![Westfalia logo]

Case Study:
Gehl Foods, Inc.
Germantown, WI

With their continued business success, Gehl Foods, Inc. of Germantown, WI, needed to find a way to meet their expanding order processing and warehouse storage needs within the confines of their existing 22' high building. They selected Westfalia Technologies, Inc. to design, build and install a High Density Automated Storage and Retrieval System (AS/RS) with Savanna.NET® Warehouse Management Software (WMS) in the company's 300,000 square foot

warehouse. The AS/RS and WMS nearly tripled Gehl's storage space and provides significant operational savings in labor costs, energy and more.

A leader in the manufacture of quality dairy products for over a century, Gehl Foods, Inc. operates one of the most diverse and technologically advanced aseptic dairy facilities in the US. The company processes real dairy ingredients into shelf-stable beverages, sauces

and puddings that hold their fresh taste without refrigeration. This enables Gehl Foods to ship products to over 300,000 retailers, restaurants and concession operators across North America. In addition to their own brand of Gehl's® Cheese Sauces and Main St. Café® Protein Smoothies, the company also uses its shelf-stable dairy expertise to copack several large national brands.

The goal of the system was to pro-

- **High Density AS/RS in 22'h Warehouse**
- *Savanna*.NET® **WMS**

OUR INNOVATION
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The Challenge:
Designing for Growth in a 22' High Warehouse

vide well over 10,000 pallet storage locations within a 315' w x 524' l x 22' h footprint. Gehl's placed two additional critical requirements on Westfalia's system design: all storage locations must access shipping, receiving and packaging lines placed on opposite ends of the facility, and the AS/RS must handle various types of pallets including GMA, IGPS and CHEP/9 block pallets. Westfalia met each of these challenges with a high density AS/RS, accumulation conveying system, and triple rail support of pallets throughout the system.

Westfalia designed a 5 aisle AS/RS with a conveying system to maximize throughput while adding significant accumulation to buf-

fer peak shipping and receiving volumes. The multi-aisle AS/RS design is based on Westfalia's multiple deep Satellite® technology, which provides the ability to create a compact, 6- to 11-pallet deep storage solution. Storing pallets 3 levels in the 22' high facility maximizes storage density, thereby negating the need for a new building and possible construction costs. Included in the AS/RS are conveyors, 6 Storage Retrieval Machines (SRMs) with Satellite® rack entry vehicles, and WMS

interfaces. Westfalia's fourth generation SRM design provides faster operation and longer life. Due to its sophisticated double mast structural design, it is one of the heaviest-duty SRM's available today.

As usual with Westfalia's AS/RS, the system offers triple rail support of pallets throughout, so that various types of pallets can be used without the need for slave pallets. Triple rail support addresses the issue of pallet quality, often

The Solution:
## High Density AS/RS and *Savanna*.NET® WMS

a concern in automated systems. With triple rail support pallets of all types are more balanced in their movements, eliminating product tipping and damage.

And lastly, an air chain accumulation conveyor system was designed to provide access from each storage location to either end of the facility for shipping, receiving and packaging. Critical to the system, pallets travel through tunnels in the racks to several packaging areas, where product may be depalletized, repalletized, and labels may be added before conveying the pallets to shipping. Westfalia's air chain conveyors move pallets along a roller surface by means of

System Features	
Size	524' 6" long, 315' 11" wide, 22'1" high (165,000 sf)
Capacity	■ Storage for well over 10,000 pallets ■ 3 levels - storing pallets from 6 to 11 deep
Technology	■ 6 Storage/Retrieval Machines ■ Triple Rail Support of pallets throughout facility ■ Conveyor System to handle all pallet types with out slave pallets - air chain accumulation, 3-Strand, CDLR & Right-Angle Transfers ■ 16 Gravity Flow Staging Lanes, 8 truckloads
WMS	*Savanna*.NET® manages all equipment and product movements; integrates order fulfillment with ERP

a transport chain that raises up to engage the bottom of the pallet. The chain is raised by the inflation of an air hose, which is directly controlled by the air valve, ensuring soft start and stop. A single motor can power up to 100 feet of conveyors.
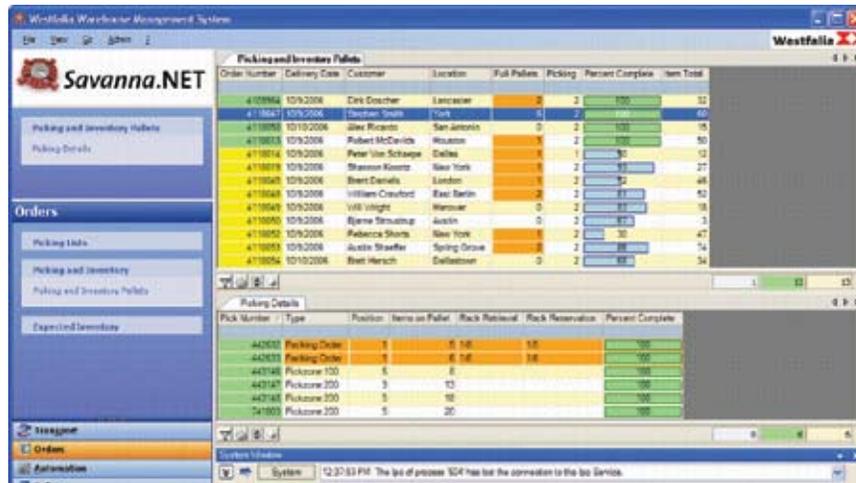
Savanna.NET® WMS
Westfalia's *Savanna*.NET® Warehouse Management Software (WMS) controls, tracks and optimizes all pallet movements throughout the system, streamlining flow for fast and accurate order management. Specific *Savanna* functionality for Gehl's included material flow control, order management, real time reporting, logging and an interface to their

existing ERP system. As much as is possible, Savanna optimizes the movements of the SRMs to perform dual command cycles. Dual command cycles are when the SRM stores one pallet, and, on the way back to the induction area, picks up another for retrieval and places it at the outfeed area. *Savanna* controls both the flows in and out of the packaging areas, as well as to the order staging area. Order ready pallets are conveyed to one of 16 pallet flow staging lanes which line up directly with a truck door.

High Density AS/RS for Growth
Westfalia's high density AS/RS permits Gehls to grow their business while avoiding costly and disruptive off-site warehousing solutions. In their landlocked, 22' high existing facility, the AS/RS not only increases storage and distribution capacity, but allows for the expanded manufacturing capacity too. By automating their existing warehouse, Gehl Foods is enabling their business to grow into the future.

Benefits

- Nearly 300% increase in storage capacity in same building foot print with 3 level high density AS/RS versus previous floor stacked configuration.

- Increased overall plant throughput and shipping capacity while reducing operating costs

- *Savanna*.NET® WMS control provides better visibility to inventory and orders, resulting in more efficient order fulfillment which greatly reduces shipping errors, as well as product damage

- Handles current storage needs, and leaves more space to accommodate projected growth

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