



CAD COMPUTER-AIDED
MATERIAL HANDLING

2D & 3D CAD APPLICATIONS IN LOGISTICS



OUTLINE

- Introduction
- Examples of CAD Applications in Logistics
 - Logistics in Factory Planning
 - Logistics in Warehouse Design
 - Logistics in the Transport of Goods
- Live Demonstration

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SYSTEMS
RAUGHTING
ICS
SOLIDS

INTRODUCTION

Logistics is the detailed organization and implementation of a **complex** operation.

What are the benefits of using CAD in logistics ?

- ✓ CAD systems can produce accurate and repeatable results rapidly
- ✓ Establishing more safe and more productive working places
- ✓ Allows for testing and simulation of a digital system without making commitments in the real world
- ✓ Renders management and sharing of information easier

APPLICATION OF

Factory
Logistics

Planning of
Physical
Factory
Layout

Planning of
Factory
Operations

PLANNING OF PLANT

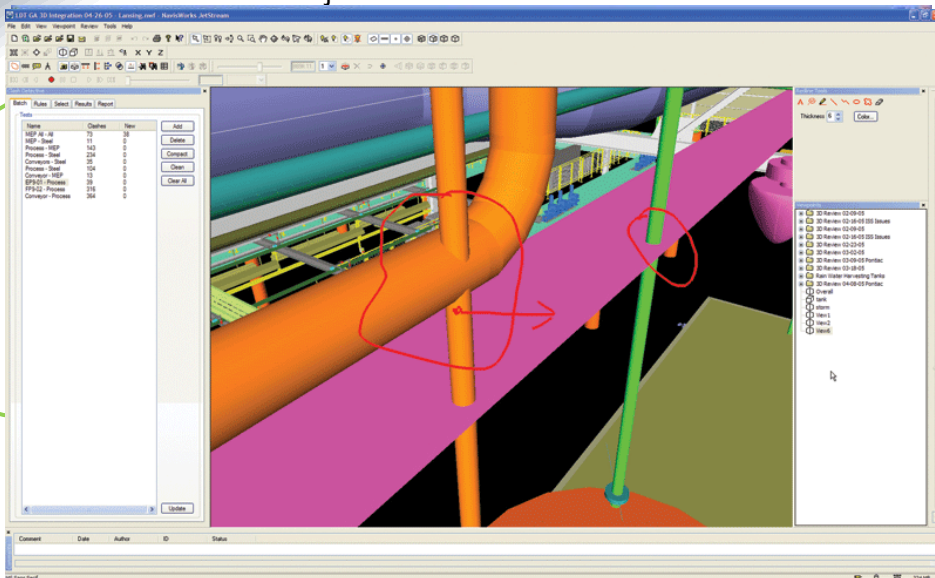
- Planning the physical layout of a factory can be very complex activity.
- Some of the challenges to be tackled include:
 - Boost productivity
 - Increase availability of resources
 - Promote flexibility
 - Reduce lead times
 - Ensure that layout being considered can be implemented e.g. avoid static collisions of services

CAD COMPUTER-AIDED MATERIAL HANDLING MODELING ENGINEERING SYSTEMS COMPUTER TOOLS GEOMETRY DRAUGHTING SOLIDS ANIMATION SOFTWARE LOGISTICS

... in essence it is a very complex task.

PLANNING OF PLANT

CAD applications for the detection of collision between static objects.



PLANNING OF PRODUCTION

Factory Walkthrough and Collision Detection

Analyzing Layout for Clashes with Factory Design Suite.mp4

CAD COMPUTER-AIDED



ANIMATION SOFTWARE

LOGISTICS

3D
MODELING
SYSTEMS
SOLIDS

PLANNING OF PRODUCTION

3D CAD systems can also be used to plan and simulate operations taking place within a factory.

These CAD systems can be used to:

- Optimise the flow of material
- Maximise the utilisation of factory assets e.g. assembly cells
- Identify potential health and safety hazards.

CAD COMPUTER-AIDED



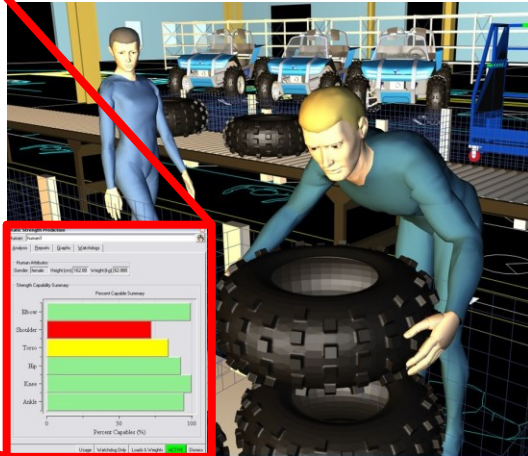
ANIMATION SOFTWARE

LOGISTICS

3D
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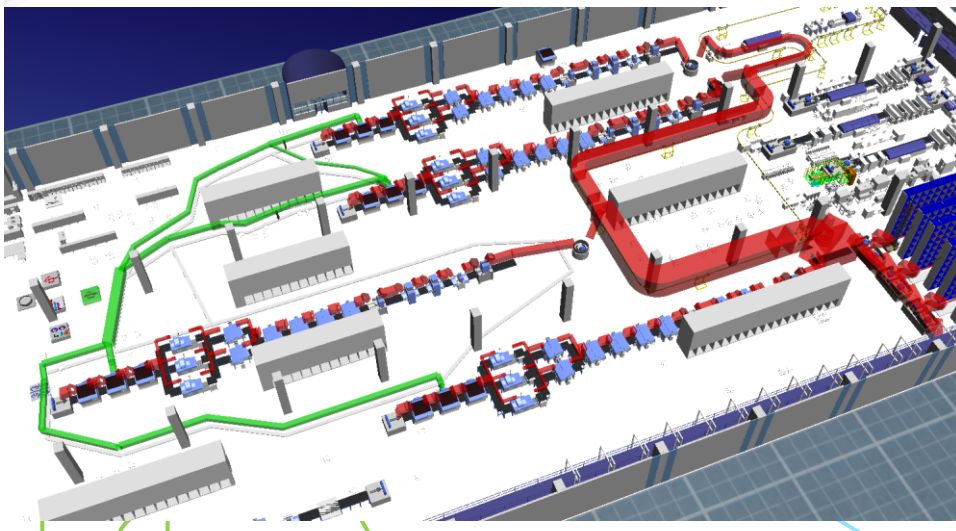
PLANNING OF FACTORY

Identifying health hazard in handling operation

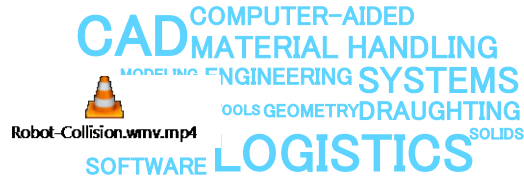


PLANNING OF FACTORY

CAD systems can also be used to monitor the flow of material and the degree of utilisation of work stations.



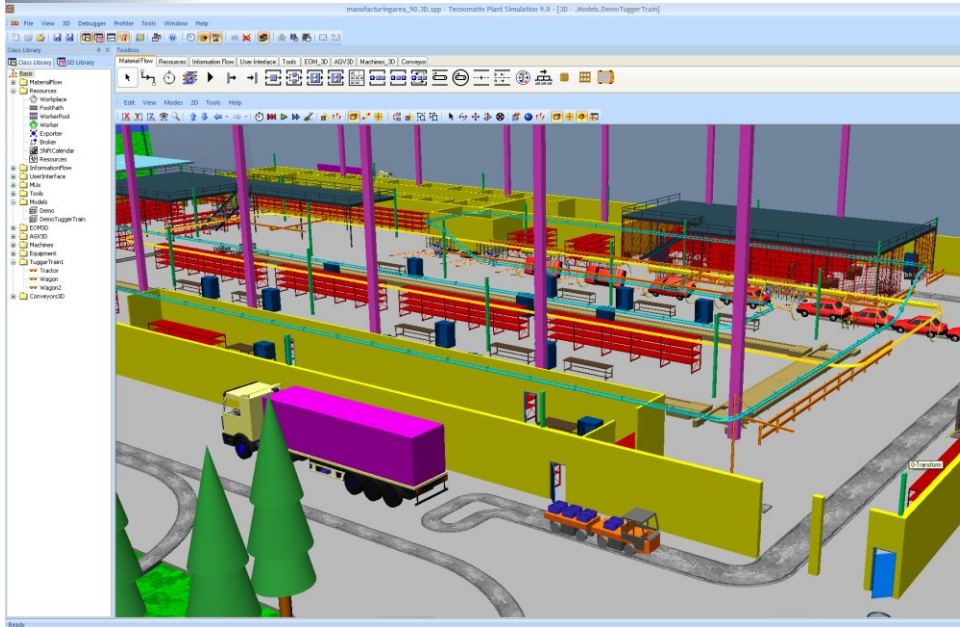
PLANNING OF FACILITIES



LOGISTICS IN WAREHOUSES

- CAD can become an important warehouse design and management support tool, with the potential to:
 - ✓ Enable the fast discovery of layout design problems while avoiding expensive re-design
 - ✓ Support execution of warehouse simulations
 - ✓ Provide a breakdown of material handling costs and material handling requirements
 - ✓ Reduce material handling needs and storage requirements
 - ✓ Reduce time to launch

LOGISTICS IN W



LOGISTICS IN W

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ENGINEERING
SOFTWARE LOGISTICS
DRAFTING
SOLIDS

Dexion Automatic Storage and Retrieval System (ASRS).mp4

The graphic features a white background with abstract, flowing lines in shades of green and blue. The central text is arranged in a blocky, stacked format. The words 'CAD', 'COMPUTER-AIDED', 'MATERIAL HANDLING', 'SYSTEMS', 'ENGINEERING', 'SOFTWARE', and 'LOGISTICS' are stacked vertically. To the right of 'ENGINEERING' are the words 'DRAFTING' and 'SOLIDS'. A small orange and white traffic cone icon is positioned to the left of the word 'SOFTWARE'. Below the main text block, the text 'Dexion Automatic Storage and Retrieval System (ASRS).mp4' is displayed.

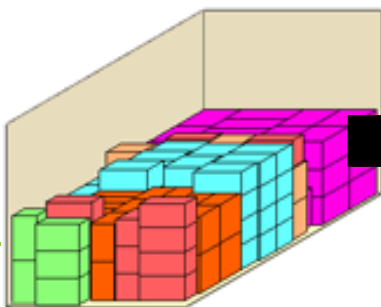
Logistics in Transport of Goods

Space Utilisation inside a container

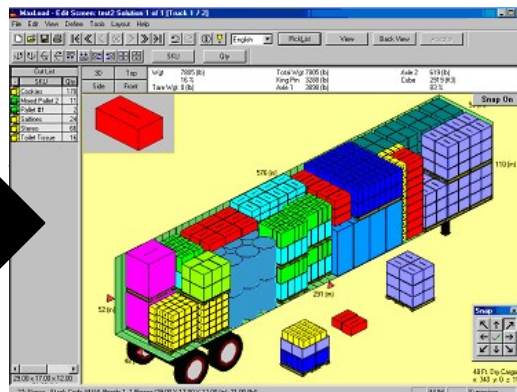
Cargo Stowage Planning

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COMPUTER TOOLS GEOMETRY DRAUGHTING
ANIMATION SOFTWARE LOGISTICS SOLIDS

- o Plan the spatial configuration of goods in order to maximise the utilisation of space within shipping containers



Poor Container Space Utilisation



Maximised Container Space Utilisation

LOGISTICS IN THE

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Cargo Optimizer Enterprise Presentation.mp4

LOGISTICS IN THE

- o Container stowage planning.
 - o Improve the ship stability by ensuring an even distribution of the cargo load.



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- o Minimise the time a cargo ship spends loading and unloading containers at a particular port. Ensure that containers at the top correspond to the next port in the travel plan of the ship.

LOGISTICS IN THE

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SOFTWARE



NEPTUNE Terminal Operating System - Terminal Planning.mp4

LIVE DEMONSTRATION

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THANK YOU FOR YOUR ATTENTION

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Learning
Programme

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