

NEW FEATURES OF SAP2000 V8

I. NEW PHYSICAL OBJECT BASED GUI MODELING FEATURES

- New Physical Object Based Modeling Environment
- New Parametric Templates for Frame, Building, Bridge, Shell and Solid Models
- New Options for Graphical Generation of Plane Stress/ Strain and Solid Elements
 - Object Creation by Point, Line, Area Extrusions into Line, Area and Solid
 - Object Creation by Linear, Radial and Mirror Replication with Assignment Options
 - Several New Controls for Fast Creation of Line and Area Objects
- User Controlled Object Based Internal Meshing of Frames, Shells and Solid Elements
 - New Options for Aligning, Extending, Offsetting and Trimming
 - On Screen Nudging and Duplication of Objects
 - New Drawing Controls for Accurate Placement and Reshaping of Objects
 - New Comprehensive Customizable Toolbars
- New General Skewed Intersecting Grid System in addition to Cartesian & Cylindrical
 - Option to Convert Cartesian & Cylindrical System to New General System
 - Generation of Reference Lines for Drafting Geometry
 - Option to Add Elevation View at any Skewed Grid Line or Beam
 - Option to Add Developed Elevations
- New Fine Grid Snap Activated with respect to Origin or Last Mouse Down
- Convenient Unit Conversion with Appended Abbreviations such as ft, psf, psi...etc.
 - Formulae can be used for all numerical text box entries
 - Built-in calculator accessible from all numerical text boxes
- Object Based Assignments for Line and Area Loads, Springs and Masses
 - Allowing Property Assignments During On Screen Object Creation
 - Copying and Pasting Assignment Patterns Across a Series of Objects
 - Vastly Expanded Group Capabilities and Uses
 - Reverse Fence Selection Added to Allow Box Intersection Selection
- 3D Renderings and Flythrough Views
- Interactive Spreadsheet Input of Model Geometry, Loading and all Assignments

Import Options

- Import Model Information from Access Databases
- Import Model Information from Excel Spreadsheets
- Import Model Information from AutoCAD 3D - DXF
- Import Model Information from CIS/2 (CIMSteel) Files
- Import Model Information from Steel Detailing Neutral Files (SDNF)
- All imports can now add to or replace the existing model

Export Options

- Export Model Information to Access Databases
- Export Model Information to Excel Spread Sheets
- Export Model Information to AutoCAD via DXF
- Export Model Information to CIS/2 (CIMSteel)
- Creation of the Steel Detailing Neutral Files (SDNF)
- Capture Enhanced Meta File (EMF) of any SAP2000 Window
- Capture Windows Bitmap (BMP) of any SAP2000 Window

II. NEW ANALYTICAL FEATURES

- New Curved Beam Element
- Large Deformation Cable Element
- Tension Only/ Compression Only Frame Elements
- Nonlinear Dynamic Direct Integration Time History Analysis
- Static And Dynamic Large Displacement Analysis Across All Element Types
- Stiffness and Mass Proportional Damping
- Control Over Selective Execution of Analysis Cases
- Nonlinear Buckling Analysis
- Steady-State Analysis with Damping
- Power Spectral Density Analysis
- Incremental Construction Sequence Modeling and Loading (Staged Construction)
- Restart Capabilities From Any Previous Analysis
- Multiple Modal Eigen or Ritz Analysis Cases From Any Linear or Non-Linear State
- Multiple P-Delta Analysis From Any Linear or Non-Linear State
- Linear Analysis From any Non-Linear State
- Mass Matrix may now be Assembled from a Load Combination

- Frame Hinges for both Static and Dynamic Nonlinear Analysis
- Nonlinear Links Can Now be Multi-Linear Elastic or Multi-Linear Plastic
- Nonlinear Links Can Now be for Both Static and Dynamic Nonlinear Analysis

- Automated Joint Panel Zone Deformations - Linear or Non-Linear
- Frame Member Joint Partial Fixity
- Frame Member Cardinal Points and Joint Offsets
- Frame and Shell Property Modifiers for Cracking

- Automated Calculation of Wind Loads for Various US and International Codes
- Automated Calculation of Seismic Loads for Various US and International Codes
- Automated Transfer of Tributary Surface Loads to Supporting Members
- Variety of Built-In Functions for Response Spectrum and Time History Analysis

- Automatic Multiple Run Batch Capability from Inside GUI

- Output for User Specified Generalized Displacements
- Stress and Force Integration Across Section Cuts - Enhanced of Group Sum Forces

III. NEW DESIGN FEATURES

Steel Design

Strength & Drift Controlled Optimization
The American Petroleum Institute - API-RP 2A LRFD 1997
The American Petroleum Institute - API-RP 2A WSD 2000
Latticed Transmission Structures - ASCE-10-97 2000
The Uniform Building Code - UBC-ASD 1997
The Uniform Building Code - UBC-LRFD 1997
The British Standard Institute - BS 5950 2000
The Italian Standard - CNR-UNI-10011 1988

Aluminum Design

The Aluminum Association - LRFD 2000
The Aluminum Association - ASD 2000

Concrete Design

Shell Element Concrete Design
The Indian Standard - IS 456-2000
The Mexican Standard - RCDF
The Italian Standard - DM 14-2-93
The British Standard - BS 8110 1997 (Updated from 1989)

IV. NEW MISCELLANEOUS FEATURES

New Section Designer

Integrated Generation of Arbitrary Steel and Concrete Cross Sections
Parametric Shape Generation
Section Property Calculations
Three Dimensional Axial Force and Biaxial Interaction Diagrams
Moment-Curvature Relationships

New Customizable Report Writer

Generation of Analysis and Design Reports in Customizable Format
Output to Word (RTF), Internet Explorer (HTML), Text Editor and Printer
Any Input or Output Table may be added to Report
Any Graphics or Text may be added to Report
Information in the Tables may be Filtered and Sorted
Display Units may be User-Specified for any Numerical Field in a Table

Documentation

New User Manual
New HTML Based Help

Quality Assurance Program

New QA Program In Place
New Verification Manual