Structural analysis

International codes

ADVANCE DESIGN

Concrete / Steel / Timber design

BIM SOFTWARE FOR FEM STRUCTURAL ANALYSIS INCLUDING INTERNATIONAL DESIGN CODE

GRAITEC

www.graitec.com

ADVANCE DESIGN

Advance Design is specifically designed for industry professionals that require a superior solution for the structural analysis and design of Reinforced Concrete, Steel and Timber structures according to the latest versions of Eurocodes and North American codes.

Advance Design features include easy modelling, a powerful FEM analysis engine, top-level design wizards, automated post-processing of results and automated detailed reports. Achieve a new level of computer-assisted engineering with Advance Design!

Meshing engine / Solver

Uniform or progressive mesh

Grid or Delaunay mesh engine

Static / Dynamic / Nonlinear analysis

Reports generation

Synthetic or detailed reports for FEM analysis and design

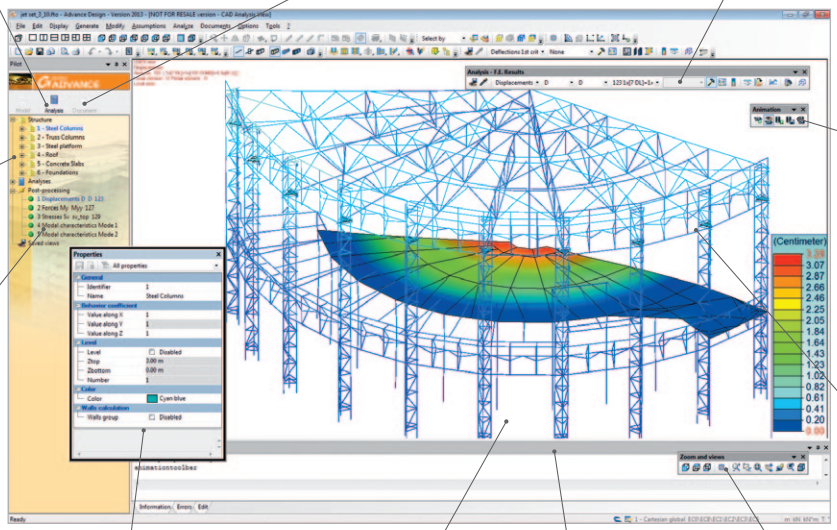
Automatic update

Microsoft Word® templates

Results display

All available results can be accessed quickly through contextual toolbars.

Rotate in 3D around the model with the displayed results!



Jet Set Club – Pro Vedra SRL

Level concept

Create the 3D structure while working in 2D by using levels (stories).
1 click in the level creates a column; 2 clicks creates a wall.

Result Memory technology

Save a post-processing scenario including graphical views and update it automatically whenever changes are made to the model

Animation tools

Create a movie (AVI format) of the results by placing cameras around the model

Realistic rendering

Design elements can be rendered using linear contour or realistic display modes regardless of design complexity

Dynamic properties windows

When selecting several elements, their shared properties are displayed and can be changed simultaneously

Dynamic model manipulation

Using this simple toolbar, move, zoom and rotate around the model

Customizable user interface

Customize the user interface by modifying the content and the position of menus, icons, toolbars

Context menu

Access the relevant functions (Copy, move, local axes, loads on selection) through an object's context menu

PROJECTS ON FRONT PAGE

1. ***Centre Pompidou*** *- Metz, France*
   Architects: Shigeru Ban and Jean de Gastines, in collaboration with Philippe Gumuchdjian
   Construction Company: Entreprise Générale Demathieu & Bard
   Engineering Office: CTE
2. ***Malabata Hills*** *- SGI Ingénierie*
3. ***Le phare*** *- KEOPS Ingénierie*

eurocodes

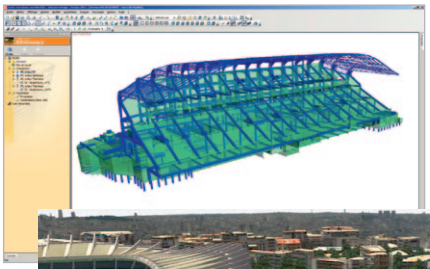
aci American Concrete Institute® Advancing concrete knowledge

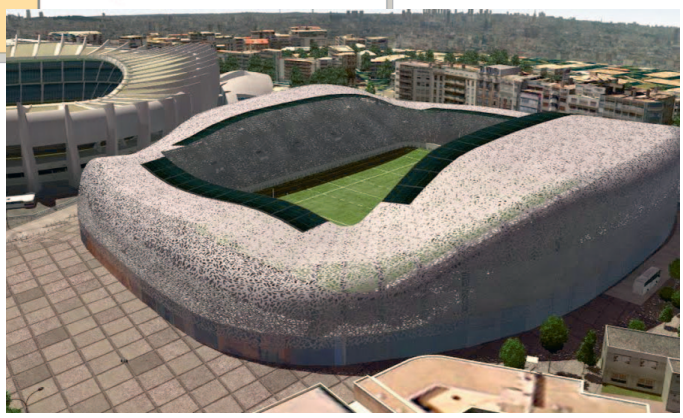
AISC

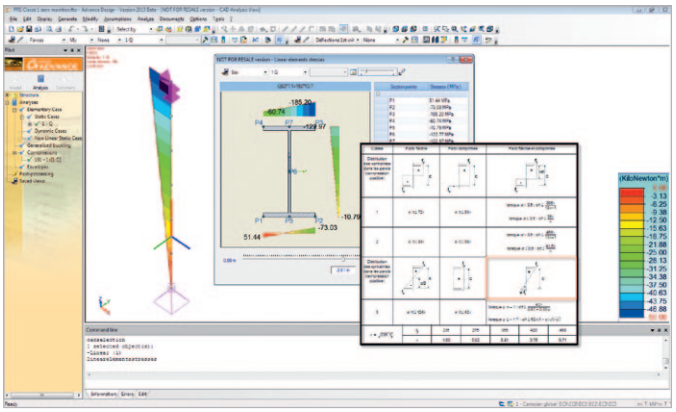
International codes

Internationalization is a major theme of Advance Design with the integration of the American and Canadian design codes for steel and concrete.

It also includes several national appendices to the latest version of Eurocodes, notably EC1 for actions and combinations, EC2 for reinforced concrete design including cracking analysis, EC3 for dimensioning steel sections and connections, EC5 for timber members design including fire verification, EC8 for seismic analysis...







Jean Bouin Stadium – CTE Strasbourg

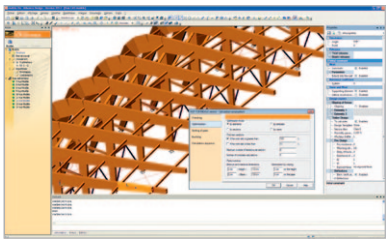
Concrete / Steel / Timber design

With Advance Design, you can handle concrete, steel and timber members design all within the same application and produce design reports automatically detailed according to the selected design code.

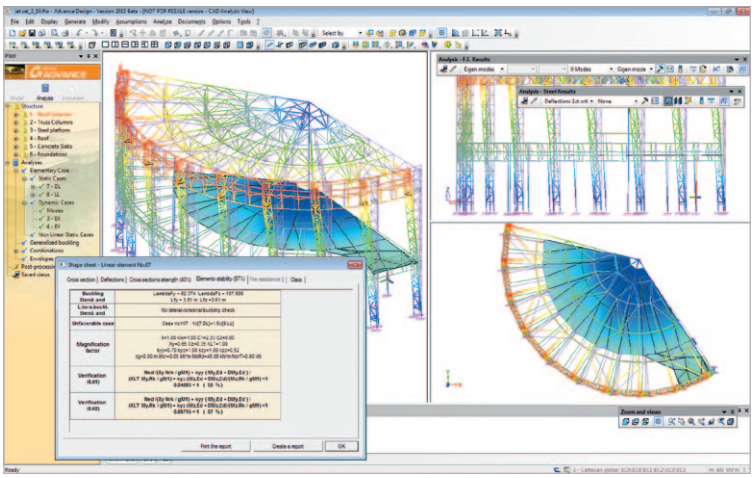
Advance Design provides high-end tools to dramatically reduce the time required to model complex projects: users can create several design templates, which can be saved into a library, and optimize work ratios and global quantities in an efficient way...

The software automates several complex design checks: punching verification, capacity design check, fire verification on concrete, steel and timber members, drift verification under seismic loading...

With Advance Design, get high-end software for simulating and optimizing all your projects!

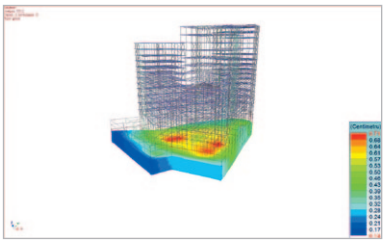


Concentrated fodder factory & silos – ALFACON SRL



Jet Set Club – Pro Vedra SRL

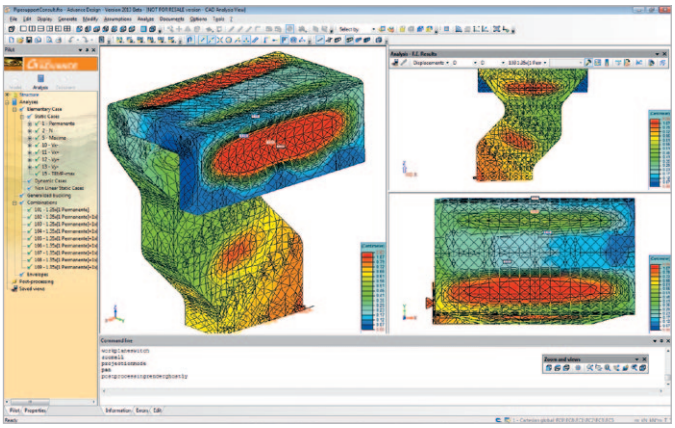
Result Memory technology

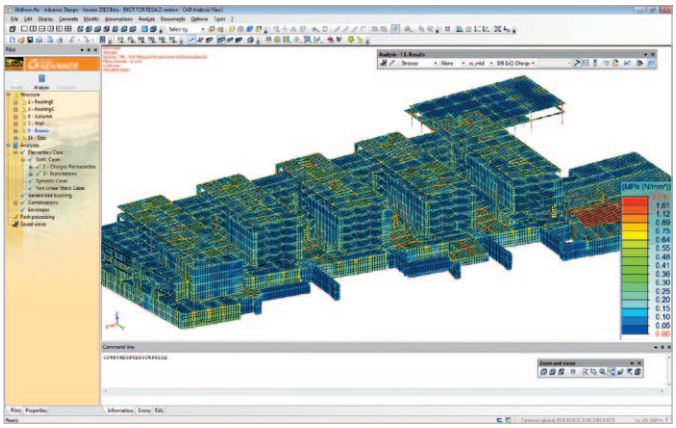


Commercial, office and residential complex – Pavial SRL

When a graphical view is stored in memory, Advance Design not only saves the current image, but also the full context that generated this image: angle view, zoom, filter of displayed elements, colors and display settings, nature of results, selected load cases and combinations, units...

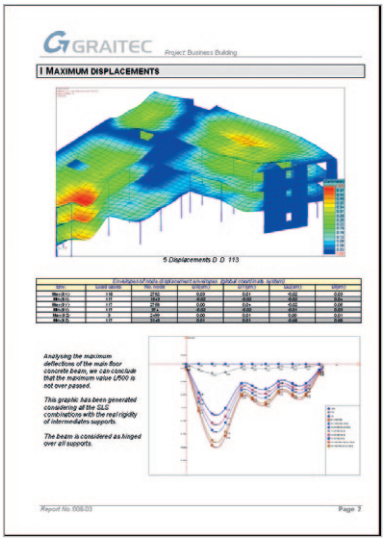
Using this technology, the saved views may be inserted in a design report, whose global content (current assumptions, graphical views) may also be stored in memory. During each calculation, Advance Design automatically recreates all the graphical views and rewrites the design report using the specified criteria.

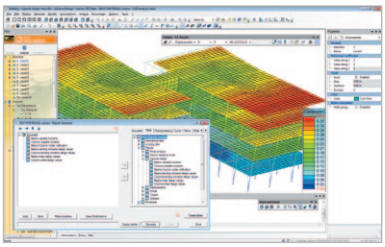




Office building – ALSTOM transport – RBS Structures

Reports





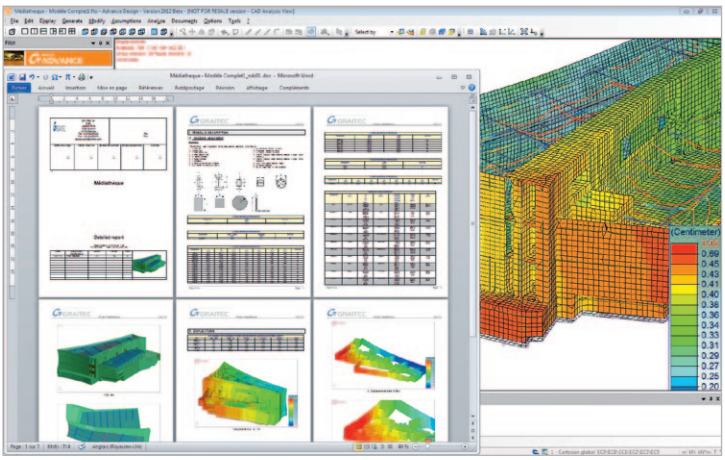
Advance Design provides an intelligent and extremely powerful report builder. It creates the content pertaining to the model by filtering available assumptions and results.

You can create reports with your requirements and include:

- Assumptions
- Graphs or drawings with ID numbers
- Results in tabular or graphical format
- A cover page with an index table and revision dates table
- A summary and automatic page numbering.

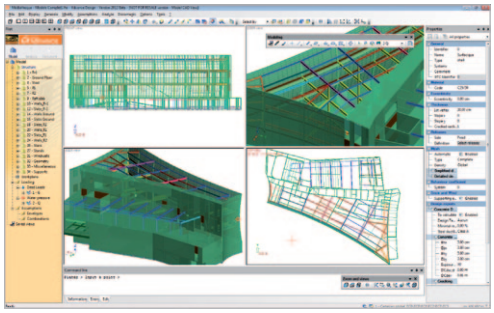
The automated integration of external files (e.g. recall of conventions) and the use of Microsoft Word® templates enable the use of your graphical layout. And with the "Result Memory" technology, the entire content is systematically updated.

With Advance Design, create clear and efficient reports in a matter of minutes!



Lons-le-Saunier Media Library – Campenon Bernard Management

1 RAPIDLY MODEL A STRUCTURE AND ITS LOADING



Lons-le-Saunier Media Library – Campenon Bernard Management

The software has a complete library for structural elements, supports and loads. These easily customizable elements adapt to all situations: numerical eccentricities, braces, ties...

The CAD has advanced functions that are simple and adapted to modelling for structural analysis. For example, by indicating the presence of levels, Advance Design automatically places elements inside the selected level. In this mode, a wall is created with 2 clicks!

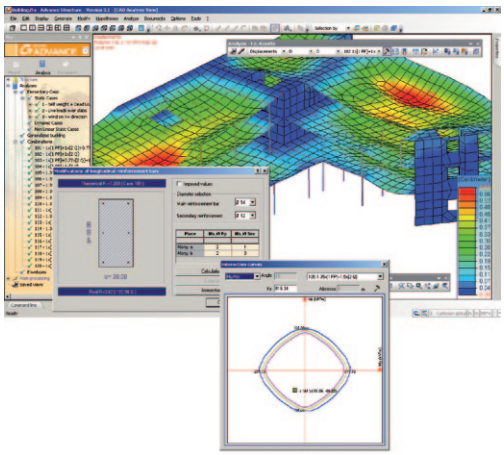
For loading, the generation of climatic and seismic actions is also automated. The "loadcase family" concept completely automates the creation of combinations.

Once the model is finished, Advance Design checks its integrity. If no errors are found... Your model is ready for analysis!

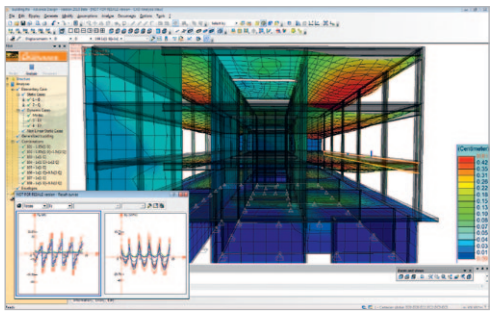
2 STRUCTURAL ANALYSIS TO DESIGN IN ONE CLICK!

The Advance Design calculation sequence automatically links the meshing, calculation and design (reinforced concrete / steelwork / timber). With advanced features, the scientific components of Advance Design facilitate the updates of your project:

- Meshing controlled through global and local parameters (e.g., progressive meshing along an element), using geometric elements (e.g., points, lines, surfaces) to impose specific boundary conditions. Static and dynamic calculation, linear and non-linear analysis, large displacements, generalized buckling, time history analysis, etc.
- Calculation of theoretical and real reinforcement of reinforced concrete elements, interaction curves on any sections, reinforcement ratio estimates, cracking analysis, etc.
- Verification of buckling, lateral-torsional buckling and deflections of steel elements, optimization of profiles, design of connections, etc.
- Timber member design according EC5 including optimization, fire verification and detailed reports.



3 RESULTS POST-PROCESSING: AVOID REPETITIVE TASKS!



All of our analyses proves that the majority of your time is spent on results post-processing, calculations and creation of the final design report.

The post-processing of all results (finite elements, reinforced concrete, steelwork) within an integrated environment facilitates the comprehension of the model operation and the creation of complete and coherent documents.

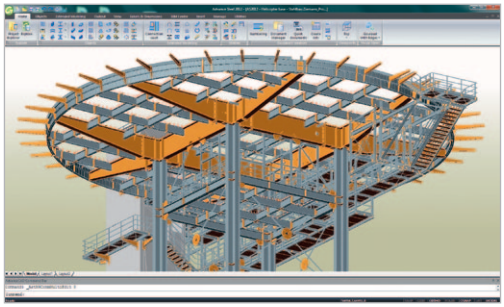
In addition, Advance Design provides a revolutionary solution for automation! With its "Result Memory" technology, you no longer have to take screen captures or recreate reports... Advance Design takes care of everything!

Would you like to enhance your study and facilitate its comprehension by your partners? Place several cameras around the structure and send your partners a video (AVI format) of the deformed structure!

4 BIM TECHNOLOGY

Advance Design is part of the GRAITEC Advance Structural BIM solution for construction professionals and the created 3D model is bi-directionally linked with the following CAD software: Advance Steel, Advance Concrete and Autodesk Revit®.

Advance Design also imports, exports and links your 3D model with industry standards files such as IFC, CIS/2, SDNF, PSS in order to facilitate the exchange of data in a BIM project environment.



Helicopter base - Stahlbau Ziemann GmbH - Germany

GRAITEC ADVANCE

THE STRUCTURAL BIM SUITE FOR CONSTRUCTION PROFESSIONALS

Better tools, improved workflow, increased productivity...

- 100% dedicated to Structural Design, Engineering and Detailing
- Automatically creates and updates construction and fabrication drawings
- FEM analysis and structural optimization
- Multi-user environment and integrated document management
- Powerful technology, easy to use, short learning curve

Advance Steel

Advance Steel® is specifically designed for structural engineers and steel detailers who require a professional and easy-to-use 3D structural steel detailing software that automates the production of drawings, BOMs and NC files. Advance Steel® drastically increases productivity and drawing quality, while reducing the risk of errors.

Advance Design

Advance Design® is specifically dedicated to structural engineers who require a professional and easy-to-use solution for simulating and optimizing all their projects. Advance Design includes: a user-friendly structural modeler, an automatic load generator, a powerful FEM engine, comprehensive wizards for designing concrete and steel members according to Eurocodes and efficient post-processing and report generators.

Advance Concrete

Advance Concrete® is specifically designed for structural engineers and reinforced concrete detailers who require a professional and easy-to-use 3D software that automates the production of drawings, BOMs and NC files. Advance Concrete® drastically increases productivity and drawings quality, while reducing the risk of errors.

GRAITEC Advance:
THE Software Suite that optimizes structural design and detailing!

COMPATIBLE AUTODESK AUTOCAD 2014 AUTODESK.

COMPATIBLE AUTODESK AUTOCAD ARCHITECTURE 2014 AUTODESK.

AUTODESK Authorized Developer — GRAITEC is ADN (Autodesk Developer Network)

AUTODESK Authorised ISV Partner — GRAITEC is ISV (Independent Software Vendor)

Minimum recommended configuration:
Please visit http://www.graitec.com/en/advance_installation.asp

GRAITEC develops, distributes and supports a suite of BIM software solutions for reinforced concrete, steel and timber structural design and 2D/3D modeling to fabrication.

GRAITEC's high performance CAD and Engineering software solutions for structural building construction are used by over 40,000 engineers and draftsmen worldwide and have helped in creating outstanding projects. GRAITEC's complete solutions contribute in solving the critical challenges of the AEC Industry, from the improvement of design and drawing productivity to the reduction of fabrication and construction errors.

GRAITEC has been committed for the last 25 years to exceed the industry standards and quality requirements with the constant commitment to provide to its users best in class support. Headquartered in France, GRAITEC operates worldwide through 13 companies in Europe, North America, Asia Pacific and works closely with a worldwide channel of Value Added Resellers.

GRAITEC is a unique multi material specialist of Structural BIM software for the Construction and Building industry, delivering best in class solutions from Structural Analysis to Engineering, Detailing and Production.

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