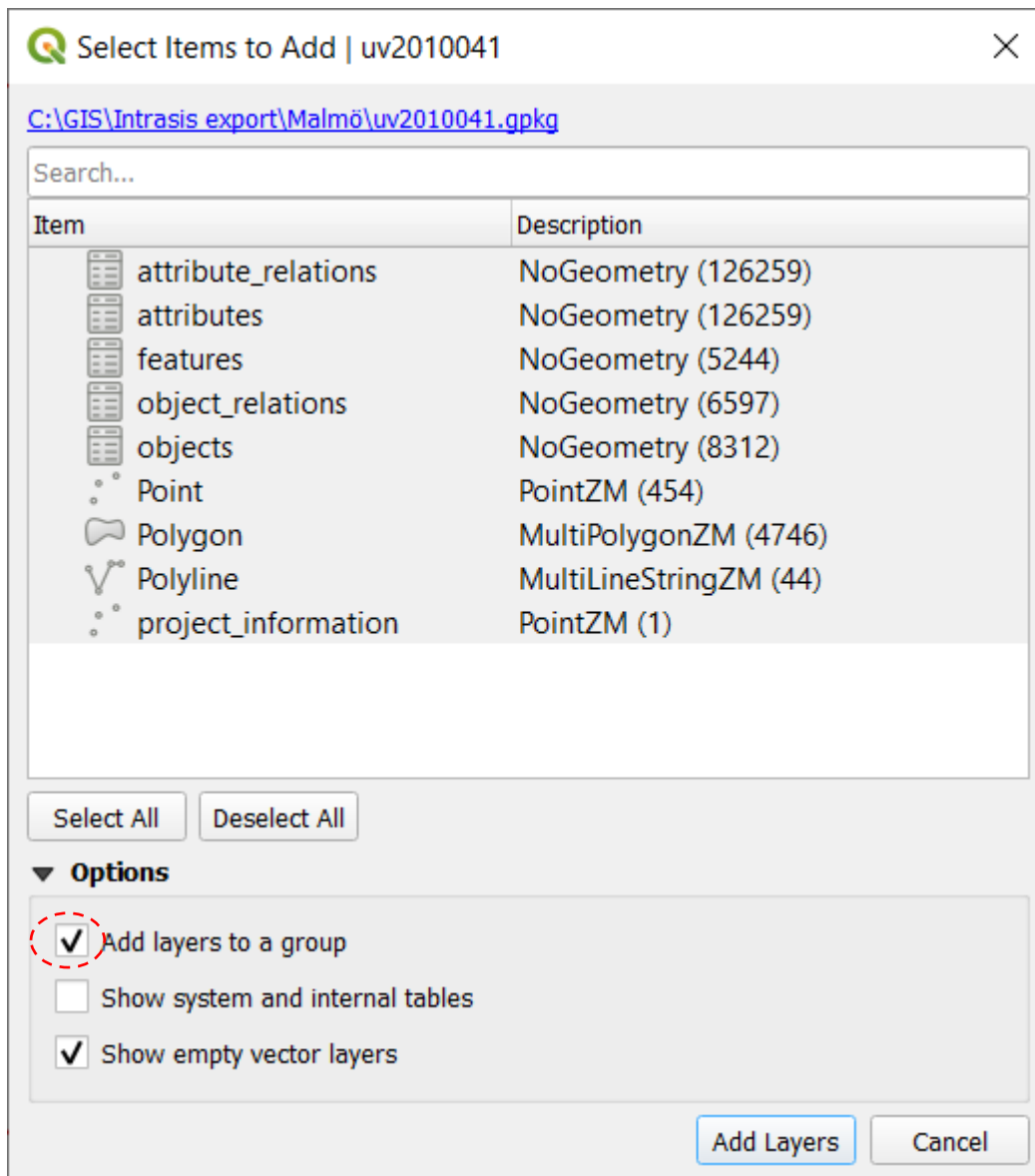


## Introduction to QGIS Swedigarch Geotools plugin workflows

Swedigarch Geotools is a QGIS plugin for working with data produced with the program [Intrasis](#) to export data to open formats (GPKG and CSV) and work with the GPKG in QGIS. The basic functions and how to export data from an Intrasis PostgreSQL/PostGIS server are described in the [GitHub wiki](#). This tutorial is an introduction to QGIS workflow as a suggested way to explore the content of a GPKG with a few different techniques to make it easier to understand and access the information, based on an example GPKG available from GitHub.

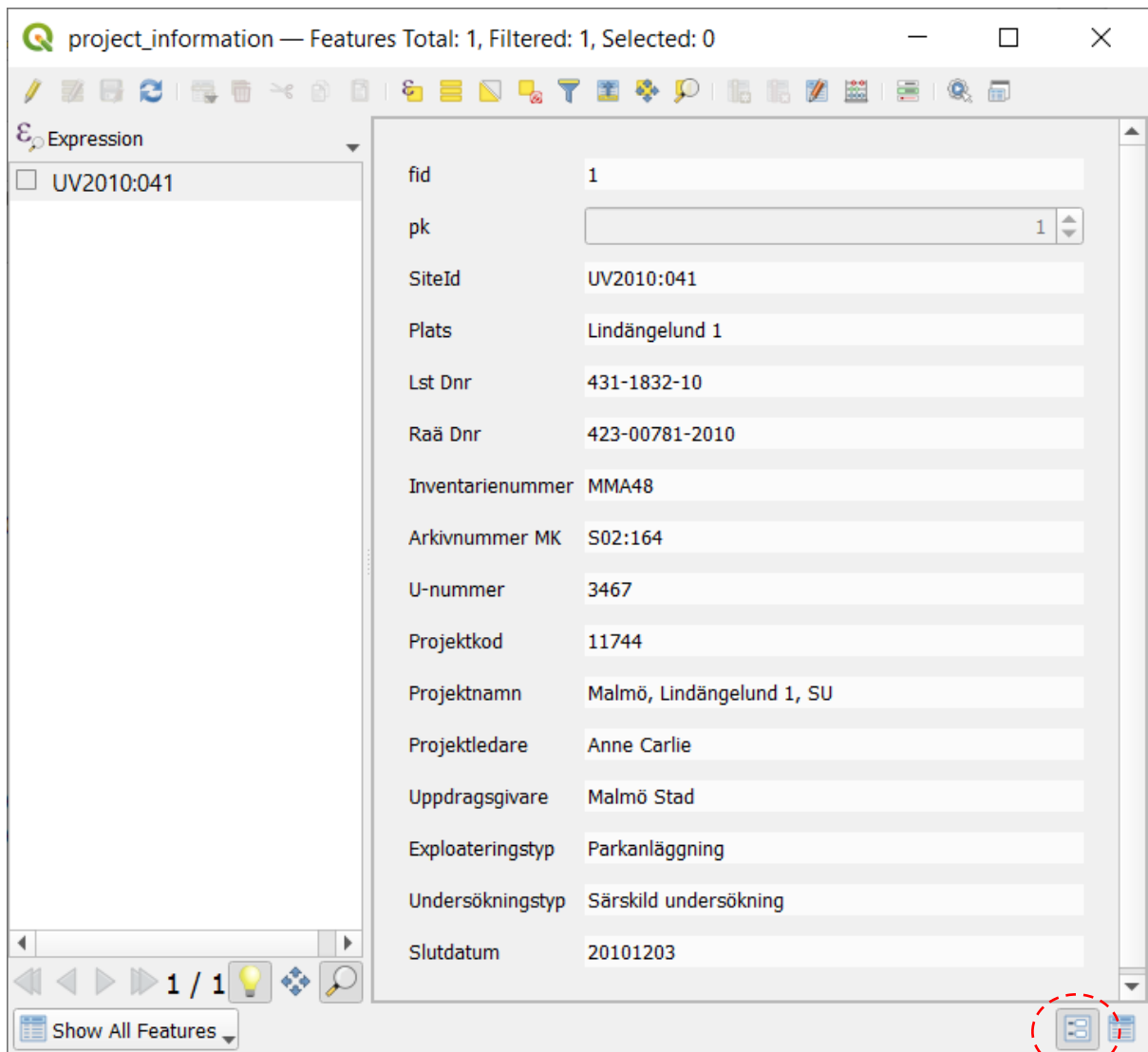
Start QGIS and add the Geopackage [uv2010041.gpkg](#). While not necessary, it is can be good to add all the layers to a group to keep track of the layers.



A default styling of the layers is stored in the gpkg and should automatically be applied to the geometry layers. Technically, these are layer views from the table features, but QGIS interpret these a regular geometry layers.



General information (metadata) is available in the point layer project information. Open the attribute table, and change to the form view.



From the information we can identify the report for the excavation:

<https://pub.raa.se/visa/dokumentation/1239ad7f-1d5c-42c6-bd08-afc66b05d941>

Comparing the GIS layers to the plans in the report, we can confirm that is it the correct report.

Uncheck the layers box for the point and polyline layers so we only see the polygons in the QGIS map window. To start exploring the content we can apply a few filters. Right-click the *Polygon* layer and *Duplicate Layer* so that we get a copy.

Right-click the new copy and *Rename Layer* to “**Arkeologiska objekt - filter**”.

Right-click the layer *Arkeologiska objekt – filter* and click *Filter*.

Set a filter as: “*Class*” = ‘*Arkeologiskt objekt*’ and click OK.

Query Builder

Set provider filter on Arkeologiska objekt – filter

**Fields**

- fid
- Intrasid
- object\_id
- Name
- Class
- SubClass
- SymbolId
- GeoObjectId
- spatial\_type

**Values**

Search...

- Arkeologiskt objekt
- Fynd
- Fyndenhet
- Grävenhet
- Område

Sample All

Use unfiltered layer

**Operators**

= < > LIKE % IN NOT IN

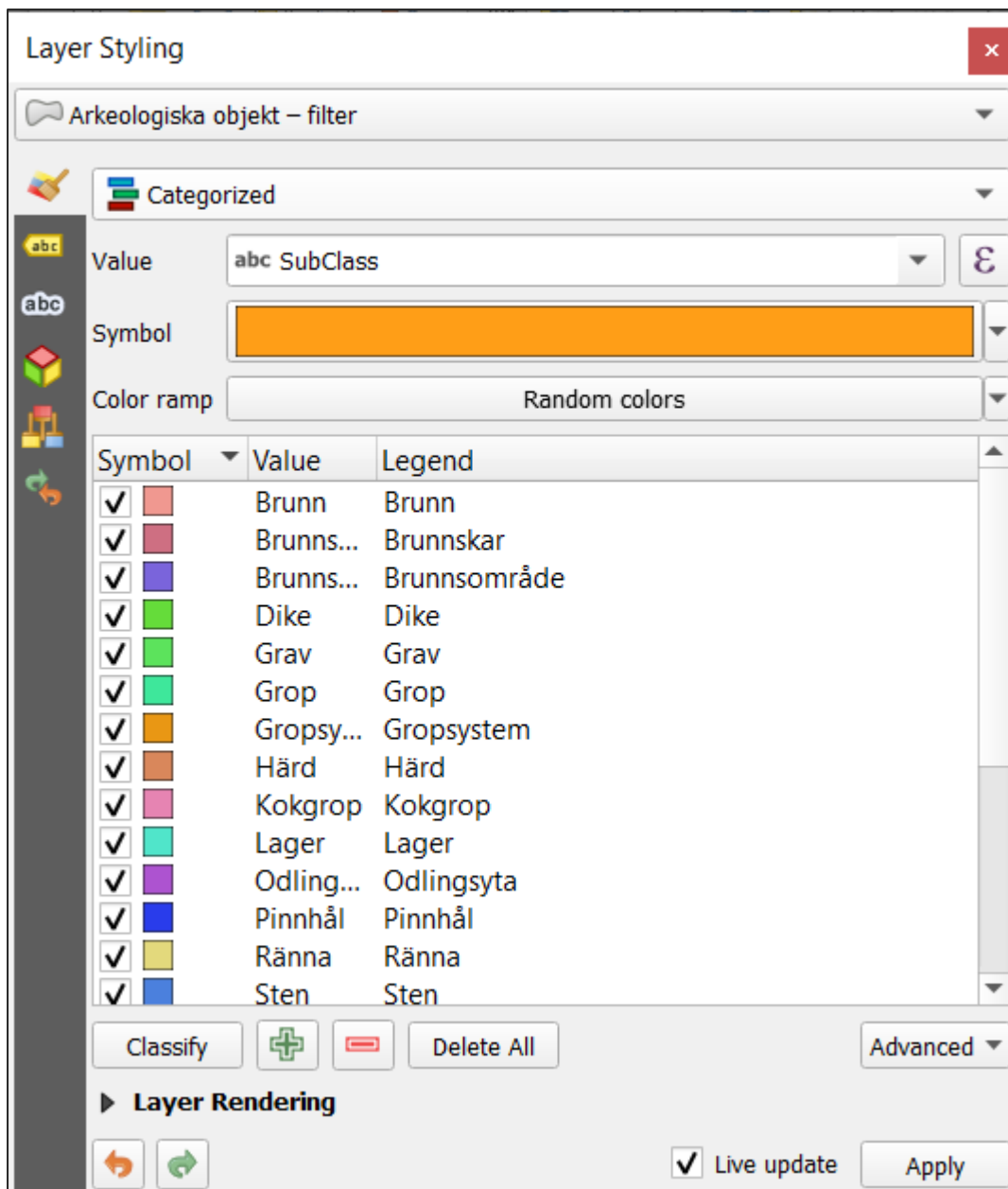
<= >= != ILIKE AND OR NOT

**Provider Specific Filter Expression**

```
"Class" = 'Arkeologiskt objekt'
```

OK Test Clear Save... Load... Cancel Help

Open *Layer Styling* for *Arkeologiska objekt – filter* and, with a *Categorized* type of styling, set *Value* to *SubClass*, click *Classify* and *OK* to the question about deleting existing classification.



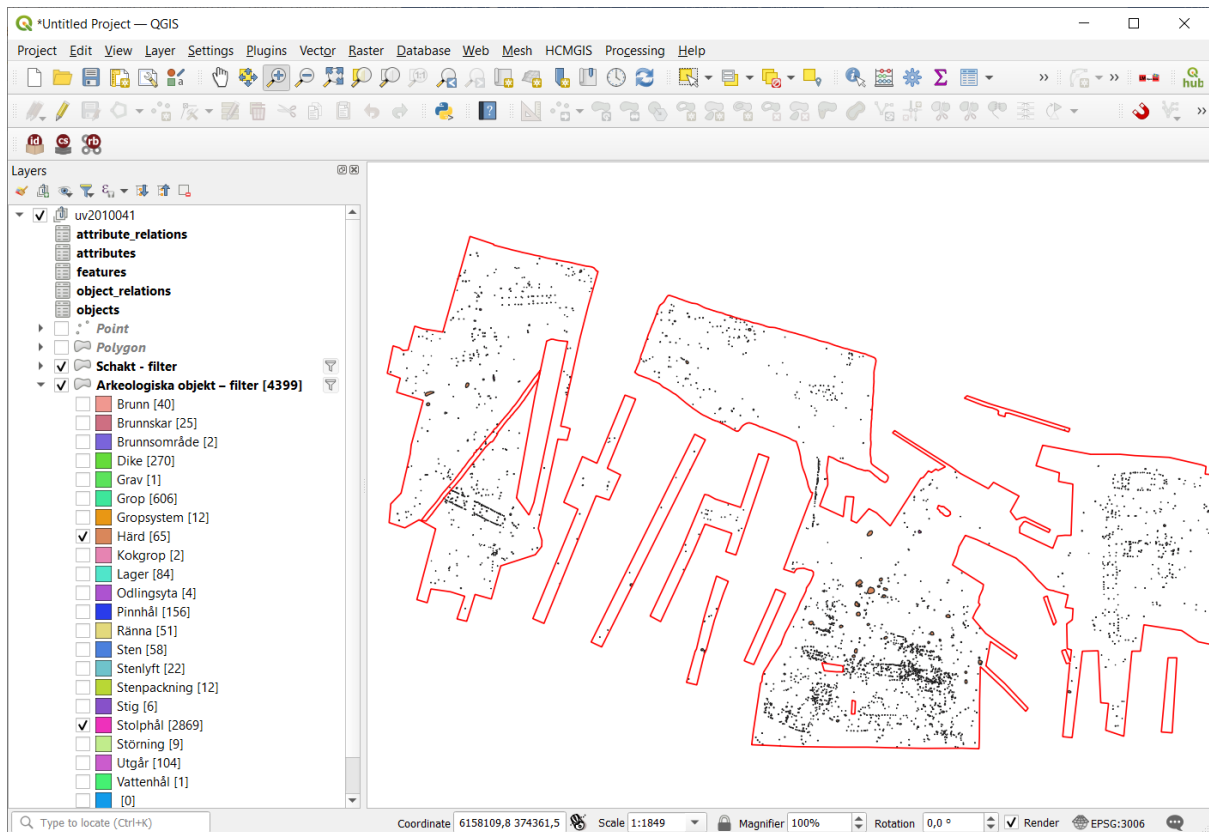
In the original *Polygon* layer, uncheck the box for the item *Arkeologiskt objekt (Default symbol)* so these are not visible in the view.

To make the view clearer, we can set another filter for trenches. Duplicate the original *Polygon* layer again, and rename this copy to "**Schakt - filter**".

Set a filter for this layer as: "*SubClass*" = '*Schakt*'


Uncheck the box for the original *Polygon* layer so we only see the filtered layers. There should be no need to change the layer styling for the *Schakt - filter* layer.

You can explore the content of the layer *Arkeologiska objekt - filter* more by showing the feature count for the layer from the right-click menu from the layer. You can also right-click one of the items in the list, and *Hide All Items*, so you easily can set the visibility to the *SubClass* items you wish to see.



Not all objects in the database are represented by a geometry. A house, for example, can be constituted of a number of postholes that has been grouped together to an object, the house. To work with these we can use the plugin *Swedigarch Geotools*, available from the *Plugins Manager*.



In the *Swedigarch Geotools* toolbar, click the  button to open the tool *Intrasis Class/SubClass Browser*.

Set *Class* (the first menu) to *Arkeologiskt objekt*, and *SubClass* (the second menu) to *Stolphus*. Click *Load table*.

This loads 22 houses with all the attributes associated to this *SubClass*. These attributes comes from the table *attributes*, joined to the objects through the table *attribute\_relations*.

Intrasis Class/Subclass Browser uv2010041

Arkeologiskt objekt ▼ Stolphus ▼ Load table Create Layer Save Table As...

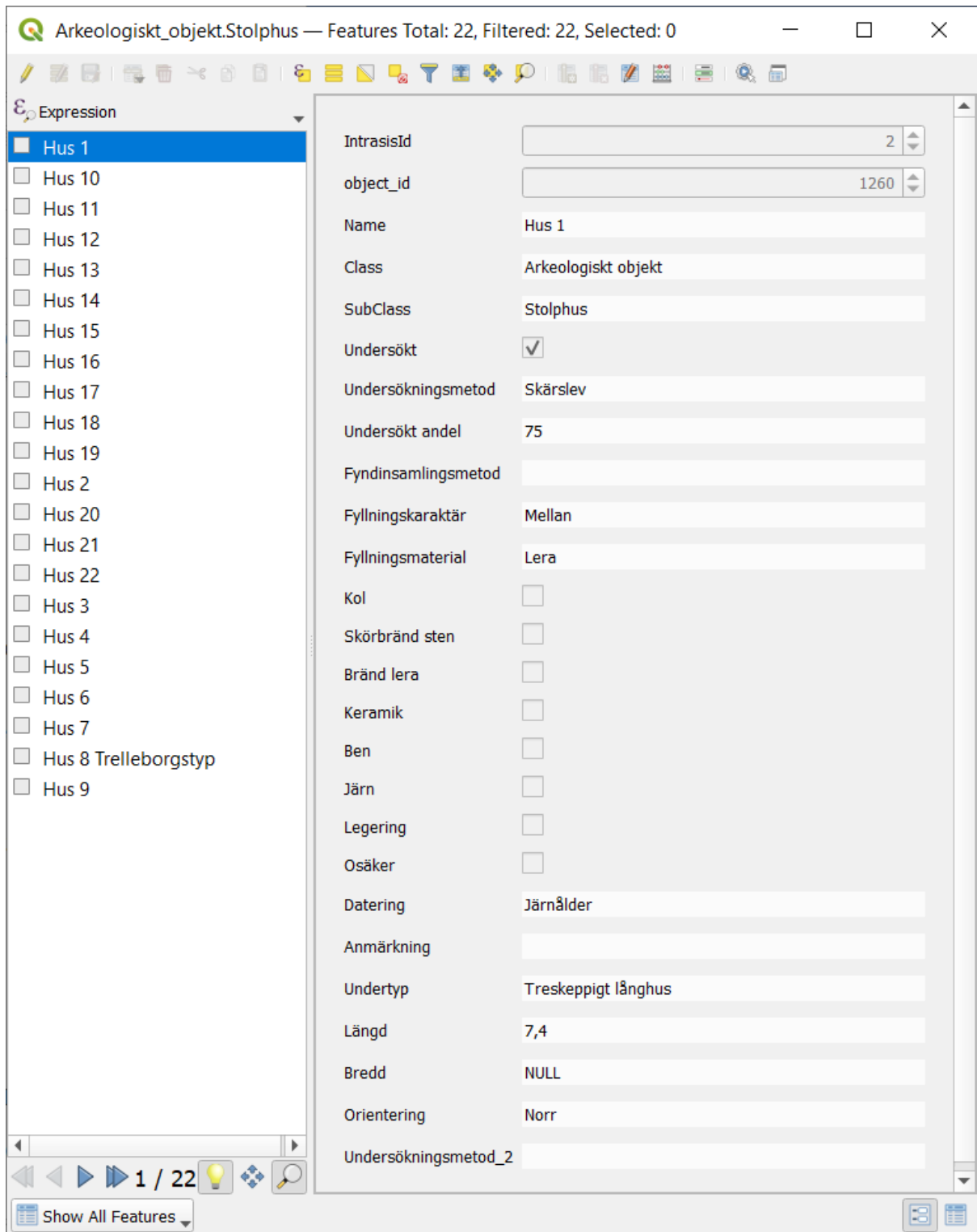
IntrasisId	object_id	Name	Class	SubClass	Undersökt	undersökningsmeto	Unde
2	1260	Hus 1	Arkeologiskt ...	Stolphus	True	Skårslev	75
8	9676	Hus 8 Trelleborgstyp	Arkeologiskt ...	Stolphus	True	Skårslev	35
11	10432	Hus 10	Arkeologiskt ...	Stolphus	True	Skårslev	50
10	10613	Hus 9	Arkeologiskt ...	Stolphus	True	Spade	15
12	11041	Hus 11	Arkeologiskt ...	Stolphus	True	Spade	50
15	11131	Hus 14	Arkeologiskt ...	Stolphus	True	Spade	50
16	11487	Hus 15	Arkeologiskt ...	Stolphus	True	Spade	30
3	11488	Hus 2	Arkeologiskt ...	Stolphus	True	Skårslev	100
4	11489	Hus 3	Arkeologiskt ...	Stolphus	True	Skårslev	100
5	11490	Hus 4	Arkeologiskt ...	Stolphus	True	Skårslev	100
6	11491	Hus 5	Arkeologiskt ...	Stolphus	True	Skårslev	100
7	11492	Hus 6	Arkeologiskt ...	Stolphus	True	Skårslev	100
9	11493	Hus 7	Arkeologiskt ...	Stolphus	True	Skårslev	10
13	11494	Hus 12	Arkeologiskt ...	Stolphus	True	Skårslev	50

Close Help

Click *Create Layer* and close the tool.

Since none of the objects has a geometry, this only produces a table, named after the criteria used for *Class* and *SubClass*.

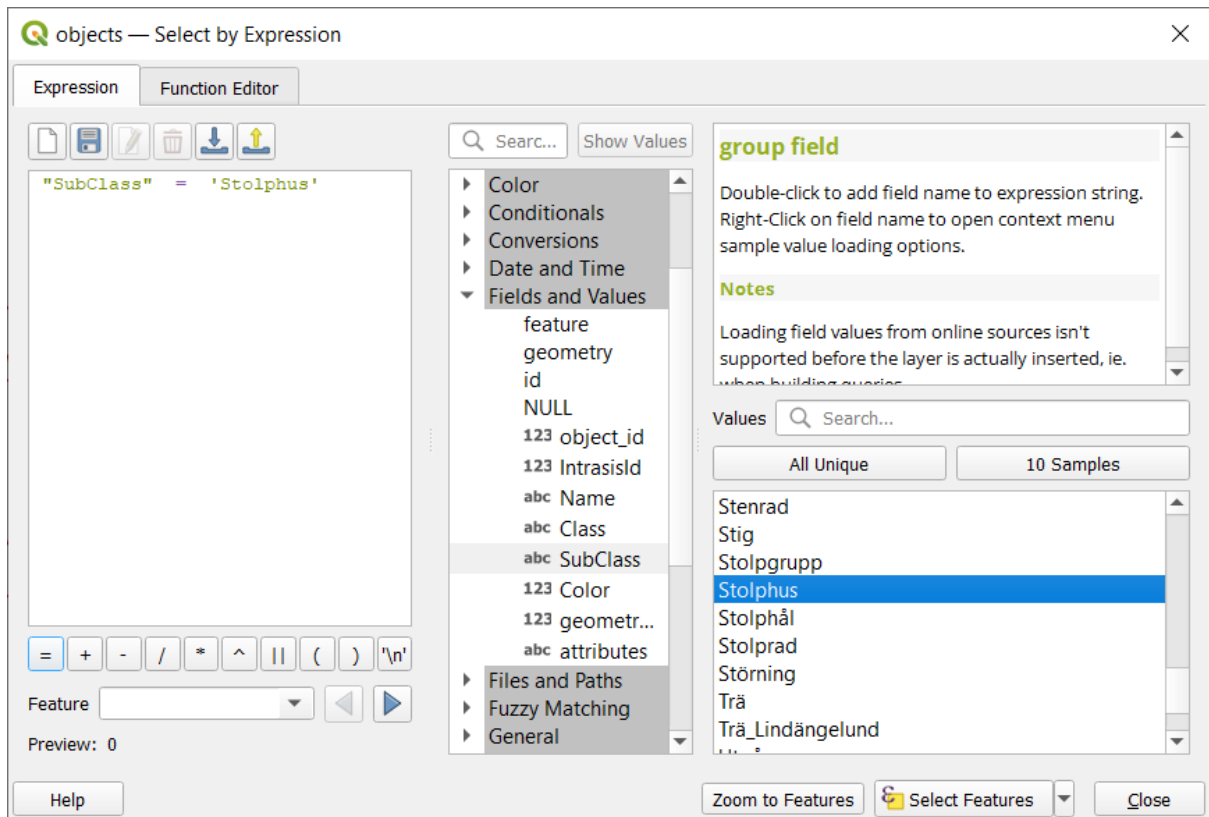
Open the *Attribute Table* for this table, and again use the form view. Scroll through the objects to see what information that has been recorded.



Close the *Attribute Table*.

To see the geometries associated to each house we first need to select them in the *object* table. Select this and use the tool *Select Features Through an Expression*, with the query:

`"SubClass" = 'Stolphus'`



This should select 22 objects. Open the tool [Intrasis Relationship Browser](#). All selected objects are available from the menu, and browsing through these also shows their related objects; *Closest parents* and *Children*.

*Hus 1* has no parents but a number of postholes and environmental samples associated as children. We can create layers of these either as flattened, hierarchical or both. To compare the differences, check both boxes and click *Create Layer from children*.



Intrasis Relationship Browser - uv2010041

### Intrasisld #2

2 - Arkeologiskt objekt / Stolphus ↻

Name Hus 1  
 Class Arkeologiskt objekt  
 Subclass Stolphus

Attribute	Value	Unit
Undersökt	True	
Undersökningsmetod	Skårslev	
Undersökt andel	75	proc.
Fyndinsamlingsmet...		
Fyllningskaraktär	Mellan	
Fyllningsmaterial	Lera	
Kol		
Skörbränd sten		
Bränd lera		
Keramik		
Ben		

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### Closest parents #2

### Intrasisld

Attribute	Value	Unit
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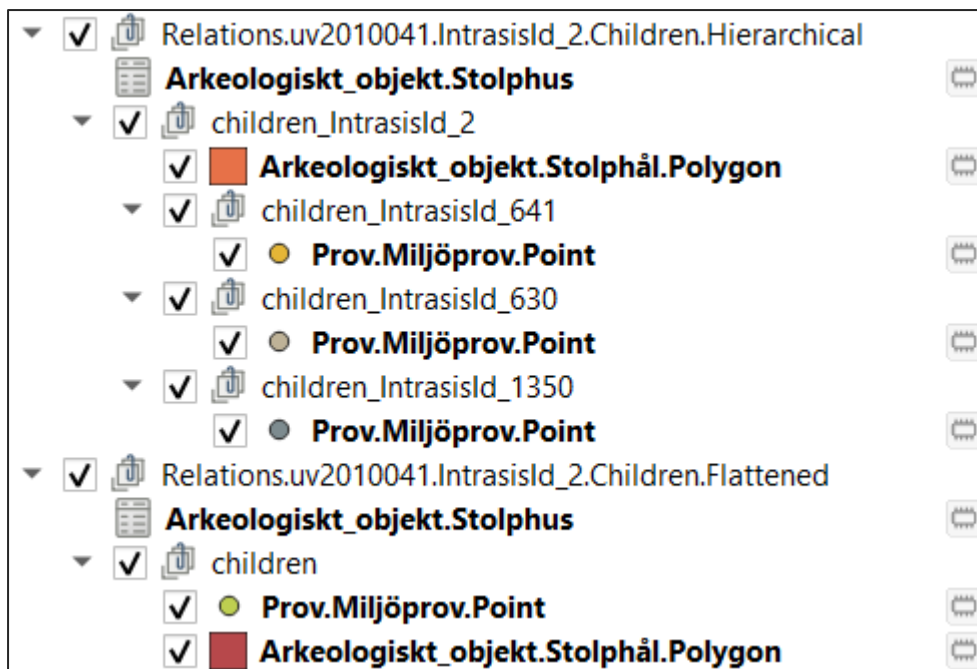
[Create Layer from closest parents](#)

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### Children #2

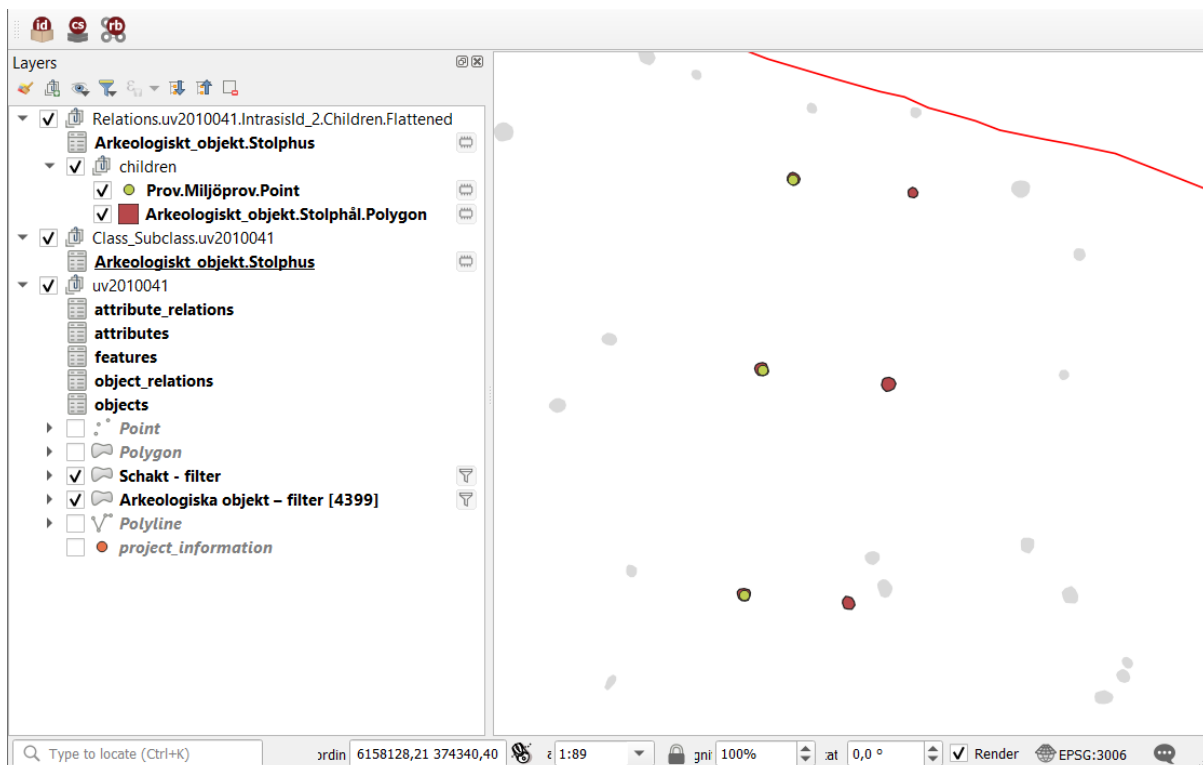
- Arkeologiskt objekt / Stolphus #2
  - Arkeologiskt objekt / Stolphål #1350 (Tillh)
    - Prov / Miljöprov #16242 (Insamlat från)
  - Arkeologiskt objekt / Stolphål #1419 (Tillh)
    - Prov / Miljöprov #16243 (Insamlat från)
  - Arkeologiskt objekt / Stolphål #630 (Tillh)
    - Prov / Miljöprov #16244 (Insamlat från)
  - Arkeologiskt objekt / Stolphål #641 (Tillh)
    - Prov / Miljöprov #16244 (Insamlat från)
  - Arkeologiskt objekt / Stolphål #671 (Tillh)
  - Arkeologiskt objekt / Stolphål #681 (Tillh)

The next dialog allows you to remove nodes if you wish to limit the result. Click OK to keep all for now.



We get two new groups of layers. In the hierarchical version, we can see which object each sample (*miljöprov*) is related to. In the flattened version, all samples are merged to one point layer. This is enough for now, so remove the hierarchical group.

Zoom to the group, and make sure you can distinguish the postholes of the house to those in the layer *Arkeologiska objekt – filter* by setting appropriate styling to the layers. We can see that the points representing the samples are from the eastern row of postholes. You can also check the attribute table of the layers.



The group also has a new table *Arkeologiskt\_objekt.Stolphus* for this house. Open the *Attribute Table of Arkeologiskt\_objekt.Stolphus* that we created before. Compare these, and note that the information is slightly different. The CS tool structures the table as it was created in Intrasis, while the RB tool sorts the fields in alphabetical order. The RB tool also gives a NULL value for empty fields.

Compare the information of Hus 1 with the [excavation report](#). The first appendix (Bilaga 1) has information about the interpretation of the houses, and page 9 has an overview of house 1. This description is only partly the same as we have in the GIS data. It is important to note that there are only temporary interpretation (at best) in the documentation, made during the excavation phase, and this often changes during the post-excavation phase as results of analysis etc becomes available. For the final interpretation and full description, we need to refer to the published report.