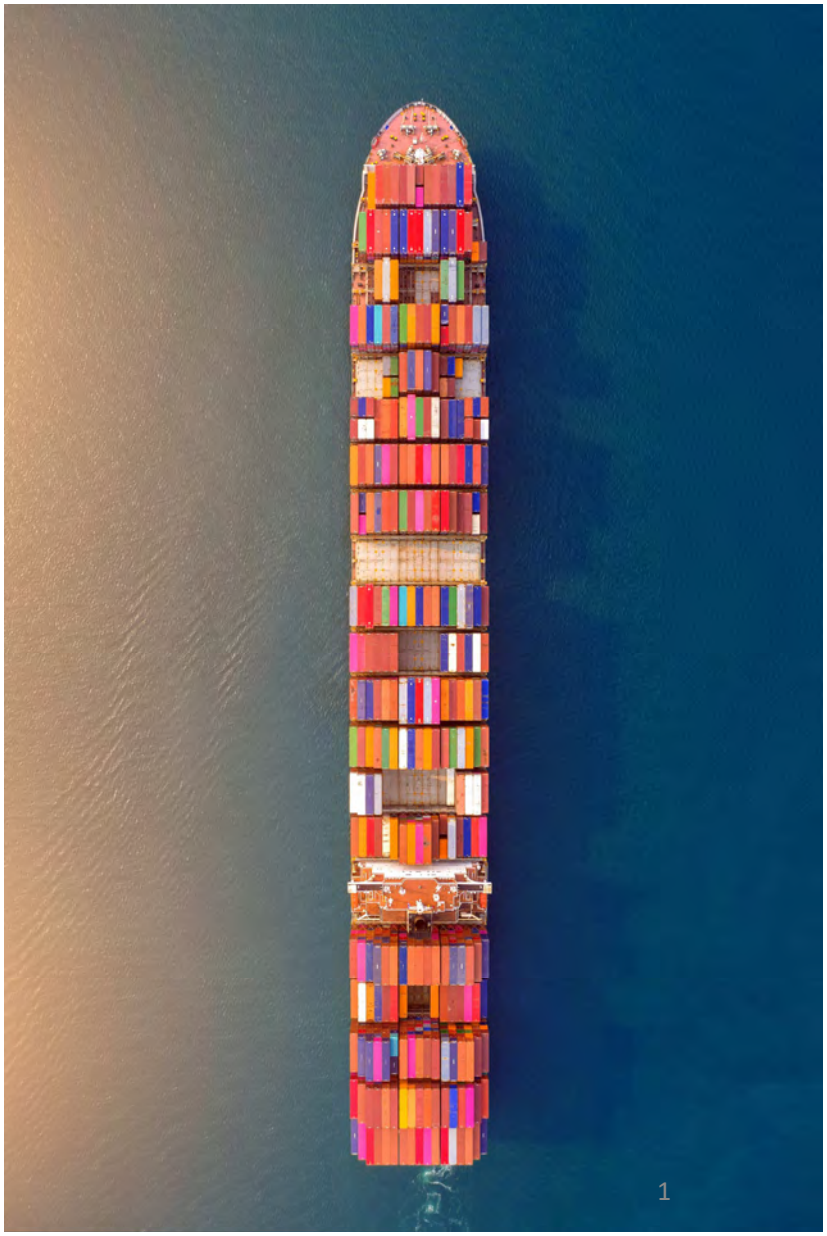
CHM GLOBAL

WE LOOK AT IT FROM A DIFFERENT POINT OF VIEW TO DELIVER YOUR EXPECTATIONS



Software Capabilities

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01 **Maxsurf - Naval Architecture**

Software provides integrated tools for hull modelling and optimization, comprehensive stability, motions & resistance prediction, structural modelling, structural analysis, and export to vessel detailing.

02 **GHS (General Hydrostatic) - Naval Architecture**

PC-based simulator of vessels in fluids and fluids in vessels for ships, yachts, docks, drilling platforms, buoys, tanks.

03 **Inventor Nastran - Structural Analysis**

A finite element analysis (FEA) software provides engineers and analysts with a wide range of simulation study types for nonlinear, dynamics, heat transfer, fatigue, and more.

04 **Rhino3D - Modelling**

Software can create, edit, analyze, document, render, animate, and translate NURBS curves, surfaces and solids, subdivision geometry (SubD), point clouds, and polygon meshes.

05 **Autodesk Inventor - Modelling**

Trusted DWG compatibility and powerful model-based definition capabilities for embedding manufacturing information directly in the 3D model.

06 **Cadmate - 2D Drafting & 3D Modelling**

Software excels to create precise technical drawings, diagrams, and 3D models of buildings, machinery, and other objects.

Software
Capabilities (Cont'd)

07

ZWCAD - 2D Drafting

Software gives 2D CAD solution that offers unparalleled compatibility with AutoCAD. It empowers designers in the AEC and manufacturing industries to effortlessly bring creative visions to life.

08

NAVISWORK - 3D Design Review

A practical solution to streaming large CAD models, NWD files require no model preparation, third-party server hosting, setup time, or ongoing costs.

09

ANSYS - Structure Analysis

Simulation software used to simulate computer models of structures, or components for analyzing the strength, toughness, elasticity, temperature distribution, electromagnetism, fluid flow, and other attributes.

10

SACS - Structure Analysis

The offshore structural analysis software that helps to optimize design to ensure compliance, understand behavior, and accurately predict performance of all types of offshore structures.

11

CAESAR II - Pipe Stress Analysis

For pipe stress analysis, CAESAR II lets designers build, assess and report on piping systems of any size or complexity in accordance with more than 35 international piping code standards.

01 Maxsurf (Naval Architecture)

Maxsurf is typically used to design as follows:

- Ships : VLCC, Plate modelling on larger vessels, Container ships, General cargo, Dredgers.
- Workboats : General purpose, dive boats, tugs, barges, fire boats, etc.
- Fast Ferries : Monohull, Catamaran, trimaran, notable examples from Austal, In-cat Crowther, Southerly Designs.
- Patrol : Patrol and Coastguard vessels, Border protection, Fisheries protection, etc.
- Defense : Anzac frigate, Littoral Combatant, etc.
- Offshore : Supply vessels, Heavy lift etc., Windfarm maintenance/support.
- Yachts : Motor luxury yachts, Sailing yachts, production yachts, personal leisure craft (kayaks, sailboards, surfboards, etc.), America's cup sailing yachts.

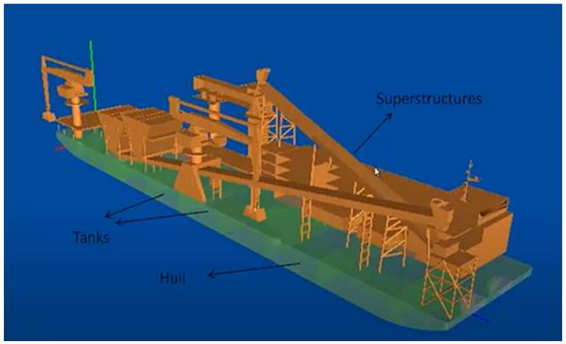
02 GHS (General Hydrostatic)

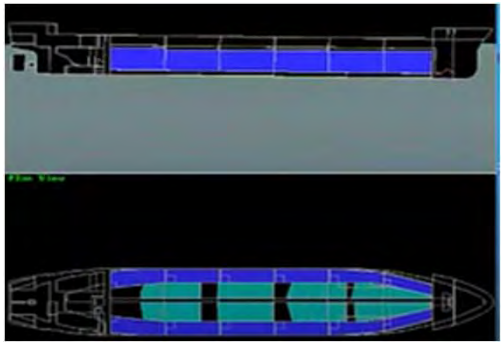
GHS is typically used for application as follows:

- General Hydrostatics/stability/strength : Applies to all ships of any size, type and any floating structure
- Vessel design : Easy model building and modification; simulation-oriented calculations
- Trim and Stability book preparation : All required calculations and graphs
- Onboard Loading Computer : Customized and packaged to support on-board vessel operations
- Salvage applications : Accurate simulation with grounding, pulling, pressurized tanks; multiple bodies
- Oil-spill calculations : Amount of oil spilled based on observed condition of vessel
- Launching calculations : Ship interaction with ways and water, automated sequencing
- Drydocking calculations : Easily-combined ship and dock geometry; graving dock grounding

Classification Societies

- American Bureau of Shipping Services provided, locations and regulations.
- Baltic & International Maritime Council Public area includes publications, shipping issues and software.
- Bureau Veritas Services offered, office locations and news.
- Det Norske Veritas Library services, classification rules and software.
- Germanischer Lloyd Rules and guidelines for ship classification.
- International Maritime Organization IMO library, questions, briefing and ISM code.
- Lloyd's Register Regulations, software and shipping information.
- RINA - Registro Italiano Navale International ship classification society, publications, services and software.

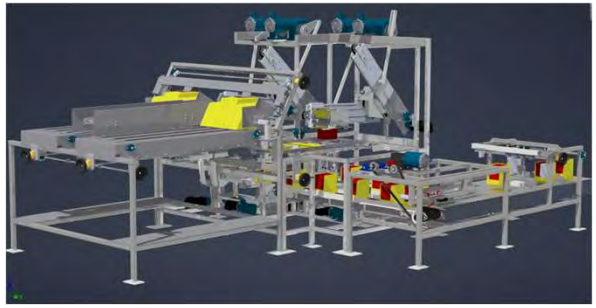


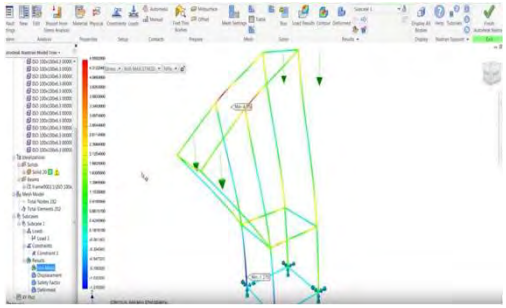


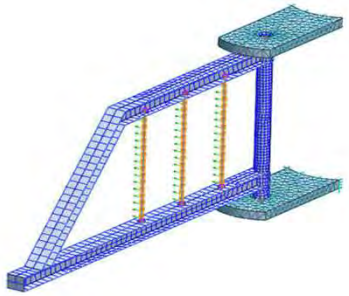
03 Inventor Nastran - Structural Analysis

Nastran is typically used for applications as follows:

- Static fatigue : Determine the durability of structures under repeated loading, including low- and high-cycle fatigue.
- Linear static : Quickly solve linear static studies to learn about high concentrations of stress, strain, or displacement.
- Frame Idealization : Solve for bending moment, bend diagrams, and axial stress for structural members.
- Linear buckling : Analyze structures, such as columns and beams, for catastrophic failure under certain loading conditions.
- CFD interoperability : Import data from Autodesk CFD for highly accurate results in Inventor Nastran.
- Impact analysis : Solve impact events and drop testing of all types of nonlinearities at the same time.
- Surface contact : Accurately simulate and model parts with different kinds of contact, such as sliding, friction, and welding.
- Heat transfer : Analyze the effects of convection, conduction, and radiation in the design to avoid failure.



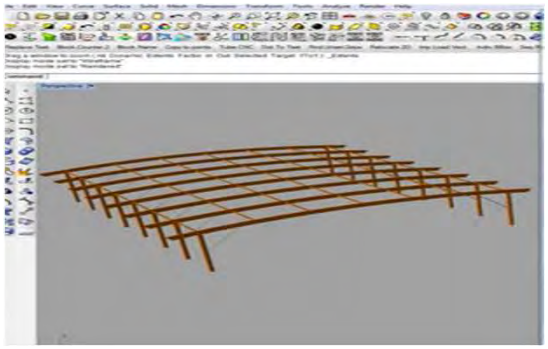




04 Rhino - Modelling

Rhino is typically used for applications as follows:

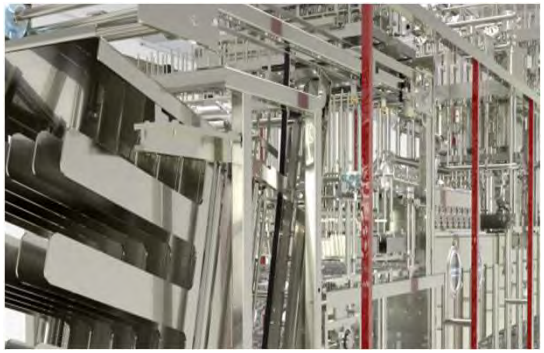
- Dynamic Design : Create parametric systems, Integrate intelligent data sets, & Optimization of form.
- Analysis and Simulations : Site-specific environment, and energy analysis, 3-dimensional view and structural analysis.
- BIM and Documentation : Link geometry and object data with BIM models and direct integration with ArchiCAD.
- Visualization and Animation : V-Ray rendering through an integrated plugin and advanced OpenGL display.
- Fabrication and Construction : Export accurate 2D Drawings, Prepare files for CNC cutting and rationalize geometry.
- Surface Modeling : Visualize changes in real time, analyze fairness and curvature and multiple display modes, Advanced display pipeline for real time rendering

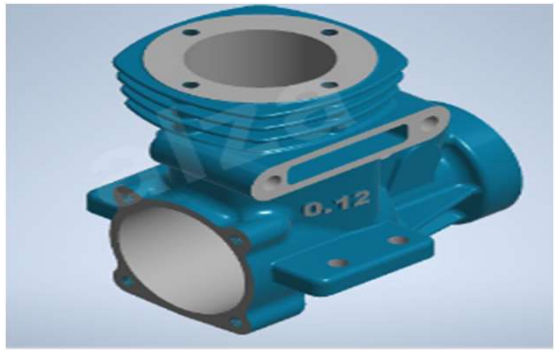


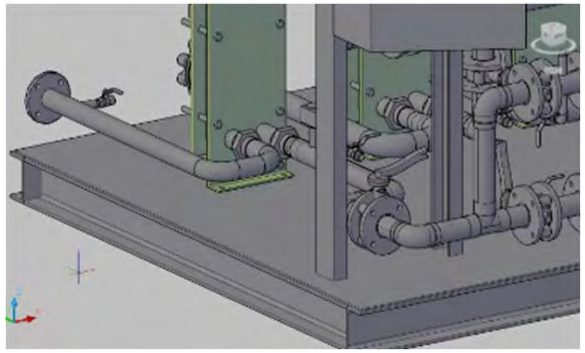
05 Autodesk Inventor - Modelling

Autodesk Inventor main features as follows:

- Parametric modeling : Focus on design as you create and edit 3D models with an intuitive user interface.
- Assembly modeling : Analyze the design will fit and perform at the assembly level.
- Drawing creation : Quickly create clear, accurate, detailed drawings for manufacturing.
- Work with non-native data : Directly open designs created from other CAD systems with no translation necessary.
- BIM interoperability : Read and author Revit data as you participate in BIM projects.
- Design configurations : Speed 3D modeling process by rapidly creating new configurations of designs.
- Automated frame design : Quickly create and simulate 3D models of your weld frame designs.
- Shared view collaboration : Collaborate with key stakeholders on the designs from any device.





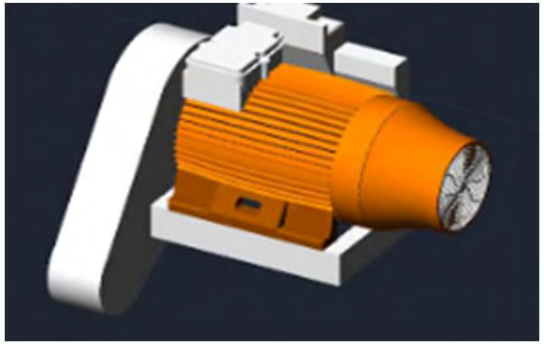


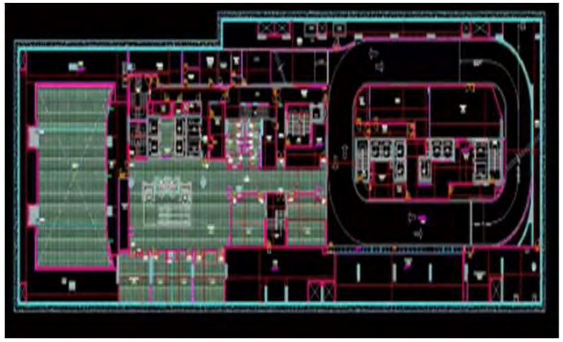
06

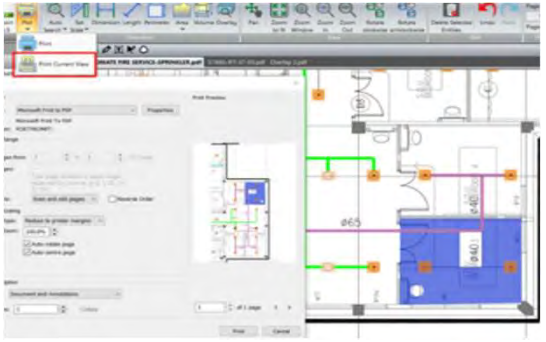
Cadmate - 2D Drafting & 3D Modelling

Cadmate main features as follows:

- 2D Drafting : Create and modify drawings using various features such as quick measure, import/export custom settings, symbol libraries, and more.
- 3D Modelling : To add tool based on existing hatch pattern via the tool palette, converts 3D to mesh objects, designs planar surface and builds 3D solids from 3D meshes or surfaces.
- Estimation : By CADMATE Takeoff, one can estimate projects, perform digital takeoffs on drawings, and send required quantities to field personnel.
- Integration : Allows to transfer calculations between documents, automate calculations for the area, length, volume, or perimeter, and generate the plot output of a predefined area.



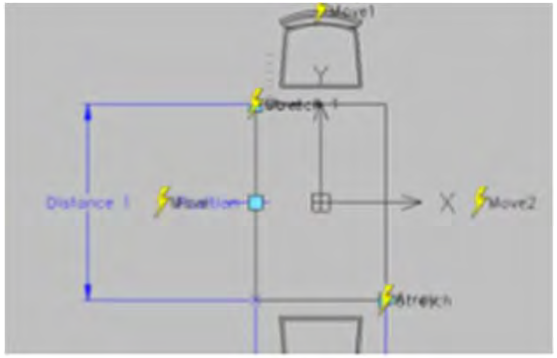


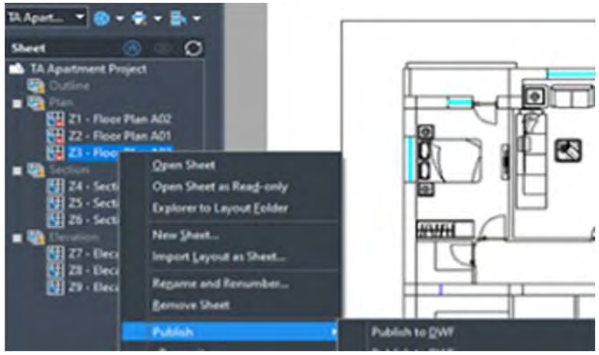


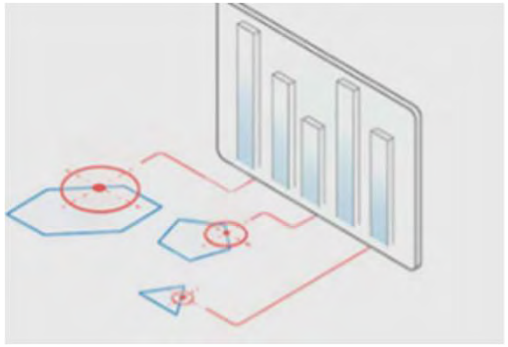
07 ZWCAD - 2D Drafting

ZWCAD main features as follows:

- Flexiblock : Speed up workflow with Flexiblock that contains parameters and actions.
- Sheets Set Manager : View, access, manage, and plot multiple drawings. All of them can be done in one panel.
- Point Cloud : Process point cloud data in ZWCAD easily to improve design accuracy.
- Data Extraction : Create and update tables made with data of objects for better data organization and analysis.
- Quick Properties panel : View and edit properties easily with Quick Properties Panel and can be customized.
- Data Extraction : Create and update tables made with data of objects for better data organization and analysis.
- Tool Palettes : Drag and use mechanical, architectural, electrical blocks; store custom blocks



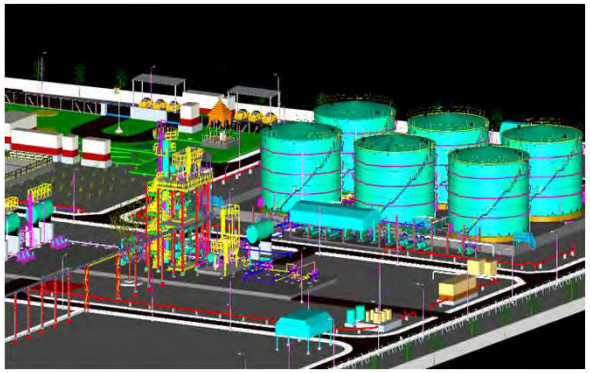


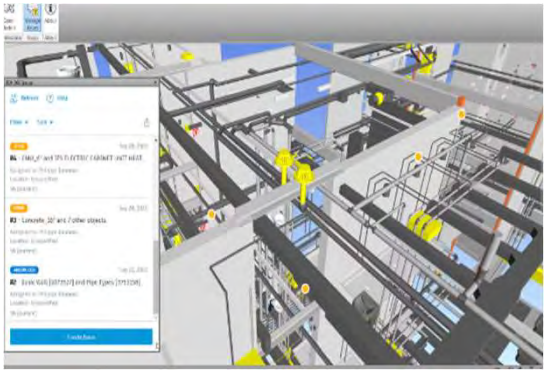


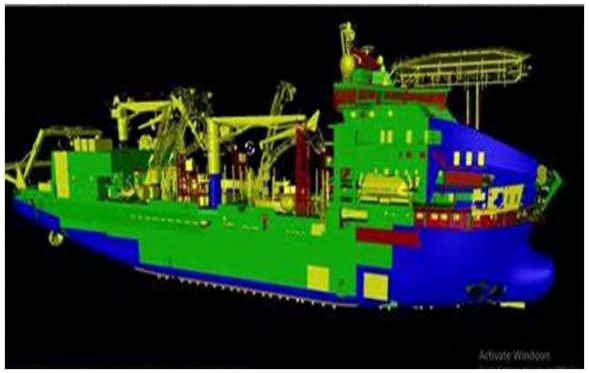
08 NAVISWORK - 3D Design Review

NAVISWORK main features as follows:

- Accessibility : Easy opening of NWD and 3D DWF files and creates compressed, more secure, NWD format files.
- Data Review : Enables viewing of model hierarchy, object properties, and embedded review data, including viewpoints, animations, redlines, and comments.
- Tool Palettes : Includes full set of navigation tools, including Walk, Look Around, Zoom, Zoom Box, Pan, Orbit, Examine, Fly, and Turntable.
- Display : Supports real-time display of materials and lighting.



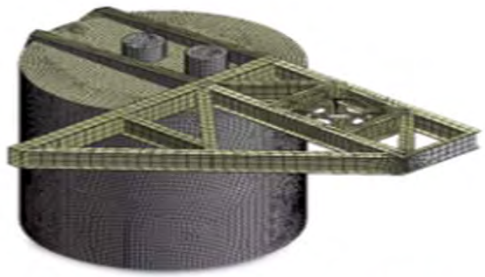




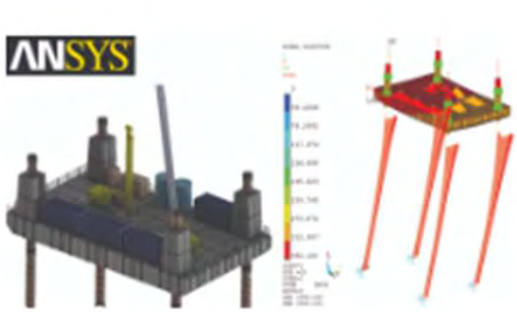
09 **ANSYS - Structural Analysis**

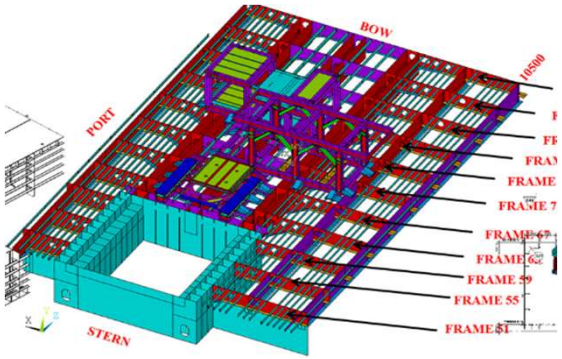
ANSYS main features as follows:

- Advanced Materials Modeling
- Vibration
- Coupled Field Technology
- Automated Meshing Adaptivity (NLAD)
- Explicit Analysis
- Acoustics
- Linear and Nonlinear Contact
- Fast Parallel Solvers



The mesh of a suction pile

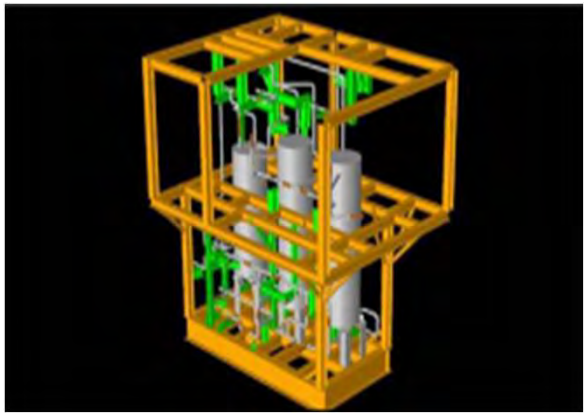


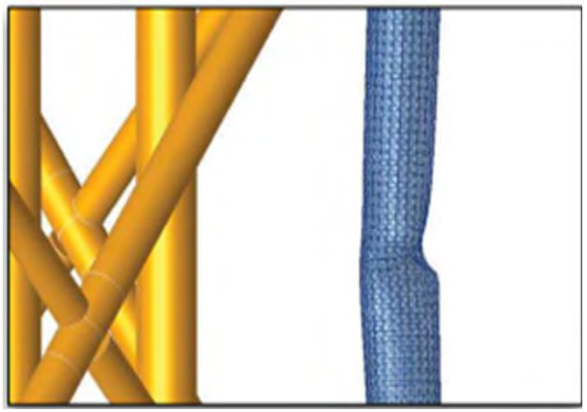


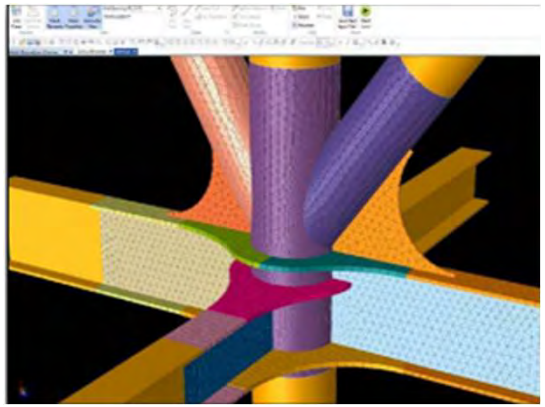
10 SACS - Structural Analysis

SACS main features as follows:

- Comprehensive Analysis : Includes full nonlinear, dynamic, and impact effects.
- Modelling : Model pile-soil interactions and apply wind, wave, seismic, ship impact, dropped object, and blast loads for a full range of likely effects.
- Codes Compliance : Built-in checking provides assurance that designs comply with offshore international codes, including API, AISC, EC, ISO, DNV, and Norsok.
- Customization : Customizable templates within a common structural model to manage multiple analyses.



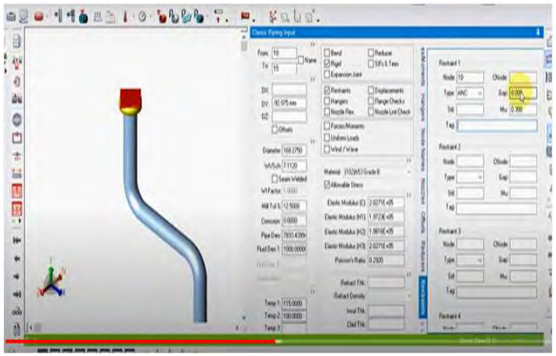


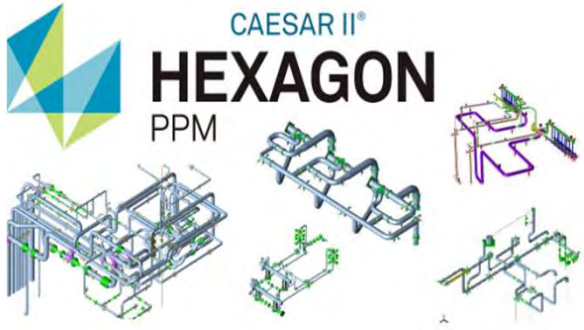


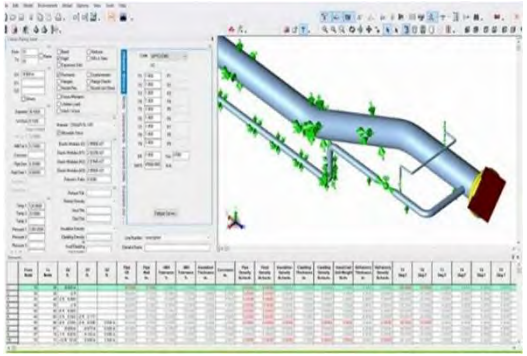
11 CAESAR II - Pipe Stress Analysis

CAESAR II main features as follows:

- Advanced graphics : 3D model graphics with fast response time to model actions and intelligent refreshers.
- Reduced modeling time : Integration with CAD design packages to import models, reducing risk for errors and costly iteration time between CAD and stress analysis divisions.
- Robust load case definitions : Customized load case definitions can import/export through an easy-to-use template.
- Advanced analysis and reporting : In addition to the evaluation of a piping system's response to thermal, deadweight and pressure loads, CAESAR II analyzes the effects of wind, support settlement, and wave loads.
- Comprehensive analysis : Associate multiple load conditions and multiple types of equipment in the Equipment Manager, which has connectivity to load cases used in the piping analysis.







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Email: info@chm-global.com

CHM Global WLL, Bahrain
Email: bahrain@chm-global.com

CHM Global SPC, Sultanate of Oman
Email: oman@chm-global.com

CHM Global LLC, UAE
Email: uae@chm-global.com

CHM Global Pvt Ltd, India
Email: india@chm-global.com

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Email: uk@chm-global.com