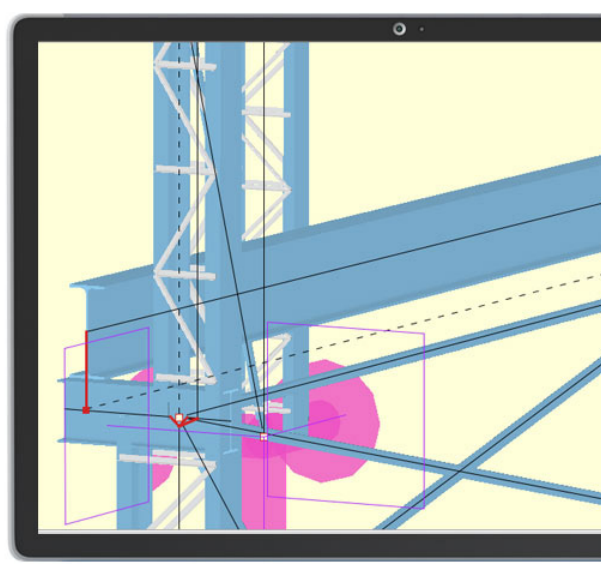# ArCADia RAMA

Static calculations and dimensioning of planar and spatial bar systems.

TOOL DESIGNED FOR CONSTRUCTION ENGINEERS

Data are intuitively entered in the program - the system geometry can be defined using only a mouse. The program works with CAD-type applications and the ArCADia-ARCHITECTURE system.

Basic function generators are available.

ArCADia RAMA contains a library of rolled and cold-formed profiles, reinforced concrete and timber elements. The program can be used for easy insertion of planar and spatial bar systems, both small systems comprising a number of bars, and large 3D structures containing hundreds of bars and nodes.

Therefore, it is possible to count such construction systems as: multi-level and multi-bay frames, planar and spatial trusses, lattice towers, surface bar structures, bar grates, etc. The program makes it possible to work with dimensioning modules according to Eurocodes: EuroStal, EuroŻelbet and EuroStopa.

ArCADia RAMA DIMENSIONING MODULES:
EuroStal, EuroŻelbet, EuroStopa, EuroDrewno

POWERFUL TOOL FOR MODELLING AND CALCULATIONS OF ANY FLAT AND SPATIAL BAR SYSTEMS ACCORDING TO PN-EN EUROCODE STANDARDS
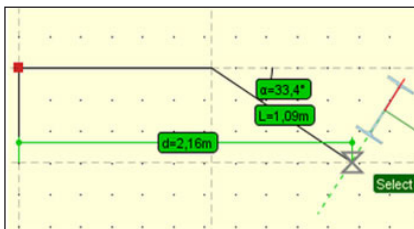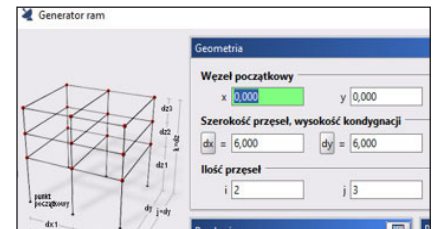
Precise coordinate specification of relative bar elements in the Cartesian and polar system.

Advanced tracking functions when entering bar structures (auxiliary lines and characteristic points).
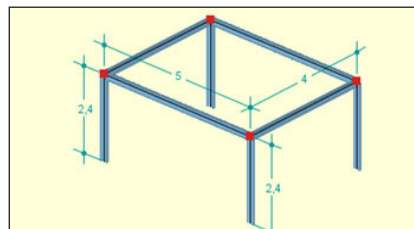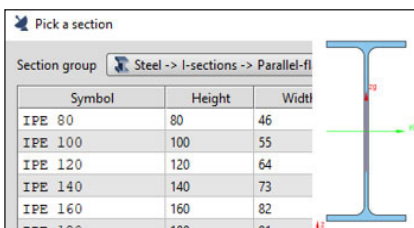
Insertion of dimension lines to the 3D model.

Possibility of switching on the cross-section preview of the bar being inserted during its insertion.

Parametric construction generators: spatial rectangular frames, arches (parabolic and circular), plane trusses, wooden roof trusses, spatial towers and geodetic domes.

Bar profile manager with a defined library of steel, reinforced concrete and wooden profiles and the possibility of expanding the library with own profiles.

Creating cross-sections of any shape bars, cutting individual sections, copying, rotating and moving components of a complex cross-section.

Automatic calculation of all possible cross-section characteristics in the system of local and main axes, including determining the core of the cross-section.
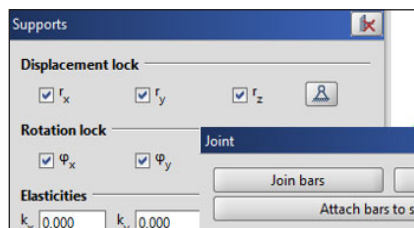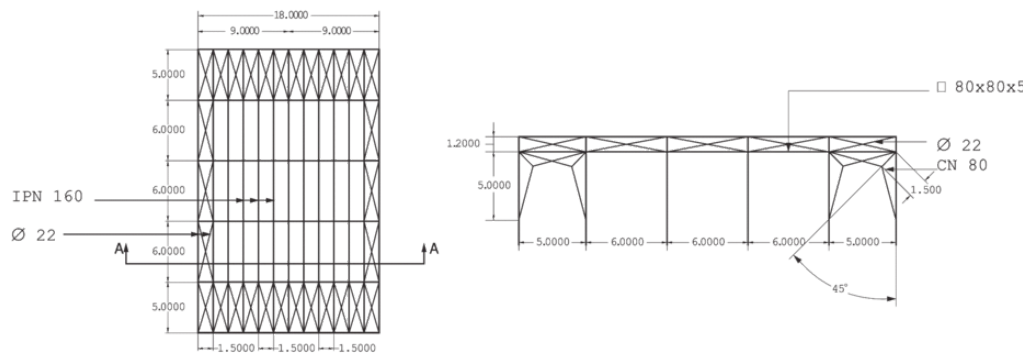
A full range of support types with the option of determining their elasticity.

The possibility of stiffening any groups of bars in the node as well as rods and supports.
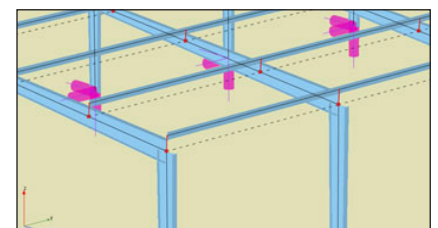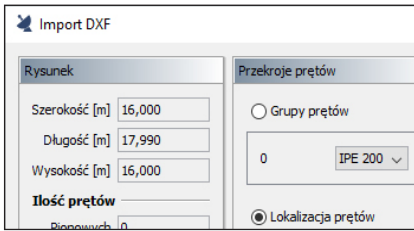
Calculation of bars with constant and variable bar section on the length.

Possibility to define ties and eccentricity bars (one-sided or two-sided) with a parallel offset bar axis.
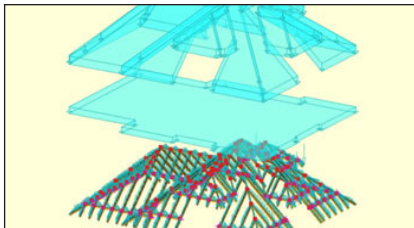
ArCADia RAMA

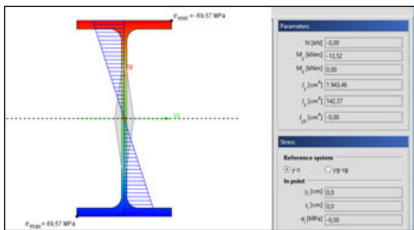Import of a flat and spatial DXF files as a bar structure or underlay (editable).

Export of a bar model to a DXF file.

Available types of loading: forces and concentrated moments, continuous loads, continuous moments, bar heating, temperature difference, settling and rotation of supports.

Possibility to set surface loads.

Possibility of inserting loads by tension.

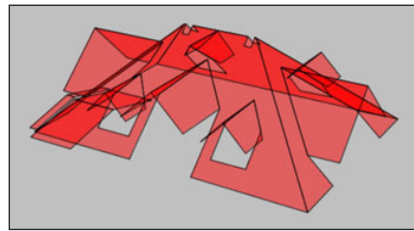Gradient maps of normal, shear and reduced stresses in any sections of bars.
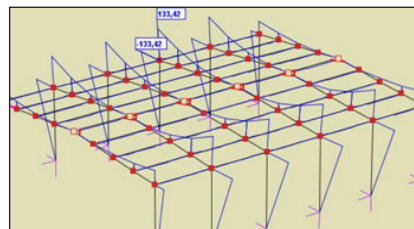

Creating reports containing tabular and graphical results in RTF format.

Opening roofs underlays from the ArCADia system together with the automatic generation of the construction of roof slopes.

Calculators of climate loads according to PN-EN standards, with the option of transferring load values.
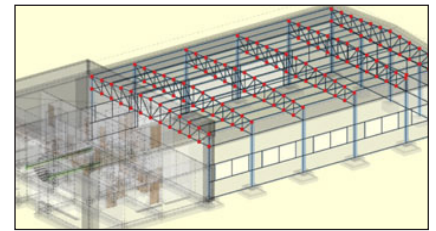

Setting of the full envelope of normal stresses and calculation of normal stresses for particular groups of loads, sum of load groups, combinations and envelopes.

Determining the graph of normal, shear and reduced stresses at any point on the bar section.

Calculations according to the 2nd order theory

Visualization of system deformation.

Transferring a 3D construction view created on the basis of the spatial architectural model of the ArCADia system to the R3D3-Rama 3D program. The bar elements are transferred with the material and cross-section of the bar, and the remaining elements of the architectural model are transferred in the form of a rendered or translucent 3D view as well as active underlays.
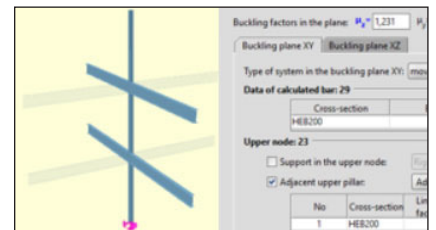
Column buckling factor calculator developed on the basis of Access Steel procedures - SN008a-PL-EU (Auxiliary information for design procedures according to Eurocodes).
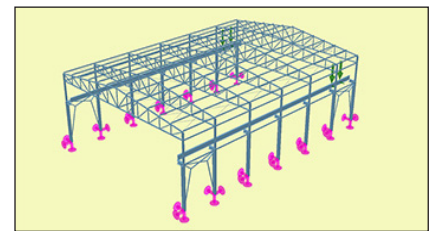
Possibilty to set, calculate and visualize results for groups of movable loads.