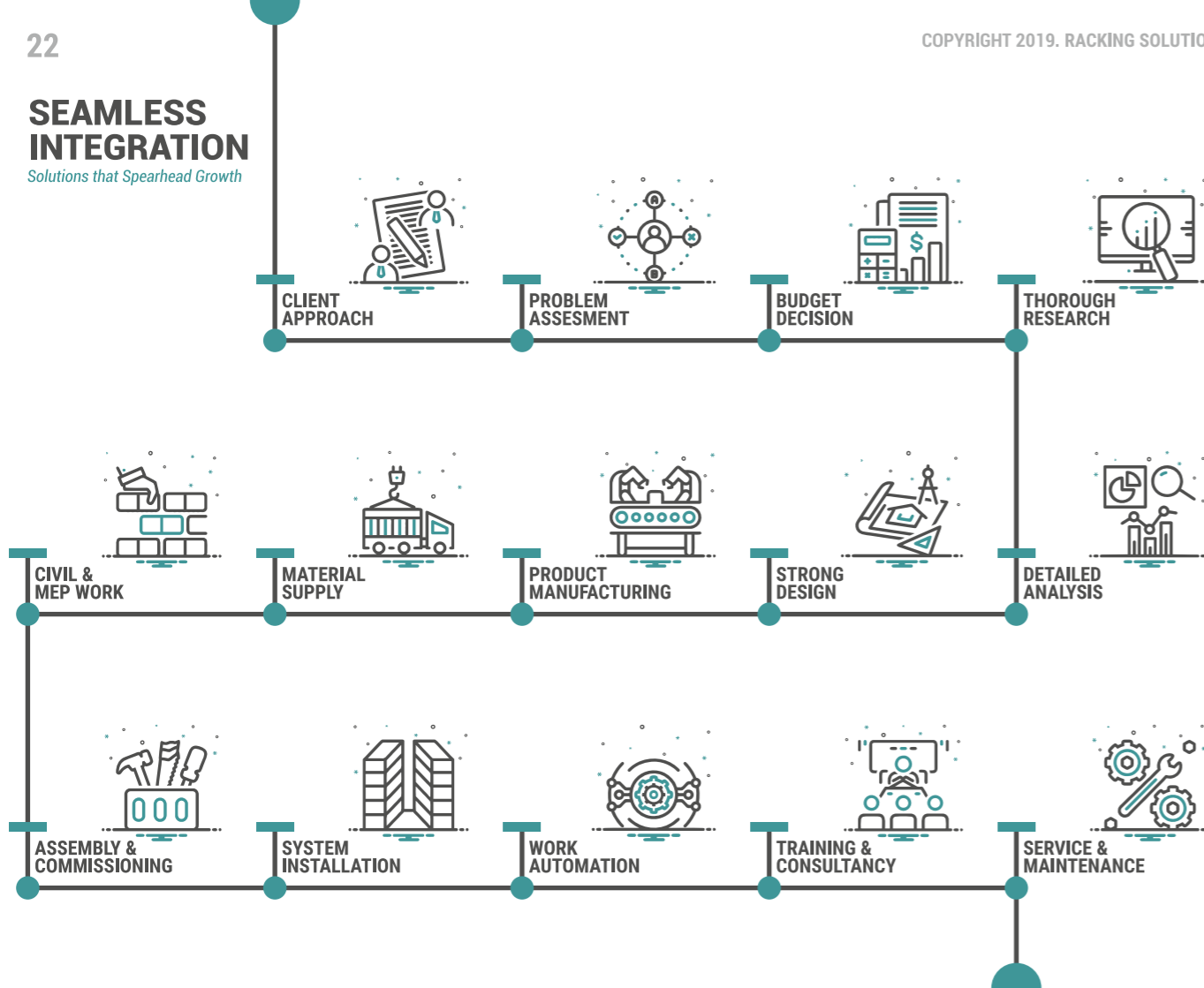
In conjunction with the above, **Racks and Rollers** also offers exclusive training to the labours who are going to work day in and day out with our storage systems, explaining them the right methods of storing and retrieving goods in the warehouse.

Taking the safety of our clients as an organisational responsibility, we provide constant support, regular awareness of safety rules, and reminders of safety precautions to be taken care of while utilising the system in order to ensure safe and sound operation, least damage of life, and property and zero accidents on site.



SEAMLESS INTEGRATION

Solutions that Spearhead Growth



OTHER RANGE OF SOLUTIONS

SHELVING SOLUTIONS



- Slotted Angle Shelving
- Long Span Shelving
- Bolts Free Shelving
- Multi Tier Shelving
- Heavy Duty Shelving
- Garment on Hangers
- Live Shelving
- Supermarket Shelving

AUTOMATION SOLUTIONS



- Conveyor Systems
- Merge & Sort Systems
- ASRS with Stacker Crane
- ASRS with Shuttle FRS
- Vertical Goods Lift
- Radio Shuttle
- Pick / Put to Light

STRUCTURAL SOLUTIONS



- Mezzanine
- Stackable Pallets
- Rack Supported Warehouses
- Pre-Engineered Buildings
- Temperature Controlled Warehouses

CONSULTING SOLUTIONS



- Turn Key Solutions
- Intra-Logistics Design
- Warehouse Management Systems
- Simulation
- Rack Inspections
- Project Commissioning