

Working with GeODinQGIS

GeODinQGIS is a plugin to connect QGIS with the software GeODin. This allows you to use GeODin databases in QGIS. Please keep your version of GeODin up to date. It is important to have the 32-bit version of QGIS installed otherwise no databases can be loaded.

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1 Overview

After installing the plugin in QGIS these plugin buttons are added to the toolbar.



These are from left to right:

1. The interface of GeODinQGIS
2. The settings menu
3. The refresh button to reload QGIS layers
4. The help.

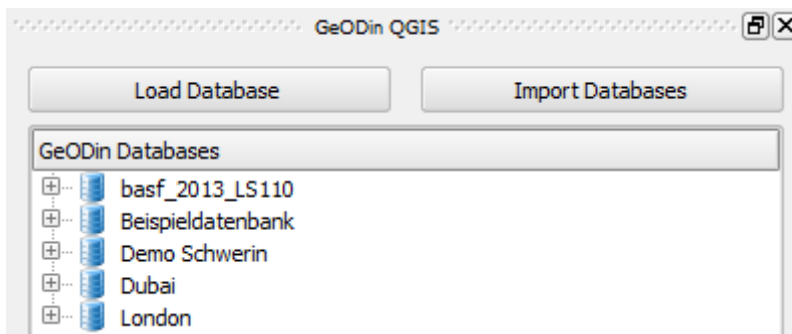
The flag shows the current plugin operating language and is free to choose. Initially only the languages English and German are available to choose from.

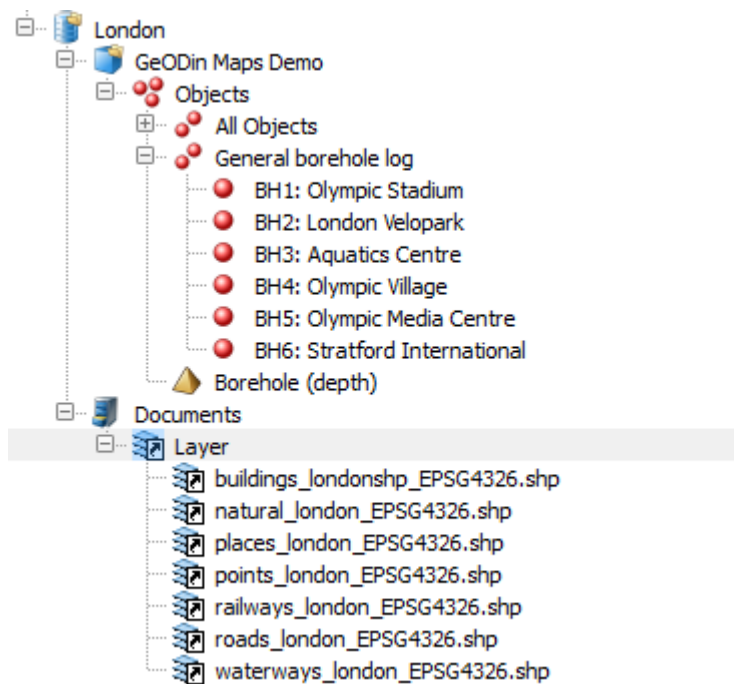
A right docked window opens with a click on the GeODin button in the toolbar.



A click on the button "Load Database" allows you to load a database from the computer's file system.

The button "Import Databases" reads the windows registry and loads the registered databases.

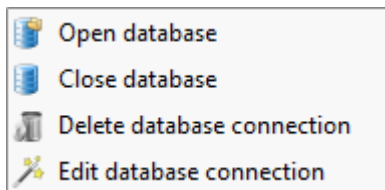




This method only shows databases which were created with GeODin. Other databases, which might have been added by manipulation of the geodin.ini file, receive no consideration since they are not listed in the windows registry. A database cannot be loaded in QGIS, if the database was deleted from the file system. However, there might be a reference in the Windows registry, if the database connection was not deleted in GeODin.

The view copies the visualisation of the GeODin object manager.

2 First steps

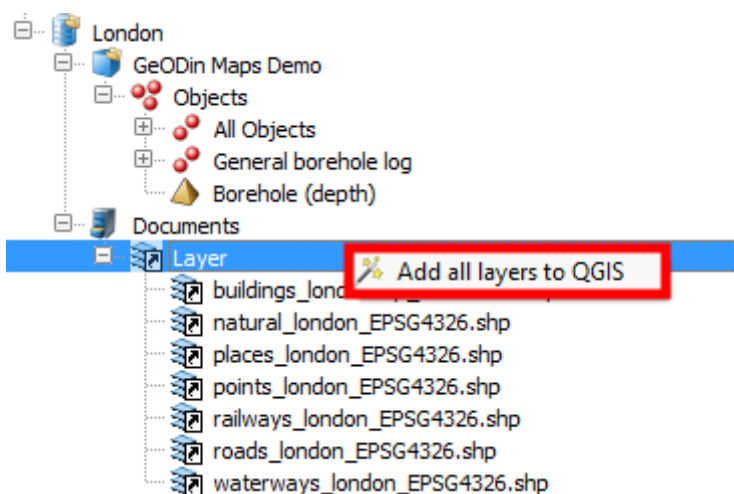


Use the right click menu on the database level to display database management options.

Editing this menu allows the edition or deletion of a database connection. This only applies to the connection to QGIS, the database itself and the connection to GeODin are not affected.

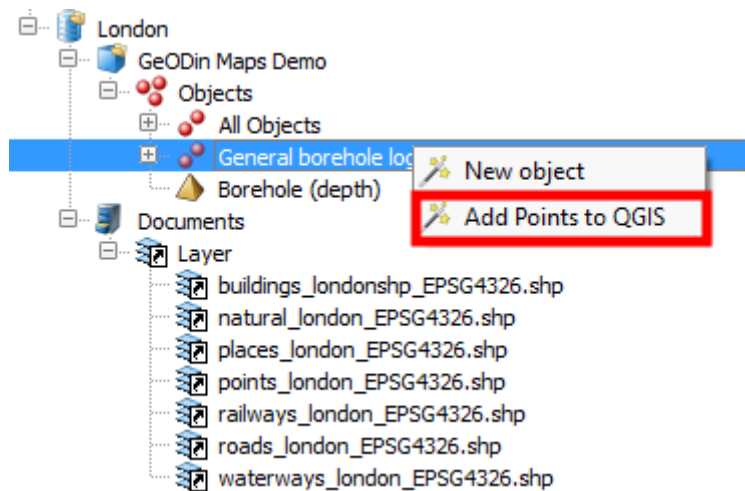
3 Visualisation in QGIS

In addition to the database objects the database shape files are imported to QGIS, if they were properly stored in the GeODin folder "Documents". As they are vector files they can easily added to the QGIS map canvas.



The right click menu is called to add the proper group or file to the map. The shape file already has a geospatial reference, so no dialogue is needed to choose the correct coordinate system.

In the same manner all objects of a project or objects of one object type can be added to the map. Hence the right click menu can be accessed at the node "All Objects" or other object types.



These points are stored in a temporary vector file. A dialogue opens afterwards to define the correct projections for the vector file.

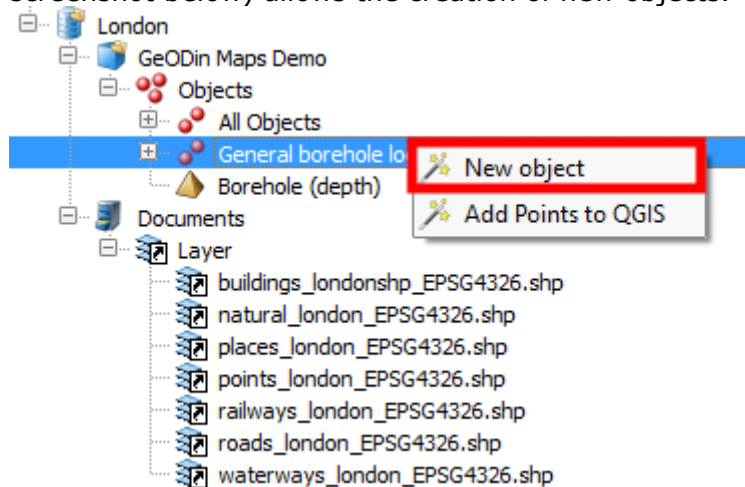
Note: Cancelling the dialogue for the selection of a coordinate system will use the default coordinate system for spatial reference (usually WGS84). This is an internal function of QGIS and can be changed in the QGIS settings. Cancelling this process does not mean that adding the points to map is interrupted.

If objects were added to map canvas and changes have been made to the database, these changes can be synchronised with the vector file in QGIS. To do so the "refresh" button in the upper toolbar is used. This will read changes in the database and transfer them to the vector file. If the vector file was changed independently from the database, any changes will be lost.

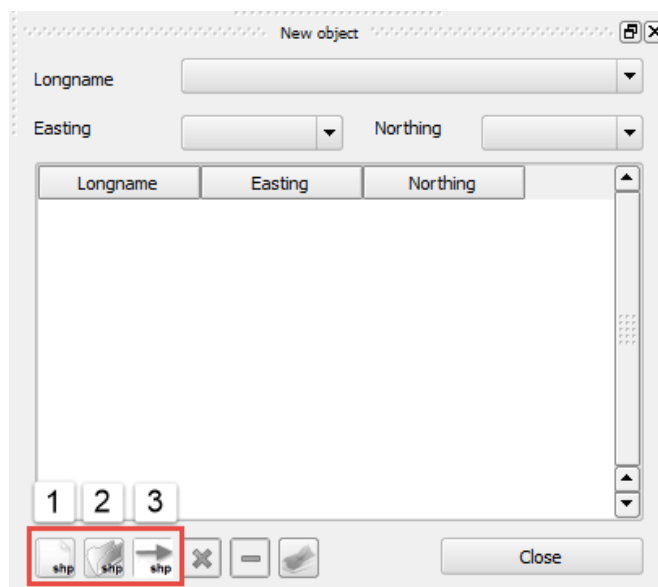


4 New object

The right-click menu on the node "All Objects" (or an Object type node as shown in the screenshot below) allows the creation of new objects.



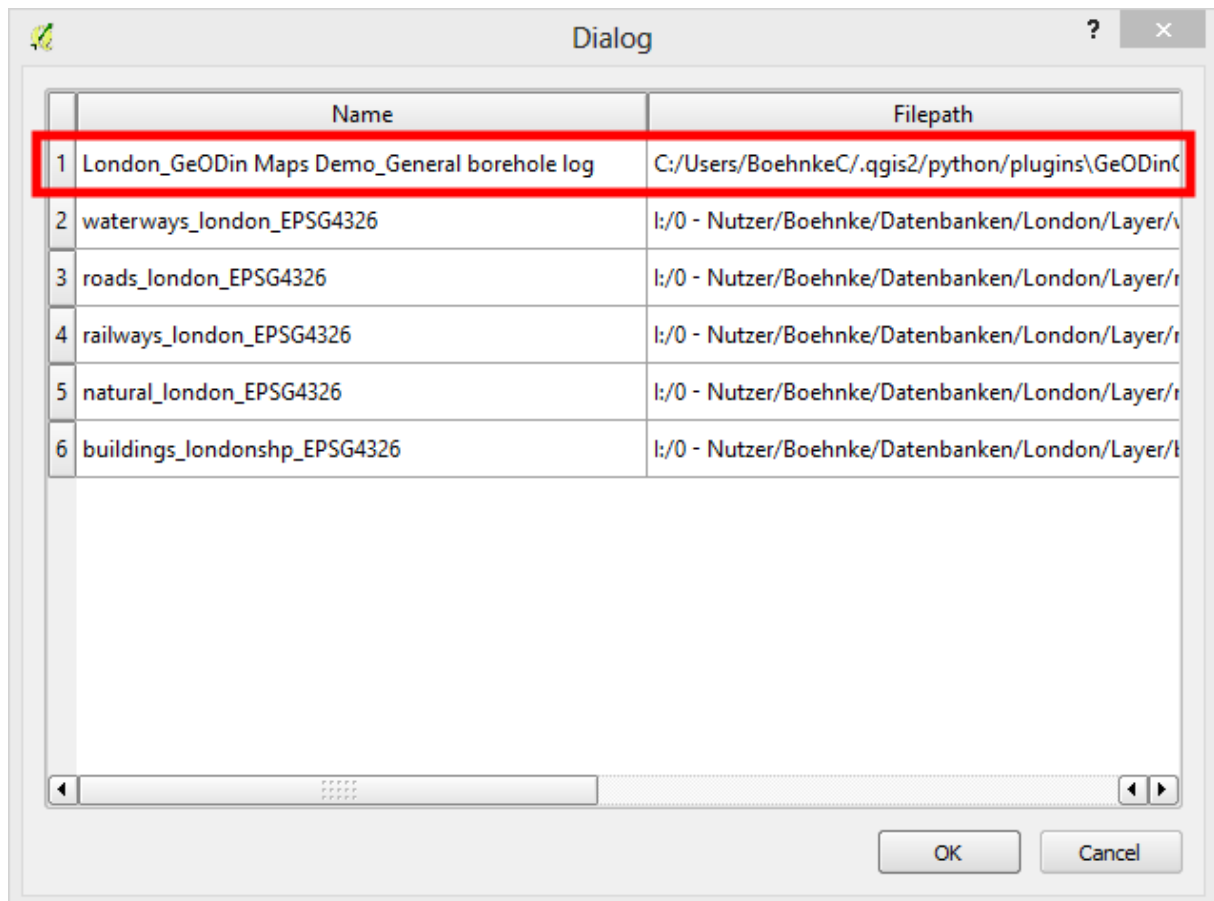
A right-docked window opens.



Adding a vector file

New objects will be stored in a vector file as points. There are three possibilities:

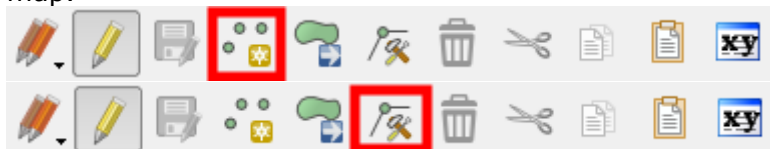
1. The user can create a new vector file in the file system. Two dialogues will open to specify the coordinate system and the path of the file. If successful, the new vector file will be loaded and displayed in the QGIS layer list.
2. The user can load an existing vector file from the file system. If successful, the new vector file will be loaded and displayed in the QGIS layer list.
3. The user can use an already loaded vector file. To do so the vector file must be "visible" in the QGIS layer list. A dialogue opens to select the file from the layer list. The file must exist in the file system, temporary files are not permitted, because they are only loaded to memory of the PC. The structure of the attribute table must correspond to the plugin's specifications. This means, that the vector file must have already been created using this plugin.



The cases 2 and 3 will fill the table of the method "New Objects" with the coordinates of the points, if the vector file is not empty.

Adding a new object

To add a new object the editing mode of QGIS is used. To do so the vector file is selected in the layer list and the editing mode is toggled on. Now new points can be created in the map.



The points can be moved by using the node tool.

The method "New Object" also allows entering exact coordinates, when the editing mode is toggled on. A double click on the relevant cell allows you to make an entry.

To delete entries from the table the editing mode must be toggled on. The entry will be deleted from the vector file and is no longer part of the map or the tables.

To accept new, changed or deleted objects the editing mode must be ended and all changes must be saved. Only then will changes be visible in the attribute and the coordinate table.

Note: Due to an error in some versions of QGIS a software crash may occur if the editing mode is ended, resulting in all changes being discarded.

Export of a new object

A new object, created by the usage of the plugin, is stored inside a vector layer but is not yet part of a GeODin database. To do so the object is selected in the coordinate table, the export coordinates will be displayed in the according text-fields at the top of the window. The button "GeODin" is now available, which was deactivated before. A click on the button opens a COM function in the background, starting the method "Data management" to add the object to the database. If more than one object is selected, the export function is deactivated. Only one object at a time can be transferred to GeODin. For adding multiple objects to the database the GeODin method "Import general data" can be used to import a shape file.

New object

Longname: LONGNAME

Easting: Northing:

	Longname	Easting	Northing
1	BH1	-0.78173191	0.80782918
2	BH2	-0.41399763	0.72716489
3	BH3	-0.62514828	0.64175563

Close

New object

Create a new object

This function creates a new object (borehole, groundwater well, CPT, monitoring points etc.) - choose the appropriate object type from the list.

Available types:

DIN 4943	SSGD4943
General borehole log	BSBORLOG
Geologischer Aufschluss DABO (GD NRW)	DABOGEOA
Geologischer Aufschluß SABIS	SABISGEO
Geologischer Aufschluss Sachsen-Anhalt	GSANHA
Geotechnische Erkundung FN ISO 22475	FNISOROR

☒ SI units (metre, centimetre ...) ☐ US Customary Units

Destination project: GeODin Maps Demo

Object data:

Name:

X: -4550.81

Y: 6720234.26

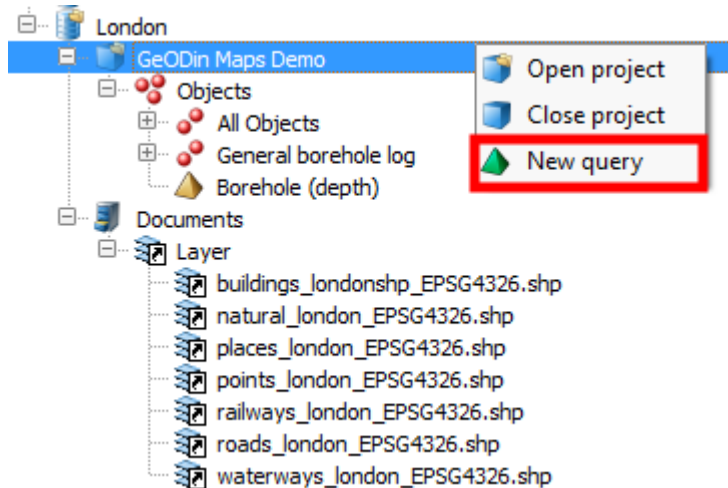
Help

OK

Cancel

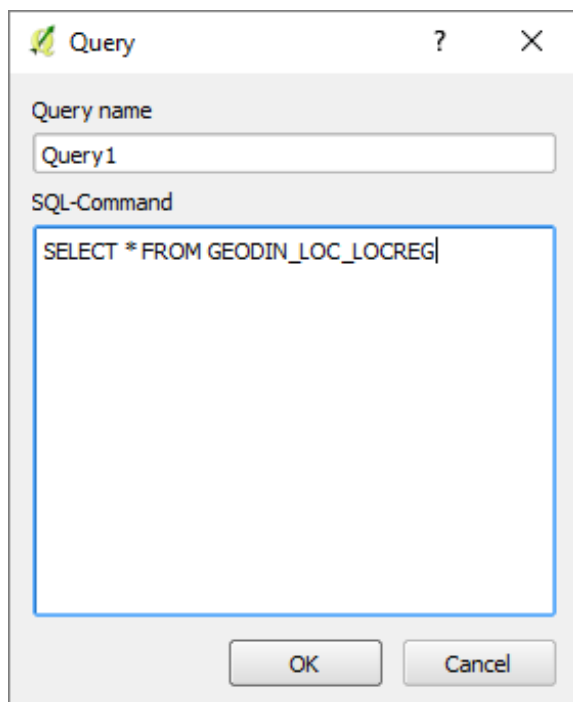
After adding the new object to the database, it will appear in an automated query inside the GeODin object manager and is not shown in the object type node for the project. For this the database has to be reloaded, the same procedure applies to QGIS.

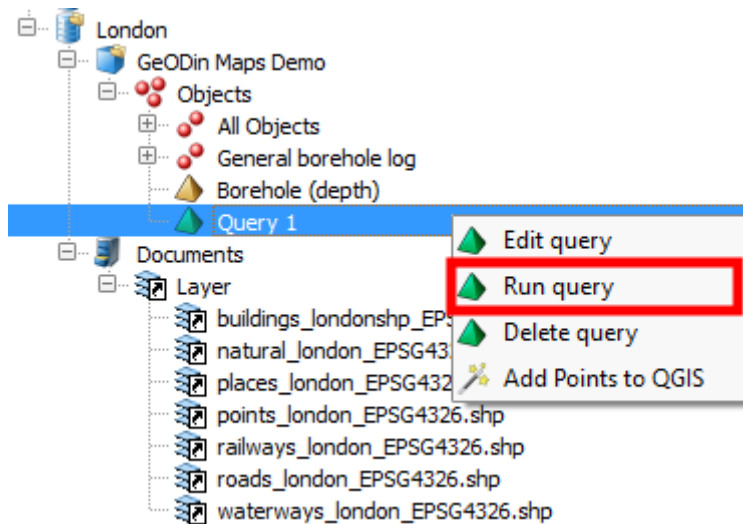
5 Queries



A right click on the project level allows the creation of queries, symbolised by a green pyramid.

The FROM statement must be entered manually, in case of complicated queries it can be copied from GeODin the query manager.





The query must be executed by the user by opening the right click menu of the query. If successful, the object tree expands automatically, showing all objects meeting the query conditions.

Custom queries, which were created in GeODin, are automatically imported to QGIS. The symbol is a yellow pyramid. These queries must be executed manually as well.

As queries act as object groups they can be added to the QGIS map canvas.

If the GeODin query contains result fields, they are transferred to QGIS in the background. They will be appended to the attribute table, if the objects are added to QGIS as a vector file.

Query creation and editing

Object queries can be created with this function. Subsequent operations apply only to the chosen selection (e.g. printing, cross-section construction etc.).

Sub-query name:

Show values

Tables:

☐ automatic

Object registration [GEODIN_LOC_LOCREG]

General information [GEODIN_LOC_BSGENINF]

Filter details [GEODIN_LOC_BSWDFILT]

Condition/View fields

SQL-Preview

Test query

no name

Condition

If GEODIN_LOC_BSWDFILT.INVZEND <5 ...

GEODIN_LOC_BSWDFILT.INVZEND <5

View fields

GEODIN_LOC_BSGENINF.SHORTNAME (

GEODIN_LOC_BSGENINF.ZCOORDem)

Sorting fields

Result fields (Export)

GEODIN_LOC_BSWDFILT.INVZBEG

GEODIN_LOC_BSWDFILT.INVZEND

GEODIN_LOC_LOCREG.SHORTNAME

GEODIN_LOC_LOCREG.ZCOORDE

GEODIN_LOC_LOCREG.LONGNAME

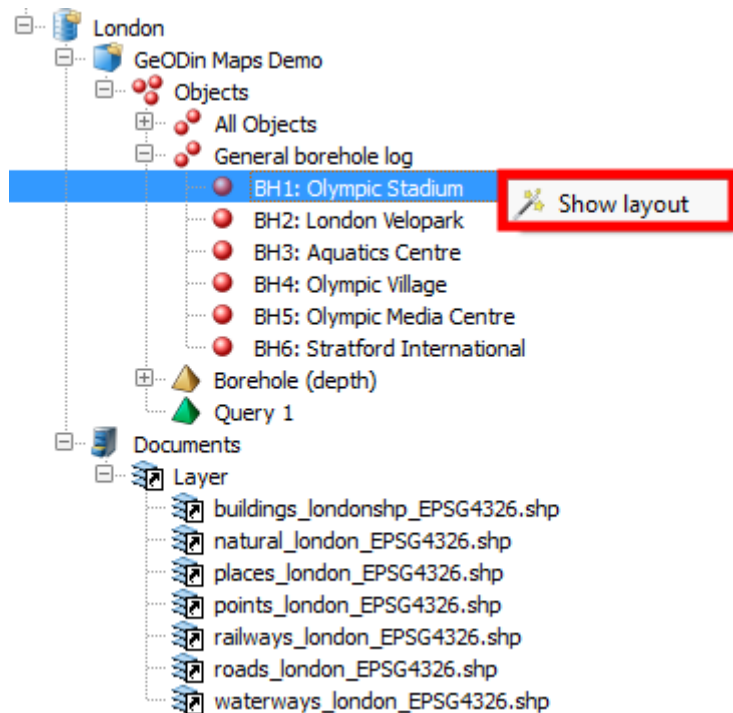
Attribute table - London_GeODin Maps Demo_Borehole (d...

	prjid	objecttype	zcoorde	invzbeg	invzend
0	D9A0T4	General borehole...	39.1	0	0.6
1	D9A0T4	General borehole...	15	0	2
2	D9A0T4	General borehole...	55	0	3

Show All Features

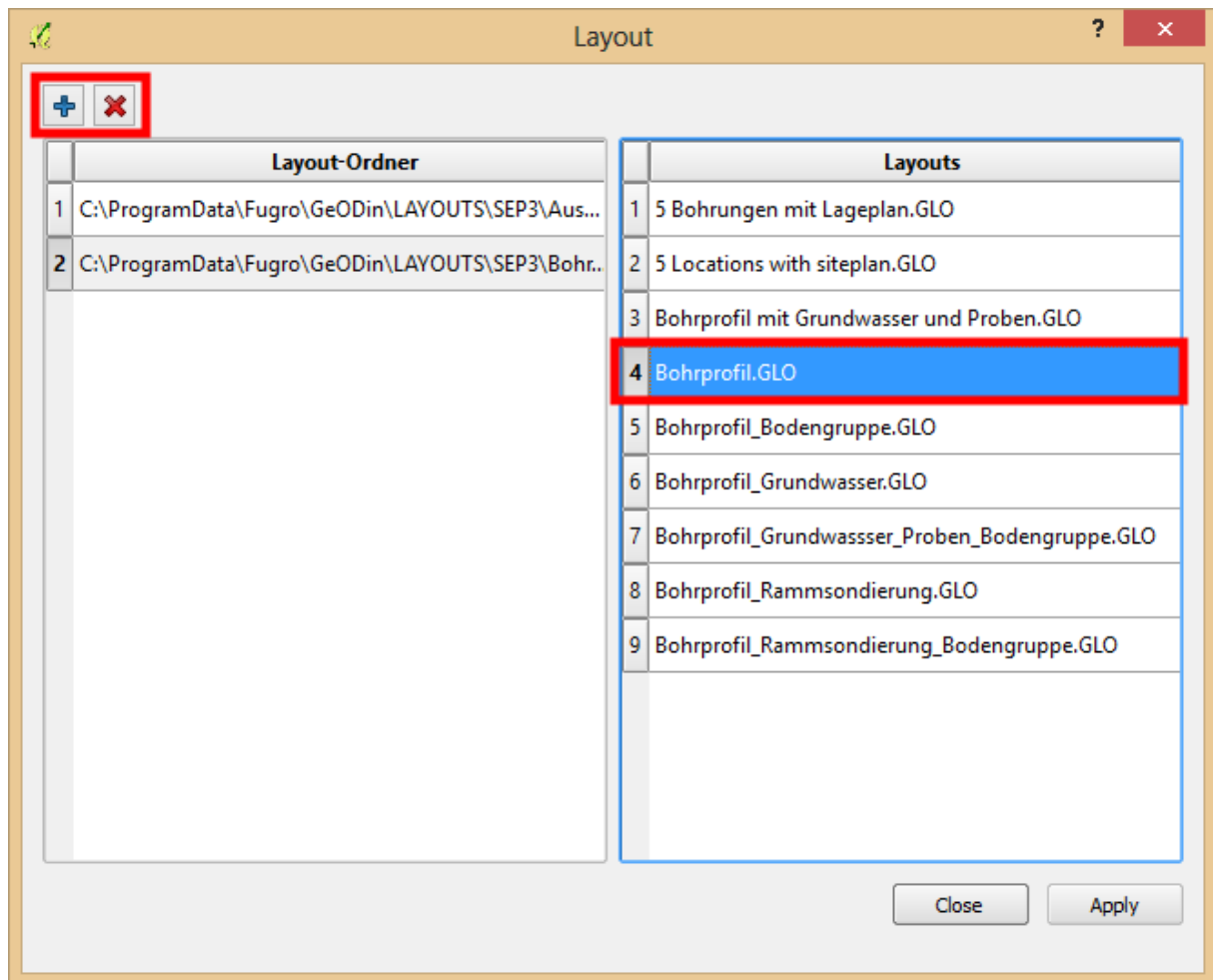
6 Layouts

The layout view is available at the object level. To do so, expand the database tree to the lowest level, the object level, and open the right click menu at the relevant object.

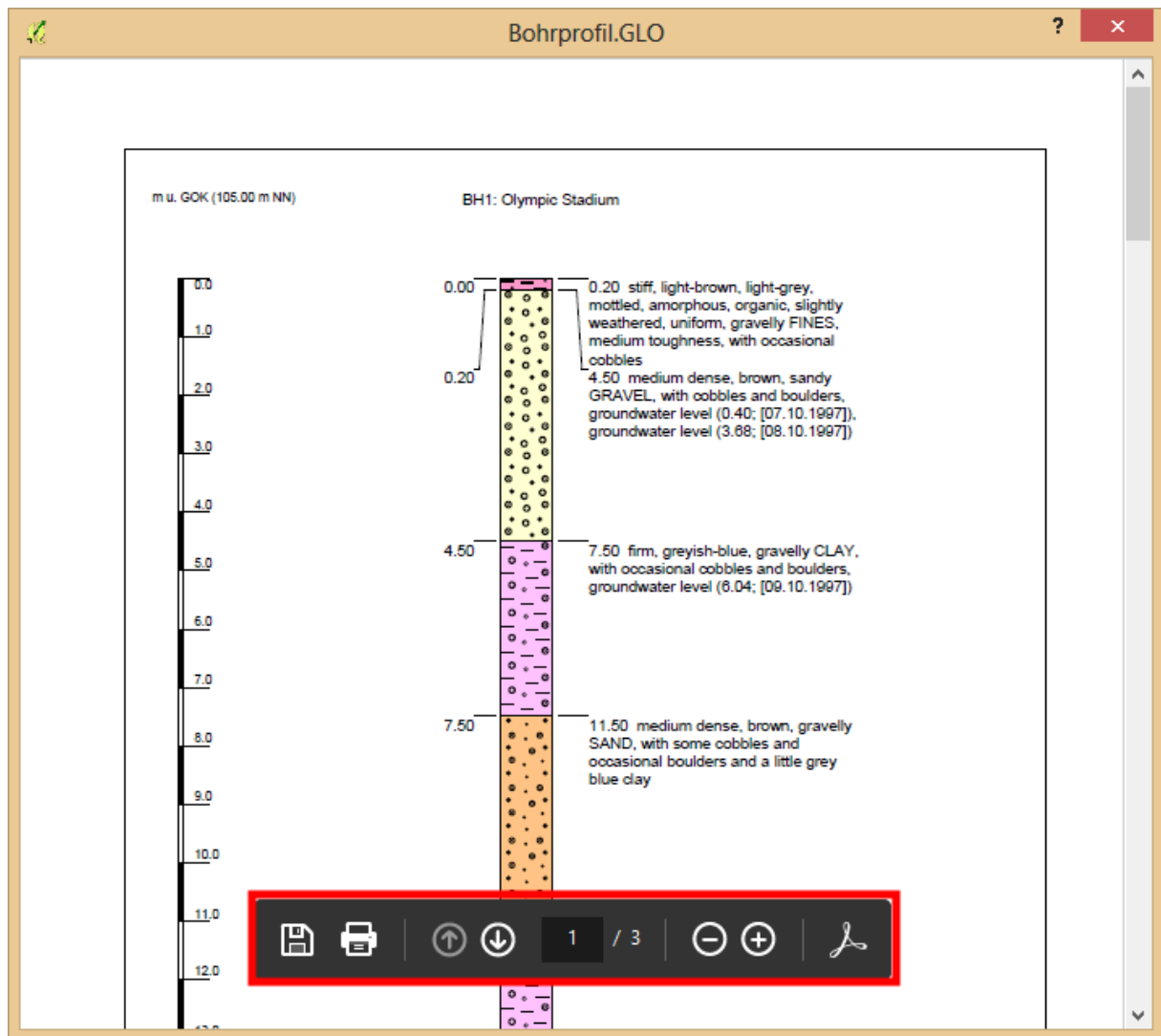


A new dialogue opens to choose both the layout folder and the preferred layout. The upper toolbar allows you to add a layout folder to the list. For this the default layout directory of the GeODin installation is used. A folder can be deleted from the list in the same manner.

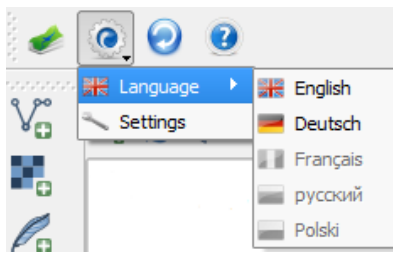
The right table view contains all layouts which belong to the selected layout folder.



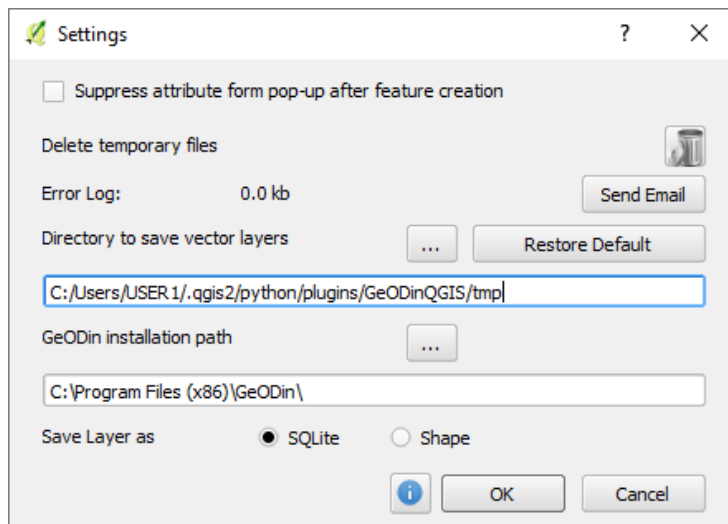
The layout view is a visualisation of a temporary PDF file. Hence common PDF controls like zooming and page change are available. All preferred layout settings must be set in GeODin, the plugin only provides a layout view.



7 Settings



The settings can be defined via the gear wheel symbol in the toolbar. This includes the operating language and the plugin's general settings.



Usually, when creating new objects with the editing mode of QGIS, a window opens, for the input of attribute data. This window always appears, if a new feature was added to map canvas. To suppress this window the option "Suppress attribute form pop-up after feature creation" may be activated.

Several temporary files will be created when working with the plugin. If they are no longer needed the whole directory can be emptied by clicking the trash button.

If an error occurs, it will be written to the error log file. There is the possibility to send an email to the GeODin support team. This will open the default email client automatically. The error message and the error log file must be attached to the email manually.

The vector files, which were created with the plugin, will be stored in the temporary directory if not specified. This directory may be saved at another location in the file system. It is also possible to restore the default path.

The vector files can be saved in two different formats. The usage of SQLite offers the advantage of fieldnames longer than 8 characters, whereas the fieldnames of shape files are limited to 8 characters. However, the performance of shape files is much better.