CLASS Warehouse Design & Simulation
Warehouse Design Software for the Logistics Professional
By Cirrus Logistics

Bring your warehouse to life in 3 easy steps:

- Draw the layout of your warehouse using simple drag and drop objects or import a CAD drawing
- Layout your warehouse using a library of warehouse objects
- Quickly and easily define your processes using standard warehousing language

Build your new warehouse in a day!

CLASS enables you to test different layouts and operating processes without the need for a physical trial.

Benefits at a glance...

- Maximise your warehouse performance
- Optimise labour and equipment running costs
- Identify hidden capacity
- Champion best practice process improvements
- Measure shift performance against company benchmarks
- Safeguard CAPEX by proving concepts before investing
- Easy-to-use, no programming needed
- Test ‘What-if?’ scenarios quickly and compare results
- Reduce warehouse solution design time

Available in an easy-to-use, Windows desktop application.
CLASS is the leading ‘off the shelf’ software written exclusively for warehouse design and simulation modelling. Used by top logistics companies, CLASS is the ‘tool of choice’ in identifying cost efficiencies in the warehouse and as a test platform for introducing operational innovation. It is used for new builds, to test designs before the building process begins, and for operational improvement in an existing site.

CLASS allows users to design, test and re-design complex warehousing solutions in a virtual computer environment by changing many different parameters and measuring their impact:

- **Assess** warehouse layout changes and their effect on productivity
- **Identify** throughput capacities and bottlenecks
- **Review** the impact of different pick-face profiling or different picking methods
- **Estimate** resource requirements, shift patterns and equipment availability
- **Quantify** costs and service levels by simulating daily receipts and despatch profiles

CLASS is pre-loaded with all of the tasks needed in a warehouse – from unloading vehicles and put-away through to order picking, pallet building, loading, despatch and all the processes in between; whilst also being able to model both manual and automated warehouses.
The unparalleled advantage of CLASS is that it puts the power in the hands of logistics professionals, enabling them to investigate any number of scenarios quickly and independently, without the need to learn a programming language.

When businesses experience increased growth or want to improve efficiency, CLASS can be used to identify how to get more volume or throughput out of an existing site and to understand where the ‘stress’ points are; delaying the need to invest in a larger facility. Alternatively, where there is a requirement to make operational savings, as demand reduces, CLASS can be used to model how storage can be consolidated and overheads reduced.

The graphics and animation within CLASS make it a favourite for 3PL sales teams when responding to tenders; they can assess the potential solution costs as well as create branded promotional videos of the client’s operation.

Cirrus Logistics also offers a Solutions Design Service. These projects keep Cirrus at the forefront of warehouse best practice. The knowledge gathered is continually used to enhance and further develop CLASS, ensuring the tool maintains its market leading position.
BENEFITS

Unlock Hidden Capacity
CLASS enables users to make the most of their warehouse asset by unlocking hidden capacity through better layout design and utilisation of resources, deferring the need for new investment. Customers have reported increases in their warehouse capacity of between 10 to 30%.

Enhance Performance
Get more from your warehouse by using CLASS Warehouse Analytics to identify operating constraints and then use the ‘What-if?’ tool to compare results of multiple operating scenarios to maximise performance. Efficiency improvements reported by our customers using CLASS averages around 10%.

Speed up Decision Making
The simplicity of CLASS means solutions designers are not dependent upon architects or computer programmers to revise their designs. This significantly speeds up the design process, enabling more options to be explored and decisions finalised in a matter of hours not days.

Improve Communication
Whether the objective of using CLASS is to support a business case for additional investment, prepare operators for a new warehouse, achieve buy-in from key stakeholders or to win a new contract, clear and dynamic 2D and 3D models communicate the change visually and detailed analytics support the change graphically.
CLASS enables me to test changes in my operation without the disruption and cost of conducting an operational trial.

Warehouse Operations Manager.
WAREHOUSE ADVANCED ANALYTICS

Model and understand all the individual components of your warehouse operation...

Workforce Planning  Dock Scheduling  Receiving  Put Away  Storage

Order Planning  Order Picking  Staging  Vehicle Loading  Yard Management
CLASS provides our business with credible “proven” data that supports the business case for investment.

Supply Chain Director.
WHO USES CLASS?

I need the ability to continually improve my operational performance and accommodate new business requirements.

Warehouse Operations Manager.

Transport and logistics equates to 30% of our product costs. Ensuring that our distribution and warehouse operations are fully utilised is essential to our profitability.

Supply Chain Director.

CLASS Operational KPIs include
- Pick rates
- Labour utilisation
- MHE utilisation
- Replenishment activity
- Storage type utilisation

CLASS Performance KPIs include
- Dock utilisation & vehicle wait times
- Service levels
- Asset utilisation
- Volumes
- Trends
Ensuring that I optimise the layout to achieve the best storage capacity without compromising productivity is key.

Warehouse Solutions Designer.

Winning profitable new accounts when margins are squeezed and RFI’s demand quick turn-around times, requires me to quickly and confidently model the effects of assimilating the new business into our current logistics network.

Logistics Development Director.

CLASS Solutions Design KPIs include
- Storage area congestion
- Travel distance analysis
- Work rates
- Inbound & outbound flow analysis
- Zone congestion

CLASS can
- Identify costs & congestion points
- Allocate customer to optimum depot
- Qualify service levels
- Help me win the business by presenting our proposal as a 3D movie
CLASS can be used to simulate warehouses of all sizes and complexities. It is easy to use and does not require programming or scripting skills, the familiar Windows environment can be quickly used by anyone.

The layout drawing is created through a series of drag and drop objects drawn to scale. The inbuilt warehouse intelligence within CLASS interprets the user’s commands and ensures that any layout changes conform to a set of standards, thereby ensuring aisles are large enough for forklift movements, bays can accommodate pallets, and pillars are considered with minimum impact on storage space.
Create your warehouse

- **Preconfigured objects** can be selected from a full range of storage types including carton flow racking, drive in racking, double deep, narrow aisle and so on
- **Drag and stretch** layout objects to draw the interior of the warehouse. Point, click and drag to draw each warehouse object – dimension lines, snap to grid and measure tool are available
- **3D image library** of MHEs, vehicles, office and other warehouse objects come as standard in order to populate static layout and simulation models or create your own 3D library
- **Customise** with logos or images of the warehouse and its inventory, vehicles and operators
- **CAD interface** to import existing drawings

The layout can be transformed into a 3D navigable model and brought to life with staff and forklifts moving in time with the defined operations process. Work flows through the warehouse are shown as lines linking different zones of the warehouse, staff can be assigned to different duties to exactly represent the operation you are designing. Models can be built in varying degrees of complexity – define inbound and outbound vehicle types, put-away and picking rules, or you can simply ask CLASS to use its inbuilt warehouse intelligence to automatically generate the necessary flows for simulation.
Run your warehouse simulation

- **Animate facility** automatically creates simulation flows – inbound and outbound to each storage area
- ‘**What-if?**’ **Wizard** simplifies the tuning of the operation and makes changes to the model quick and simple
- **Simulation data** can be imported from files created by your WMS or developed from product profiles and order types, defining actual pick journeys and true vehicle load sizes based on historic data. Simulation data on numbers of vehicles, arrival times etc. can be edited via dialogues associated with each flow, or via the data editor
- **Toggle between 3D and 2D** drawings to find the best visualisation
- **Record Flythrough Movies** in 2D or 3D and share as runtime models with colleagues or customers, great for communicating ideas

Once built, the model can be run in QuickTime to represent a whole week and thereby collect performance data for analysis.
Warehouse Results

- **Updates** on space occupancy and vehicle fill are reported and the user can see which task each operator is carrying out as the simulation runs.
- **Colour coded** KPI reports enable quick identification of problem areas.
- **Drill down** function assists the user to navigate detailed hour-by-hour reporting.
- **Statistics** are available on utilisation of resources, labour breakdown by task, throughput by hour.
- **Export to clipboard** charts and tables for import into Excel or PowerPoint.
- **Project Comparison** report enables users to compare key statistics across multiple projects and warehouses.
- **Business cases** to bring about change can be supported by quantifiable savings or operating expenditure.
CLASS Site Traffic models the dynamic effects of vehicle movements around the site, arrival and departure patterns as well as vehicle queuing and waiting times. Using movement pathway technology, Site Traffic allows users to build an exact copy of their site quickly and then use this in the simulation to model the vehicle movements.

Site Traffic can be used to assess the key factors that determine vehicle turnaround times:

- **‘What-if?’ Wizard** enables vehicle arrival and departure patterns in the yard to be synchronised to best support warehouse operations.
- **Traffic Logic Builder** models the decision making process of scheduling vehicles onto a dock, based on the products carried and their destination in the warehouse. Vehicle activity can be accurately modelled to parking area sizes, road ways, entry and exit gates, and thereby determine the optimal site traffic plan.
- **Site Traffic Layout** supports physical objects including: road networks, parking positions, refuelling and wash stations. These can be included in the model to understand their position in relation to one another and the effect each component has on the overall flow of traffic in the yard.
- **Data files** of inbound and outbound vehicle activity can be exported from the yard management system into CLASS, which then creates arrival and departure time profiles based on historic vehicle arrivals. The phasing of activity ensures that movements are as evenly spread across the day as possible.
- **Trailers, tractors and shunters** can be modelled so the required levels of each can be determined to meet the order profiles.

Sometimes the main warehouse infrastructure is designed well to cope with future demand but not enough consideration is given to the provision of trailer parking, internal roadways etc. CLASS Site Traffic module provides the warehouse designer with the supporting yard and trailer analytics to support their vision.
CLASS can model constraints and bottlenecks that are impossible to calculate on a spreadsheet or see on a blueprint.

Warehouse Solutions Designer.
Cirrus Logistics has 20 years’ experience in logistics modelling and warehouse design. Our software products and industry professionals help our customers drive value in their supply chains. Services include: optimisation of assets, maximising order fulfilment, the reduction of Co2 emissions and the efficient planning of people, products and services. Our software products include: CLASS for warehouse modelling, COST2SERV for network planning and optimisation and SEABERTH for port operations. Our customers range from small independent companies to large multi-nationals in Third Party Logistics, Retail, Food & Drink, Manufacturing and Oil & Gas.

**Training and Consultancy**

If you want support with your design project, our staff can provide both design suggestions and help you get the most from your software investment. Training programmes are available in classroom or webinar format.
CLASS enables me to simulate the effect on our storage and vehicle yards thus enabling me to submit the most competitive RFP.

Logistics Development Director.