



INTEGRATED SOFTWARE FOR STRUCTURAL ANALYSIS & DESIGN

The SAP name has been synonymous with state-of-the-art analytical methods since its introduction over 30 years ago. SAP2000 follows in the same tradition featuring a very sophisticated, intuitive and versatile user interface powered by an unmatched analysis engine and design tools for engineers working on transportation, industrial, public works, sports, and other facilities.

From its 3D object based graphical modeling environment to the wide variety of analysis and design options completely integrated across one powerful user interface, SAP2000 has proven to be the most integrated, productive and practical general purpose structural program on the market today. This intuitive interface allows you to create structural models rapidly and intuitively without long learning curve delays. Now you can harness the power of SAP2000 for all of your analysis and design tasks, including small day-to-day problems. Complex Models can be generated and meshed with powerful built in templates. Integrated design code features can automatically generate wind, wave, bridge, and seismic loads with comprehensive automatic steel and concrete design code checks per US, Canadian and international design standards.

Advanced analytical techniques allow for step-by-step large deformation analysis, Eigen and Ritz analyses based on stiffness of nonlinear cases, catenary cable analysis, material nonlinear analysis with fiber hinges, multi-layered nonlinear shell element, buckling analysis, progressive collapse analysis, energy methods for drift control, velocity-dependent dampers, base isolators, support plasticity and nonlinear segmental construction analysis. Nonlinear analyses can be static and/or time history, with options for FNA nonlinear time history dynamic analysis and direct integration.

From a simple small 2D static frame analysis to a large complex 3D nonlinear dynamic analysis, SAP2000 is the easiest, most productive solution for your structural analysis and design needs.

Physical Modeling Features

	Plus	Advanced	Ultimate
3D line and area objects, solid objects	✓	✓	✓
Database of all standard hot rolled steel, aluminum, and cold formed sections	✓	✓	✓
Section Designer for specialized sections	✓	✓	✓
Interactive database spreadsheet editing	✓	✓	✓

Analytical Modeling Features

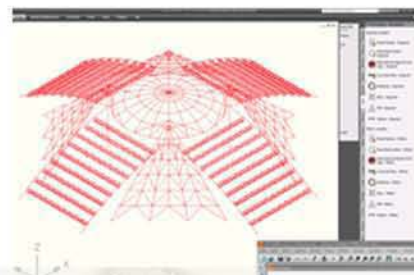
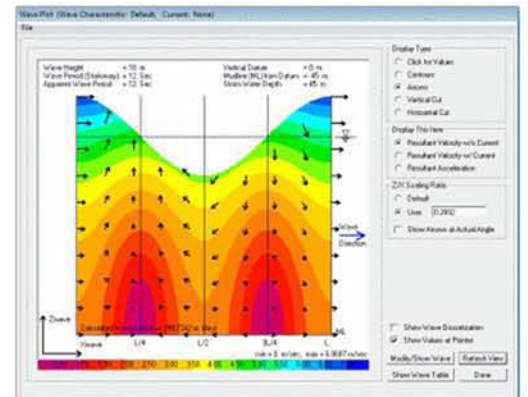
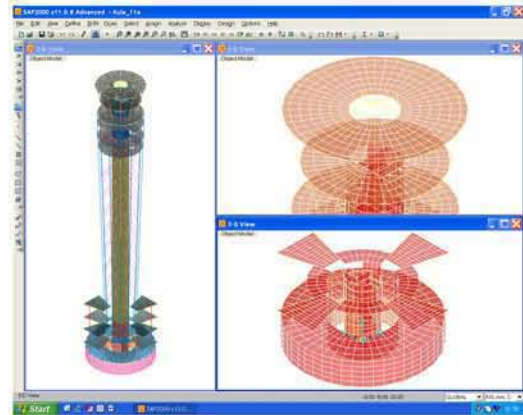
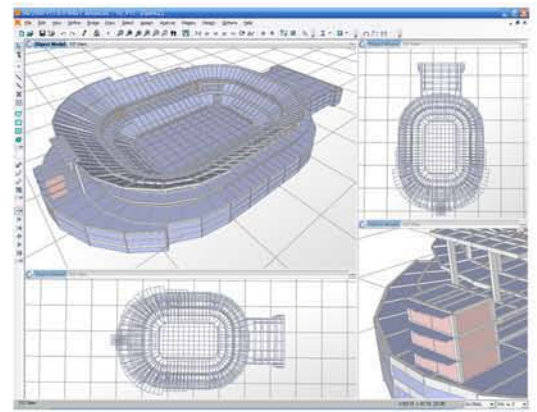
Automatic mesh generator	✓	✓	✓
Automatic edge constraint technology for mismatched meshes	✓	✓	✓
2D and 3D frame element	✓	✓	✓
Tendon element	✓	✓	✓
Cable element	✓	✓	✓
Shell element	✓	✓	✓
Nonlinear layered shell element	✓	✓	✓
Moment curvature curve and PMM interaction	✓	✓	✓
surface for arbitrary fiber sections	✓	✓	✓
Coupled spring element	✓	✓	✓
Plane-stress, plane-strain and solid of revolution	✓	✓	✓
(A Solid) Solid element	✓	✓	✓
Linear link element with stiffness and damping	✓	✓	✓
Automated panel zone element	✓	✓	✓
Nonlinear link elements: gaps, hooks	✓	✓	✓
Nonlinear link elements - plasticity, dampers, isolators	✓	✓	✓
Nonlinear frame hinge element	✓	✓	✓

Loading Features

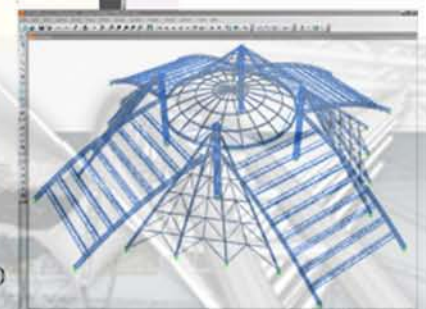
Point, line, trapezoidal, and area loads	✓	✓	✓
Tributary area load distribution to frames	✓	✓	✓
Automatic code-based wind loading	✓	✓	✓
Open structure wind loading (multiple codes)	✓	✓	✓
Automatic code-based seismic loading	✓	✓	✓
Pattern loading	✓	✓	✓
Applied displacement loading	✓	✓	✓
Moving loads on frame elements	✓	✓	✓
Gravity, pressure and thermal loading	✓	✓	✓
Strain loads, deformation loads, target force	✓	✓	✓
Prestress loads	✓	✓	✓
Wave loading	✓	✓	✓

Analysis Features

Fast advanced solver technology with SAPFireTM analysis engine	✓	✓	✓
Multiple 64-bit solvers for analysis optimization with unmatched solution capacity	✓	✓	✓
Generalized joint constraints including: diaphragms, plates, rods and beams	✓	✓	✓
Eigen analysis with auto-shifting for ill-conditioned problem	✓	✓	✓
Ritz analysis for fast predominant mode evaluation with missing mass	✓	✓	✓



AutoCAD



SAP2000

Analysis Features

	Plus	Advanced	Ultimate
Multiple response spectrum cases in single run	✓	✓	✓
Modal combination by the CQC, SRSS, GMC or double sum methods	✓	✓	✓
Directional combination by the ABS, SRSS, or CQC3 methods	✓	✓	✓
Linear dynamic modal time history analysis	✓	✓	✓
Frequency domain analysis	✓	✓	✓
Power spectral density analysis	✓	✓	✓
Buckling analysis	✓	✓	✓
Nonlinear analysis			
Tension/compression-only frame elements	✓	✓	✓
Tension/compression only soil (area)	✓	✓	✓
P-delta analysis - both small and large P-delta	✓	✓	✓
Static pushover analysis		✓	✓
Wilson FNA (Fast Nonlinear Analysis) method		✓	✓
Direct integration time history		✓	✓
Line and surface multi-linear springs (P-y curves)		✓	✓
Material nonlinearity - frame hinges and links		✓	✓
Geometric nonlinearity - large displacement		✓	✓
Target final geometry iterations		✓	✓
Staged construction			✓
Creep and shrinkage			✓
Property modifiers for frames, tendons and shells can be changed			✓
Section properties for frames, tendons and shells can be changed			✓
Hyperstatic analysis for secondary effects of prestressing forces	✓	✓	✓
Static and dynamic load combos - linear, envelope, absolute, SRSS, range	✓	✓	✓

Design Features

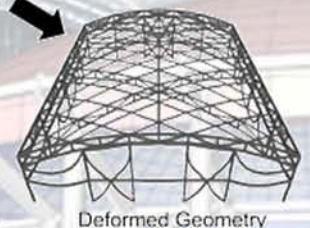
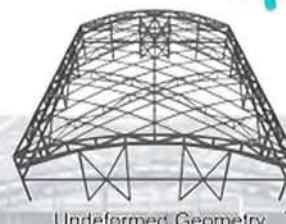
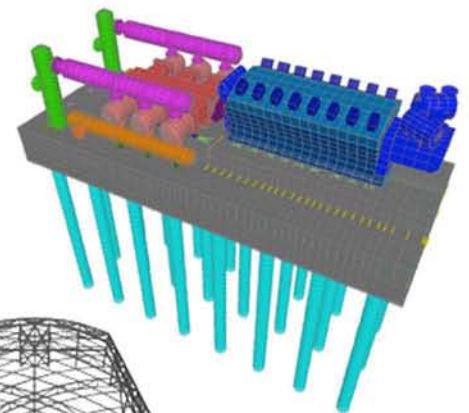
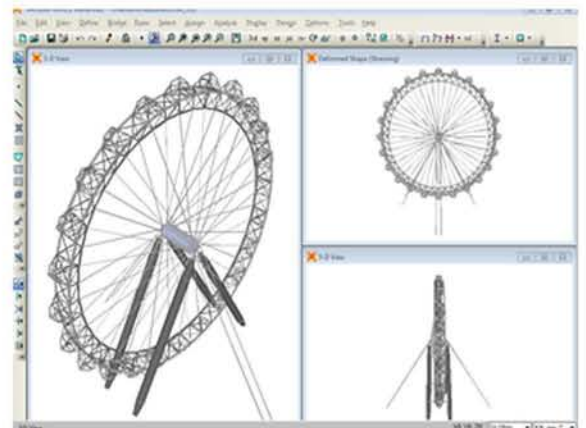
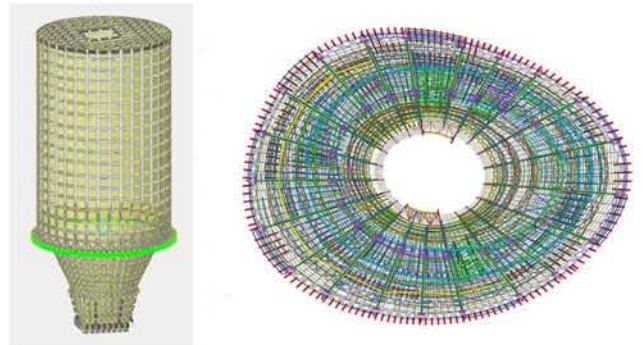
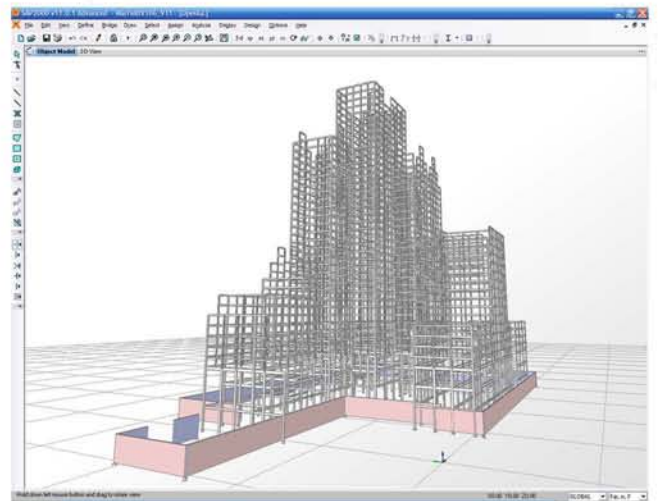
Steel frame design – British, Eurocode	✓	✓	✓
Concrete frame design-British, Singapore-Eurocode	✓	✓	✓
Aluminum frame design	✓	✓	✓
Cold formed frame design	✓	✓	✓
Concrete shell required reinforcement display	✓	✓	✓
Load combinations can be converted to nonlinear load cases for Advanced design	✓	✓	✓

Output and Display Features

Deformed and undeformed geometry in 3D	✓	✓	✓
Loading diagrams	✓	✓	✓
Moment, shear and axial force diagrams	✓	✓	✓
Stress contours for area and solid objects	✓	✓	✓
Resultant forces displayed along section cuts	✓	✓	✓
Virtual work plots	✓	✓	✓
Time history displays of function vs. time	✓	✓	✓
Force vs. deformation plots	✓	✓	✓
Response spectrum curves from time history response	✓	✓	✓

All Import & Export Formats

Microsoft Access/ Microsoft Excel/ SAP2000 text file /	✓	✓	✓
Export to Perform-3D/ CIS/2 – STEP /	✓	✓	✓
Steel detailing neutral file (SDNF)/ AutoCAD /	✓	✓	✓
Frameworks Plus/ IGES/ IFC/ Prosteel	✓	✓	✓



Undeformed Geometry

Deformed Geometry

ABOUT OTTE

Otte group of companies are the authorized software distributors for world-class structural engineering, geotechnical engineering and technical computing software.

In the engineering sector, we are the Sole Distributor for all CSI and GEO-SLOPE products in both Singapore and Malaysia.

With an in depth knowledge of our products, we provide complementary consultation on the appropriate software that best fulfills our customers' requirements.

Our strong partnership with our software developers helps us in terms of responding to end-user feedback and continual software enhancements, to strengthen our customers' competitiveness and productivity.

Our people are of high calibre professionals, including our technical director who is a registered P.E. (Professional Engineer), with local and international design experience.

Our dynamic team comprising of people from different technical backgrounds but share one common objective:

To excel in what we do and differentiate ourselves from others by offering unparalleled after-sales service and support for our customers.

As a Modeling Specialist

Otte provide value-added service by offering our expertise to model our customers' structural and geotechnical projects with our products.

Our customers can leverage on our specialist knowledge on our software to create their model in a timely and affordable manner and design their structures/building confidently based on the analysis results.

As a Certified Trainer

We conduct regular software training courses and seminars which are all conducted by experienced instructors with the relevant industry background. These include professors, professional engineers and the experts in their respective fields.

Get the most out of your software by attending informative training courses:

Workshops: Half-day sessions that are program-specific which provide comprehensive overviews of the respective programs. These are ideal for existing users as well as for potential users looking to explore into our solutions.

Regular : One or two-day scheduled training courses depending on the level of proficiency of the user. Please check our website training calendar for more details.

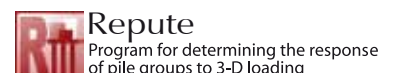
Customer in-house: Special training classes conducted at the customer's schedule and premises. Special terms and conditions apply. Please give us a call or submit a request on our website contact page.

OUR PRODUCTS

civil & structural



geotechnical



Please call us for a non-obligatory consultation:

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