1) Database structure

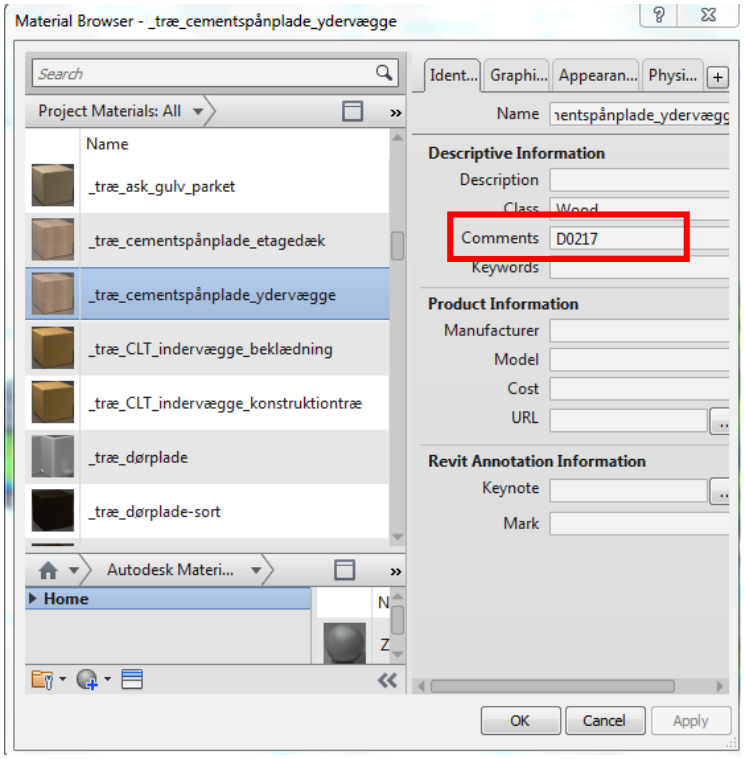
The database has to be prepared by the user. The same structure has to be followed in order to be read properly by the dynamo script. The materials' impacts have to be given per m3 or m2. Materials that are modelled as membranes in Revit need to be specified in impacts per m2. The same applies for glass used in glazing. Two free sources to use are the German oekobaudat and the Quartz database. Of course the database can be filled with datasets from any source.

http://www.oekobaudat.de/

http://www.quartzproject.org/

2) Database and Revit library link

The Revit library and the database are linked through a unique ID that is stored in the materials' "Comments" field and column Z respectively. Each material's ID has to be unique and can contain any character. A good way of assigning IDs is to start with a letter that defines the source and four number, e.g. D0001. Only in the case of glass, the dataset's unique ID needs to start with a "G", e.g. G00001. This way the script recognizes that the material is glass and thus uses its area instead of volume. This way the user is free to model a glazing in whatever level of detail they want.



3) Encoding system

The script is made to recognize the BIM7AA code from each family type's name. The reason that such a system is used is to facilitate the interpretation of results. The use of it thought is not

mandatory. The BIM7AA encoding system is based on the sfb classification system and can be found here: http://bim7aa.dk/index_UK.html

4) Results visualization

The results can be visualized on the 3d environment in Revit by color-coding the model's elements. To allow this, the impact category, the life cycle stage and the construction category need to be defined using an integer as an input as shown below.