ZW Geo

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# ZWGeo

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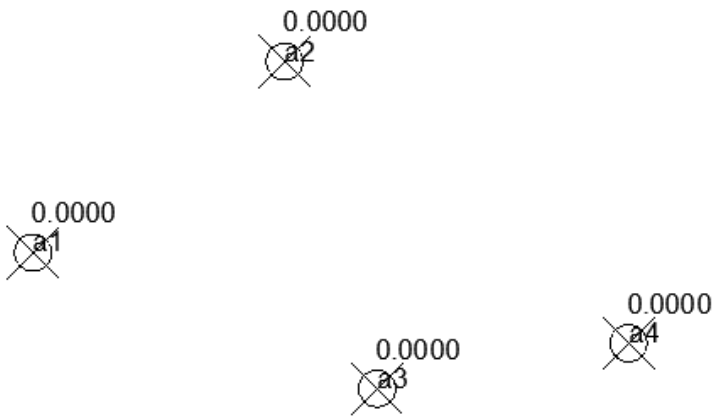
## Load

In order to load ZWCAD faster, the application isn't active at all time. If you want to use the application during your project, please use this function to load its content into the ZWCAD. You can also run ZWCAD with ZWGeo by opening it from the desktop's icon.

## Manage points

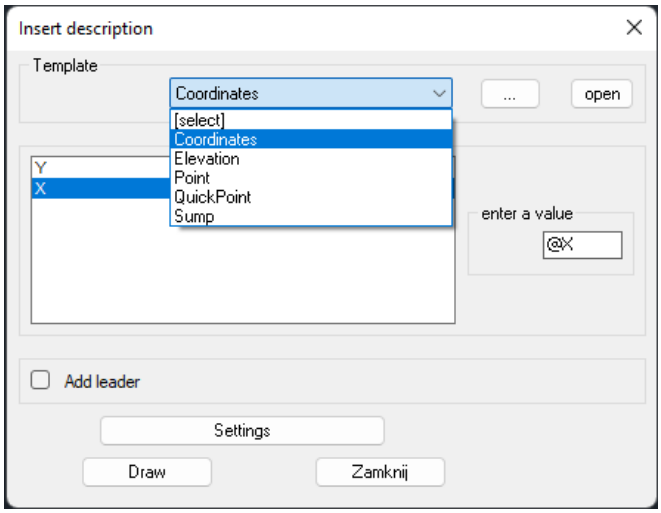
### Add points

The command let user mark points by insert point entity and text containing series and number in points clicked by user. After running the command, the user will be asked to input series and start number. After that, click on the place where first point should be located, and set a symbol of this point.



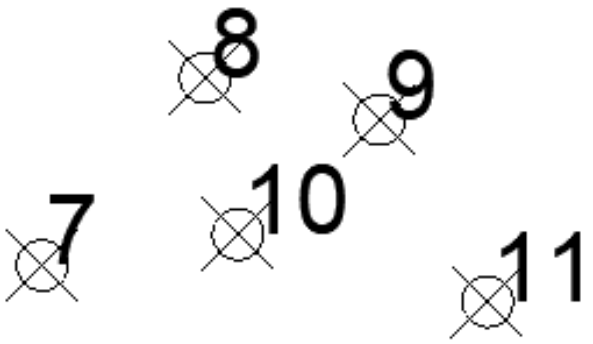

### Describe points

You can use this function to insert points based on a template. Run the command, and choose set of values from: Coordinates, Elevation, Point, Quick Point and Sump. You can then put a point into a drawing with chosen description. You can also add a leader to your point.



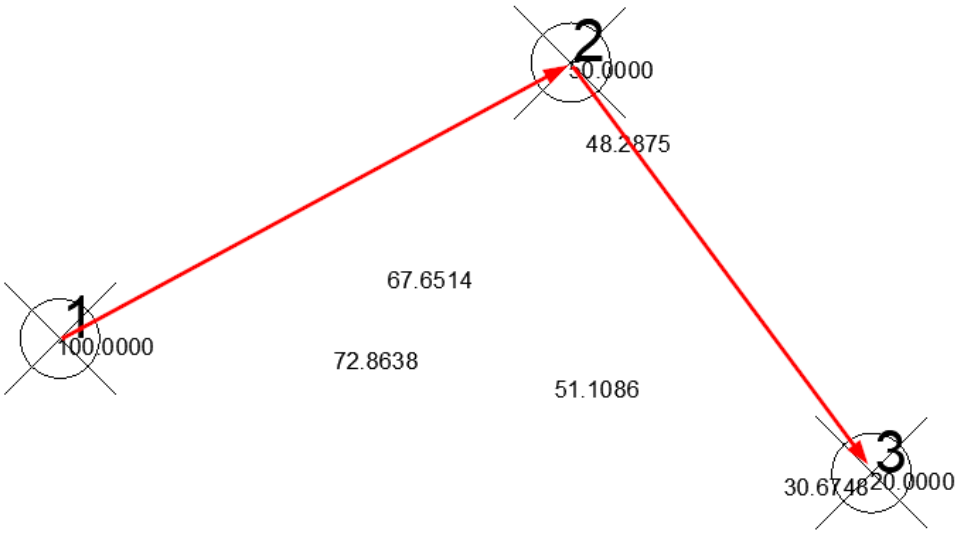

## Quick point

You can use this function to conveniently insert many points, one by one. The points will have advancing numeration. You can also edit it any time by double clicking.




## Interpolate

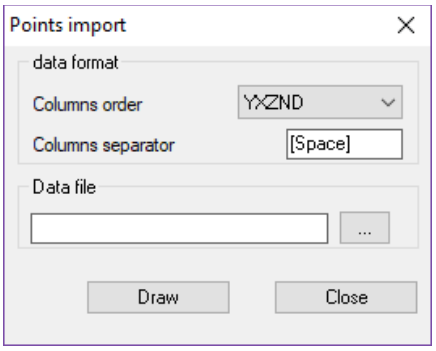
This function can be used to define a plane and calculate coordinates of points in this plane. Any points that are to be interpolated must be located within boundaries of 3 lines.




- First, choose 3 points you want to be your reference point. Make sure that they have Z value set, and its different from each other.
- Then you can draw a line between them, so a triangle is created, but this only makes it more readable. Make sure you have localization to point turned on, or you won't be able to catch your points.
- Run the command, and draw 2 lines between your points to make a triangle.
- Now you can click on any point within the figure, to create points with Z value, based on created plane.

### Import points

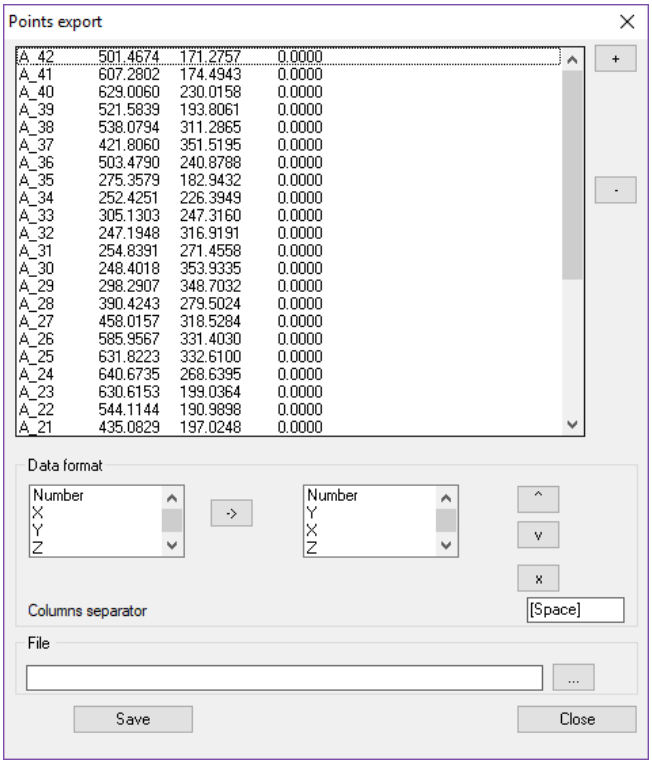
The command inserts into drawing points defined in text files. After executing the command, application will display a window:




In this window user may select format of files with data, columns order and separator of columns. Also user may select file with data. After clicking button [Draw], application will insert points, numbers and blocks of symbols if contained on a data file.

## Export coordinates

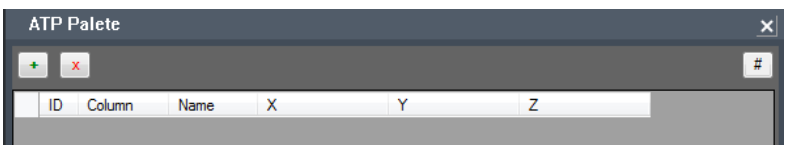
The command will export coordinates of points into text files. After executing the command, application will display window:



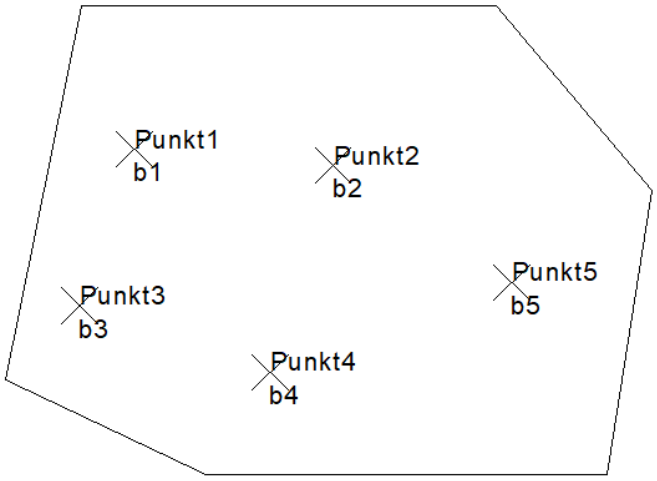

In this window, there is a list of points selected from drawing. If you want to select a new one, click point [+] and application will ask you to select points. You can remove them from this list by [-]. In this window you can also define format of a file, columns order and a separator. Also you must write or select a path to a file where points will be stored. After clicking [Save], points will be saved.

## Table of points

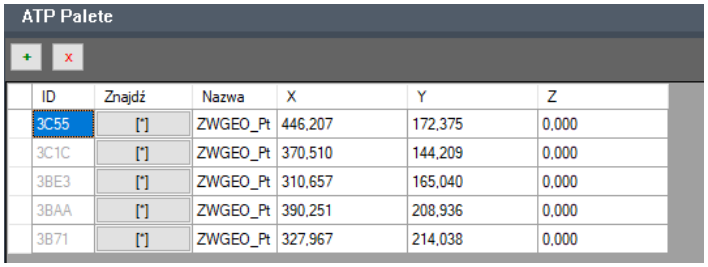
Function can be run by using the command ATP_START. Once the function is started, the following table will appear:



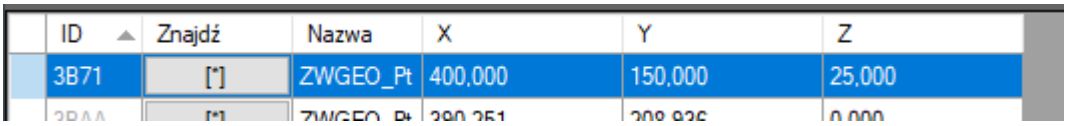

To which you can add points from drawing with this button and select objects (points in this case), just as presented below:



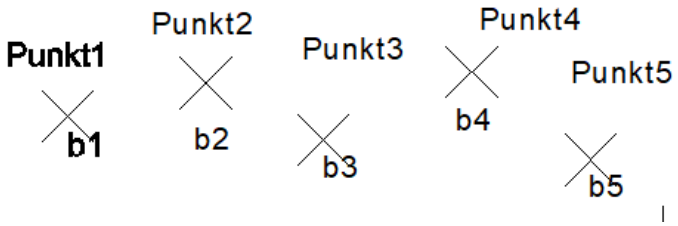

You will get the following result:



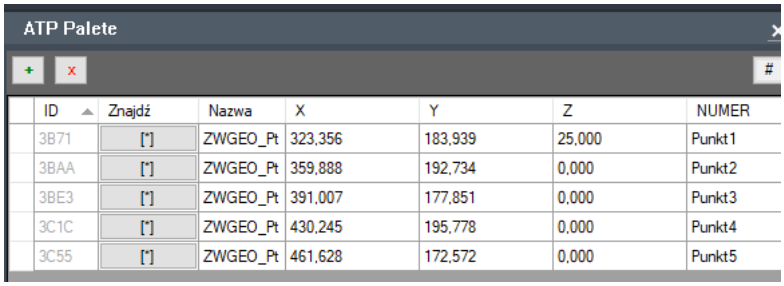

This is the way how points have been added to the table. When changing properties in the table, the changes in the drawing are applied automatically.



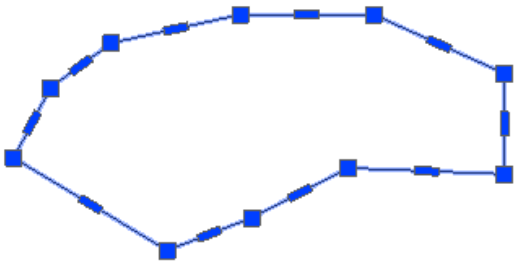

After changing coordinates of Punkt1, it will move to a different place. It is also possible to move points in the model:

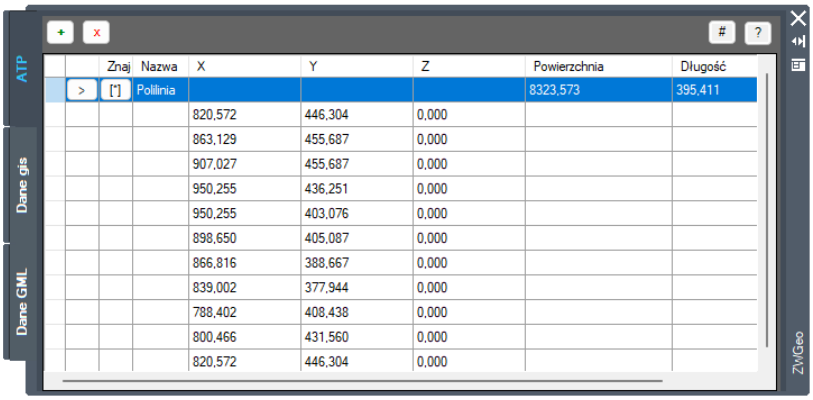



Active Points Table will adjust values accordingly to their new position:




Once a selected polyline is added into the table, it will display all information regarding coordinates of polyline vertexes, its area and perimeter.

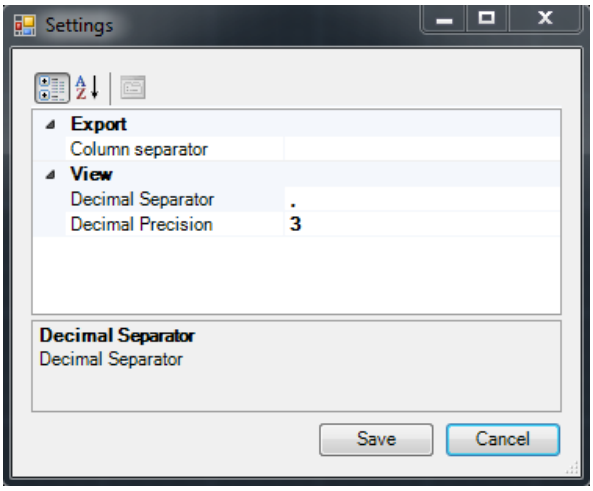





Any changes to polyline vertexes will be automatically applied within the table. Active Points Table handles:

- points,
- group of objects,
- attribute blocks,
- polylines.

To access settings, click on this icon or type in the command ATP_SETTINGS. Following parameters can be adjusted:



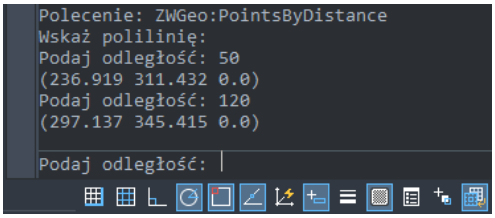

### Report points as table

You can use this command to make a table of points. Run the function, select points you want in your table, and confirm with Enter. Then place it in your drawing.

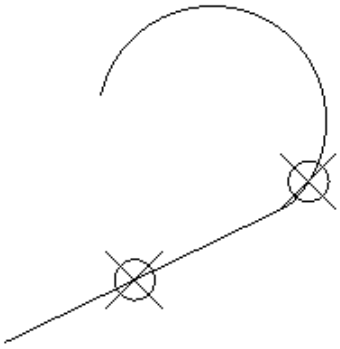
| Zestawienie współrzędnych punktów | | | |
|---|---|---|---|
| Współrzędna X | Współrzędna Y | Współrzędna Z | Numer |
| 322.813 | 185.3564 | 0 | a1 |
| 402.6712 | 245.874 | 0 | a2 |
| 431.9942 | 142.3078 | 0 | a3 |
| 511.8524 | 156.6573 | 0 | a4 |
| 739.0316 | 204.0972 | 100 | 1 |
| 814.6298 | 244.8452 | 50 | 2 |
| 859.1309 | 184.2594 | 20 | 3 |
| 803.9066 | 129.0351 | 0 | 4 |
| 896.6619 | 125.8182 | 0 | 5 |
| 942.2353 | 239.4836 | 0 | 6 |
| 975.6741 | 175.2768 | 0 | 7 |
| 990.3674 | 192.1299 | 0 | 8 |
| 1006.0752 | 188.3666 | 0 | 9 |
| 993.3126 | 178.0584 | 0 | 10 |
| 1015.8107 | 172.0044 | 0 | 11 |
| | | | |
| | | | |

### Points by distance

With this function you can insert points on a polyline. You need to run the command, and choose a polyline. Command line will prompt for a distance:



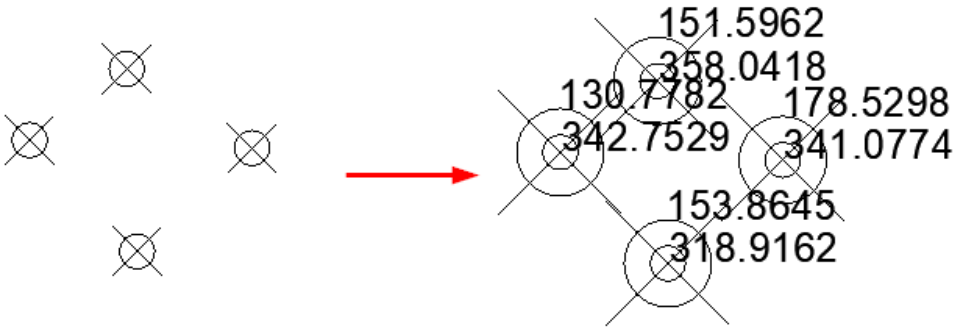

When you type the distance, a point will be made and its coordinates will be listed. You can continue inserting points or finish with Enter.



## Manage lines

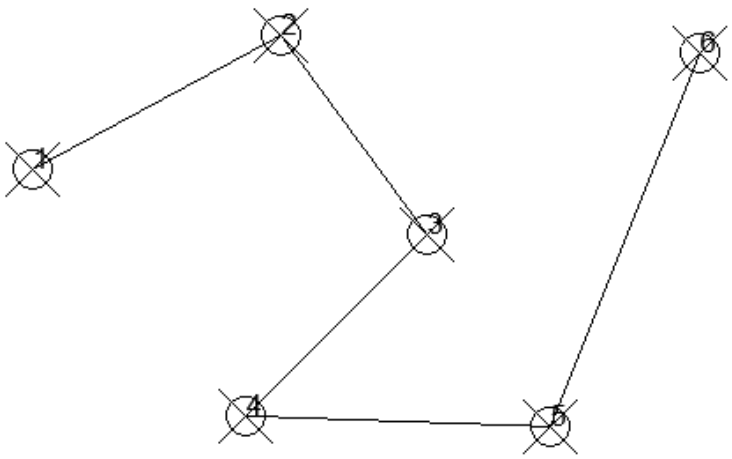
### Describe objects

With this function, you can easily add values to points in your drawing. You may press S to go for setting, and then you can choose a set of values to input, for example Coordinates, Point etc.



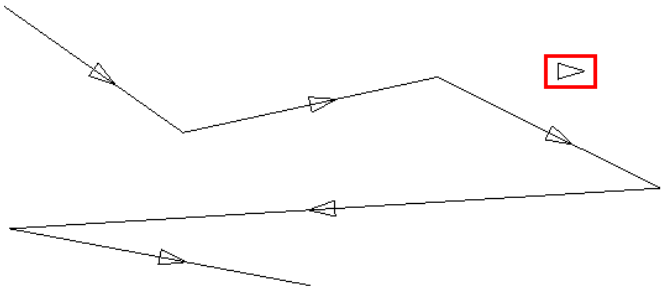

### Draw by numbers

When using this function, you can draw a line through each point of your choosing. Run the command, and type points you want to be connected. You can divide points in order by a comma (,) or select more of them one by one for example 5-15.



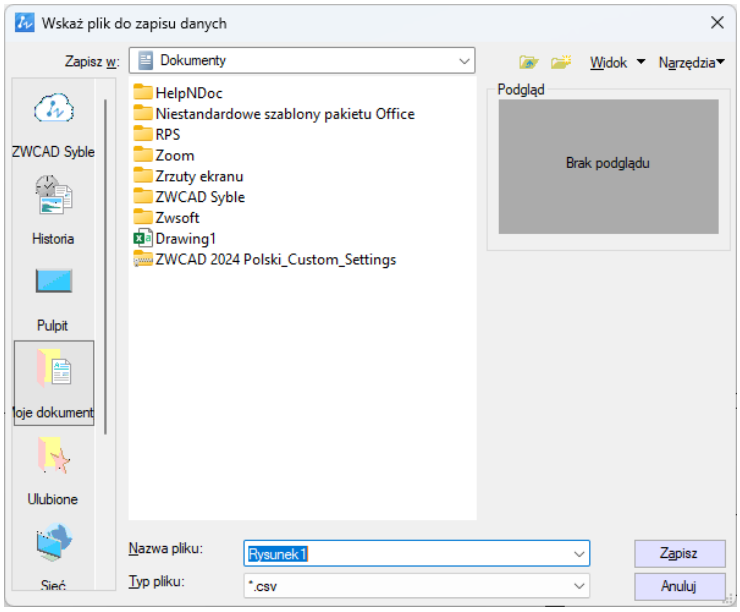
### Mark middle segment of the polyline

With this function you can put a block into the middle of each section of polylines. Run the command, then click on a block that will be put in the middle of a line, and choose polylines. Confirm with Enter.



### Export polyline coordinates

In order to export coordinates of polyline's points you can use this function. The program will ask for location and a file to save, in which coordinates will be saved. You can save it in .csv or .txt.




Here is how it looks after the process:

| | A | B | C |
|---|---|---|---|
| 1 | X | Y | Z |
| 2 | 1274.9220 | 183.3887 | 0.0000 |
| 3 | 1351.0564 | 129.7730 | 0.0000 |
| 4 | 1459.3602 | 153.3639 | 0.0000 |
| 5 | 1554.2601 | 106.1820 | 0.0000 |
| 6 | 1277.0666 | 89.0250 | 0.0000 |
| 7 | 1405.2083 | 64.8979 | 0.0000 |

### Polyline coordinates to a table

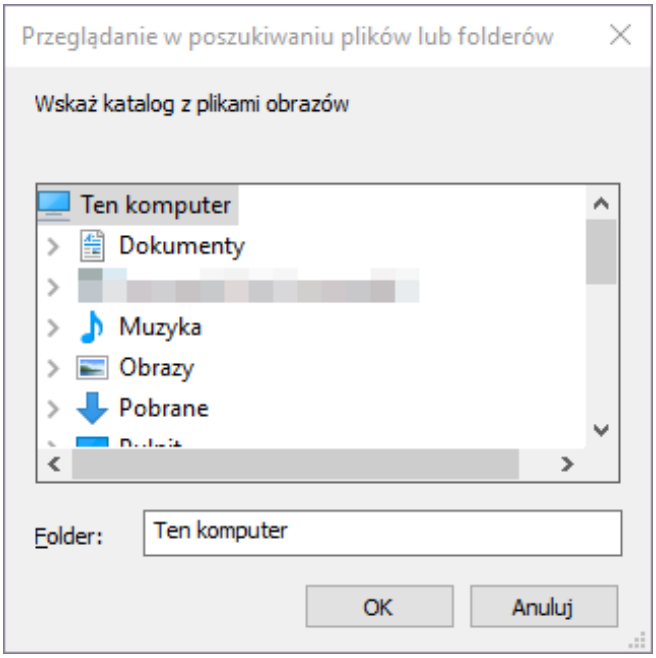
This function makes a table with coordinates of a chosen polyline. Just select polylines you want to be labelled and confirm with Enter.

| Zestawienie punktów | | |
|---|---|---|
| Pozycja X | Pozycja Y | Pozycja Z |
| 1405.2083 | 64.8979 | 0 |
| 1277.0666 | 89.025 | 0 |
| 1554.2601 | 106.182 | 0 |
| 1459.3602 | 153.3639 | 0 |
| 1351.0564 | 129.773 | 0 |
| 1274.922 | 183.3887 | 0 |

## Raster images

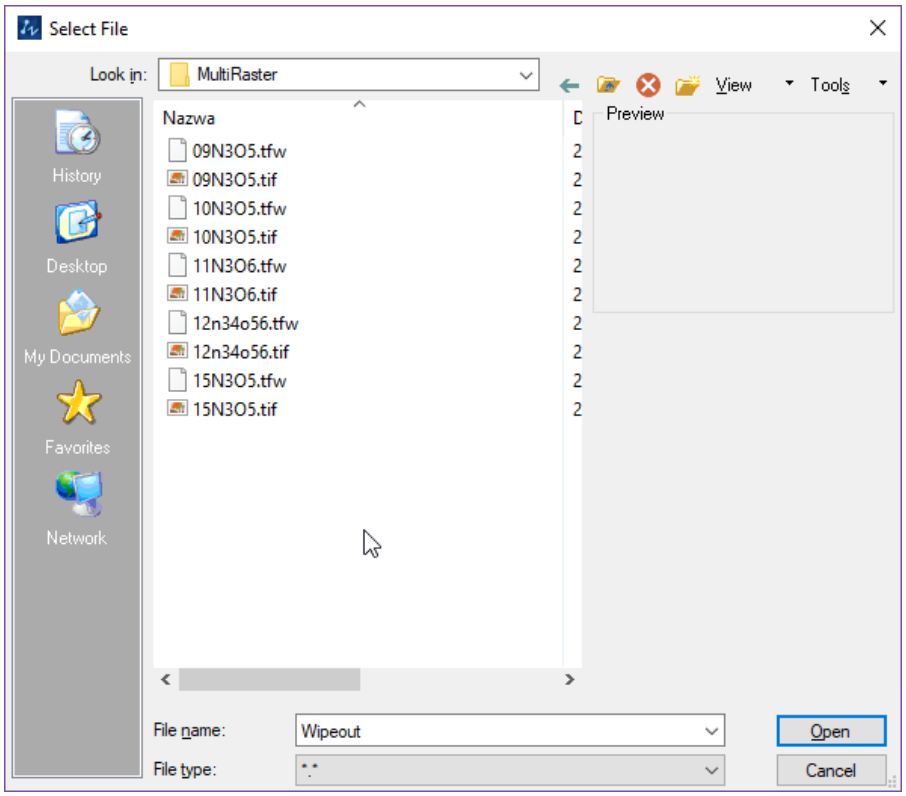
### Insert all rasters from a selected folder

By this command you can export values of texts into external text file. After running the command, go to select Texts or MTexts and choose a path to text file where data will be stored.




### Insert multiple raster files

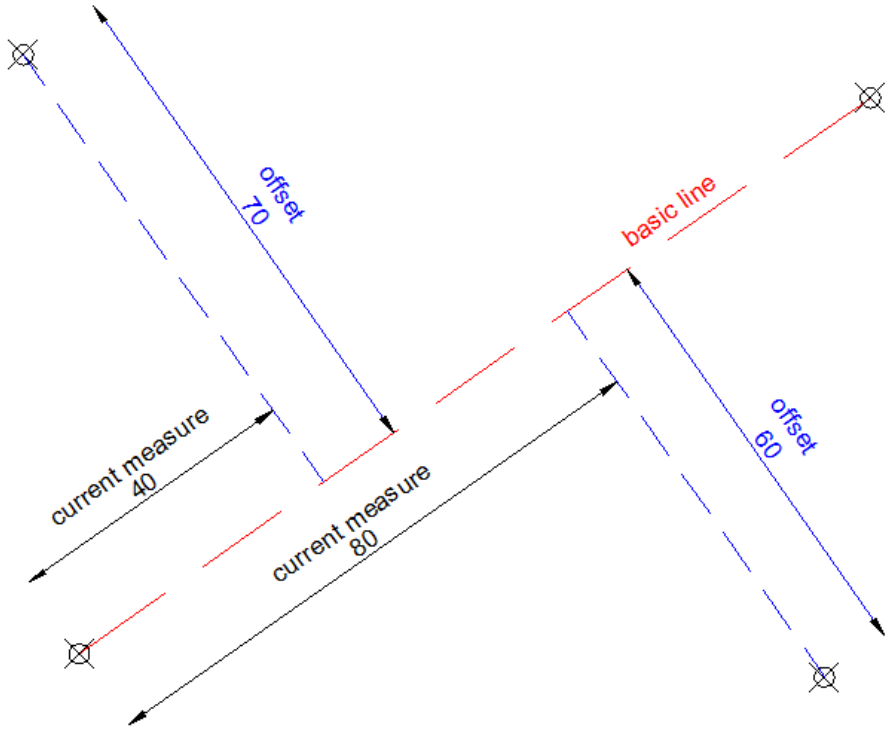
The function will let you select many raster images, and insert it automatically using positioning file.




## Tools

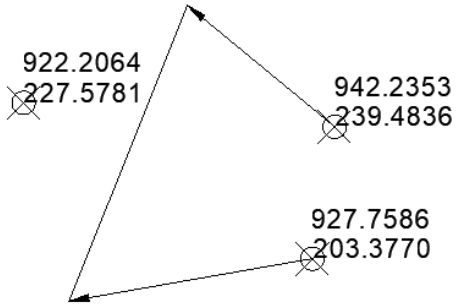
### Rectangular offset

Offsets square is a function used to measure the details of a terrain. After activating the function, indicate two points on the base line. Then please specify the distance and offset. The location corresponding to the entered value will be inserted point.



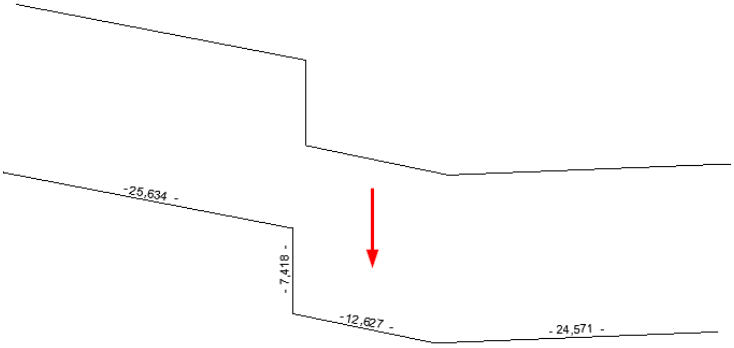
### Insert coordinate description

By this command you can mark points in project by describing coordinates X and Y. The application will ask you to pick a point and insert description block in the chosen point. If you click next points, there will be leader connecting first click point with the rest of points, and description block will be always on last picked point.



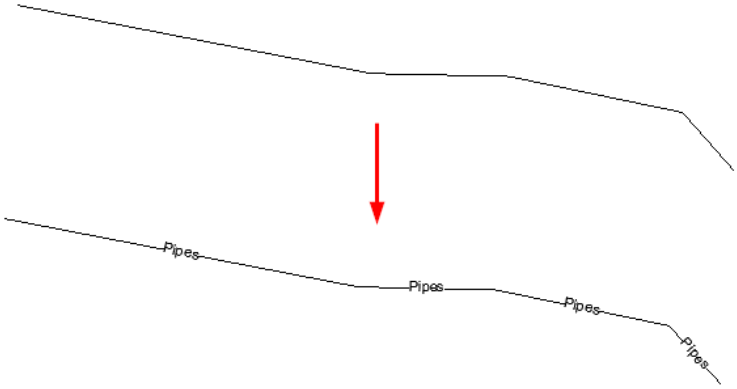

### Front measure

Front measure can be used to add lengths of certain segments such as cabling or pipes.

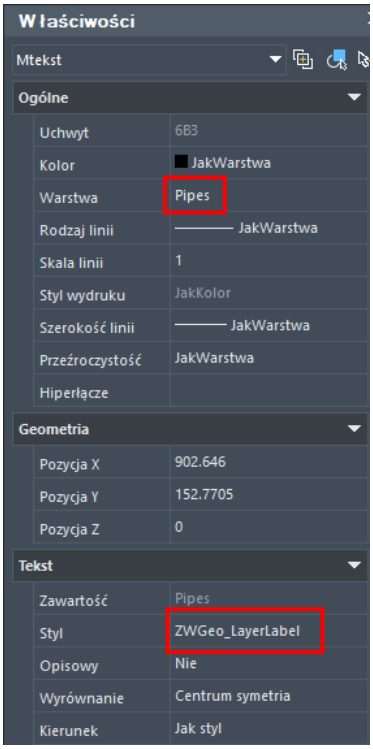



### Describe conduit

After running the layer label command, you'll have to select polylines and they'll get labelled with a proper layer name in the middle of each segment:



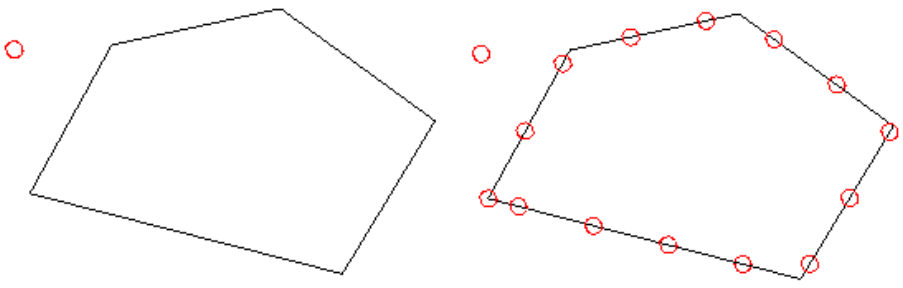
Layer label adds a description to each segment of a selected polyline as well as the name of the layer.




## Mark a boundary

Draw a fence by multiple copy of selected object along selected path. To draw such fence you need to:

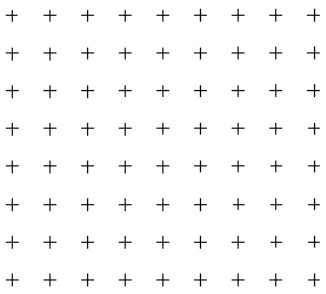
1. Draw symbol which should be copied
2. Draw axis of fence (lines or polylines).
3. Run the command.
4. Select a symbol to copy.
5. Pick a base point.
6. Write a distance between symbols or click two points.
7. Select fence objects, the same drawn on point 2.



On the picture above you can see project before and after using the command.

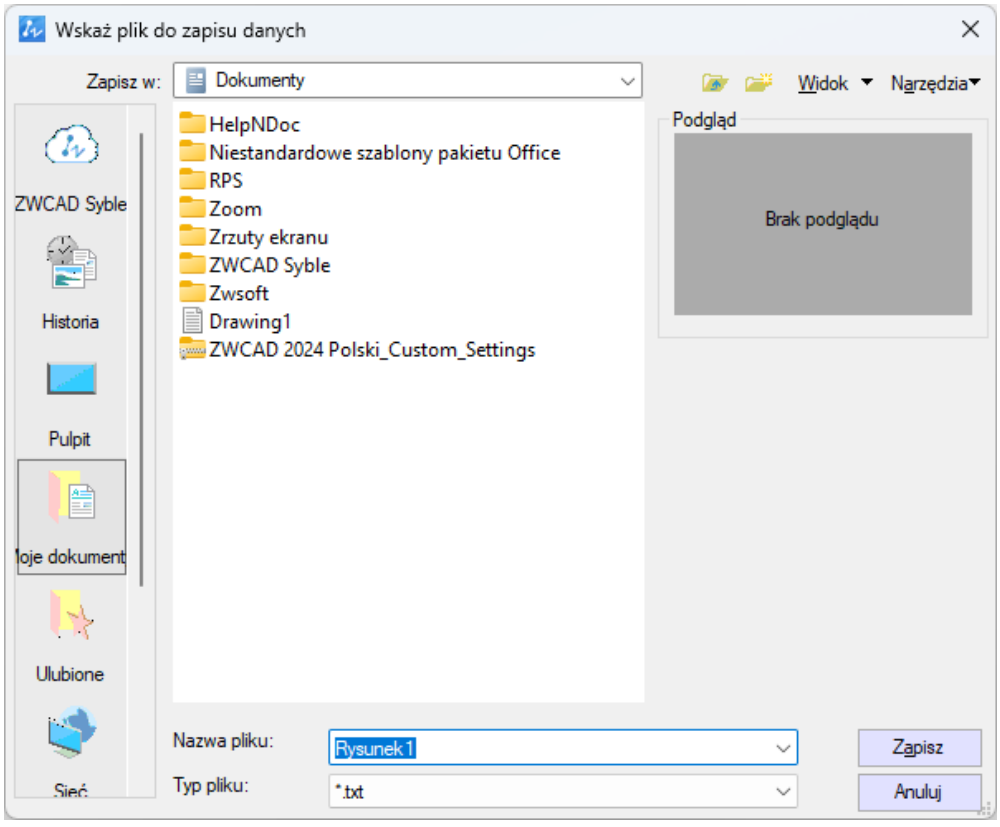
### Insert a cross grid

The command will draw an array of crosses in range – windows selected by two opposite points. In the command bar you have to specify the distance between cross marks.



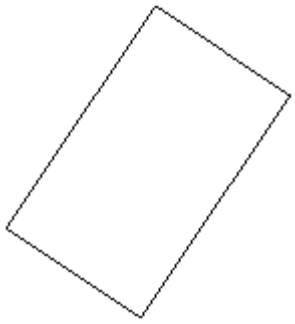
### Save text in txt file

By this command you can export values of texts into external text file. After running the command, go to select Texts or MTexts and choose a path to text file where data will be stored.




### Rectangle

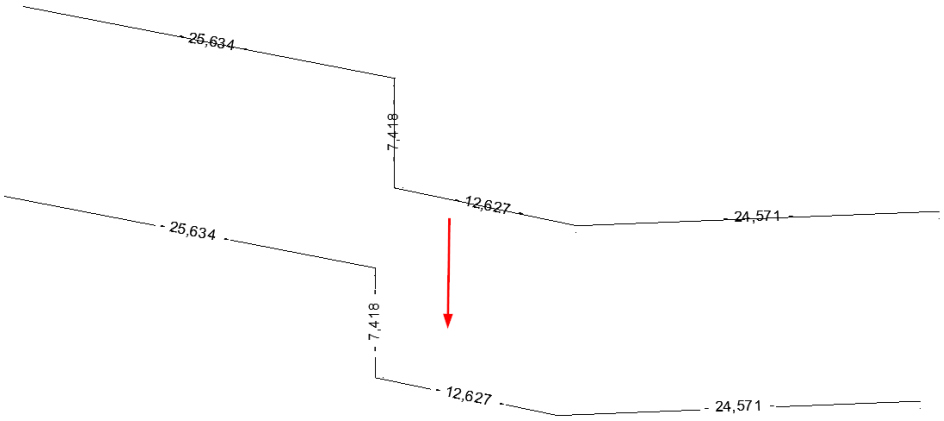
This function makes drawing rectangles at any angle. Run the command, choose an angle and height/width.



## View

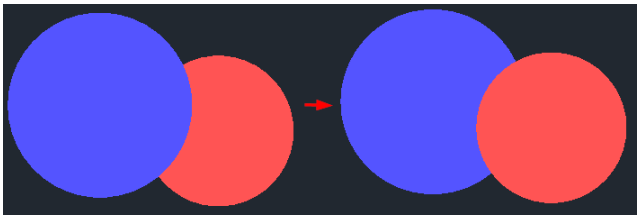
### Cover elements with text

This command helps you make drawing more readable, by covering objects under MText by wipeout. All you need to do is run the command and select multiline text entity. Everything under this MText will not be visible, but it will remain there.



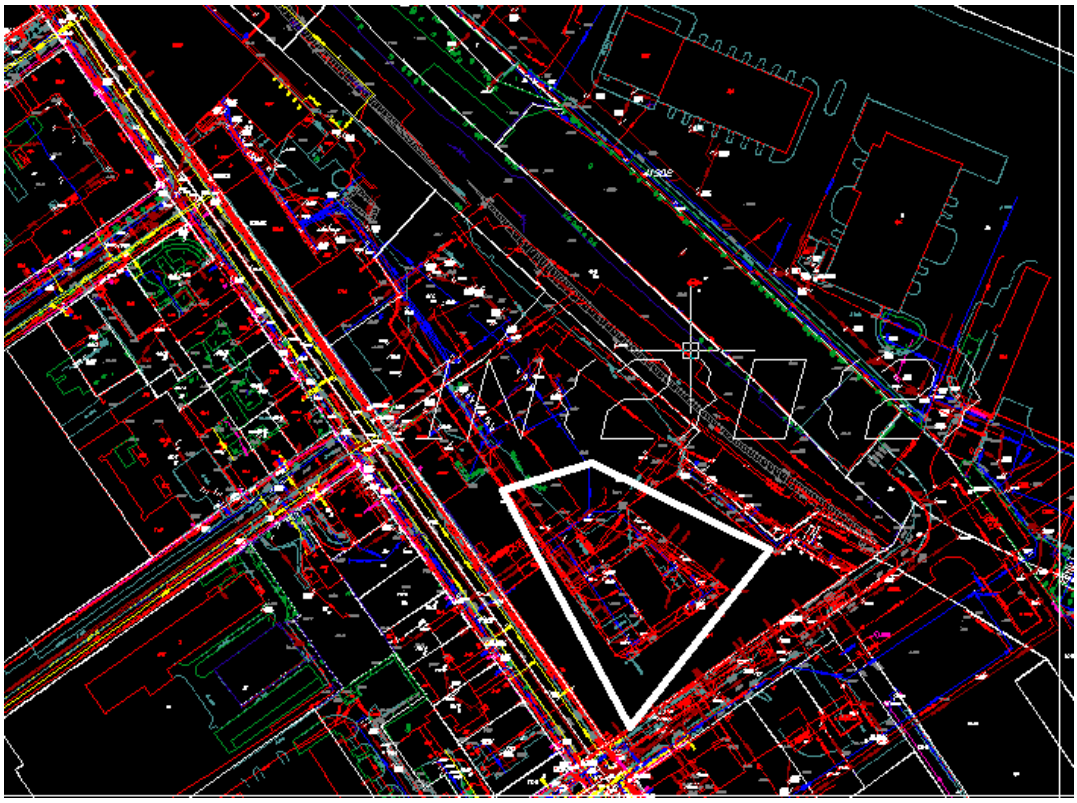

### Bring forward

Just run the command and select those entities, which should be over the other ones, and then select one entity which should be at the bottom of draw order.

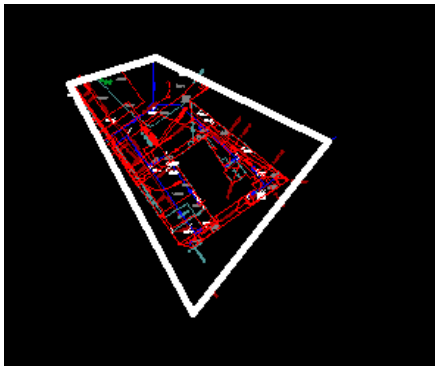


### Trim Map

Maps can be cut by using a single button. Select an area outside of a closed polygon. Once the area to cut is selected (LINE, POLYLINE, ARC, CIRCLE, ELLIPSIS, IMAGE or TEXT), and there is something outside of the cut line, the effect will be similar to the one presented below:

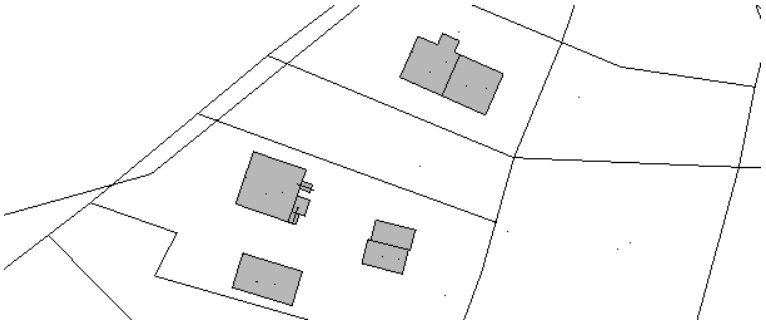


This functionality makes work much smoother and easier. Cutting maps is considered as a work improvement since at the end of the design process, almost always maps require manual cutting, as the terrain is too large and, as confirmed by many users, this part of work is the most time consuming one when working on maps.

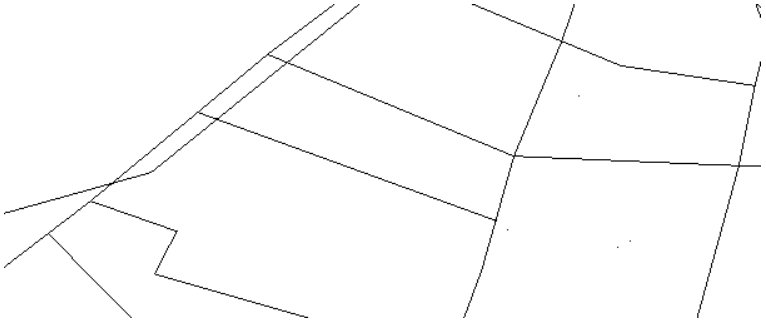


## Visibility

After running the command, indicate items that will be in one of the first group of objects. After selecting the items and approving by pressing Enter, previously selected objects won't be visible. To enable it you have to run the command. In this way, the user can quickly turn on and off groups of elements in the drawing. Just make sure that objects are on a different layers.



The user can make eight groups of objects in the drawing, they are formed in an analogous manner.



The function allows you to turn off or on all previously defined object groups 1-8.

## ZWGeo

### Activate

A trial period that lasts for 30 days with full functionality is available after installation of the application.

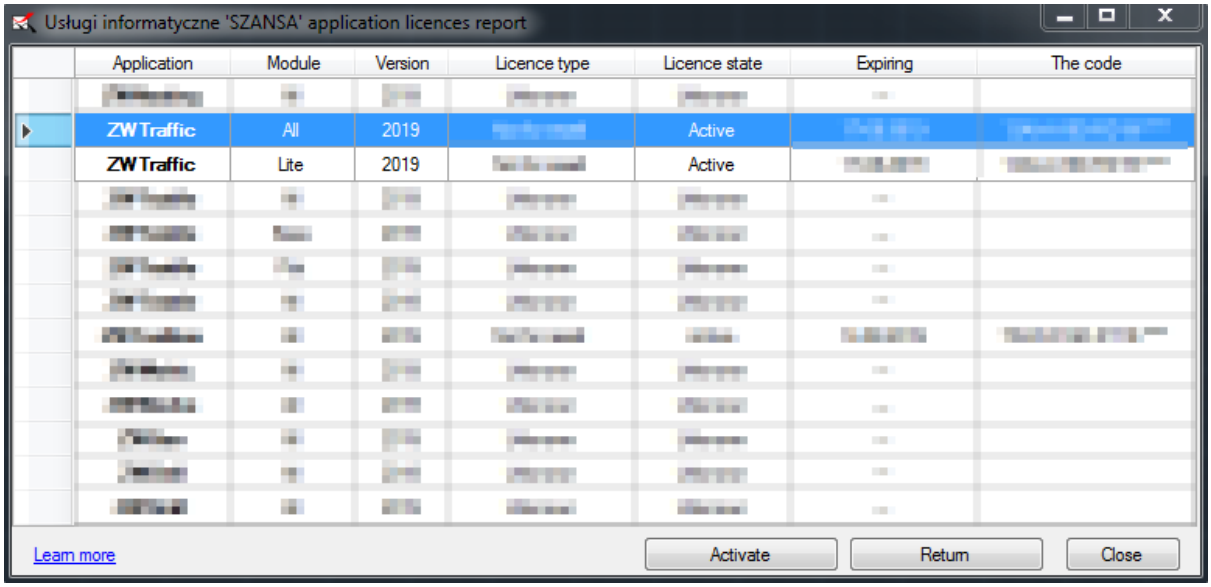
Activation must be completed on an account with administrative privileges.

Once the trial period of 30 days runs out, a licence will be needed in order to use the program. After receiving the payment, an e-mail with an activation code will be sent. Activation is available directly in ZWCAD or by using the function Activation from menu of the application. It is also possible to activate the program from its installation folder. By default located in: **C:\Szansa\Aktywator\2025\EN** and run **Aktywator_2025.exe.**

**In operating systems such as Windows Vista, Windows 7, Windows 8 and Windows 10 it is necessary to right click on ZWCAD icon and select Run as Administrator.**

Full licence code is only visible on the licence certificate that is sent out during completion of the order due to security reasons. Once Activator has been launched, the following window

will be displayed:



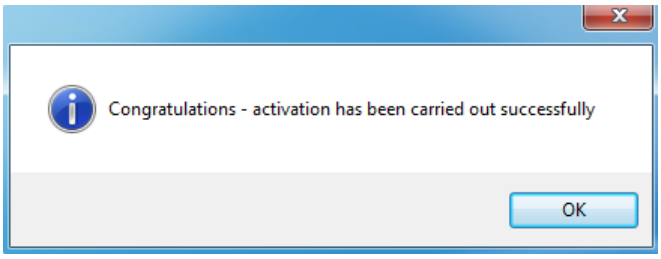

Please click on **Activate**.

A choice between activating the application online or offline will be present.

**Online activation**

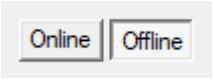
In the field **Activation code** please type in the information sent during realization of the order, afterwards click on **Activate**.

An information window will pop up confirming the activation.

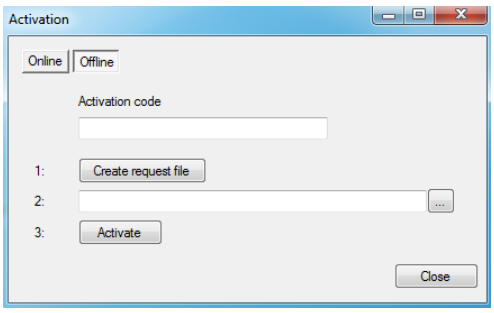



Once ZWCAD is launched, all functions of the program should be loaded and available.

**Offline activation**

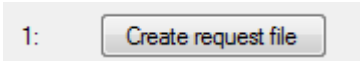
In the **Offline** tab 

additional steps are required to complete the activation.

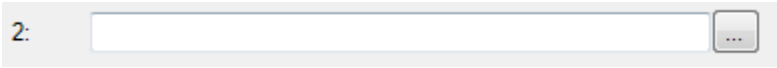



In the field **Activation code** please type in the information sent during realization of the order.

Afterwards it is necessary to click on Create a request file, it will create an additional file which needs to be saved on the desktop or in any other directory of the computer.




The file needs to be sent in a form of an attachment to, pomoc@zwcad.pl and a reply will consist of response file which then needs to be loaded in the activator:

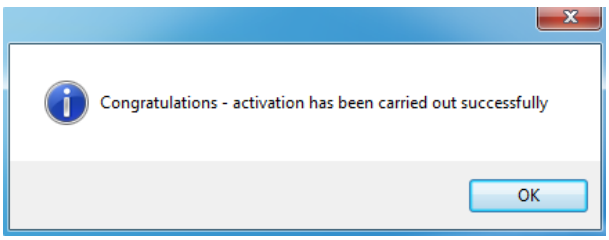



Response file needs to be saved on the computer and its localization needs to be determined by clicking on the following icon

.

Once the response file is loaded, click on **Activate**.

An information window will pop up confirming the activation.

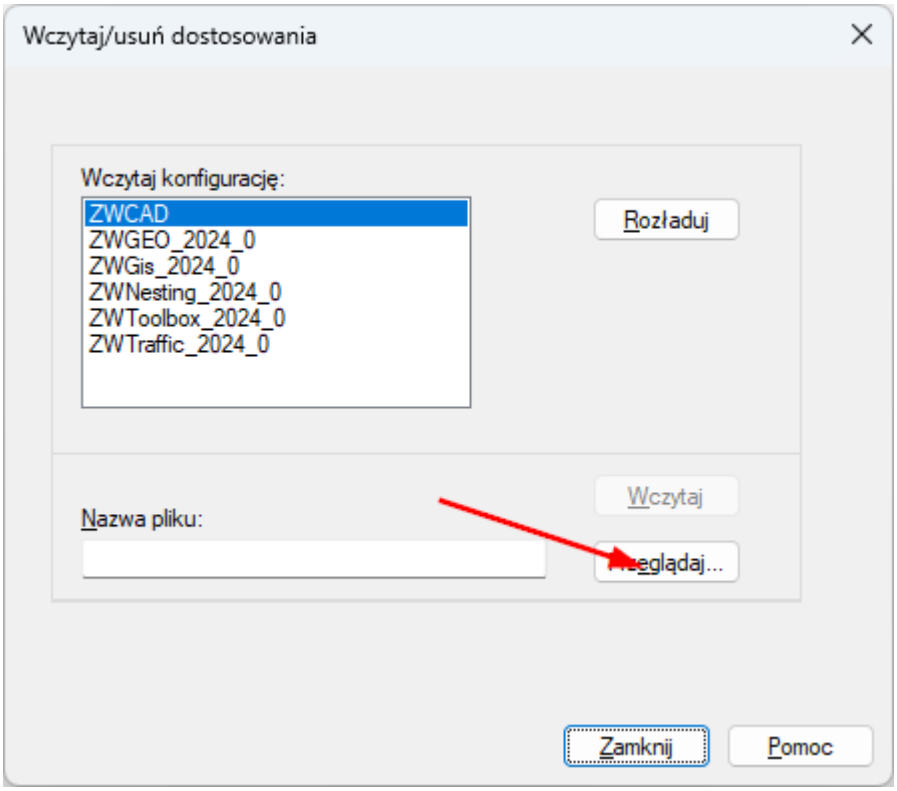


Once ZWCAD is launched, all functions of the program should be loaded and available.

### Manual load

After installing the overlay, it should load automatically after running ZWCAD 2025. The functions should be available and the toolbar with the icons should be displayed. If after running ZWCAD the overlay does not appear, please follow these steps:

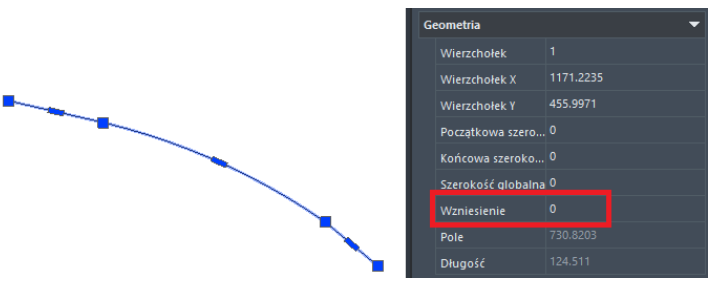
- Run the command _menuload.
- Press the button and select the file ZWGeo.cuix or ZWGis.cuix located in C:\Szansa\ZWGeo\2025\EN. Confirm the file by clicking Add.



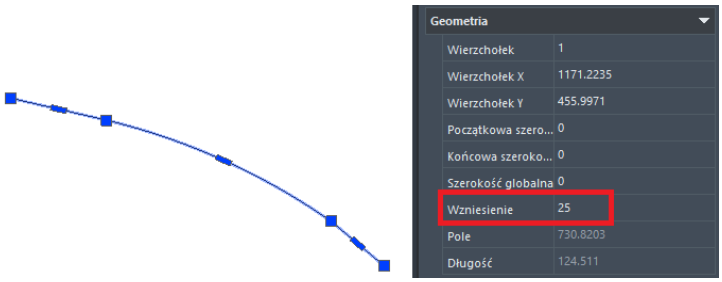

## Profile

### Mark Contour Lines

With this function, you can easily change a height of a contour line. To do so, run the command and click on a line, then type its value. The Z parameter will be changed.



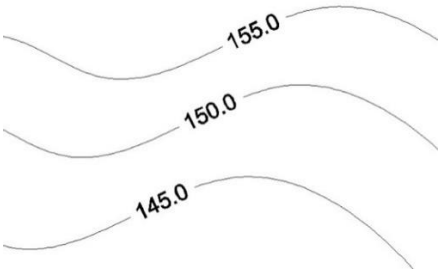
The picture before and after said function is used.




In case of problems, convert your contours to Light Polylines with a CONVERTPOLY command.

## Label Contour Line

The function labels contour lines. After running the command, make a line that will go through your chosen lines. In each place that contour crosses with this function's line, a description of its hight will be placed.

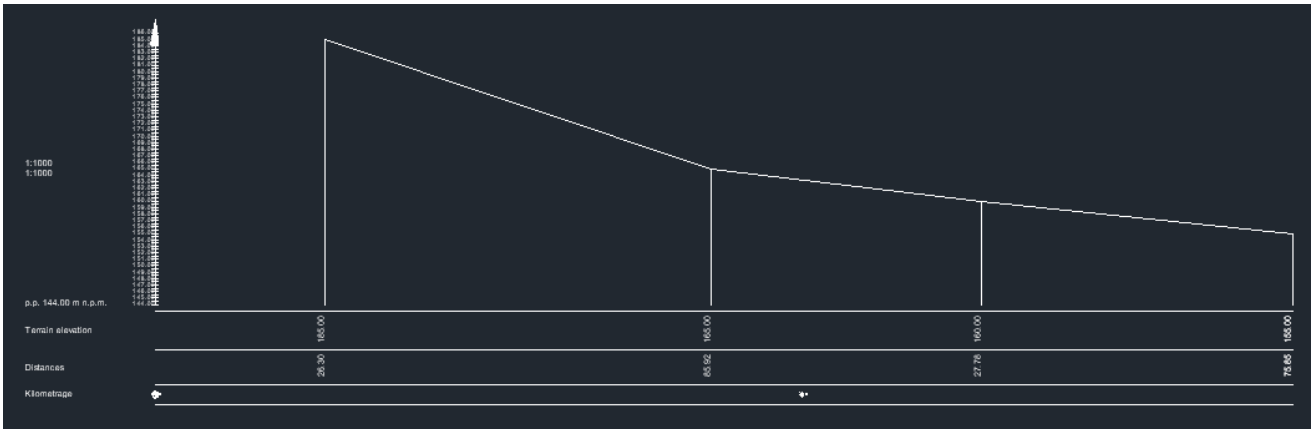



In case of problems, convert your contours to Light Polylines with a CONVERTPOLY command.

## Draw Profile

To draw a longitudal profile, run the command and select contour lines. Then, draw a line you want to be a profile, and insert it to the drawing.

In case of problems, convert your contours to Light Polylines with a CONVERTPOLY command.

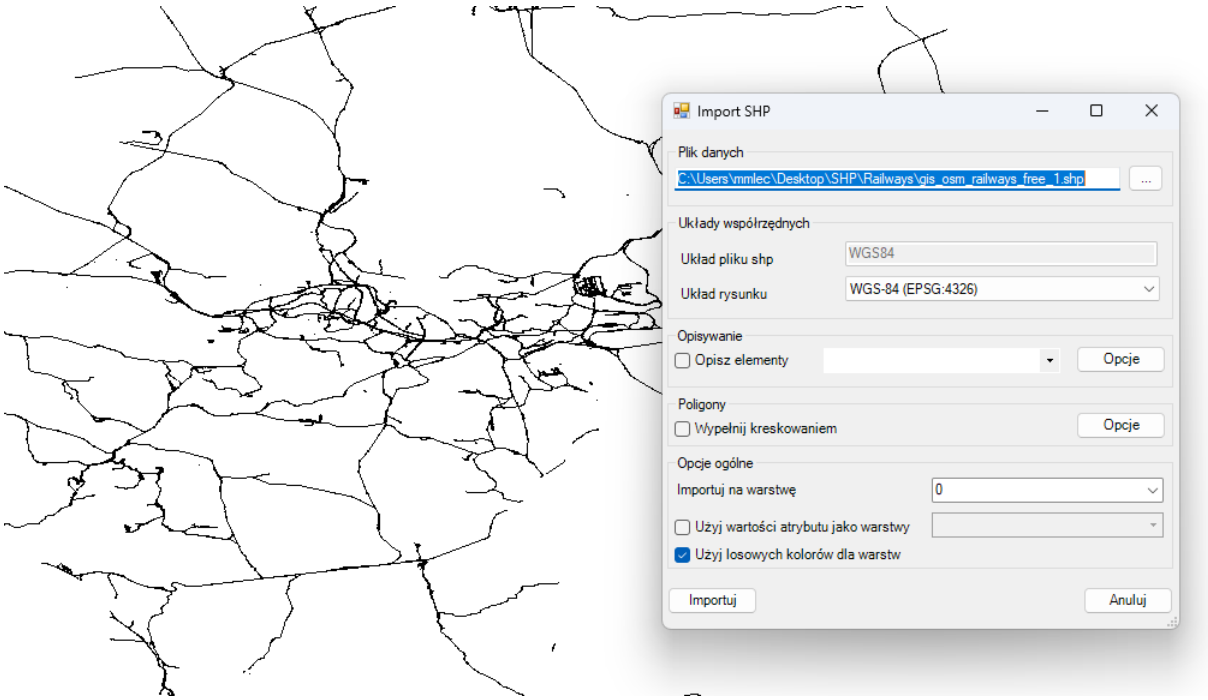


# ZWGis

## Import/Export

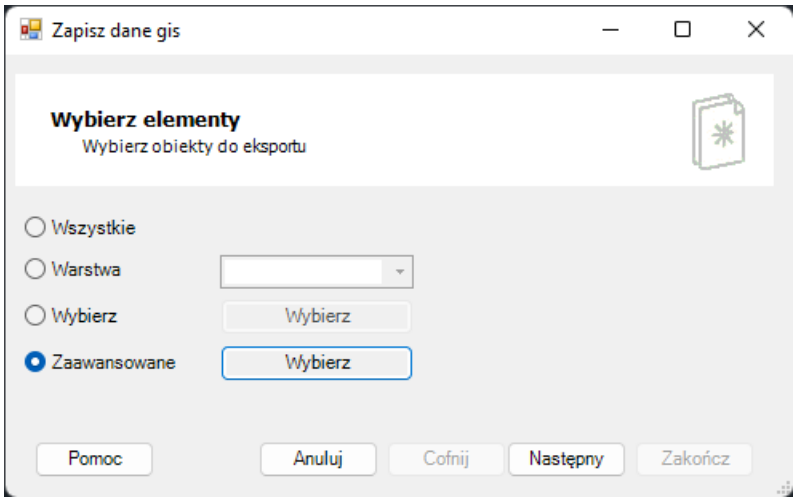
### Import SHP

With this tool you can import .shp file to the drawing. Run the command, choose a file and click Import. You can also label with one category of the file or fill with hatch.

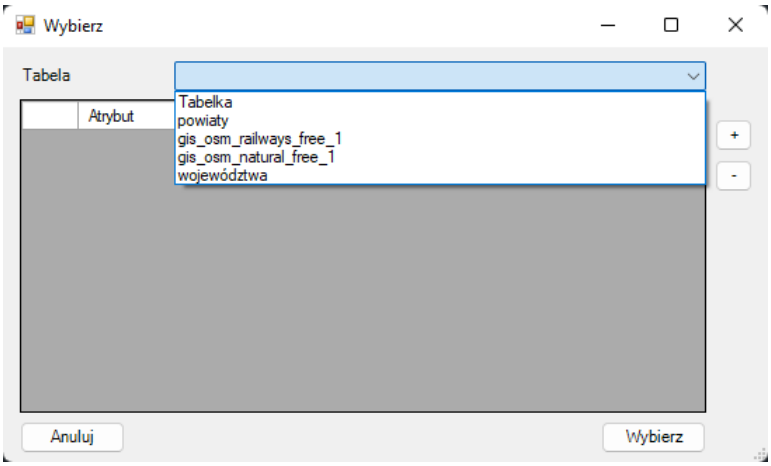



### Export SHP

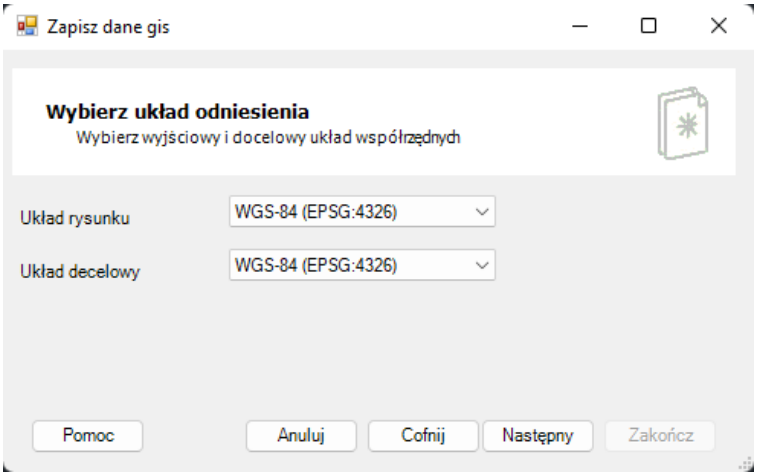
With this function you can export elements of the project with set values. Run the command so the window will pop out:



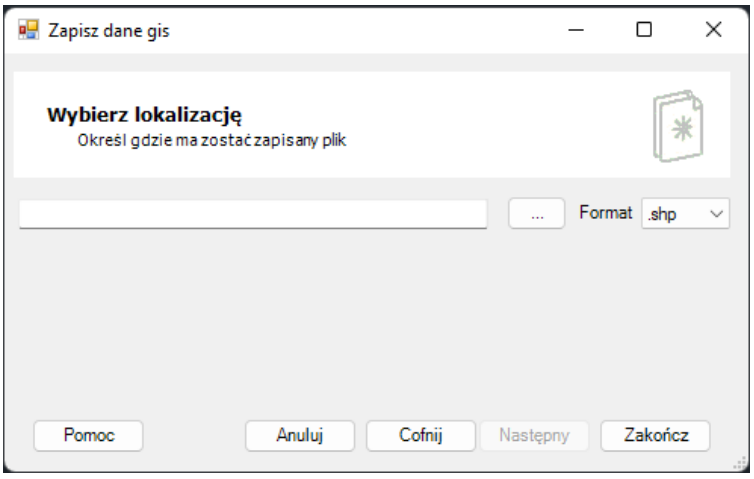

You can choose to export all, one layer, selected elements or one table.




In next window you should choose a reference systems to save to.



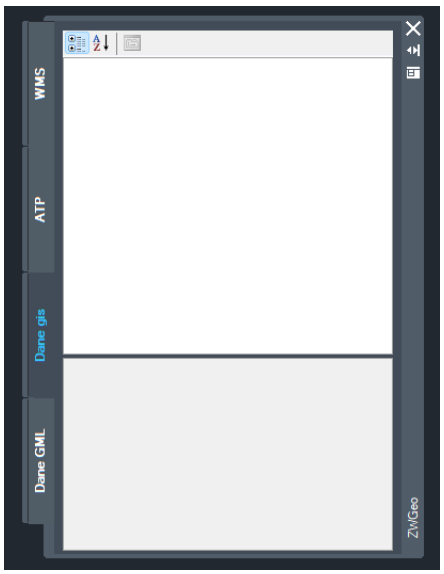

With last window, all there is to do is choose a location of the file to be saved in.




## Data

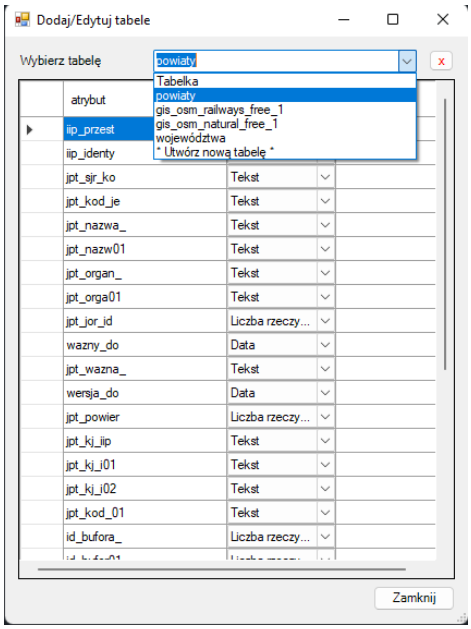
### Gis data panel

With this command you can turn on the Gis data panel on.



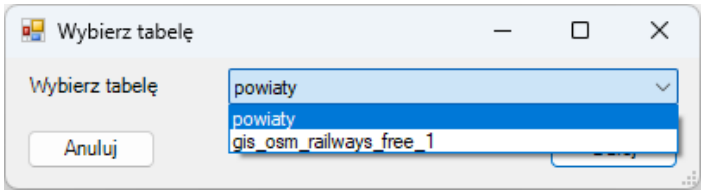

### Data: Table edit

You can use this function to create or edit a table, that is used to label objects in your drawing.




### Data: Add data

This function allows you to add a point or polyline to a table. After running the command, just point at proper table and object.



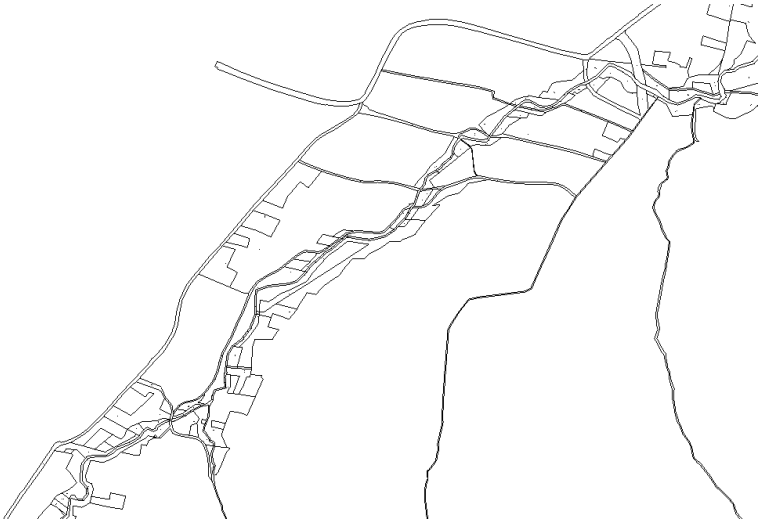
### Data: Remove data

You can use this command to remove any element off the table. Run the function, then select proper elements and confirm with Enter.

## GML

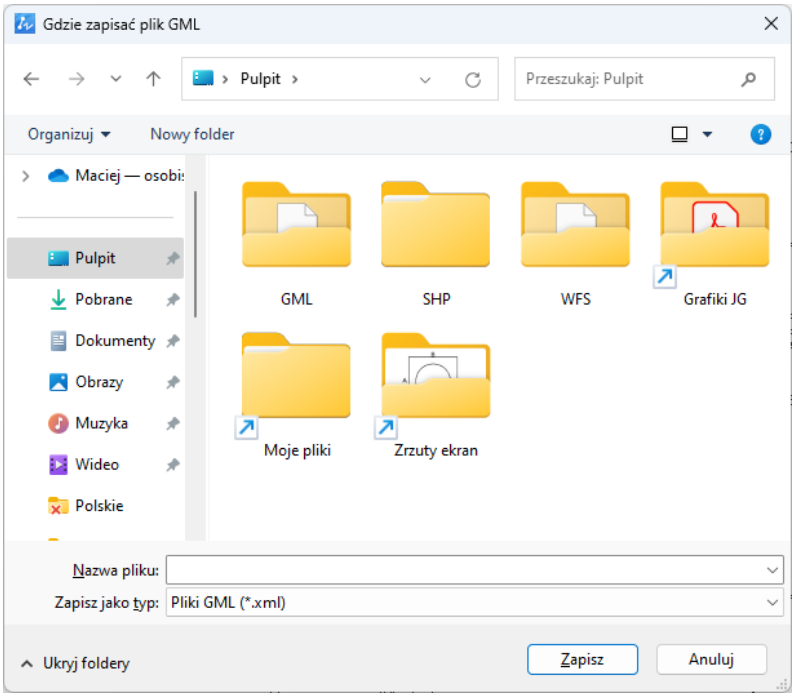
### GML Import

This function can import a GML file into a drawing.



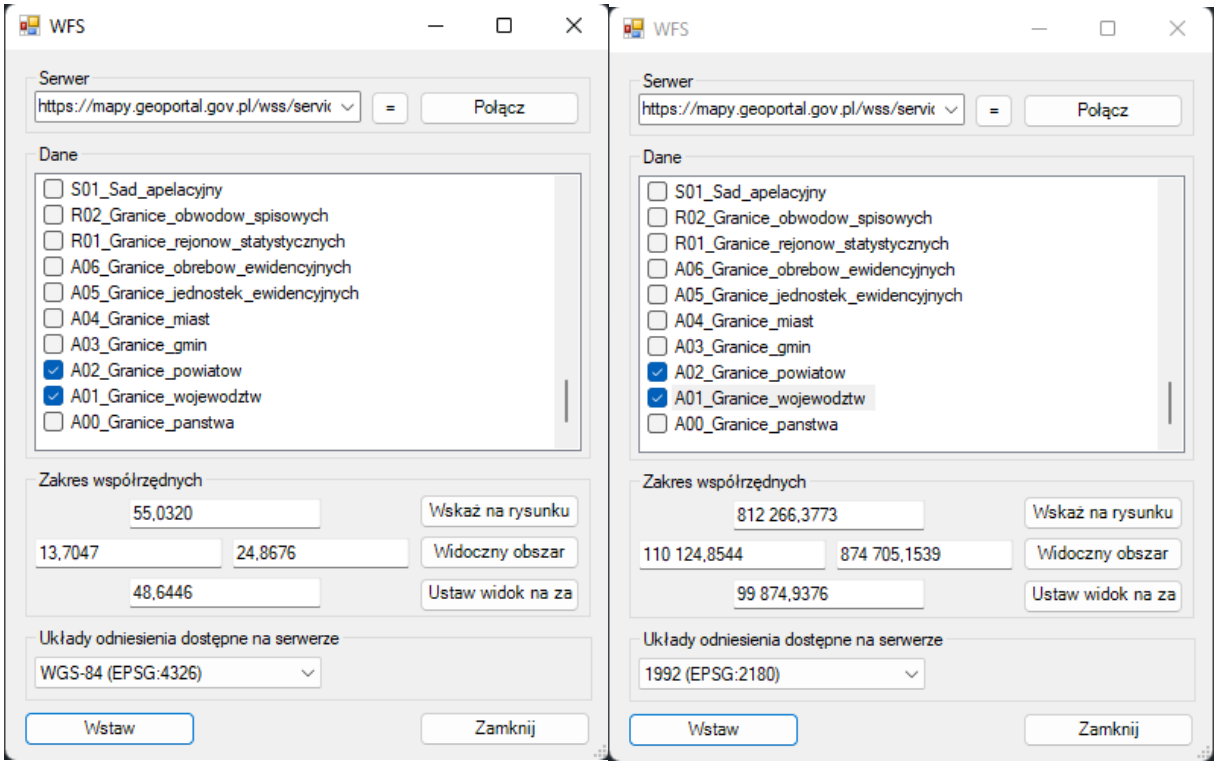
### GML Export

This function can be used to export a piece of a drawing into GML file. You need to start the command, and then select needed elements, then press Enter.



## WFS Import

You can use this function to insert WFS data from a server directly into your drawing. In order to do so, you need to copy an address of a service to the top box and connect.




Here is the effect of importing WFS map with Polish borders.

## WMS

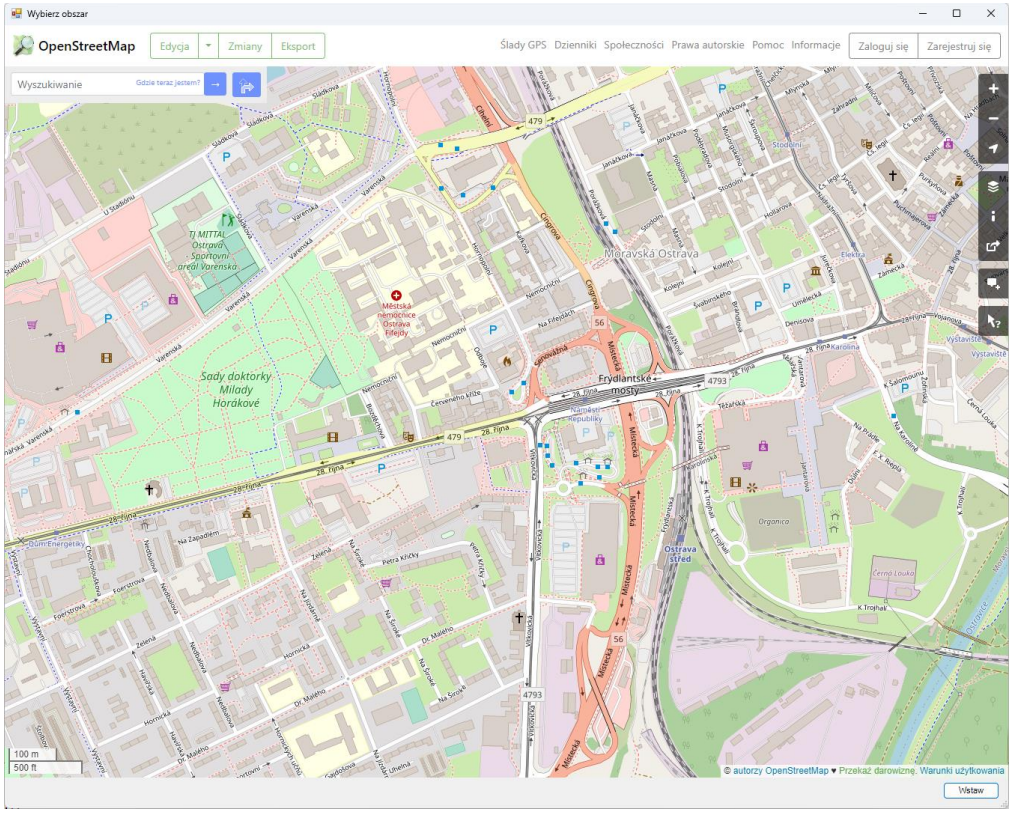
### WMS_Import

With this function you can import WMS map from Polish servers. You can choose a server and decide which features are to be imported.

## OSM

### OpenStreetMap

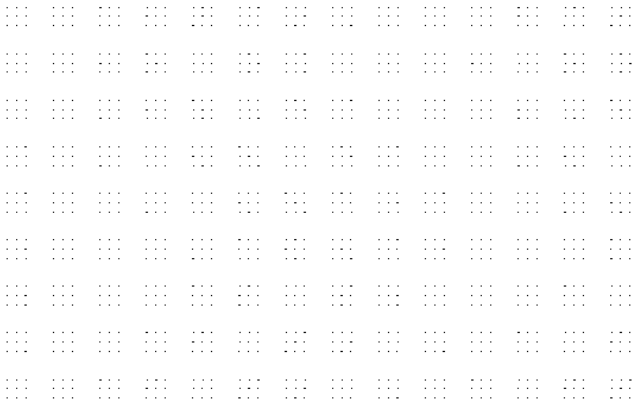
This function enables you to insert a map as a raster image from any place using OpenStreetMaps. After running the command, open a map you want to be placed and click Insert. You may have to choose a reference system as well.



## H

## H

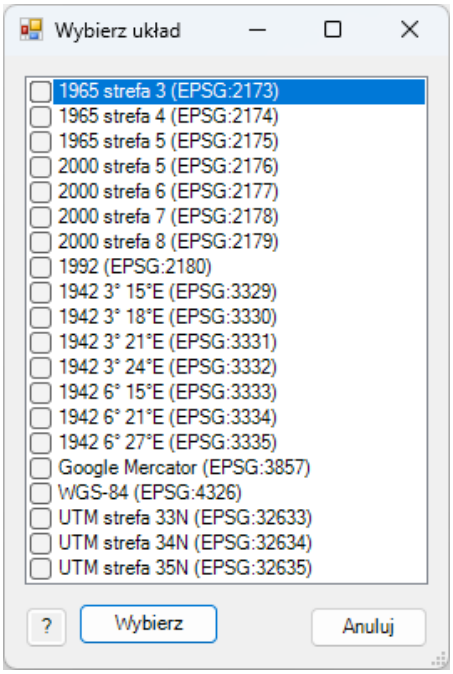
With this function you can easily set up points or blocks in the drawing, or copy them to fill an area. After running the command, choose a point or a block to be copied, then start inserting them. You can also type A as Area in command tab to fill a rectangular area with your objects. You can also type D as Density to control distance between elements.



# Reference systems

## Set reference systems

You can set a reference system in your drawing with this command. The window will pop out, in which you can choose the system you need.

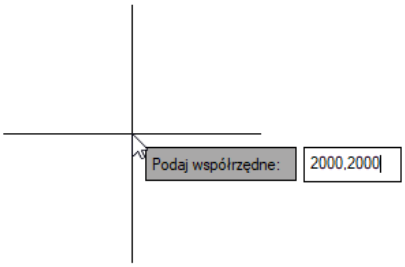


### Transform drawing

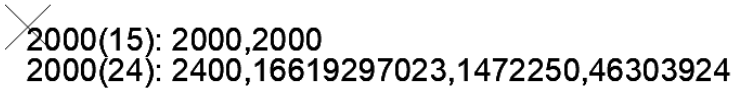
With this function you can convert reference system in your drawing into another geodetic reference system. After executing the command and choosing a new system, a copy of it will be saved with date and time, and the current drawing will be converted into the new reference system.

### Mark coordinate

You can use Mark coordinate function to insert a point into your drawing from another reference system. The system will ask for a system and then for coordinates to insert.



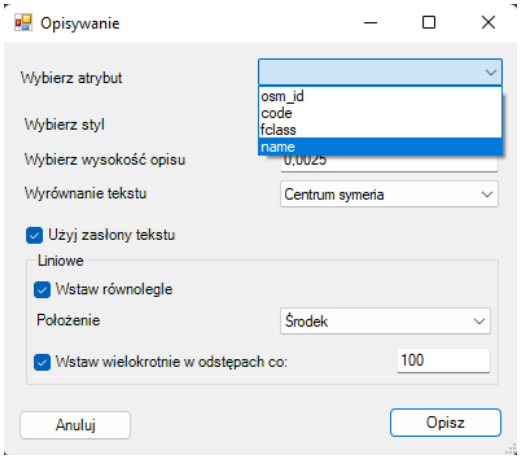

Here is an example of inserted point, labelled in two reference systems:

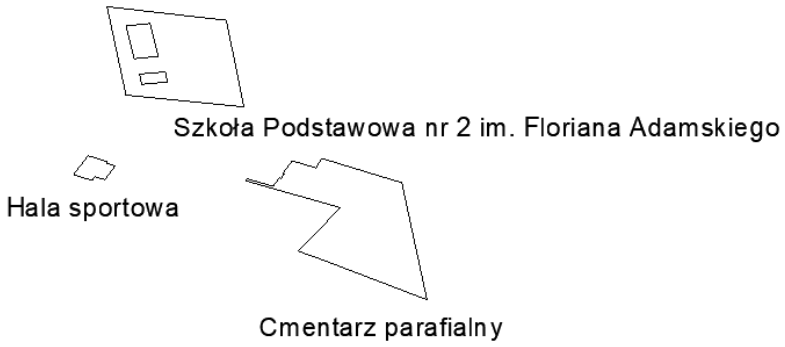



## Tools

### Label

Label function is for inserting a description of a point that is available for it. After running the command, select the objects and choose the attribute.





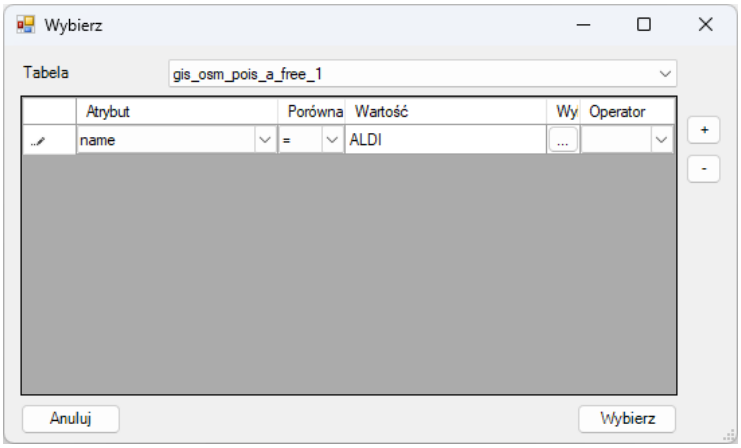

## Report

The Report command creates an editable table in a drawing. You need to select the elements you want to be placed and confirm with Enter.

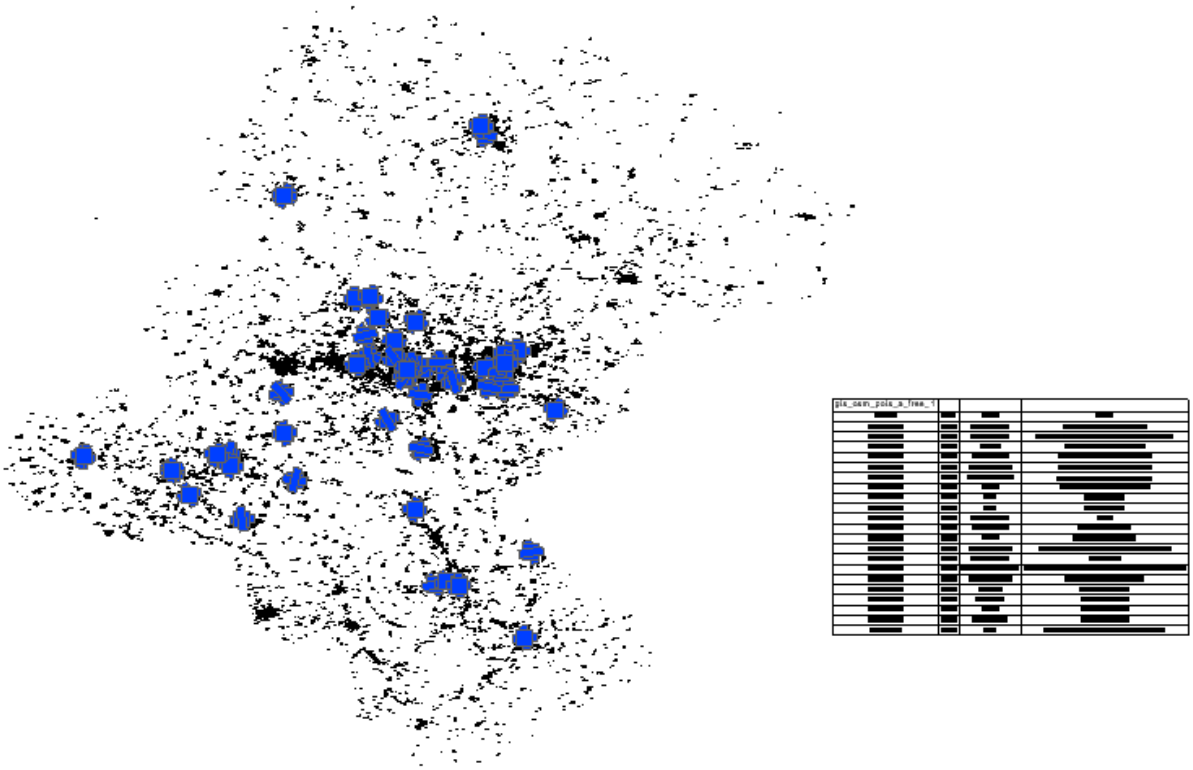
| gis_osm_pois_a_free_1 | | | |
|---|---|---|---|
| osm_id | code | fclass | name |
| 770396316 | 2083 | kindergarten | Przedszkole Miejskie nr 27 |
| 747454371 | 2083 | kindergarten | Przedszkole Akademia Kolorowych Podróży |
| 700129963 | 2082 | school | Szkoła Podstawowa nr 17 |
| 549207655 | 2744 | theme_park | Centrum Rozrywki Sosnowiec |
| 549207655 | 2251 | sports_centre | Centrum Rozrywki Sosnowiec |
| 469455864 | 2541 | car_dealership | Skoda Auto Śliwka Sosnowiec |
| 427792938 | 2950 | tower | Dawna wieża transformatora |
| 398213757 | 2204 | park | Park Sielecki |
| 398213756 | 2204 | park | Park Sielecki |
| 248842594 | 2501 | supermarket | ALDI |
| 193684679 | 2404 | guesthouse | Pensjonat Sielec |
| 193684541 | 2402 | motel | Okrąglak Residence |
| 189308365 | 2251 | sports_centre | Centrum wspinaczkowe Sport Poziom 450 |
| 180841320 | 2501 | supermarket | Biedronka |
| 180816934 | 2012 | community_centre | Sosnowieckie Centrum Organizacji Pozarządowych |
| 133017945 | 2251 | sports_centre | MOSiR Kąpielisko Sielec |
| 133002047 | 2256 | stadium | Stadion Zimowy |
| 133002039 | 2721 | attraction | Zamek Sielecki |
| 133002039 | 2731 | castle | Zamek Sielecki |
| 133002039 | 2014 | arts_centre | Zamek Sielecki |
| 70083988 | 2504 | mall | Centrum Handlowe Plejada Sosnowiec |

## Select

You can use the Select function in order to select elements from one group. Just turn on the command and select a group from your table. All of the objects in this group will be selected.

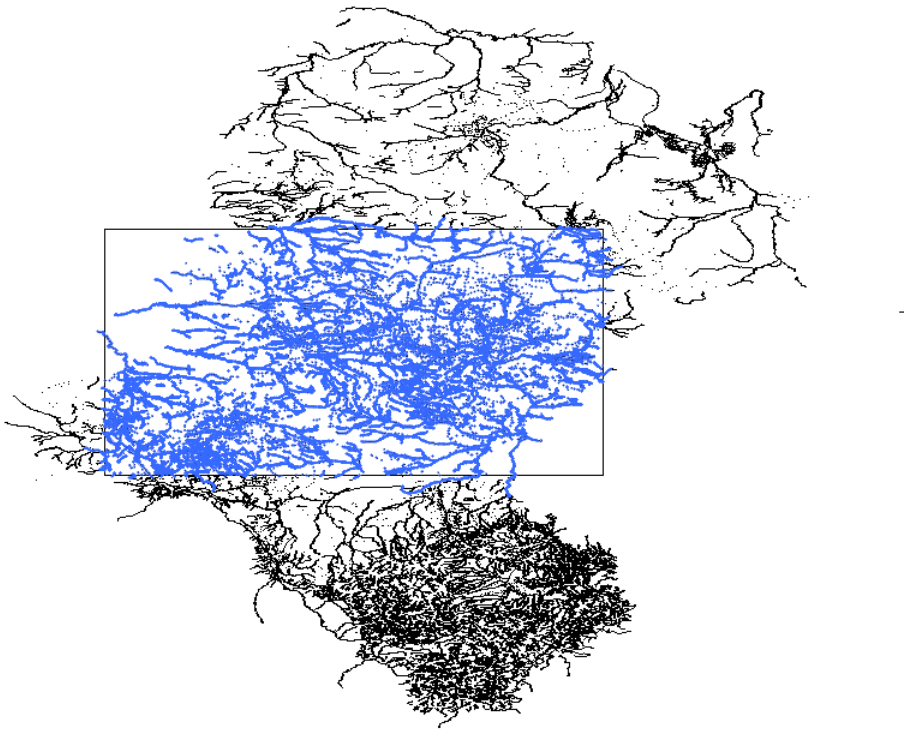


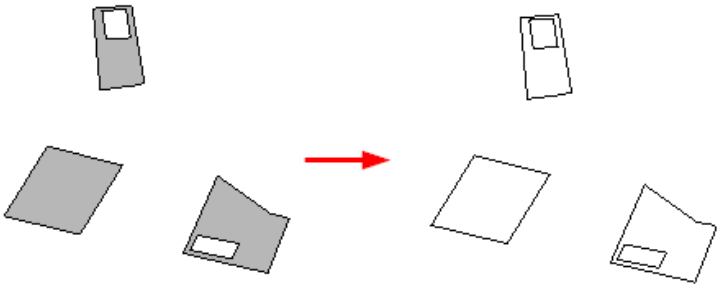
In this example, all ALDI buildings in the area were selected:



### Select by area

You can use this function to select points or lines inside an area. Run the command, select the rectangular frame and all the objects inside will be selected.



### Turn on/off fill

You can turn filling of objects on or off with this command.