



New features

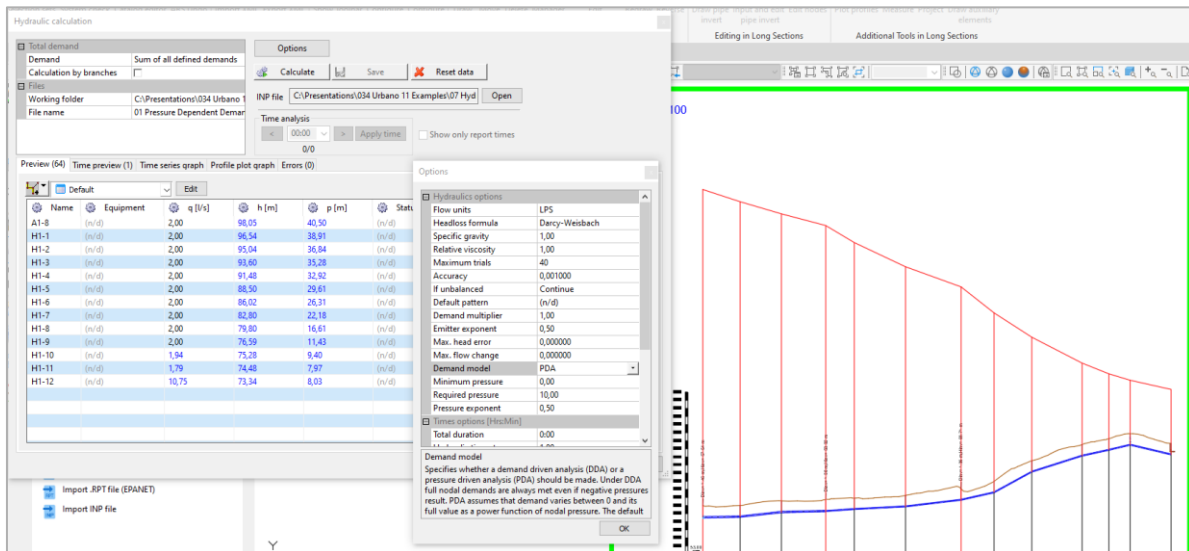
Check what's new in Urbano 11

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1 Hydra – Transition to EPANET 2.2

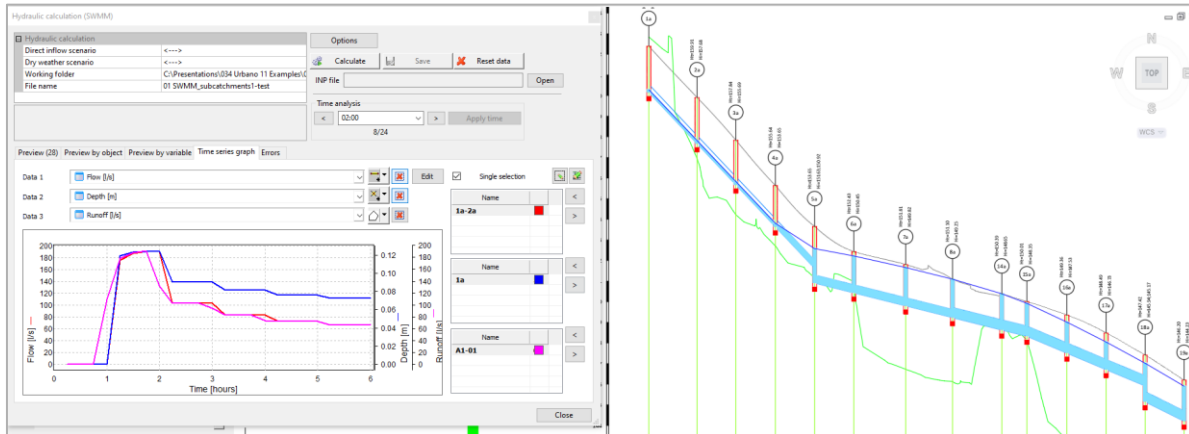
In the new version of Urbano, support for the latest version of EPANET has been made. EPANET 2.2 code is built into Urbano and is used for hydraulic calculation of water supply systems. The old code has been replaced by the latest version of EPANET, which brings many benefits and improvements. In addition to full compatibility of all parameters and results with the latest version of EPANET, the new version brings some very significant new features such as: pressure-dependent demands, more robust convergence criteria, faster solution times for single period analyses, improved handling of near-zero flows, allowing tanks to overflow when full, etc.





2 Canalis – EPA SWMM 5.1 integrated calculation

Similar to Hydra, from version 11, the EPA SWMM 5.1 code is built into Canalis. This brings a handful of new possibilities and options. It is now possible to define rain gages and rain parameters, adjust catchment parameters and calculate rainfall, infiltration, and runoff from catchments. Also, all flows calculated in Canalis can be written as direct or dry weather flows and it is possible to make a hydraulic calculation according to these flows.

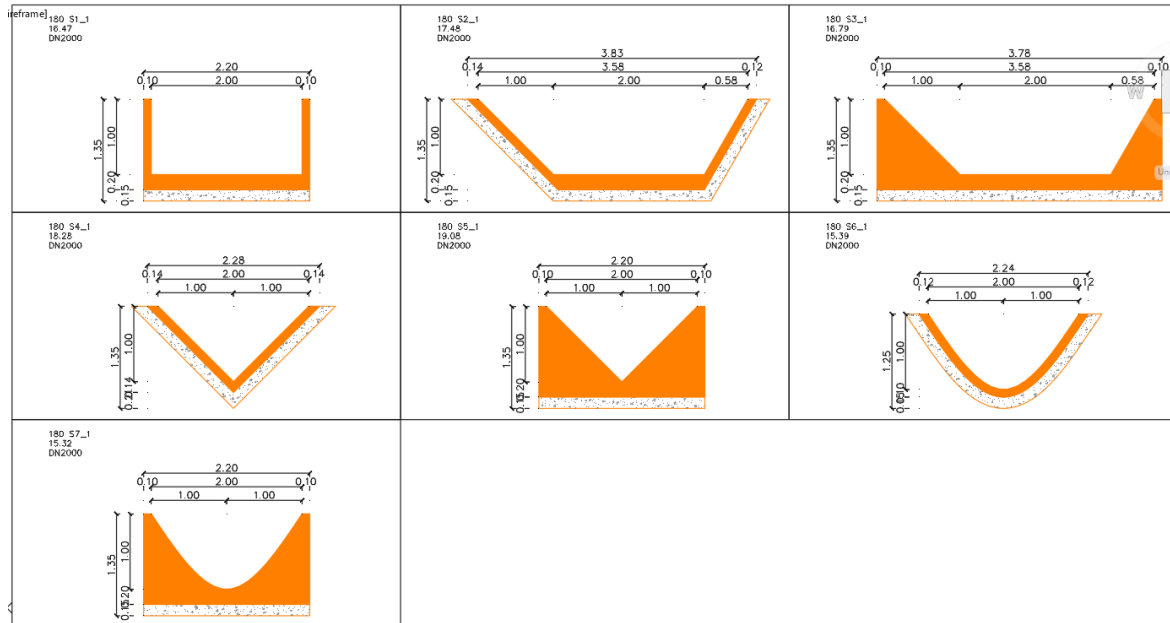


It is also possible to set all SWMM equipment of nodes (outfalls, dividers, storage units) and sections (pumps, flow regulators – orifices, weirs, outlets) with all their parameters. It is possible to define and set time patterns or time series and make a complete time simulation for storm, sanitary or mixed sewage. All results can be viewed in special time-dependent data tables, graphs, and labels in plan and piezometric lines in profiles. In addition to gravity networks, the calculation of pressure pipelines and open channels is also supported.



3 Open channels

In version 11, in addition to flow in pipes and closed channels, flow in open channels is also supported. New catalogs have been made that enable the creation of rectangular, trapezoidal, triangular, and parabolic open channels. Open channels can be displayed in plan with different plan styles and in profiles and cross sections. Excavation volume calculation and hydraulic calculation via SWMM are supported. Open channels can also be displayed in 3D and exported to BIM file formats such as IFC and Navisworks NWC.



4 Geodesy

The Geodesy module has been completely re-designed. A new, faster, simpler, and clearer function for importing surveyed points from a text file has been created, and functions for drawing points by conversion, interpolation and tachymetry have been renewed. Geodetic points are no longer separated from the label, they are now blocks with attributes. In addition, points can now be moved and deleted with standard CAD commands.

New functions have been created for drawing alignments interactively, including tangent polygon drawing, CAD element conversion and according to Urbano topology – alignments can now go through Urbano pipe systems. Functions for editing alignments and data tables for alignments have also been created. Also, new functions for drawing and editing cross lines have been created.

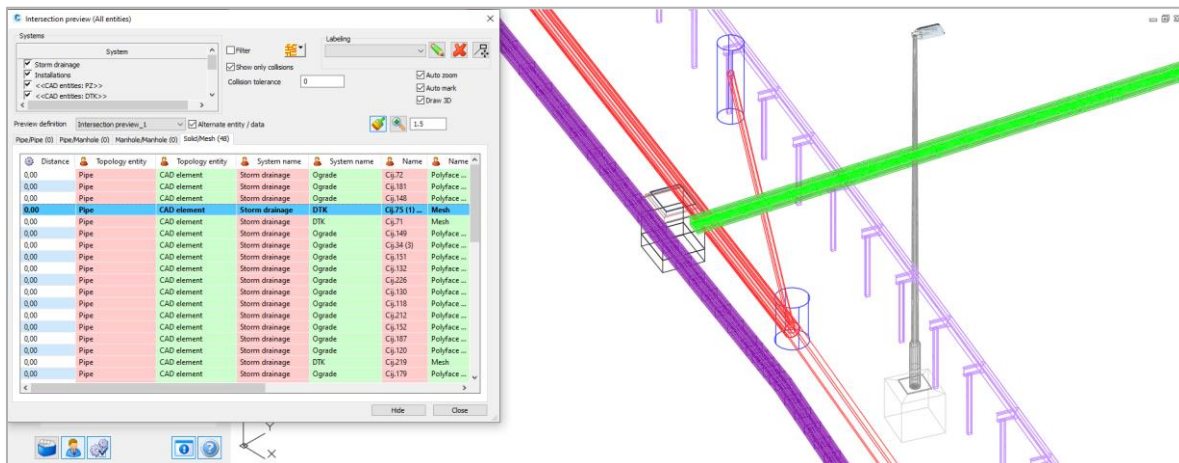


5 Intersections

In version 11, intersections have been further improved and optimized. Complete dynamics and optimization of intersections have been made, which has significantly increased the speed of all functions, especially in the case of intersections with CAD elements. It is now possible to move labels and only those intersections and labels whose elements have been modified will recalculate and refresh.

Until now, with any change in the model, all intersections would always recalculate, which would result in redrawing of all labels. Repositories for storing data table, label, and report configurations are enabled. A horizontal buffer has also been added to allow intersections to be found between elements that do not intersect or touch in plan.

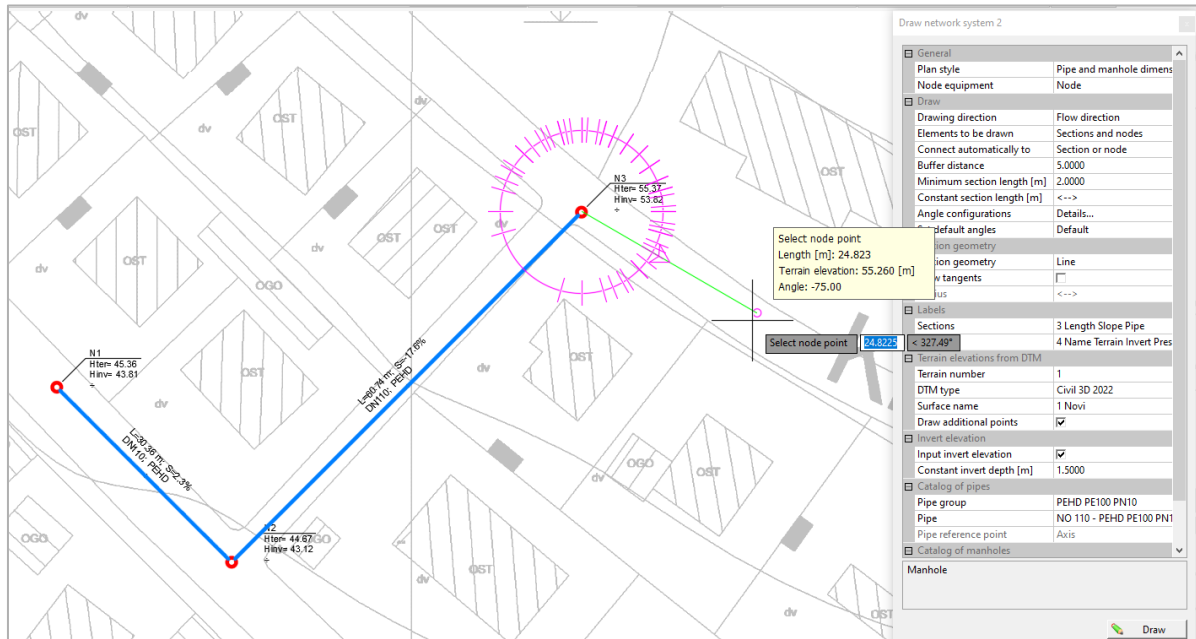
Also, it is possible to create groups of CAD elements from 3D Solid or Mesh elements and analyze the intersection of these elements with Urbano elements or other groups of CAD elements. This enables efficient intersection analysis between Urbano elements and other elements such as other pipe infrastructures created with some other software or objects such as traffic signalization or road lighting foundations, guardrails etc.





6 Dialog for interactive drawing and naming of topology

A completely new dialog has been created for interactive drawing of the system in plan. Some obsolete options have been removed from the dialog, while some new, much more important, and useful ones have been added to the dialog, such as option for setting the plan style, option for defining the flow type in sewer systems, etc. Drawing of arc sections has been completely redesigned and now includes drawing of tangent elements. The function for drawing at fixed angles using a compass has been significantly improved, as well as the function for drawing sections of constant length.

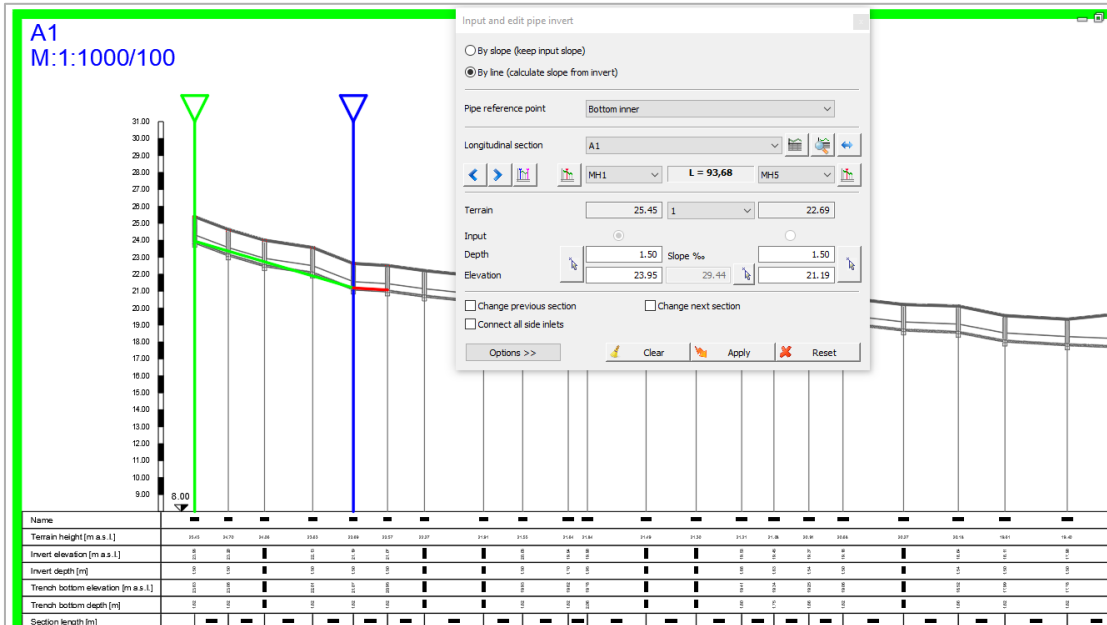


Also, a new topology naming system is created. All topological elements drawn with any Urbano drawing function – nodes, sections, branches, and arrays, now have system-level naming settings defined, resulting in all newly drawn elements always being sorted by name. Also, from now on, elements in different systems within the same drawing can have the same names.



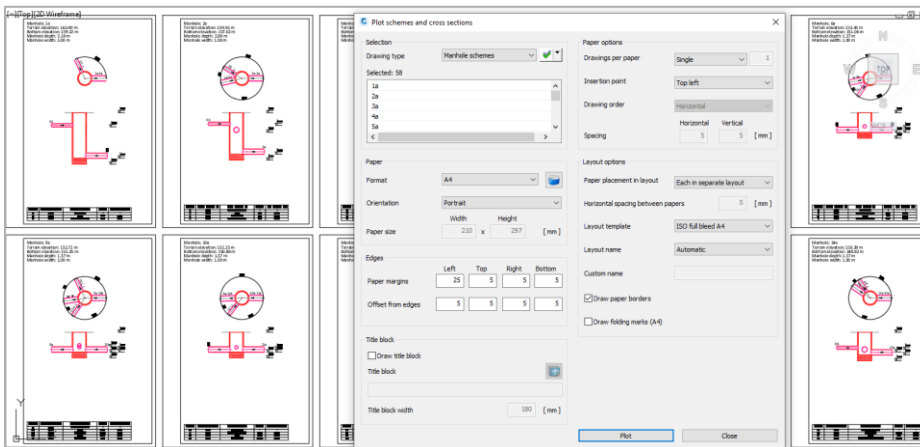
7 Pipe invert – functions for drawing, defining, and editing

The functions for interactive drawing, defining, and editing of pipe invert have been completely redesigned. All existing functionality has been retained, some new features and technologies have been added, and the appearance of the dialog and the way elements are selected is made to resemble the functions from older versions of Urbano that users are used to.



8 Plotting

Completely new functions have been created for plotting all schemes and cross-sections, plan, and profiles. All schemes and cross-sections can now be quickly and easily plotted into layout on papers of defined dimensions in such a way that each scheme or cross-section goes on its own paper or that multiple schemes or cross-sections go on the same paper.

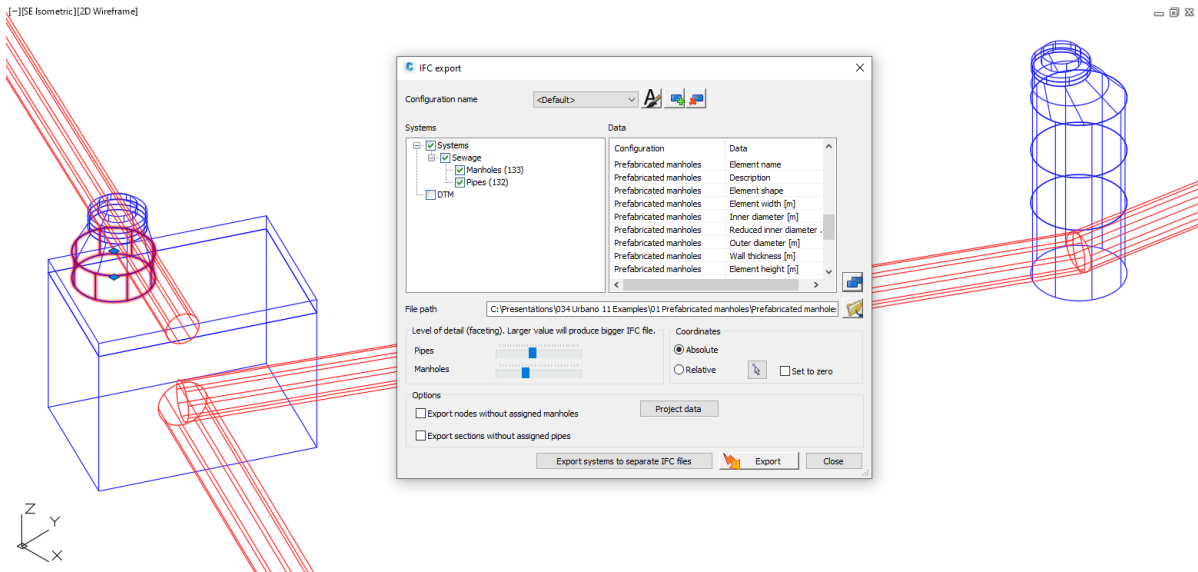


The function for plotting plan enables interactive drawing of frames according to which layouts are created with papers of defined dimensions. The functions for preparing profiles for plotting and for plotting itself enable quick and easy, automatic drawing of frames in profiles and their plotting into layout on papers of desired dimensions, regardless of the scale and units of measurement of the profile.



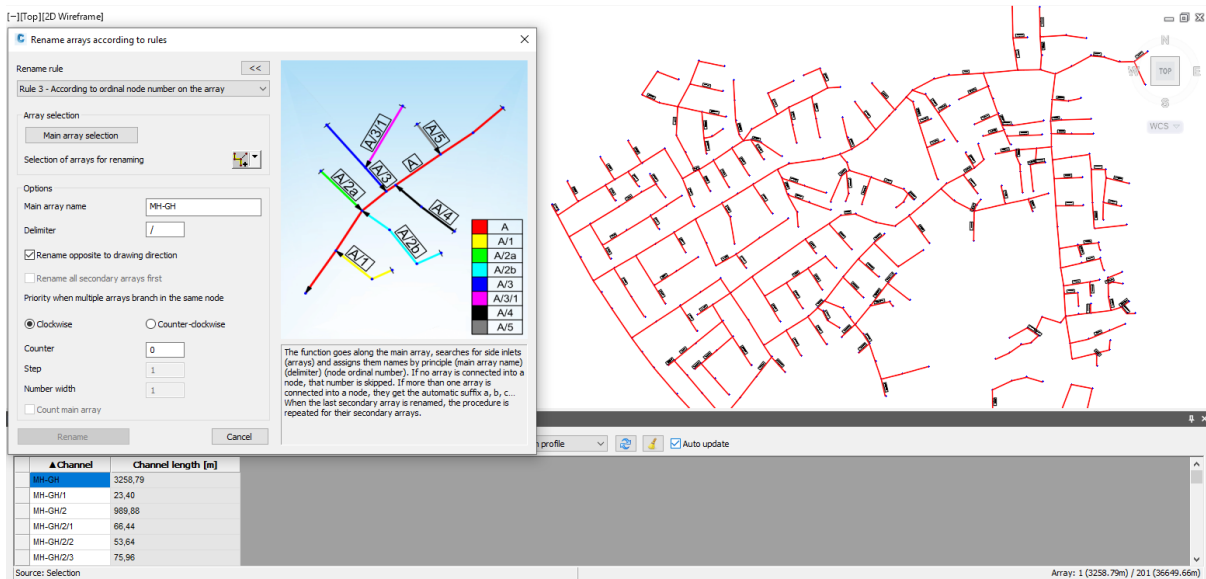
9 IFC and Navisworks NWC new features

IFC and Navisworks NWC new features include the possibility to export prefabricated manholes with all data for the entire manhole and for each individual prefabricated element.



10 Rename arrays according to rules

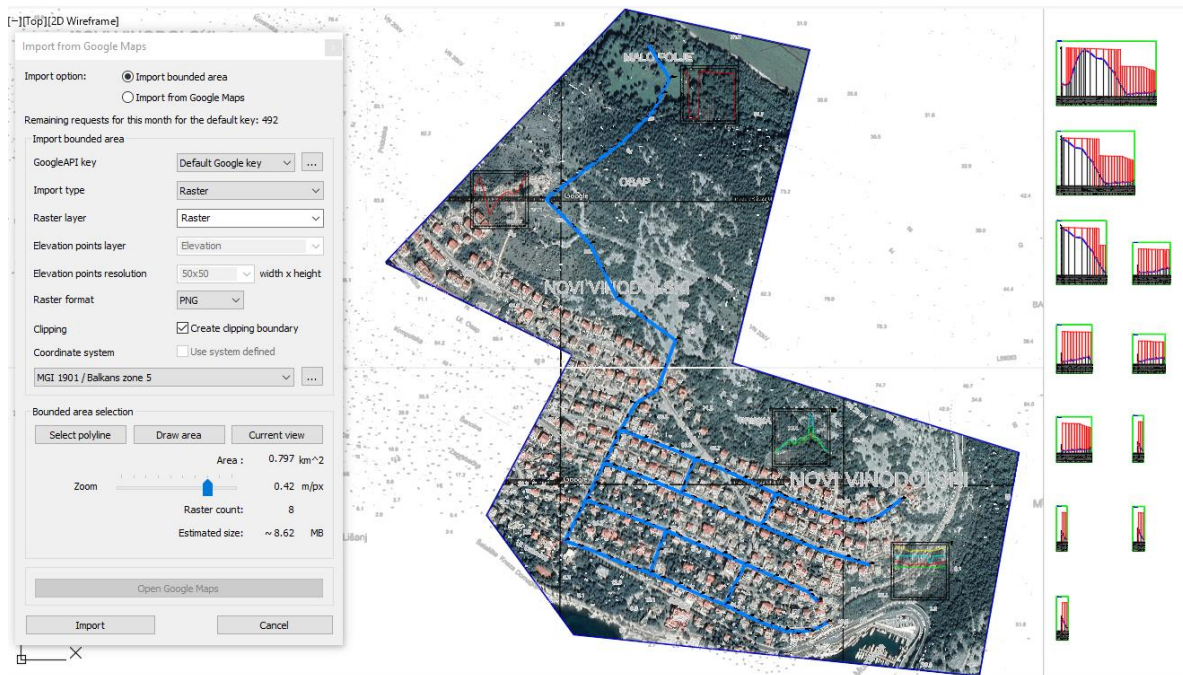
A new function has been created for intelligent, automatic renaming of arrays according to defined rules. Very quickly and easily, it is possible to rename all arrays in the system according to various rules, in drawing direction or opposite of drawing direction. Possible renaming rules are given as following: According to arrays hierarchy, According to counter and According to ordinal node number on the array. All you have to do is select the main array, the arrays to be renamed and the rename rule, after which the program will rename all the selected arrays according to the selected rule.





11 Google Maps

Google Maps import feature has been expanded and improved. In addition to classic functionality for selecting area for import via Google, it is now possible to define an area within CAD by selecting or drawing a closed polyline or taking a screen extent and defining a coordinate system. Downloaded maps can also be automatically clipped according to selected borders. The number of maps to be downloaded depends on the defined zoom factor that can be set in the dialog. A higher zoom factor will result in more maps and better image resolution, while a lower zoom factor will result in fewer maps and poorer image resolution.

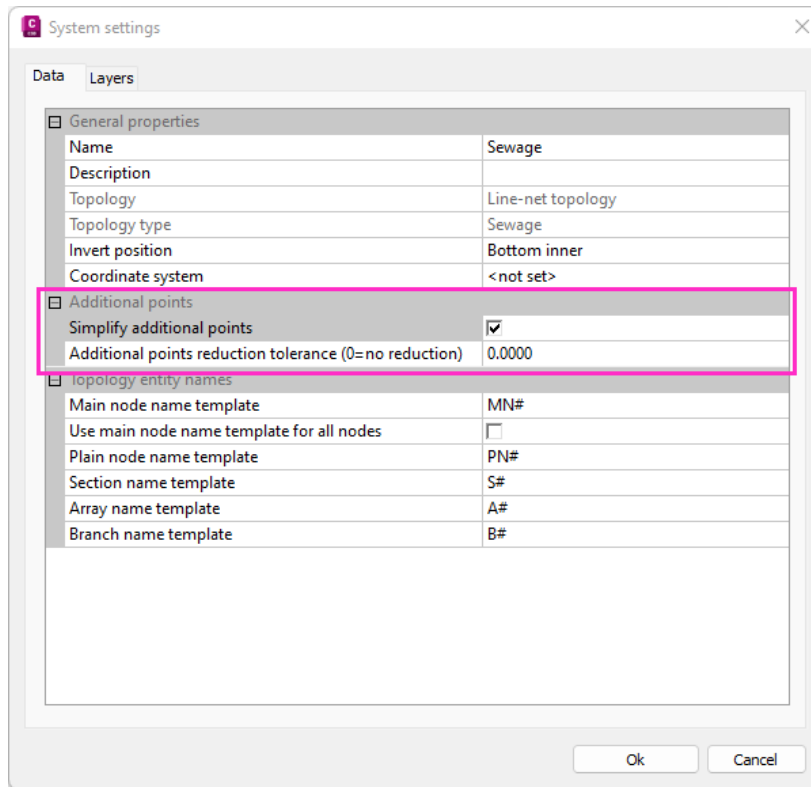


With the default Google key, it is possible to select an area up to a maximum of 200 km², and the maximum monthly number of requests (number of downloaded maps or packages of points with elevations) per user is 500. It is possible to choose your own Google key where there are no restrictions.



12 Central reduction of additional points number

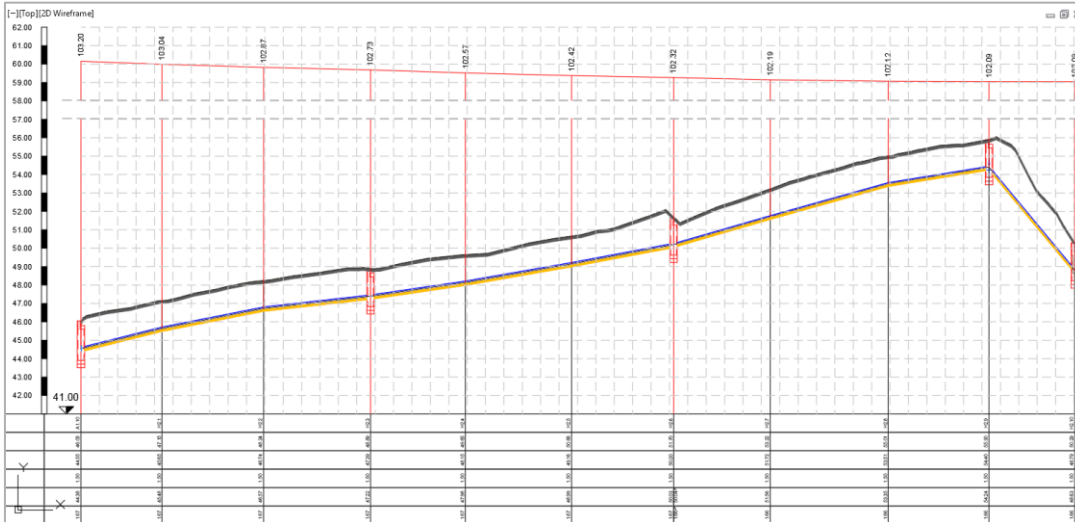
In the system settings it is possible to define a parameter to reduce the number of additional points. This parameter will affect all functions that use additional points (e.g., setting terrain elevations, excavation calculation, etc.) and applies to all terrain numbers (1-10) and all types of DTM surfaces (Terraform, Civil 3D, 3D Face).





13 New features in profiles

Drawing of profiles is accelerated. In addition, some new options and features have been added, such as drawing a grid, placing texts on vertical lines in a profile table, trimming piezometric lines, and more. The dynamics and automatic refresh of profiles have also been improved, so now the profile fully reacts to changes in width and height, e.g., in case of changes in scale, length, or height of the profile due to hydraulic calculation or display of piezometric lines.



14 Dynamic data tables

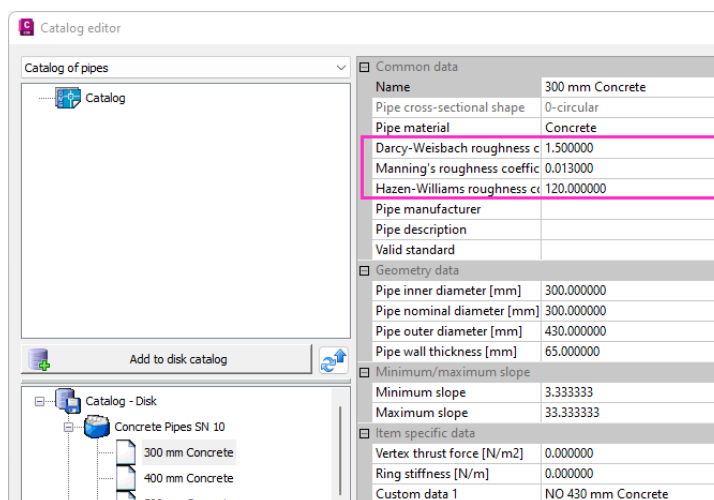
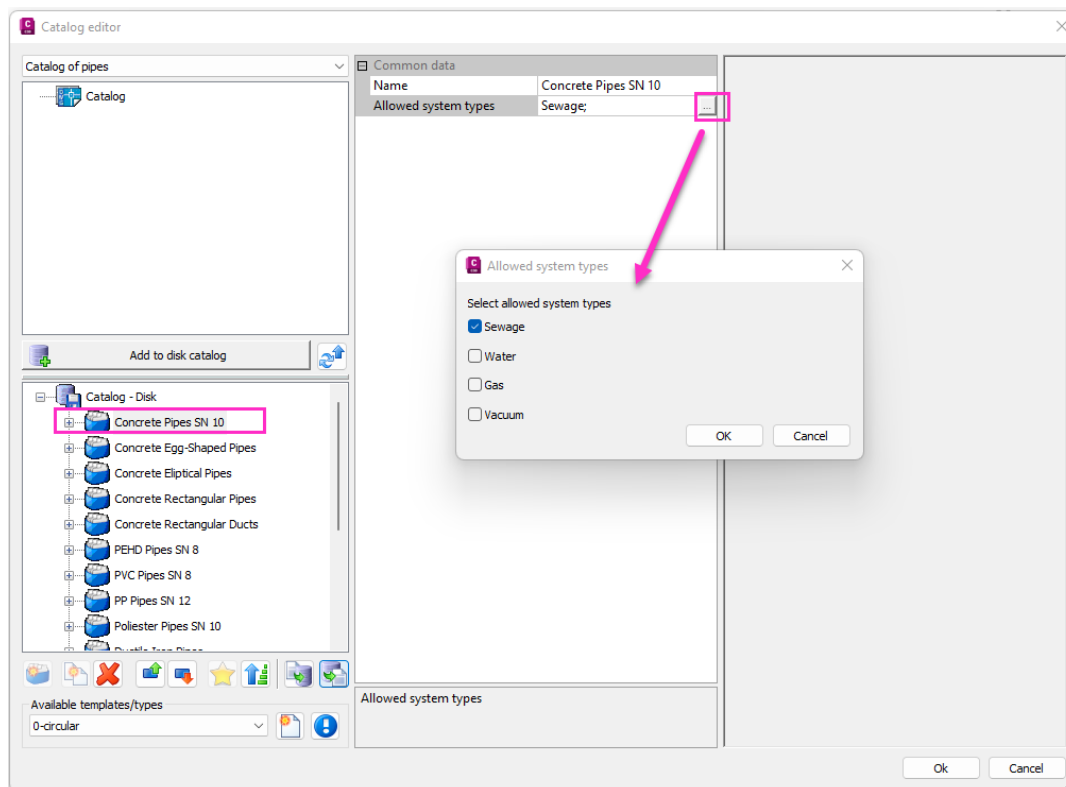
Numerous new features have been added to the dynamic data tables. Position, dimensions and data table settings are now saved in the application. A function has been created for editing or setting multiple values at once through the data table. This function recognizes the type of data in question and opens the corresponding dialog for setting or editing. If the data is for arbitrary text entry, the input cell will open. If the data is from a catalog and can only be changed by changing the catalog item, the corresponding function for setting that catalog item will open (e.g., pipe, manhole, trench, open channel). If the data is a name, and more than one cell is selected in the data table, the corresponding function for automatically renaming that type of element (node, section, branch, array, catchment area, polygon) will open.

Name	Catalog group	Pipe material	Nominal diameter [mm]	Inner diameter [mm]	Outer diameter [mm]	Height [mm]	Width [mm]	Depth [mm]
CO-4360	S - Concrete Pipes SN 10	CONCRETE	330.00	200.00	330.00	85.00	1.00	1.00
CO-4359	S - Concrete Pipes SN 10	CONCRETE	330.00	200.00	330.00	85.00	1.00	1.00
CO-4362	S - Concrete Pipes SN 10	CONCRETE	330.00	200.00	330.00	85.00	1.00	1.00
CO-4363	S - Concrete Pipes SN 10	CONCRETE	330.00	200.00	330.00	85.00	1.00	1.00
CO-4314	S - Concrete Pipes SN 10	CONCRETE	330.00	200.00	330.00	85.00	1.00	1.00
CO-5031	S - Concrete Pipes SN 10	CONCRETE	330.00	200.00	330.00	85.00	1.00	1.00



15 Catalog of pipes

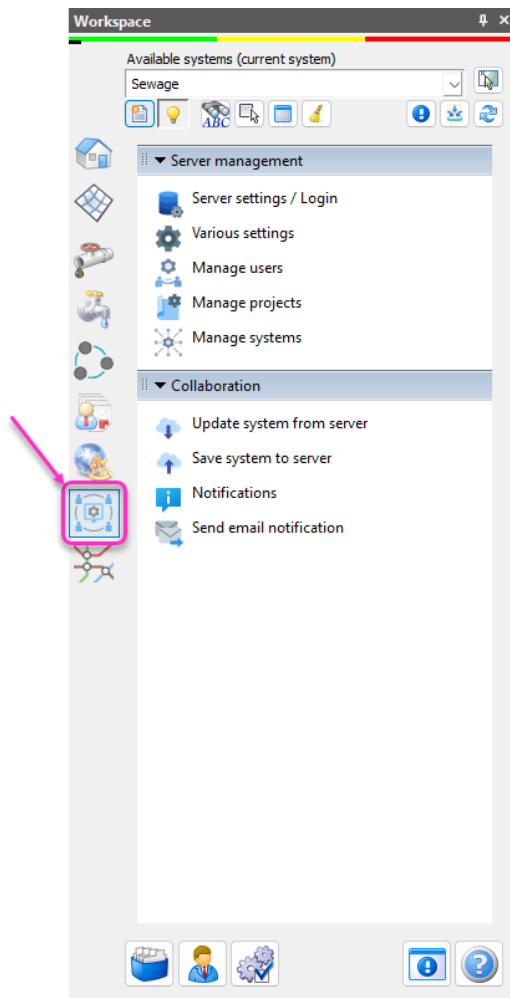
The possibility of setting which system type certain groups of pipes belong to has been added to the pipe catalog. In this way, it is possible to see, for example, groups of non-circular pipes (rectangular, egg-shaped, semicircular...) only in sewer-type systems. Once this system type affiliation is set in the catalog, only those pipe groups that belong to that system type will be visible in all functions that use setting of the pipes. New data for pipe roughness have been added to the pipe catalog. The existing roughness data is divided into three data: Darcy-Weisbach's, Hazen-Williams' and Manning's roughness coefficients. For all hydraulic calculation and pipe sizing functions in Hydra and Canalis, the program will read the appropriate roughness coefficient from the catalog according to the calculation formula selected in the dialog.





16 New Collaboration module (Multi-user workflow)

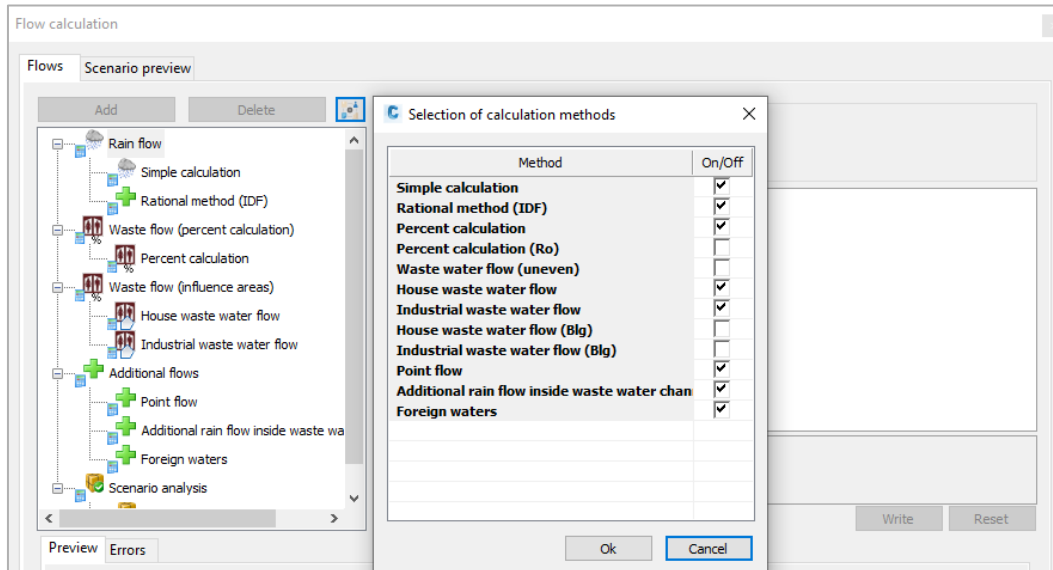
In version 11, a new module has been added – Collaboration, which enables multi-user workflow via PostgreSQL database. This module is not part of the Urbano Ultimate package and is licensed separately. After setting up and logging in to the database with a username and password, it is possible to create new users with different rights and authorities, create new projects and assign certain users to them. Users can work on the same project at the same time, exchange messages, download and post changes, and receive notifications of project changes made by other project members.





17 Other minor new features

Other minor new features include an interactive label selection function for configuration editing. This function allows you to select a label in plan, after which the corresponding configuration opens for editing. In the Canalis module, in the Flow calculation function, it is now possible to define which of all possible flow calculation methods will be visible in the dialog via the new method selection menu. Urbano's topological model has been significantly improved, which includes all functions for drawing, converting, editing and deleting topological elements (node, section, branch, array).



18 Urbano Navisworks Tools (Urbano Document Linker)

As part of the development of Urbano 11, a new version of Urbano Tools for Navisworks was released. In the new version, Urbano Document Linker feature has been improved and expanded. It allows you to quickly add external links to elements in Navisworks based on the data written in the elements and a defined connection rule. In the new version, in addition to links to content on the local computer, it is also supported to add hyperlinks to Internet content contained in an Excel file, following the same principle.