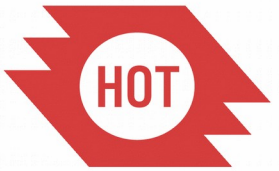


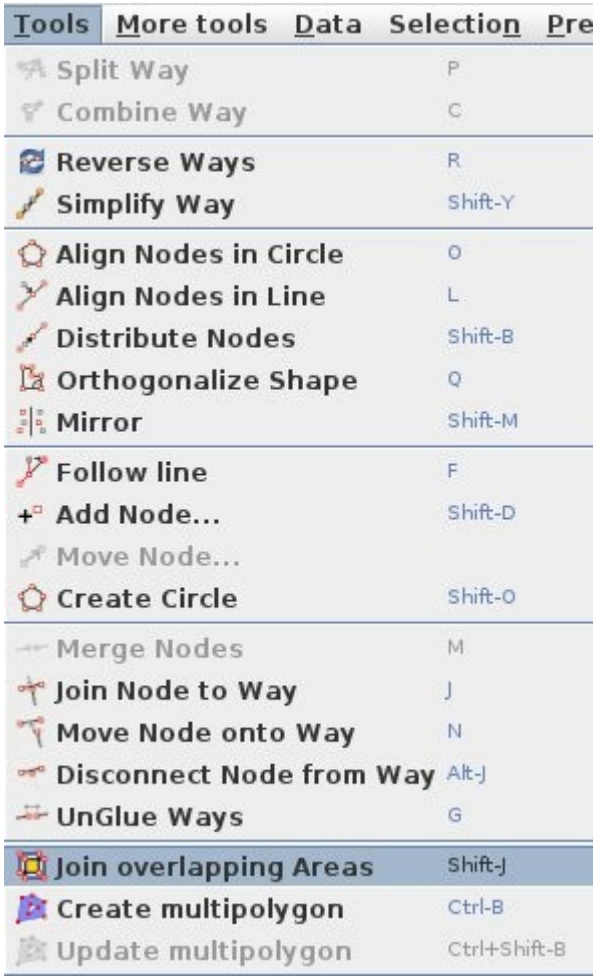
Humanitarian
OpenStreetMap
Team

JOSM in detail

Dar es Salaam, Tanzania

JOSM in Detail

JOSM has some additional tools to make it easier to draw lines and shapes. These tools are found in the Tools menu at the top of JOSM.

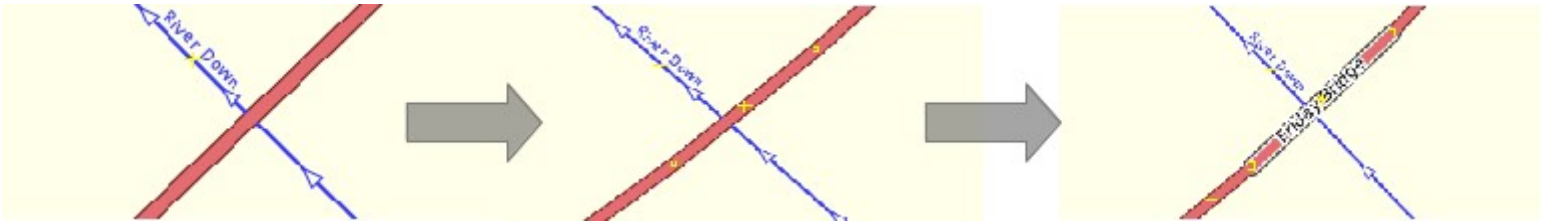


Advanced Editing Tools

- Split Way
- Combine Way
- Reverse Way
- Simplify Way
- Create Circle OR Align Nodes in Circle
- Orthogonalize Shape
- Unglue Ways

Split Way

This allows you to divide a line into two separate lines. Useful if you want to add different attributes to different parts of a road, such as a bridge. To use this function, select a point in the middle of the line that you want to split, go to *Tools* ▸ *Split Way* and your line should be split in two.



Combine Way

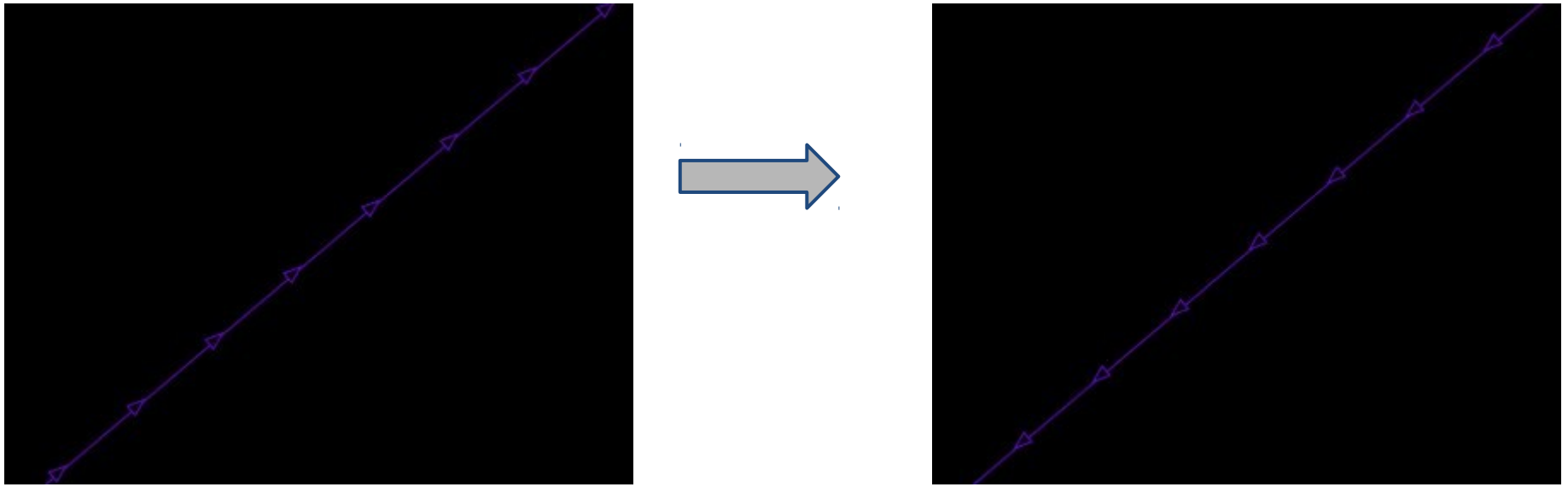
This does the opposite of Split Way. To combine two lines into a single line, they must share a single point. To use this function, select both lines that you want to combine.
You can select more than one object by holding the SHIFT key on your keyboard and clicking on each line.

Combine Way

When you have selected both lines, go to *Tools* ▸ *Combine Way*.

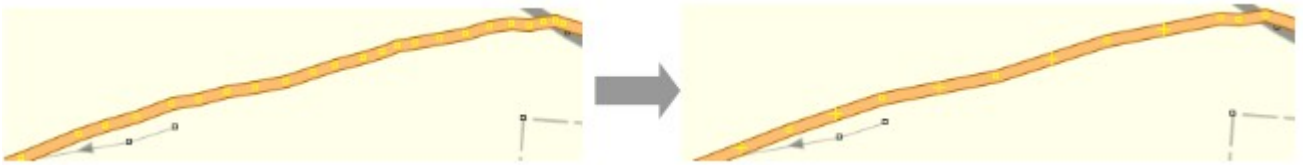
Reverse Way

This will change the direction of the line. If the line incorrectly represents a road or river that is one-way, you may want to change its direction. To Reverse Ways select the way, then go to *Tools* ▸ *Reverse Way*



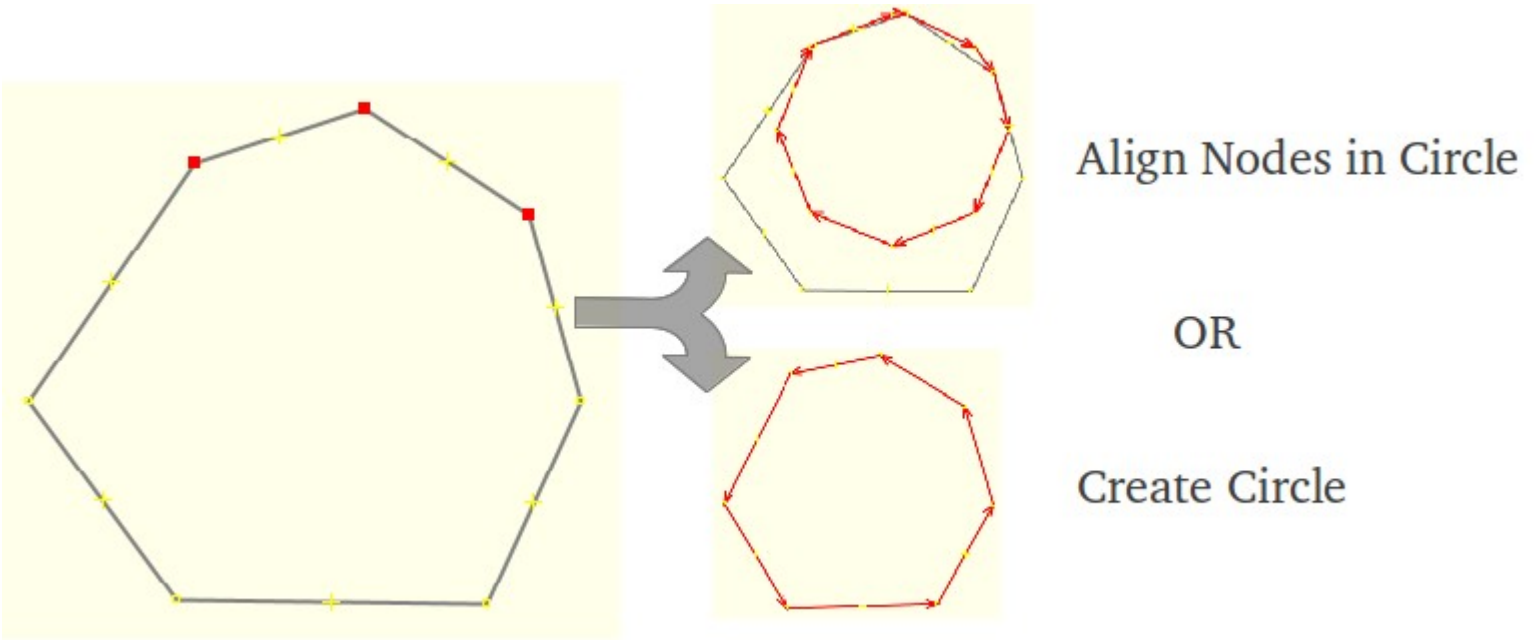
Simplify Way

If your line has too many nodes in it and you'd like to make it simpler, this will remove some of the points from a line. Select the way, then go to *Tools* ▸ *Simplify Way*



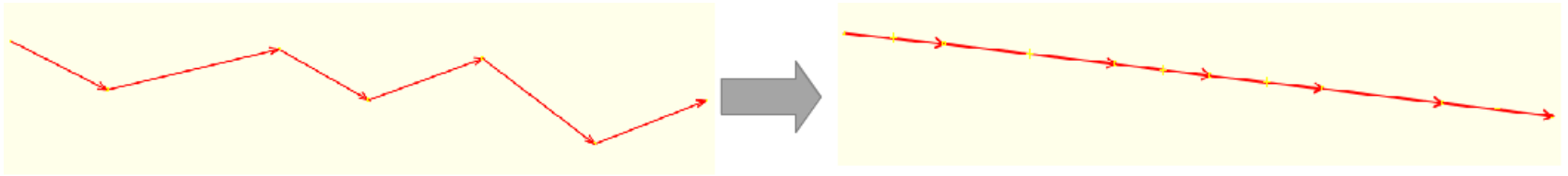
Align Nodes in Circle OR Create Circle

If you are trying to make a circular shape, draw the circle as best you can and then select three nodes and the function. It will help arrange your points in a circle. Select the way then go to *Tools ▸ Align Nodes in Circle* OR Select at least three nodes then go to *Tools ▸ Create Circle*



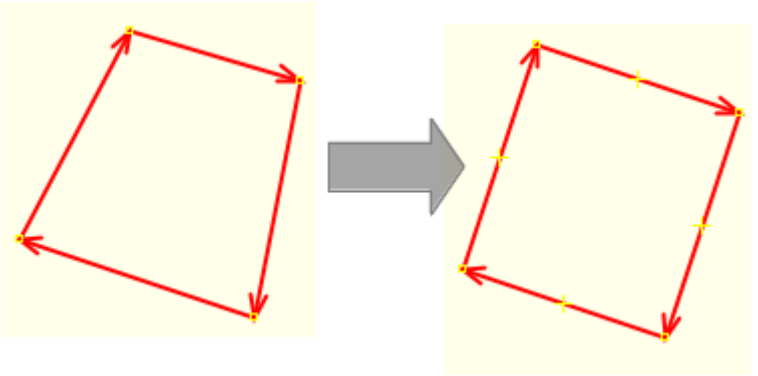
Align Nodes in Line

This function will align a series of points into a straight line. With long lines it is best to select sections of the line to straighten. Be careful as this does have the tendency to shift the line a little. To do this, select the line then go to *Tools ▸ Align Nodes in Line*



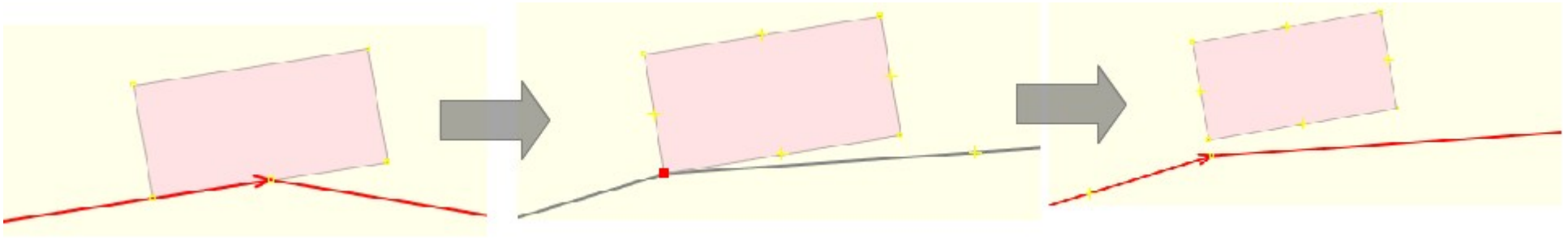
Orthogonalize Shape

This function is very useful for drawing regular shapes such as buildings. After you draw an area, this function will reshape it to have square corners. This feature is most useful for other regularly shaped features, such as tennis courts or landuse areas. To do this, select the object then go to *Tools* ▸ *Orthogonalize shape* or simply press the shortcut Q



Unglue Ways

This tool allows you to detach nodes that are connected. To do this, select either a node or one of the ways glued together, then go to *Tools* ▸ *Unglue Ways*



Plugins

JOSM allows you to install numerous plugins, which add extra functionality to the software.

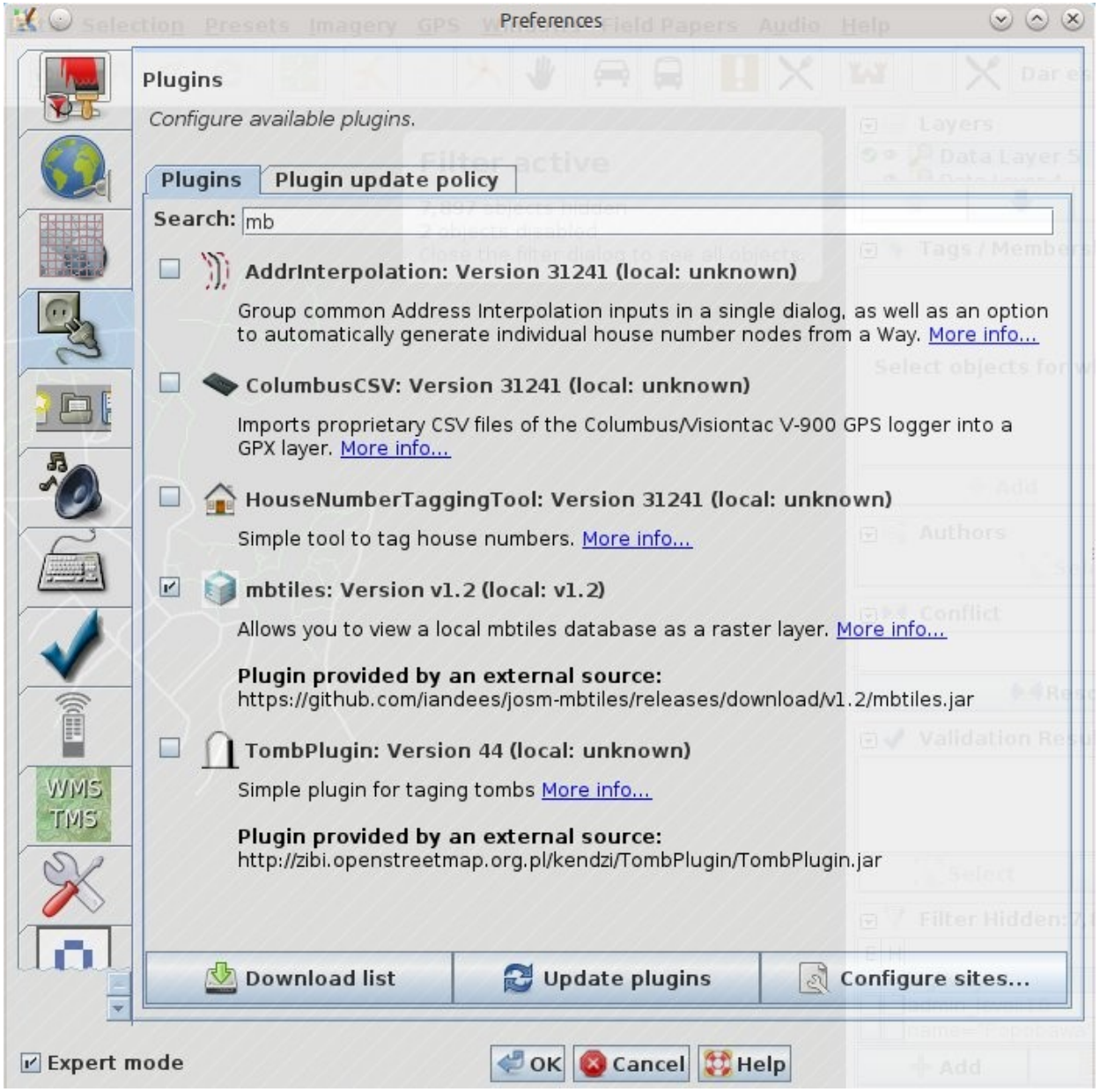
- Installing plugins
- Buildings plugin
- mbtiles
- Utilsplugin2 (More Tools)

Install plugins

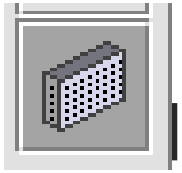
To install plugins to ***Edit > Preferences*** and click on the ***Plugins*** tab. 

- You will see a list of available plugins.
- To install a plugin you simply must check the box next to it and click **OK** at the bottom.
- Lastly, you must restart JOSM anytime you install new plugins.

Install plugins



Building plugin

 lings_tools is simple plug-in for drawing rectangular buildings.

This plugin is by far one of the most useful tools for editing. After installation, It will appear as an icon on the left.
The Building tool allows you to create shapes with 90 degree corners with just three clicks. First, trace the edge of the building and then drag out the line to make it a polygon.

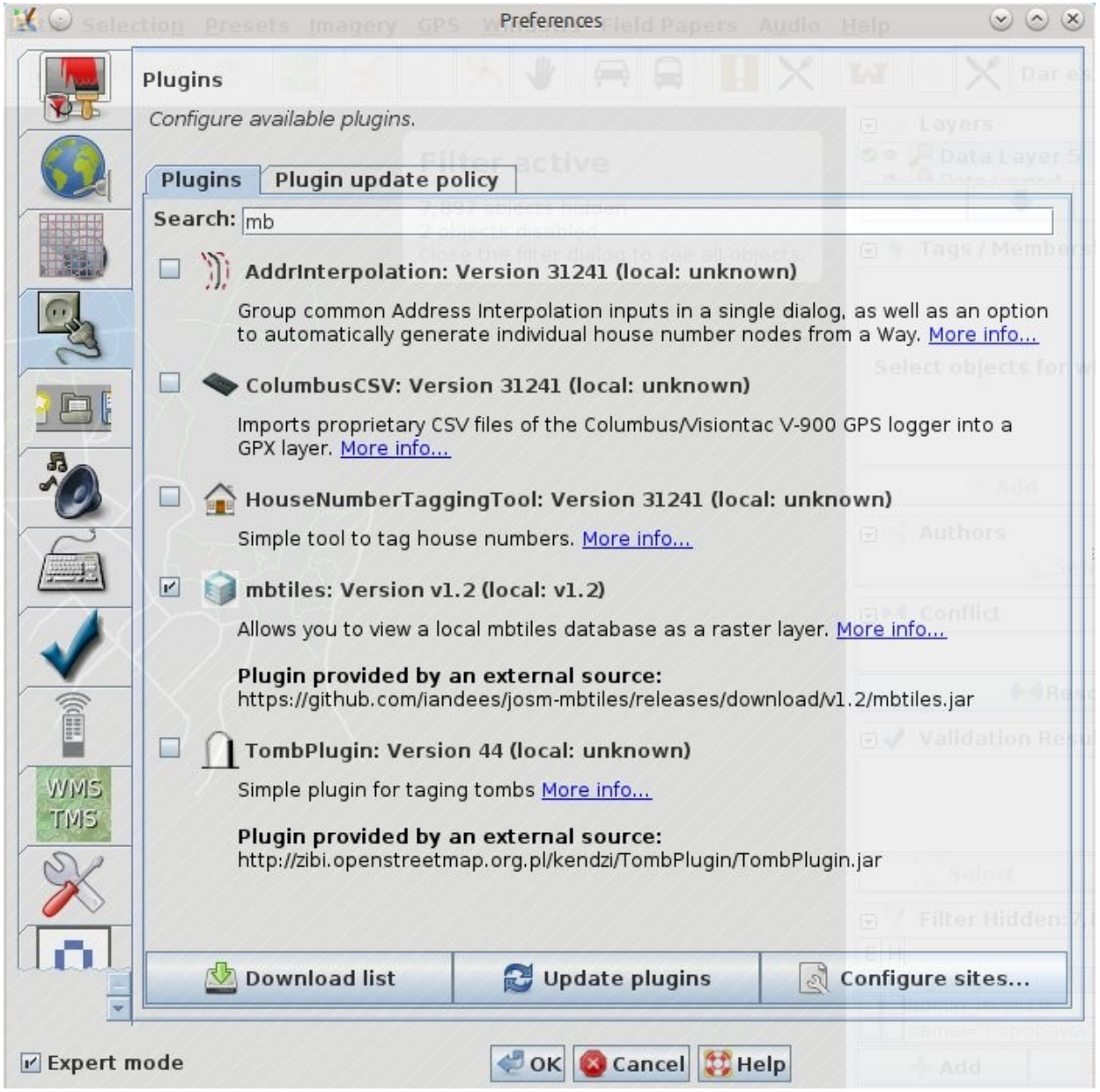
Join overlapping Layers

You can also create more complicated buildings by using the merge option. Create your building outline, select all of the polygons (press SHIFT to highlight them all) and then press *SHIFT + J* to merge the objects.

mbtiles

The mbtiles plugin allows you to view a local mbtiles database as a raster layer.
To install mbtiles, go to *Edit > Preferences>Configure Plugins*
Search for mbtiles, check the box on the left and click ok
You must restart your computer for the plugin to be active

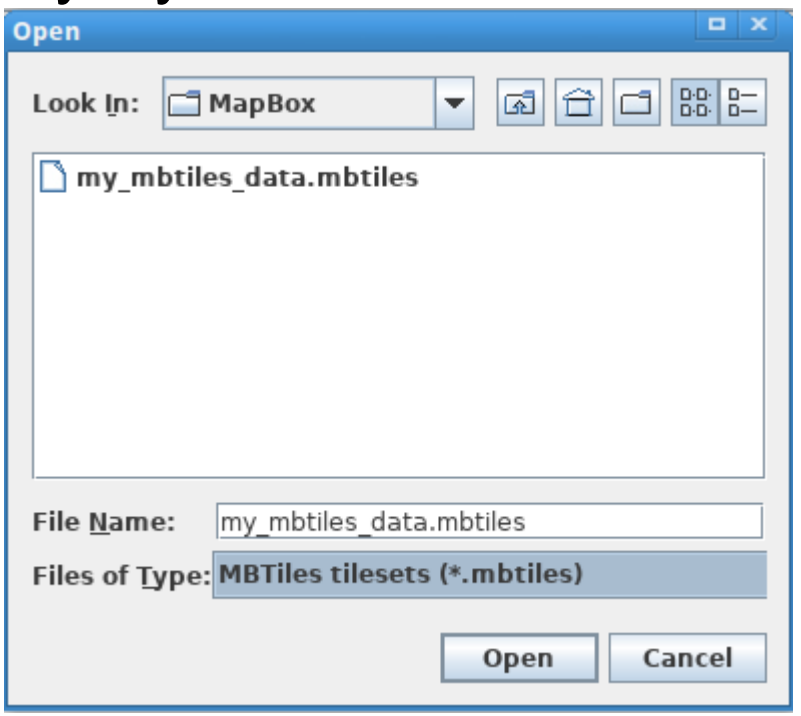
Install plugins



mbtiles

To use mbtiles in JOSM

- Go to *File* > *Open* > "Files of Type" drop down list to select the "MBTiles tilesets(*.mbtiles)" file type.
- Pick your tileset.
- Use the Layers window to turn the images on and off just like any other imagery layer.

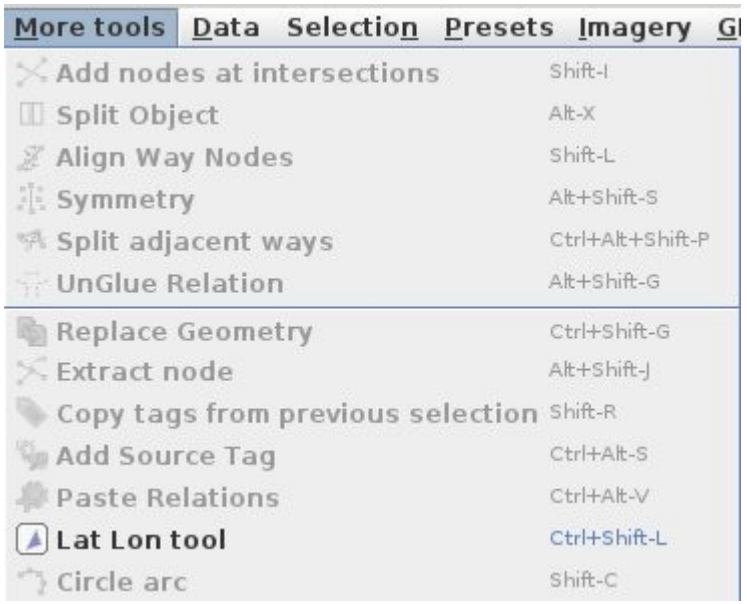


utils plugin 2

The plugin utilsplugin2 has several features that are also useful for editing.
After you install this plugin, a new menu will appear called *More Tools*.

Some of the most useful tools here are:

- Add Nodes at Intersections
- Copy Tags from Previous Selection
- Replace Geometry



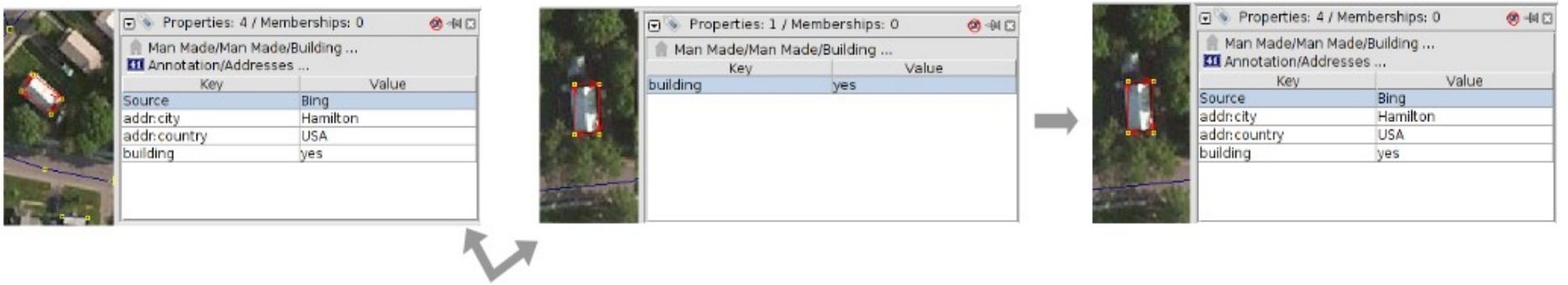
Add Nodes at Intersections

This tool is helpful for adding missing nodes in intersections of selected ways. It is good practice that roads and rivers should always have common nodes where they intersect. Select all the ways, then go to *More Tools* ▸ *Add nodes at intersection*

Copy Tags from Previous Selection

This function makes copying tags easier. If you want to create many objects with the same tags, first draw the objects. Then add the tags to one object. Click on another object and press *Shift + R* to copy the tags from the previously selected object. You can do this for all objects that you want to tag.

Note that the tags will be copied from the previously selected object.



Replace Geometry

This tool is to redraw a poorly shaped object, when you want to keep the history, attributes and ID number of that object.

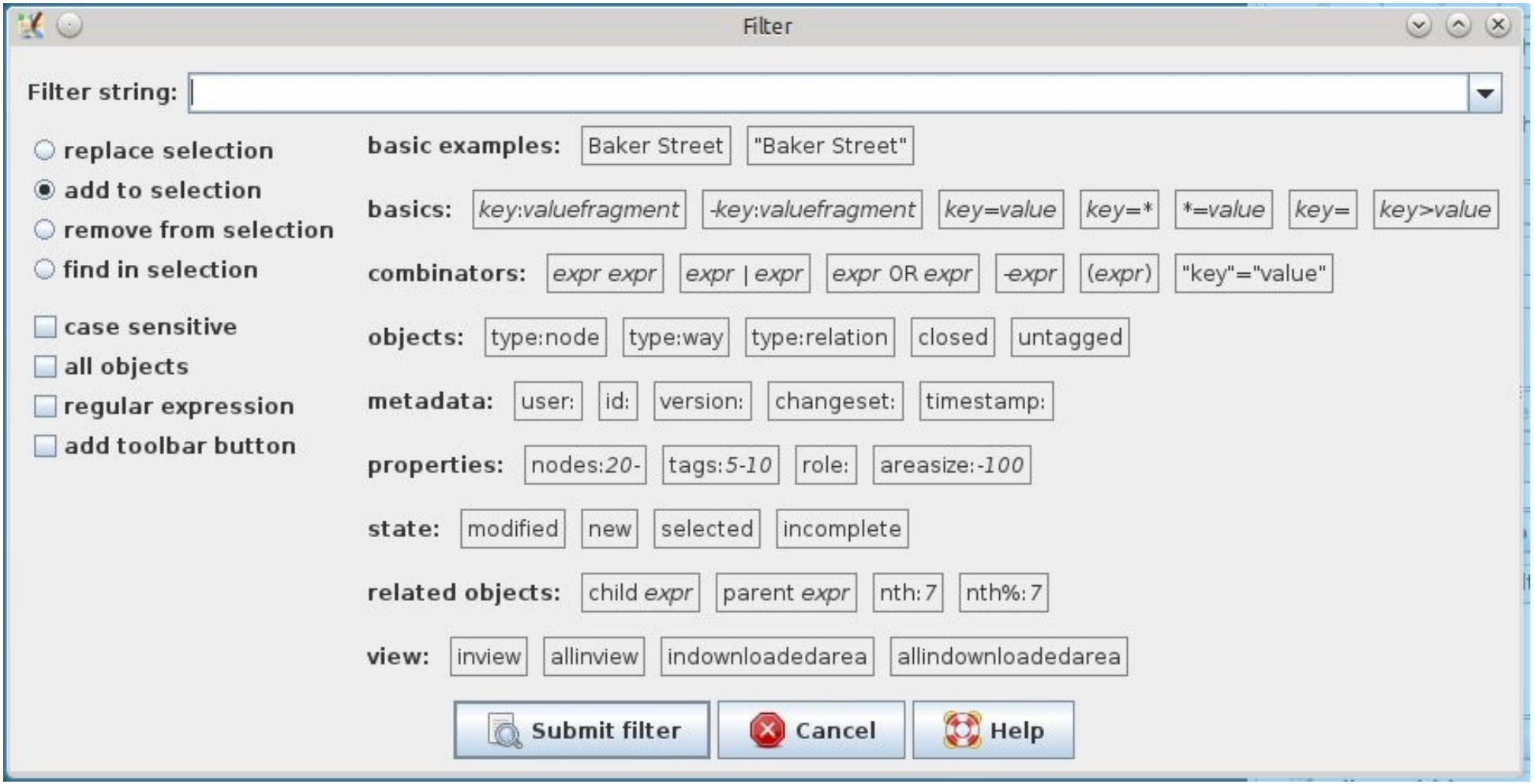
For example, if you come across a building that is complicated and drawn in a poor fashion, then instead of painfully changing each node, you can just draw the object again select the old and new object press *More Tools* ▸ *Replace Geometry* to transfer all the information over.

JOSM Filters

JOSM Filters allow you to disable, hide, select, and highlight specific groups of objects based on flexible custom parameters.

To work with filters, turn on the filters panel (Windows→Filter from the menu, or Alt+Shift+F from the keyboard). Use the +Add button on this panel to create a new filter. The filter creation window looks like this:

JOSM Filters



JOSM Filters

For example, to filter the data layer to show only roads: Add the following filter

highway=*
then click on Submit Filter

Filter Options

- **E** (*Enable*): Enable or disable this filter line.
- **H** (*Hide elements*): If this option is ticked, the chosen objects are completely hidden. Otherwise they are disabled and shown in a shade of gray.
- **Text**: The search term or property that defines the objects that are filtered.
- **I** (*Inverse Filter*): Normally, the specified objects are hidden and the rest is shown. If this option is activated, only the specified objects are shown and the rest is hidden.

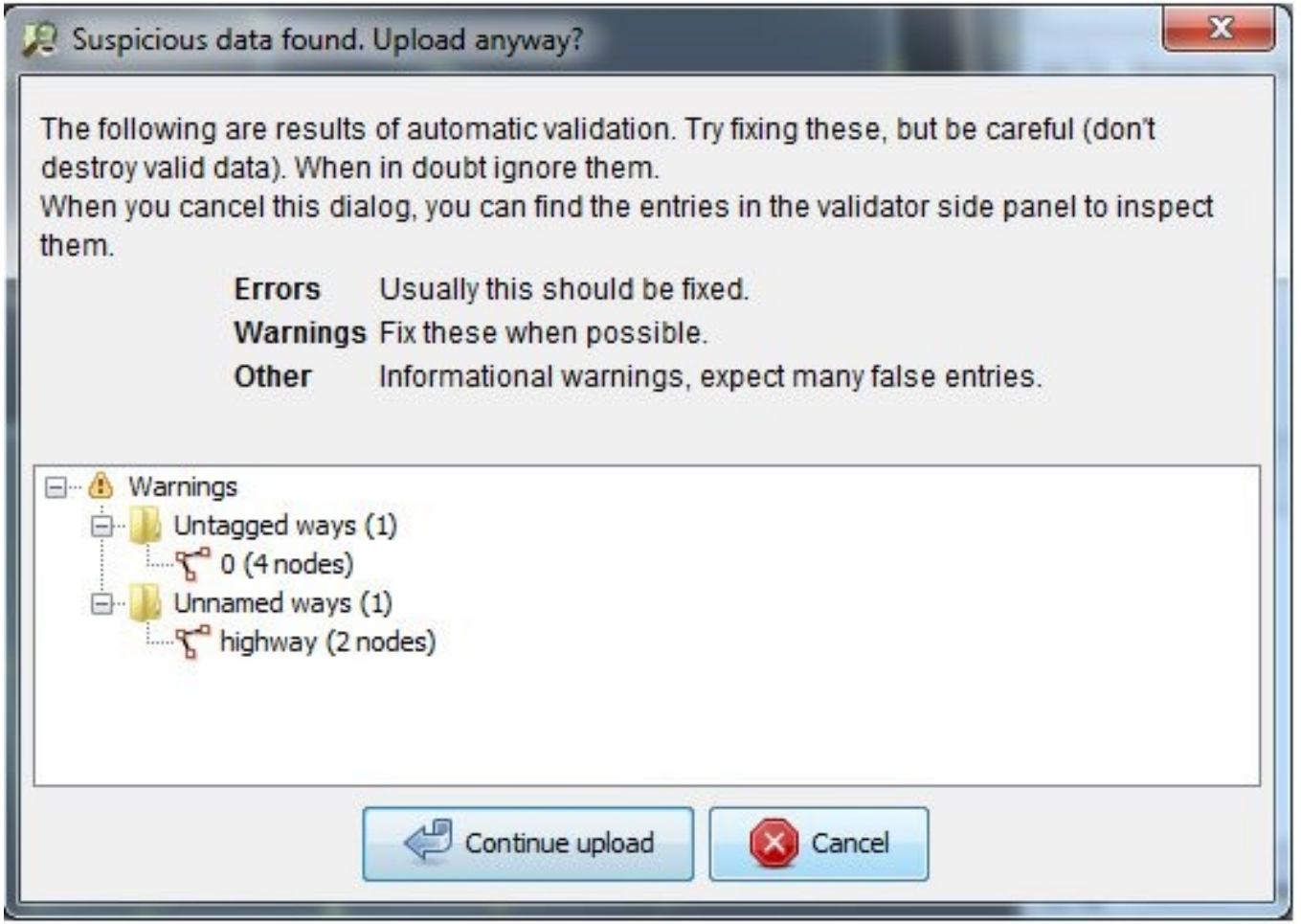
Quality Assurance

As you map more and more it is crucial to learn the “proper” way to do things.

JOSM has a validation tool, which is automated to search for errors and warnings in your data.

Errors and warnings

Sometimes when you go to upload your edits in JOSM you get a pop-up window like this:



Errors and Warnings

- **Errors:** These are important to fix, and therefore usually you should not ignore these. Examples of errors include duplicated objects or overlapping lines and polygons.
- **Warnings:** These are problems that are important to fix, but in some cases, they are tolerable.

NOTE: When you run the validation tool, you may get a very long list of errors and warnings. This is because the validation tool works on the whole map, not only the changes that you have made. You may see mistakes that other mappers have made, and you can fix them, or ignore them.

Common validation warnings

- Ways that are not closed
- Crossing buildings (overlapping buildings)
- Untagged nodes or ways
- End node near another way
- Crossing ways

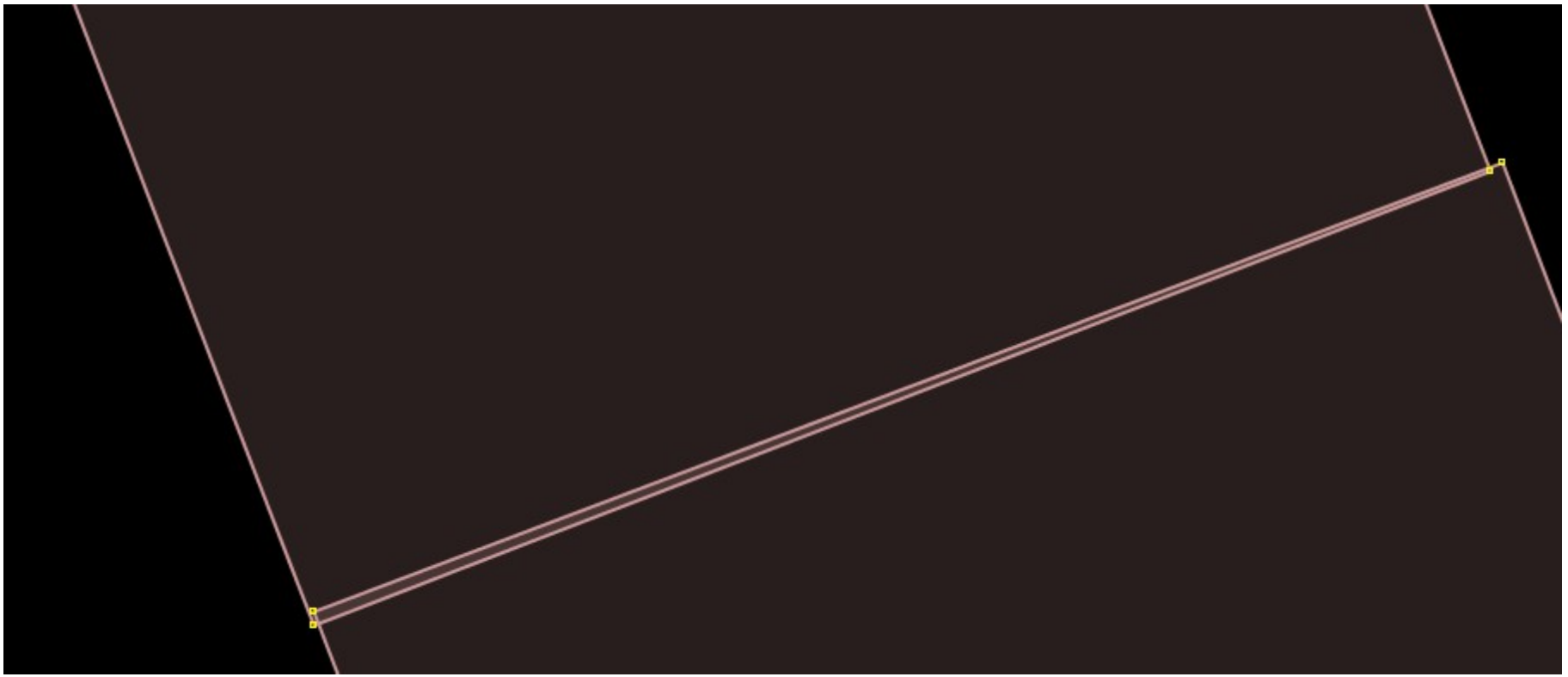
Ways that are not closed

This is usually a line that does not form a polygon. Common examples are buildings where the first node does not meet the last node.

To fix this, select both nodes and go to *Tools* ▸ *Merge Nodes* to connect them.

Crossing buildings (overlapping buildings)

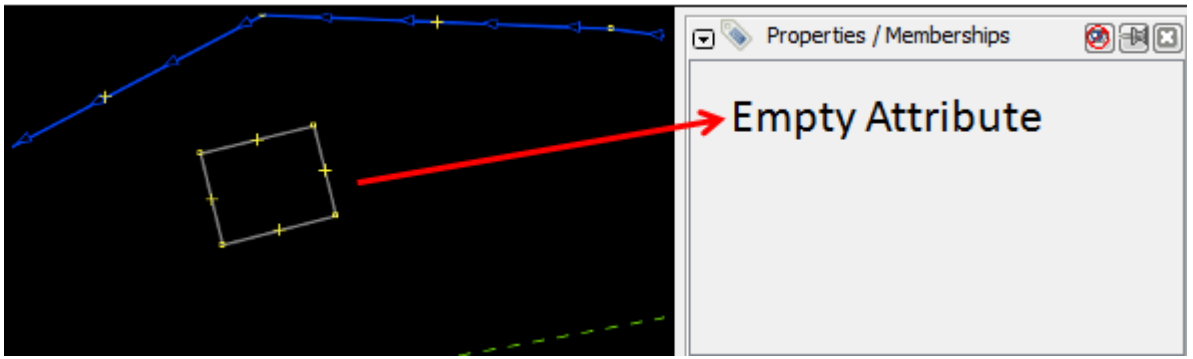
This means that buildings are overlapping each other.



To fix this, move the nodes of one of the buildings outside of the other building. It is possible for two buildings to share nodes, if the buildings share a common wall. But two buildings cannot overlap with one another.

Untagged nodes or ways

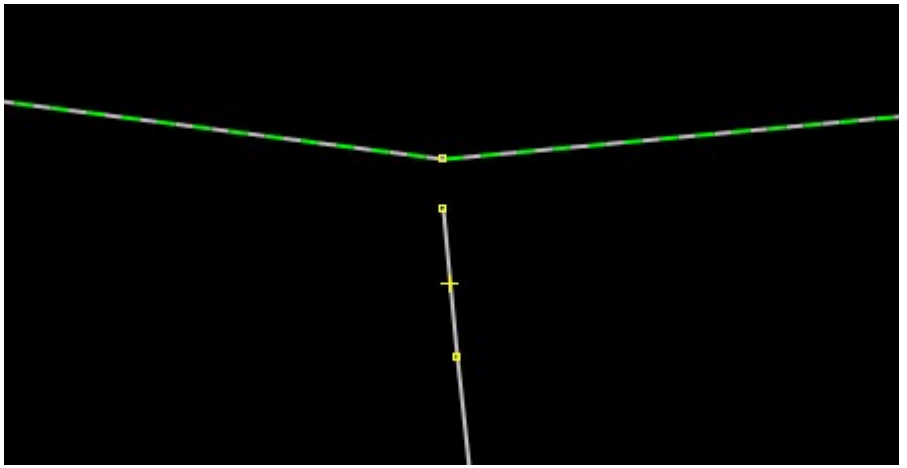
If someone draws a point or a line but forgets to give it any tags, then it is useless, because it does not mean anything.



To fix this, apply tags to the object to identify it, or delete it if it is a mistake.

End node near another way

If a line ends very close to another line but does not connect, this raises a warning.
Many times this warning is not important, but it helps to find road intersections that are supposed to connect but do not.



Crossing ways

Lines that cross other lines without being connected will raise warnings. Many times this is not a problem, because the crossing ways are intentional - such as in the case of bridges, or streets and rivers that cross landuse polygons. However, it is sometimes helpful to find errors.