2.6 IFC Property Mapper

In order to implement an extension or specialization of classes in IFC without creating new subclasses, it is possible to define properties of objects. The properties are implemented in IFC in two ways: on the one hand by attributes and on the other hand by properties (characteristics). This dichotomy was provided for in IFC because properties required by users are not always internationally standardized and predictable. The schema should not be inflated any further. Attributes are used to store some basic properties of objects directly in the schema. An example of this is the OverallHeight attribute of the IfcDoor class, which can be specified when instantiating a door object. Attributes are static and therefore cannot be created by users. In contrast, properties can be created dynamically. They offer the possibility of national or user-specific extensions to the IFC schema.

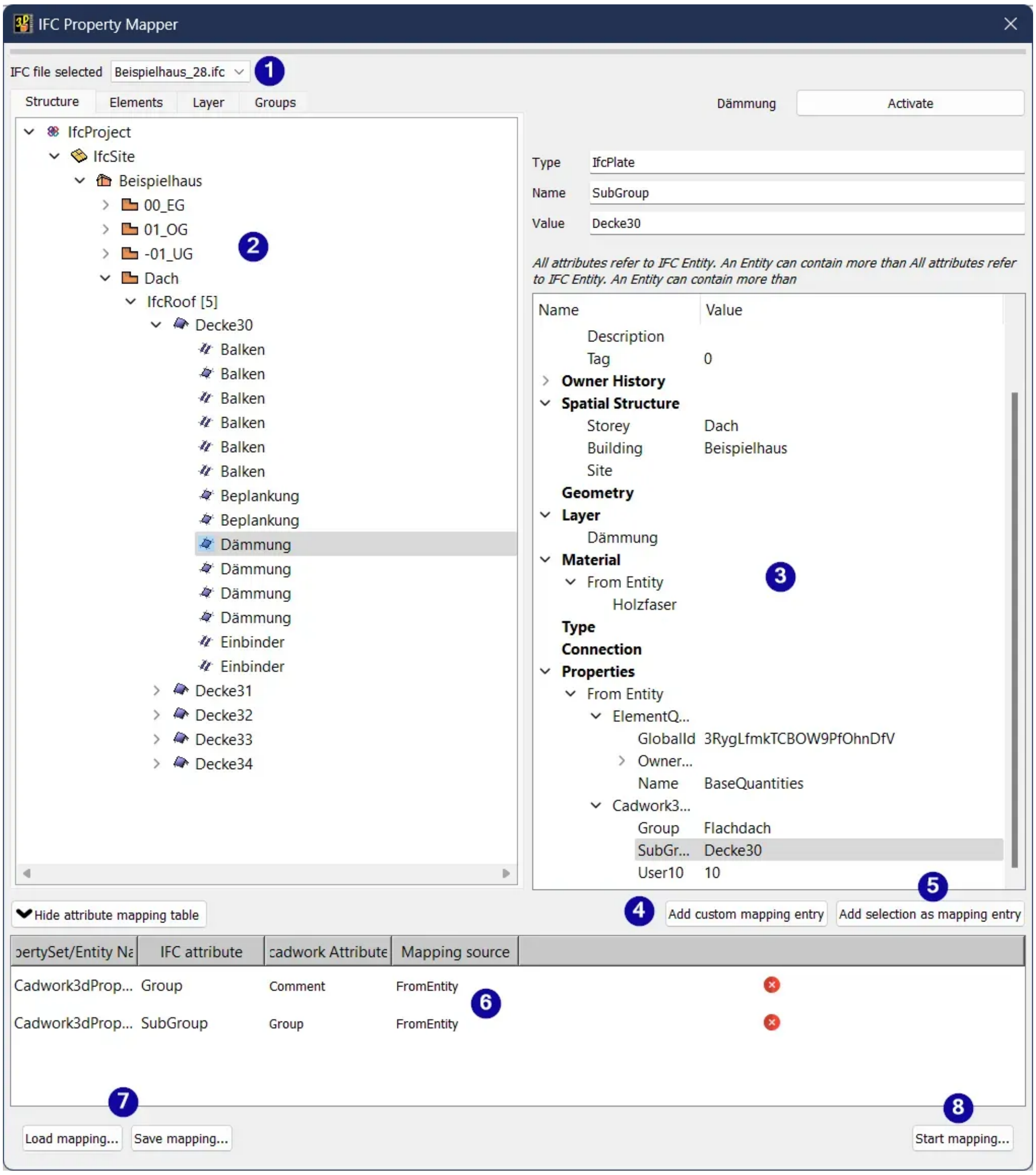
IfcPropertySet designates all properties that can be assigned to an IFC model object. The properties contained in such a set can be of two types:

- predefined
- additional/customized (i.e. user-defined).

The predefined properties are those that follow the standard.

In addition to the existing specifications, the IFC data structure allows the definition of individual additions. These can be defined on a project-specific basis within a local framework and are communicated to the project team.
BIMcert manual

Tip:
The IFC Property Mapper can only be executed with the BIM Manager license!



IFC file selected: Beispielhaus_28.ifc

Type: IfcPlate

Name: SubGroup

Value: Decke30

All attributes refer to IFC Entity. An Entity can contain more than All attributes refer to IFC Entity. An Entity can contain more than

Name	Value
Description	
Tag	0
Owner History	
Spatial Structure	
Storey	Dach
Building	Beispielhaus
Site	
Geometry	
Layer	
Dämmung	
Material	
From Entity	
Holzfaser	
Type	
Connection	
Properties	
From Entity	
ElementQ...	
GlobalId	3RygLfmkTCBOW9PfOhnDfV
Owner...	
Name	BaseQuantities
Cadwork3...	
Group	Flachdach
SubGr...	Decke30
User10	10

pertySet/Entity Na	IFC attribute	cadwork Attribute	Mapping source	
Cadwork3dProp...	Group	Comment	FromEntity	✕
Cadwork3dProp...	SubGroup	Group	FromEntity	✕

1. Selected IFC file

Dropdown selection of the loaded IFC files in cadwork 3D. If several IFC files are loaded, the one to be used can be selected via this selection.

2. Hierarchy view IFC file

This view shows the hierarchical structure of the IFC file in the same way as in the BMT. Bi-directional activation is also implemented here.

3. Property toolbar

Information on the entity (attributes), affiliation (spatial structure), the material and the properties are displayed in the property toolbar.

4. Add custom mapping entry

This button can be used to make a manual entry for the mapping of properties from the PropertySet.
The mapping entry applies to all elements that have this property!

5. Add selection as mapping entry (recommended)

In the Properties tree, select a property (figure, selected property --> Renovation Status) or an entire set and then click on "New mapping entry from selection". The names of the properties are automatically transferred to the input fields. If you now activate the "Create user attributes according to property name" checkbox, a new attribute is created at the end of the list during mapping if the attribute does not yet exist (see video). This attribute is automatically given the name of the property.

Attention:
The mapping entry applies to all elements that have this property!

6. Mapping list

The defined mapping entries are listed in the mapping table.

7. Load/Save mapping

Load/save the project-specific mapping entries. The file is located in the project folder.

8. Start mapping

Once the mapping entries have been created, the mapping is started by clicking on this button.

FromEntity

Class, also entity, element class, entity type:
According to the IFC definition, an entity is an information class that is defined by common attributes and restrictions. Attributes and relationships to other entity types are defined for each entity type. The object-oriented concept of inheritance is implemented. This means that attributes and relationships are passed on to subtypes.

Tip:
Execute the mapping fromEntity by default. FromType should only be mapped if those properties are deliberately required. Object types are used in software that works with component libraries. Attributes and properties can be assigned to these objects. The objects in the component library serve as a template when modeling. The properties of the object type (catalog element) can differ from the entity type (modified properties).

FromType

Similar to a class, an object type is also a kind of template that combines the common characteristics of several instances. However, certain basic parameters that remain the same for recurring components are defined before the actual instantiation. The concept of object types is provided in IFC in order to be able to efficiently describe frequently recurring components. A reusable pattern is predefined for this purpose, i.e. a kind of "template". The object types can define attributes and properties that are then automatically passed on to the linked objects. This can be referred to as pre-instantiation. When the object types are actually instantiated, only data such as the spatial position or the relationships to other objects are defined. This data cannot be specified via object types.