

PLANNING | PRESENTATION | PRODUCTION
 PYTHA integrates seamlessly into your workflow!

Areas of Application

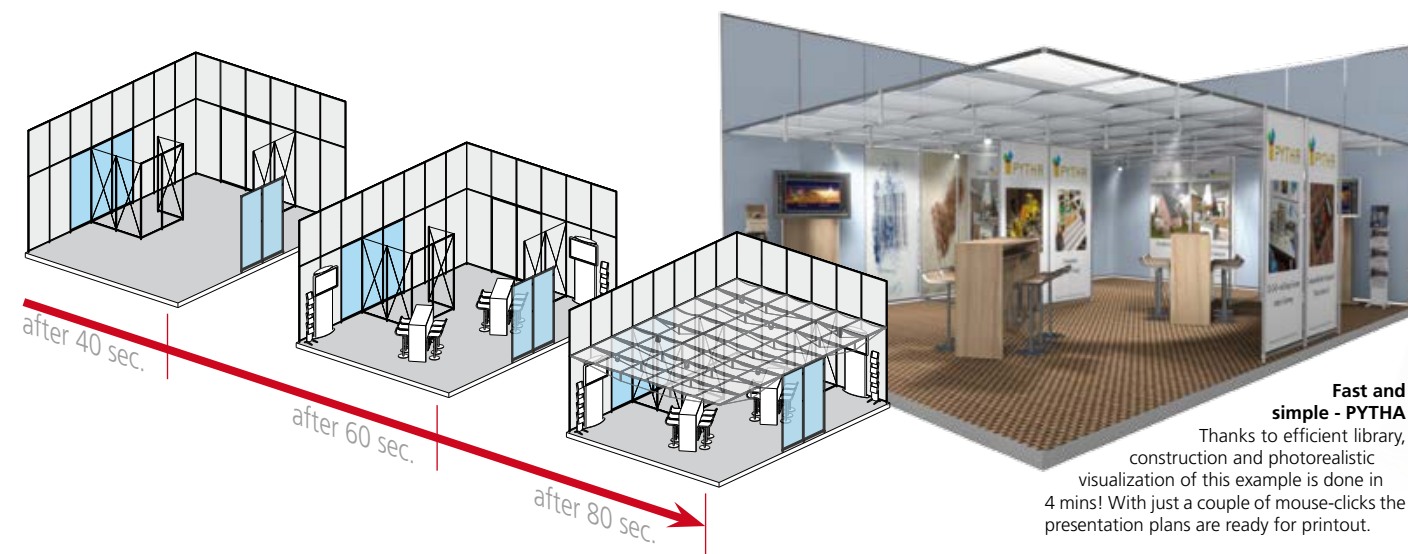
Furniture manufacturing,
 Outfitting for restaurants/hotels,
 Kitchen planning, Exhibition design,
 Show design, Interior design,
 Interior finishing, Shop design, Project
 planning, Display design and more



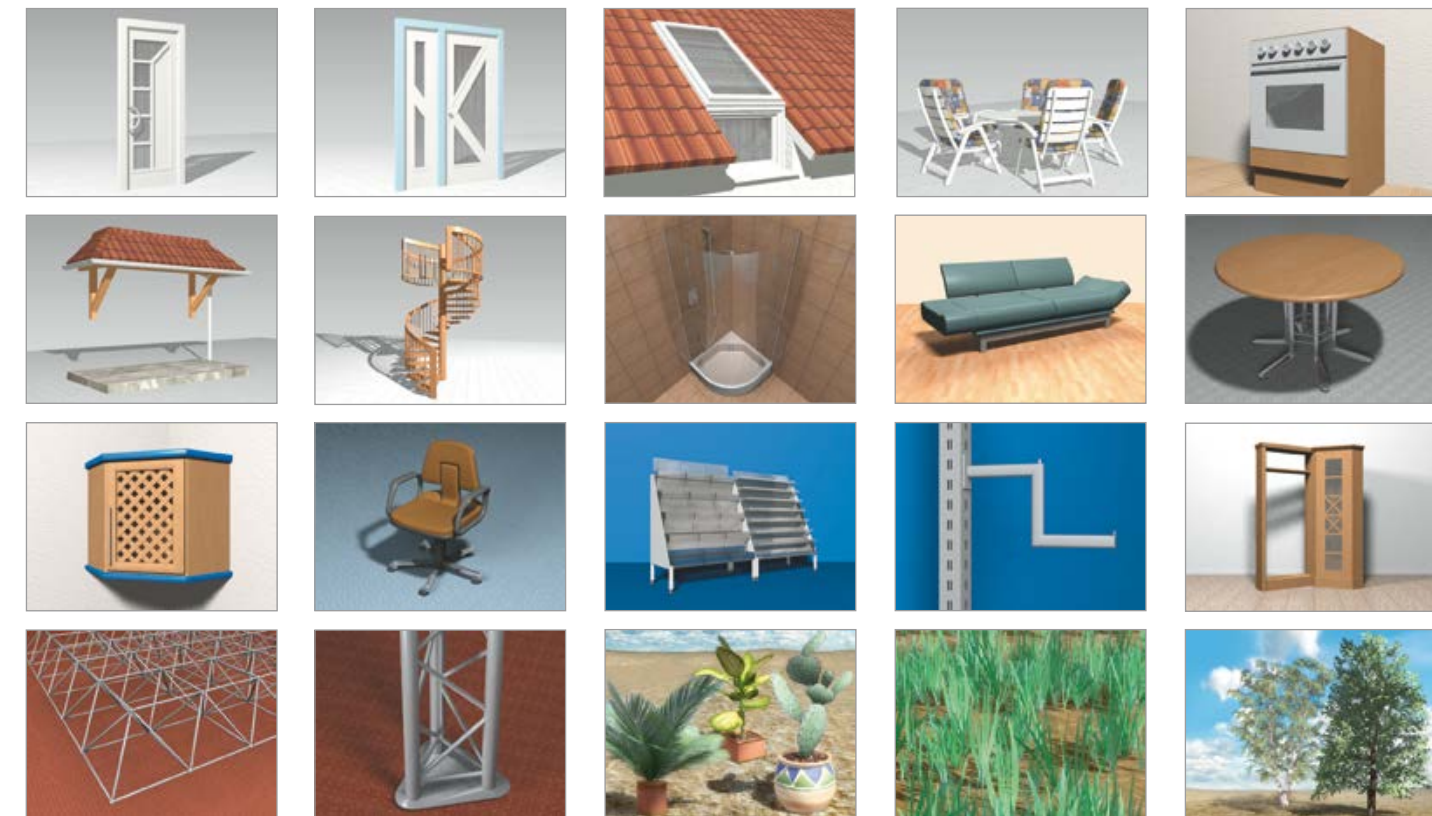
Work with libraries

With PYTHA you can model with ease and, using library modules, make the process even more time efficient. PYTHA provides you with comprehensive and versatile libraries, where you will find many ready-to-use objects for interior design, exhibition design, show/event design and architecture.

It goes without saying that you can also create your own libraries, with parametrized components and the attributes you need. Using drag&drop you can drag elements directly into the project, assign the required dimensions and place them wherever you please. You can modify library parts with all PYTHA tools.



Fast and simple - PYTHA
 Thanks to efficient library, construction and photorealistic visualization of this example is done in 4 mins! With just a couple of mouse-clicks the presentation plans are ready for printout.



Technical Data: MODEL

3D Construction

- Basic solids: block, cylinder, cone, sphere, ring, tube
- Profile solids (extrude sweep)
- Revolve (rotational sweep)
- Free extrude (curve sweep)
- Platonics: tetrahedron, octahedron, dodecahedron, icosahedron, cube
- Rotations: hyperboloid, paraboloid, ellipsoid, helix
- Geospheres, archimedean
- Parallel parts
- 3D text

Free form surfaces

- Loft
- Bézier objects
- B-Spline objects
- Coons
- Curve sweep
- NURSS objects (subdivision surfaces)

2D elements

- Line, polyline, walk line
- Triangle, rectangle
- Circle, 3-point circle, oval, ellipse
- Freehand drawing
- Faces parallel to edges

Auxiliary lines

- Fillet
- Parallel, equidistant
- Tangent
- Center of angle
- Perpendicular, center perpendicular

Curve

- Tangent curve
- Circular arc
- NURSS curves

Generators

- Cabinet Wizard
- Table Wizard
- ...

Tools

- Move, copy, rotate, rotate copy,...
- Copy along a guide line
- Position at given intervals, set on a line
- Extend, zoom, stretch, bend, shear, taper, twist,...
- Boolean operations (sum, difference, average, line of intersection)
- Drill and stamp
- Cut, divide, or melt, edges, faces and parts
- Trim, extrude faces
- Fillets, modulate, wrinkle
- 2D revolve
- Triangulate
- Explode
- Replace parts
- Shrink, pull points

Layer

- 256 named object layers
- Separate layers for dimensioning, text, symbols and hatching
- Visible/invisible, selectable/unselectable, active/inactive
- Pen and line types for layers
- Select parts by layers

Variants, parametrics

- Variable and parametric dimensions
- Dummy objects
- Multiple copy with import

Associative drawing attributes

- 2D text
- Hatching, symbols
- Line colors, styles
- Dimensions

User definable snap criteria

- Auxiliary lines, grid
- Object points, reference points, origin
- Edges, center of edges
- Axes / axis markers
- Dimensions

View, viewing modes

- Plan view, front view, side view
- Axonometric view, perspective view
- Zoom, pan
- Hidden line elimination
- Shaded view with textures (OpenGL)
- Raytracing

Drawings

- Exact scale, zoomed view, arbitrary scaling
- Details
- Free layout
- Title block with text and graphics
- Frame
- Freehand drawing function (automatic distortion of lines)
- Pictures (Tiff, Jpeg)
- Parts lists/text integrated
- Clipping of images and drawings

Parts list

- Individual layout in columns
- User definable attributes
- Leading text, trailing text
- Import of database information (article number, price, etc.)
- Length/dimension from the geometry
- Price per piece (per meter/square meter or per inch/square inch)
- Discount
- Total weight
- Eliminate double objects
- Interface to various 3rd party software products

Evaluation of objects

- Geometric values as length, distance, radius, angle, surface area
- Physical values as weight, volume and center of gravity
- Collision detection

Interface

- 2D/3D DXF (Import, Export)
- 2D/3D DWG
- MI
- STL
- HPGL
- TIFF, JPEG graphics
- AlphaCam, Carat, NC-Hops, WoodWop
- Polytrans (Import, Export)
- OSD, Kuhnle, Excel etc.
- ...



PYTHA Lab GmbH

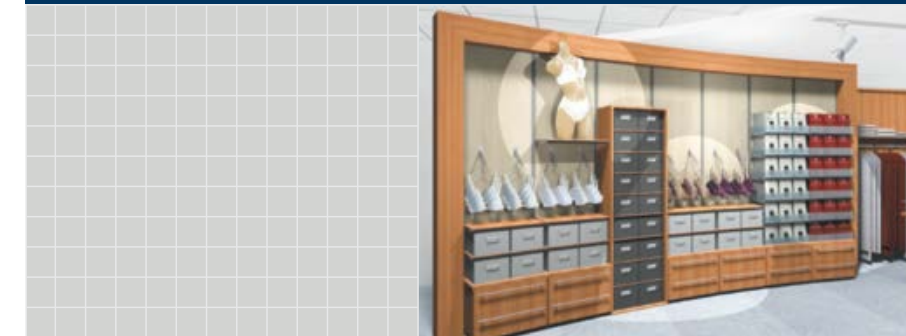
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MODEL

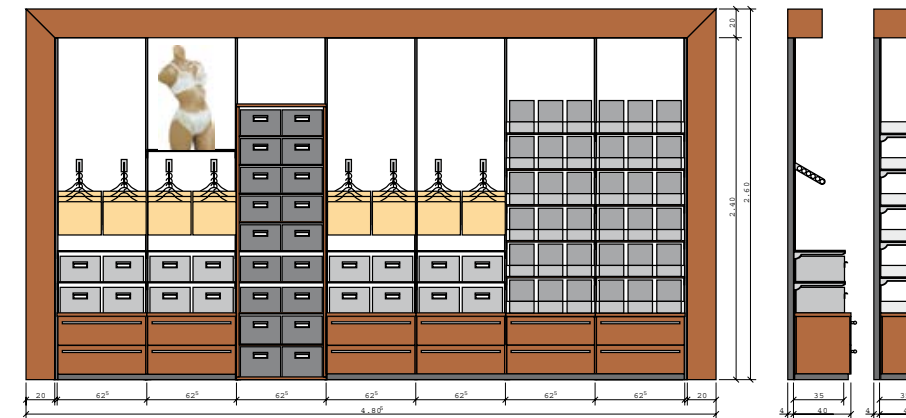
Groundbreaking modeling software brings your ideas to life!

P L A N N I N G P R E S E N T A T I O N P R O D U C T I O N

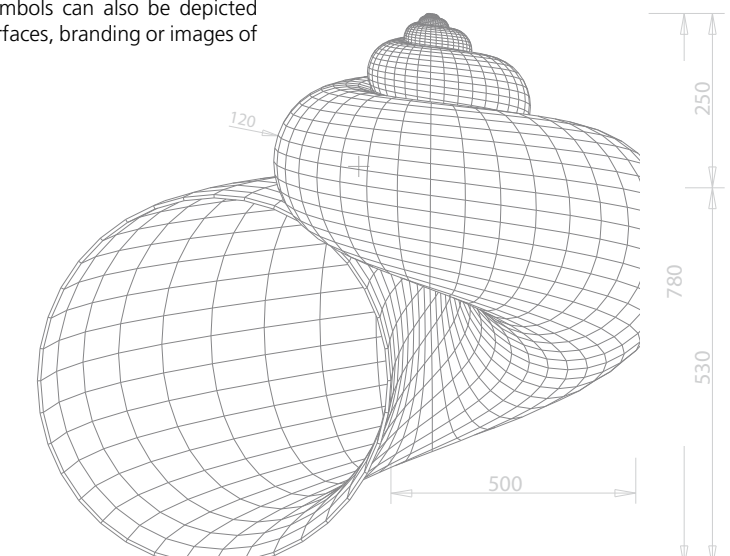


Futuristic 3D-Modeler!

- Flexible 2D and 3D modeler
- Easy to learn
- Integrated photo imaging



Create walls with dimensions, lettering, hatching and symbols can also be depicted with textured surfaces, branding or images of merchandise.



With the modeling module of PYTHA, you hold the key: visualize designs, plot technical drawings, create animation and manufacture using CNC machinery. PYTHA provides you with an intuitive working interface enabling you to quickly become productive and effortlessly make use of the software's versatile functions. It won't be long before you will be quickly modeling complex objects and scenes that used to take you hours!

Create elaborate computer models with ease!



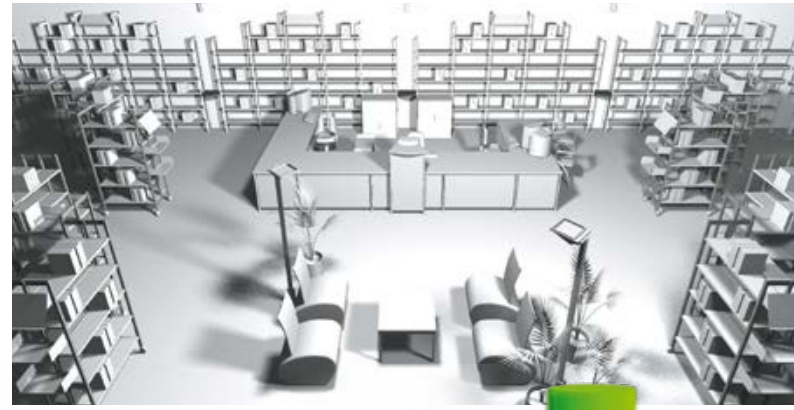
Areas of Application

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3D Construction

You construct your project from individual parts and groups of components. You can model the objects from scratch or choose them from the libraries. Through interfaces, you also have access to data from your suppliers, and an enormous pool of objects you can find on the internet.

When you begin constructing, you'll quickly learn to value the comfortable, well-organized modeling tools. PYTHA offers you the ability to work freely with your mouse, as well as with precise numbers and dimensions.



General parts

The block, cylinder, sphere, cone, ring and tube are handy for constructing complex scenes: the shape is familiar and you merely need to determine the dimensions.



Profiles (extrude sweep)

These include profiles for exhibition design, profiled moldings in wooden handcrafting or countertops in the kitchen. Any desired cross section can be extruded into a solid. In doing so, the shape of the edge band can be selected: straight, chamfered, rounded or elaborately modulated.



Revolve (rotational sweep)

For turned parts, vases, drinking glasses, bottles or pillars, you construct the outline (Represented by the red lines in the picture to the right), which are rotated around a selectable axis, and which thus define the solid.



Free extrude (curve sweep)

These are created by guiding any desired cross section along a guideline in space (such as a handrail). Miter cuts are automatically calculated on the nodes of the guideline. An extrusion can have two open ends or be self-contained.



3D text

With the 3D text function, you can create a logo on an outer facade or stand panel. All TrueType fonts can be transformed into massive blocks for this purpose.

... everything from a single source - PYTHA!

- Simple construction of complex components
- Present high-quality designs efficiently
- Create animation
- Transfer seamlessly to a CNC machine



Reach the goal in just a few steps

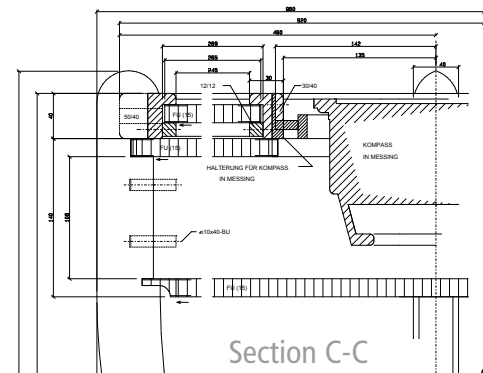
You can quickly construct depressions such as a sink or a deep drawn component. You draw the individual cross-sections and press these into the form. To do this, you merely determine depth, radius and rake angle - PYTHA calculates everything else for you.

Free Forms

With free-form surfaces, you can model curtains, upholstered furniture, landscapes, plants, unique design objects or everyday objects with rounded shapes. Apart from Bézier-, B-Spline- and Coons surfaces, with free extrusion (loft), PYTHA offers you the ability to compute a harmonious form from any cross-section. NURSS subdivision surfaces present you with a powerful toolbox that allows you to literally transform a block into a freeform chair. The tools allow for so much flexibility as if you were modeling with clay.

2D Construction

When using PYTHA software on a daily basis, you will often be creating 2D drawings. Constructing complex 3D solids also often requires 2D cross-sectional guide lines. PYTHA auxiliary lines are a virtual drawing board that, aside from lines and circles, features all types of geometric constructions such as subdivision of angles, perpendicular and vertical center line, parallel, tangent and circles constructed within the parameters of two tangents. Rectangles, ellipses, ovals and edge trimming are useful shapes and tools for 2D construction. At the push of a button, you can transform these auxiliary constructions into 3D models.



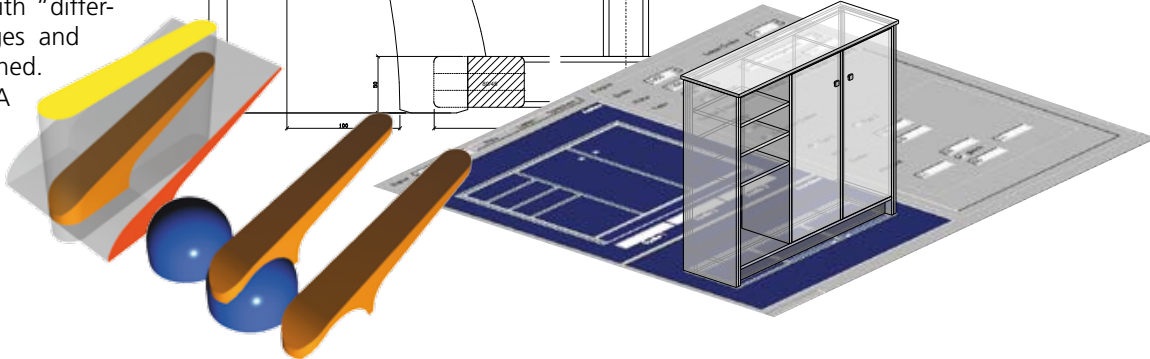
Section C-C

Cabinet Wizard

The PYTHA cabinet generator provides you with your own "planning studio." An accurately sized space with a roof pitch gives an impression of the proportions of a design during the planning phase. Flexible communication within the PYTHA modeler also allows for the use of any frame front, profiled door, drawer or individual handle within the generator. Combine the freedom of design provided by CAD with the speed of a generator! Planning and designing become remarkably simple and leaves room for your creativity.

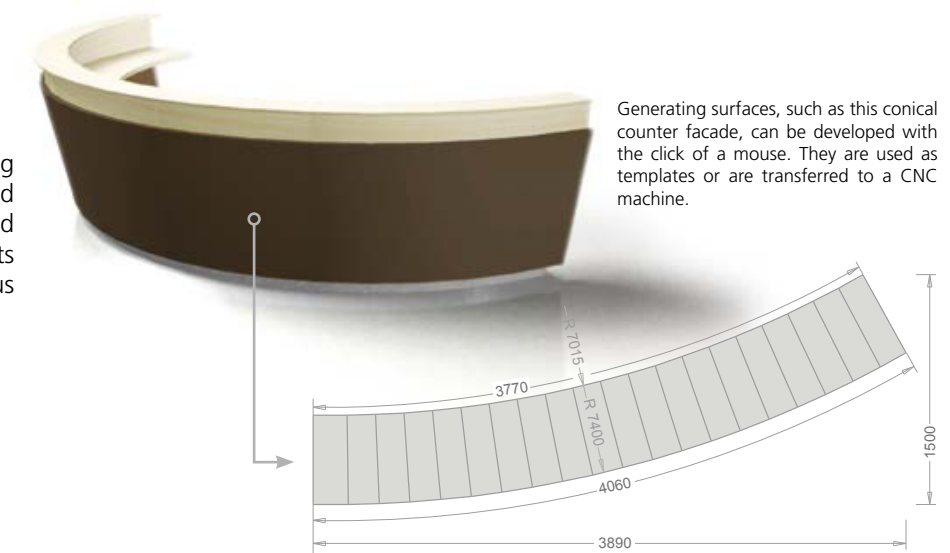
Boolean Operations

PYTHA features the Boolean operations sum, average, difference and line of intersection. In the example to the right, a new component is created from two profiles with "average." Then, a hemispherical shape is used as a milling cutter and subtracted from the new component with "difference." Simply fillet the edges and the handle of a faucet is finished. The Boolean tools in PYTHA are designed so that components may be blended together as often as desired without destroying the structure of the objects.



Data output made easy

Developing an idea is simply the beginning of the design process! From here you need technical drawings, presentations and planning for production. PYTHA supports you in these areas as well with numerous user-friendly tools.



Generating surfaces, such as this conical counter facade, can be developed with the click of a mouse. They are used as templates or are transferred to a CNC machine.

Parts List

You can derive a bill of materials directly from the construction data. To do so, you can select the properties you want to have displayed (position, number, item number, dimensions, price, material, etc.) and freely define the layout.

You can format the bill of materials as a parts list, timber list or as an offer, and save it as a text file or print it out directly. Practically any interface format can be set up in order to export the data to Microsoft Excel®, to an industry program such as Kuhnle, OSD, Schreiner Plus or Analyzer, or to a cutting optimizer such as Ardis®.

Board #	Qty	PartName	Material	Dimensions	Assembly name
1	1	Reception counter/Shop fitting	Job no. 122201		
1	1	Cabinet Side	Beech fpy	1147x58x20	Cabinet
2	1	Cabinet Bottom	Beech fpy	558x520x20	Cabinet
3	7	Rail	Beech fpy	520x128x20	Cabinet
4	12	Base	Beech fpy	520x128x20	Cabinet
5	18	Backside	Beech fpy	520x128x20	Cabinet
6	16	Door Riv	Beech fpy		
7	1	Shell	Beech fpy		
8	4	Drawer Doublets	Beech fpy		
9	2	Drawer Side	Beech fpy		
10	28	Drawer Bottom	Beech fpy		
11	6	Drawer Back	Beech fpy		
12	6	Drawer Front	Beech fpy		
13	12	Handle	Chrome		

Production planning

The process of creating bids and orders is optimized and simplified by a calculation program. The CAD data, in particular the dimensions are directly transferred to the production planning.

Create and Manage Drawings

Technical drawings can be produced by applying intersections and enhancing 2D or 3D constructions with dimensions, lettering, symbols and freely definable hatching.

Assign various pen and line types and organize the construction in layers. As title block, you may use the standard title block or your own personal one. Powerful layout tools allow for the combination of various views, details at different scales, graphics, images and text into one plan, as well as automatically and correctly aligning the ground plan, elevation and side elevation. You may create as many plans as you like for your project.



Raytracing images

Even the basic package of the modeler contains a raytracer you can use to compute photorealistic images. Thus within the PYTHA modeler you have various presentation techniques at hand: line drawings (also in free hand mode), colored drawings or high-quality renderings.

