Case Study.....

Maximising
Warehouse Efficiency:

DRIVE-IN RACKING FOR SOLAR PANEL STORAGE

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WSL delivered an efficient, cost-effective storage solution that supports the client's expanding solar panel inventory.

www.warehouse-systems.co.uk

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Meeting Growing Demand for Solar Energy

Customer choice has been greatly influenced by the increasing shift towards renewable energy with solar panels ranking high as a green energy product. In the UK, 90% of the population supports solar panel adaption and 1,486,652 have been installed since February 2024. (Panel Statistics, 2024)

As an electrical wholesaler, our client was to increase their stock of solar panel products to keep in line with surging demand. As the need for more storage space became evident, the adjoining unit to one of their existing facilities became vacant. Recognising the need to accommodate their expanding inventory levels, our client seized the opportunity to acquire the newly vacant space.

Designing an Efficient Storage Solution

Once the space had been completely stripped out, a WSL Design Technician attended the site to conduct an on-site survey. Pallet racking would be the most appropriate form of storage given that the solar panels would be palletised, however selecting the right type of pallet racking required careful consideration.

Key Factors in Selecting the Right Pallet Racking Type

1.Space Utilisation

Maximising capacity was a key priority for our client who was looking to implement 1,000 pallet locations without this taking up space unnecessarily. The ceiling height allowed for no more than five levels of racking; however, a deep-lane racking system would allow for more rows whilst limiting the surface area this would occupy.

2.Inventory Characteristics

Palletised solar panels are slow-moving goods and non-perishable, which meant stock rotation was not a priority. The most efficient choice was a system which operated on the First-In Last-Out (FILO) method which prioritises storage density, rather than the First-in First-out (FIFO) method which prioritises stock rotation and freshness.

3.Cost

Our client required a cost-effective solution which delivered maximum value.



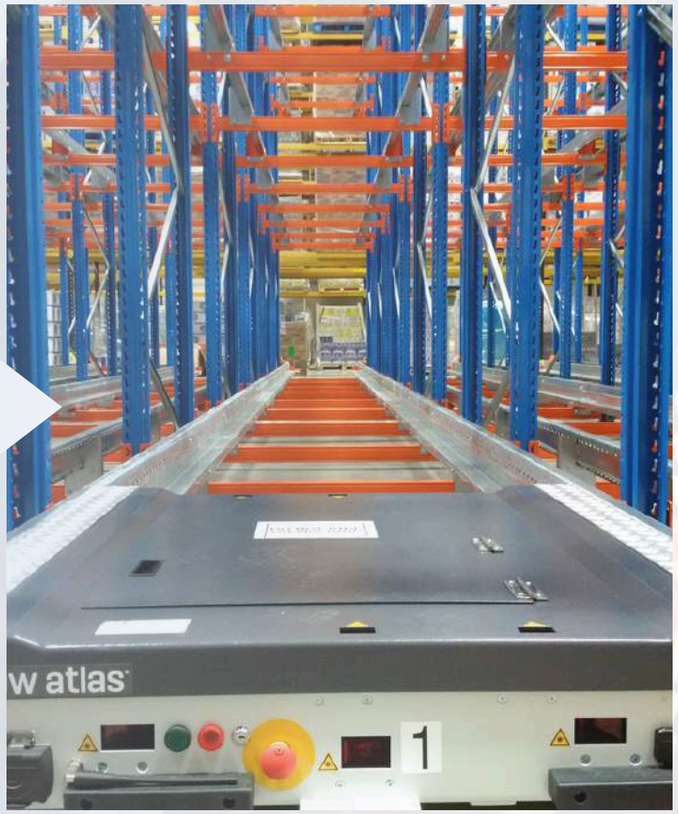
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After evaluation, two pallet racking systems, offering deep-lane storage emerged as the most viable options:

Both systems offered comparable storage capacity and floor space maximisation, however the **drive-in system** began to emerge as the most viable option.

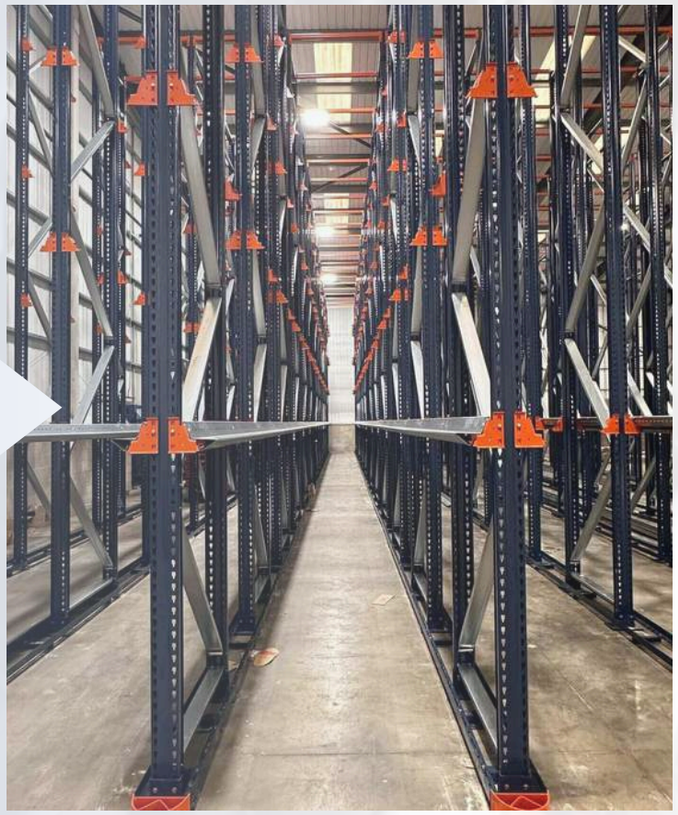
Shuttle Racking

Fully automated, this solution utilises motorised shuttles to transport the pallets within the long-running storage lanes. To explore its feasibility, the client was able to visit a WSL installed shuttle racking system, to see it in operation at another site.



Drive-In Racking

A simpler set-up with fewer components and no motorised mechanics. Instead the structure is designed to enable forklift trucks to access the lanes, travelling the length of the lanes to place and retrieve pallets



Insights Into The Drive-In Racking System

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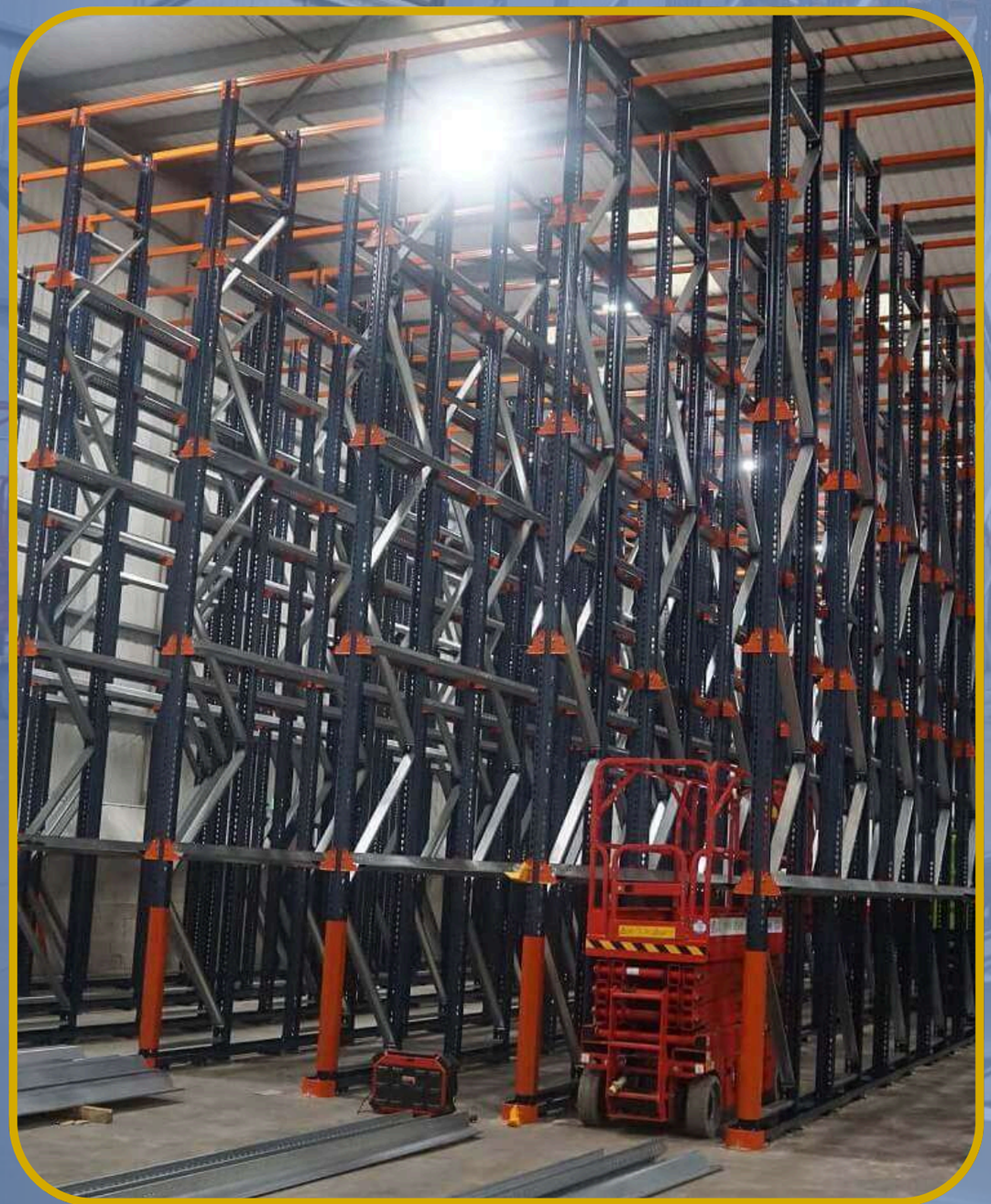
The drive-in racking system is especially beneficial for industries handling seasonal stock or large quantities of the same SKU, where quick access to older inventory is not a priority. By maximising storage capacity while keeping costs low, drive-in racking proves to be a practical and efficient choice for many operations.

For our client, drive-in racking was the most viable solution due to the following key benefits:

- **Cost-effectiveness** – The structure is simple and consists of few components, making it very economical, which was a high priority for our client.
- **Space Efficiency** – Over a floorspace of just 304 sqm, the system could deliver the 1,000 pallet locations our client required.
- **Inventory Compatibility** – The system is ideal for supporting uniform products with low turnover which matched our clients inventory characteristics.



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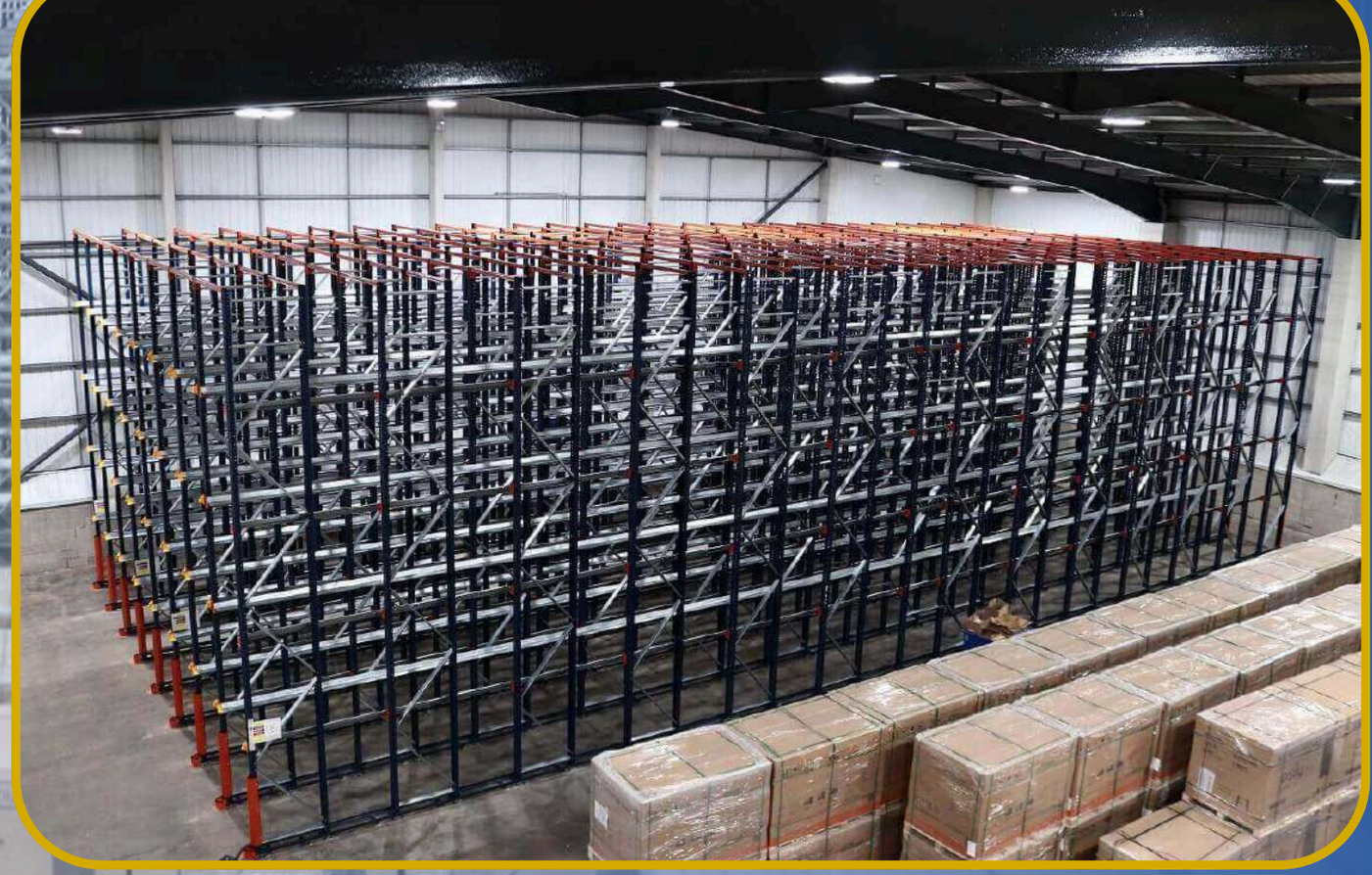
Project Execution

The installation process was completed within a month, meeting the agreed timeline. A dedicated team of five experienced WSL installers, led by a WSL Project Manager, worked efficiently to ensure a smooth build from the arrival of components to the final setup. Their expertise in racking installations enabled precise assembly, with rigorous quality checks at each stage. Close coordination with the client avoided misunderstandings and unexpected challenges, ensuring that the project was completed on schedule and to the highest standards of safety and performance.

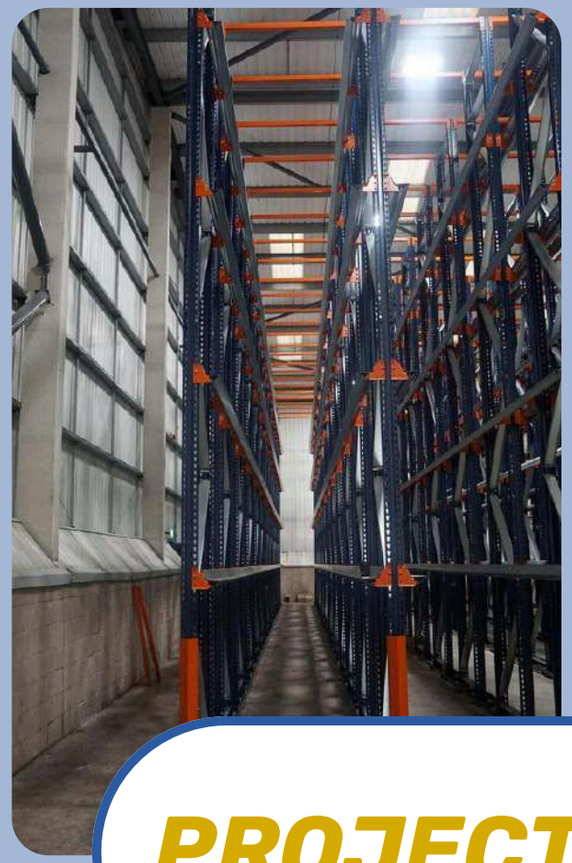
Project Success!! Increased Stock Volumes Handled Efficiently

The newly installed Drive-In Racking system provided an impressive 1,000 pallet locations, effectively maximising the available warehouse space. This high-density storage solution not only increased capacity but also improved operational efficiency by streamlining inventory management. Additionally, the design allowed for the seamless integration of a future picking system, ensuring adaptability to the client's evolving storage needs.

By implementing a strategic approach to space utilisation, WSL delivered an efficient, cost-effective storage solution that supports the client's expanding solar panel inventory. This investment in optimised racking ensures long-term scalability, allowing the warehouse to handle increased stock volumes while maintaining smooth and organised operations.









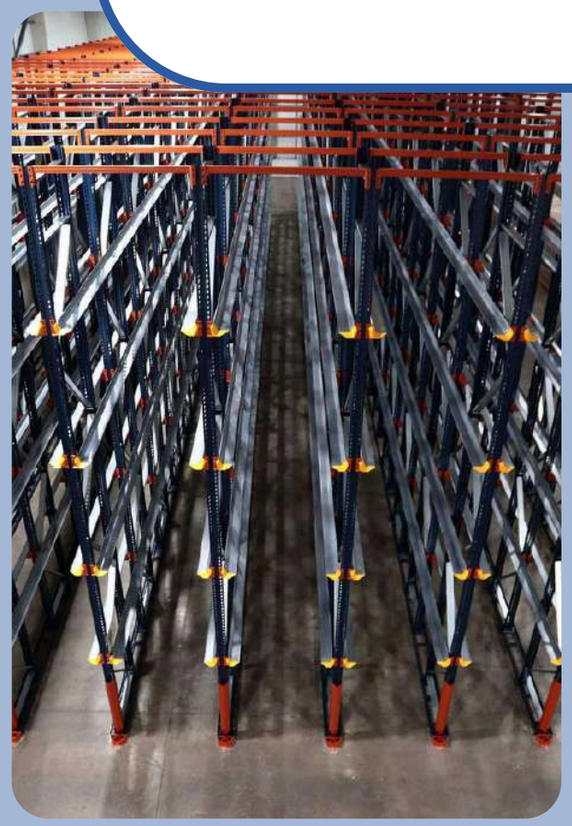




PROJECT GALLERY











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