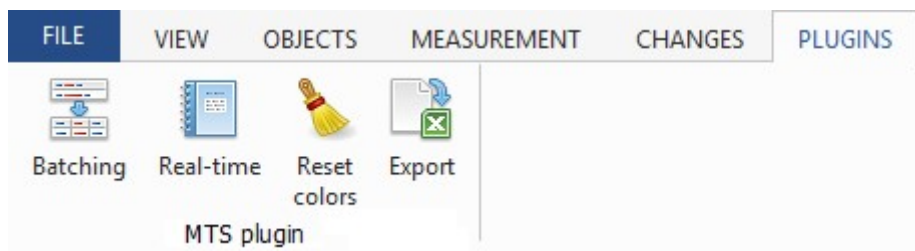# MTS plugin

Plugin for BIM Vision

Thank you for choosing MTS plugin. This BIM Vision extension allows to group objects depending on property values or data that comes from external CSV files. You can view, select, change visibility and color of each group. You can also edit groups and assign elements to then in BIM Vision. There are two grouping types "Batching" and "Real-time", both have own group lists.

User interface

Plugin adds group "MTS plugin" with four buttons in ribbon tab "PLUGINS".

Batching

Batching information is read from CSV file or from objects' properties.

CSV file format:

- Text file with two columns IFC GUID and batch name
- First row contains columns headers and is ignored
- Example:

```
IFC GUID,BATCH
1Ii0dP00003p4pE3SoDp4s,1
1Ii0dP00004p4pE3SoDp8p,1
1Ii0dP00005p4pE3SoDp8p,2
```

When object does not belong to any group it will be placed in "Un-batched items". When object belongs to group also all its children also belongs to this group and are omitted while reading and writing.

Automatic loading:

When you open in BIM Vision an IFC file i.e. "*project.ifc*", plugin looks for file named "*project.batching.csv*" in the same directory. If this file exists, it will be loaded automatically, otherwise plugin will group objects depending on the value of property "**USER_FIELD_4**" in property group "**BIM**". You can also load CSV file manually.

Batching is not saved automatically.

NOTE: Object must be IFC geometrical element (that has geometry), not container element (i.e. building storey) or be type of "IfcElementAssembly" to belong to group.

Real-time

Real-time status is read from CSV file.

CSV file format:

- Text file with two columns IFC GUID and status
- First row contains columns headers and is ignored
- Example:

```
IFC GUID,STATUS
1Ii0dP00003p4pE3SoDp4s,ONSITE
1Ii0dP00004p4pE3SoDp8p,OFFSITE
1Ii0dP00005p4pE3SoDp8p,ONSITE
```

When object does not belong to any group it will be placed in "Unknown status" group. When object belongs to group also all its children also belongs to this group and are omitted while reading/writing.

Automatic loading:

When you open in BIM Vision an IFC file i.e. "*project.ifc*" plugin looks for file named "*project.real-time.csv*" in the same directory. If this file exists, it will be loaded automatically. You can also load CSV file manually.

Real-time status is not saved automatically.

NOTE: Object must be IFC geometrical element (that has geometry), not container element (i.e. building storey) or be type of "IfcElementAssembly" to belong to group.

Reset colors

This option restores original colors of all objects (by element type or from IFC file - depending on BIM Vision setting "Object Color").

Groups windows

"Batching" and "Real-time" groups are displayed in separate windows. When you open that window, plugin will automatically change model colors according to the list. When grouping window is visible plugin changes selectin rules that allow select whole element assemblies.

Double click or press "Space" to select objects in viewer.

Right click on element to show context menu. New/renamed group must have unique name.

Click or press "Enter" to choose color.

Selecting group in list (one click or mouse scroll) will also select objects in viewer.
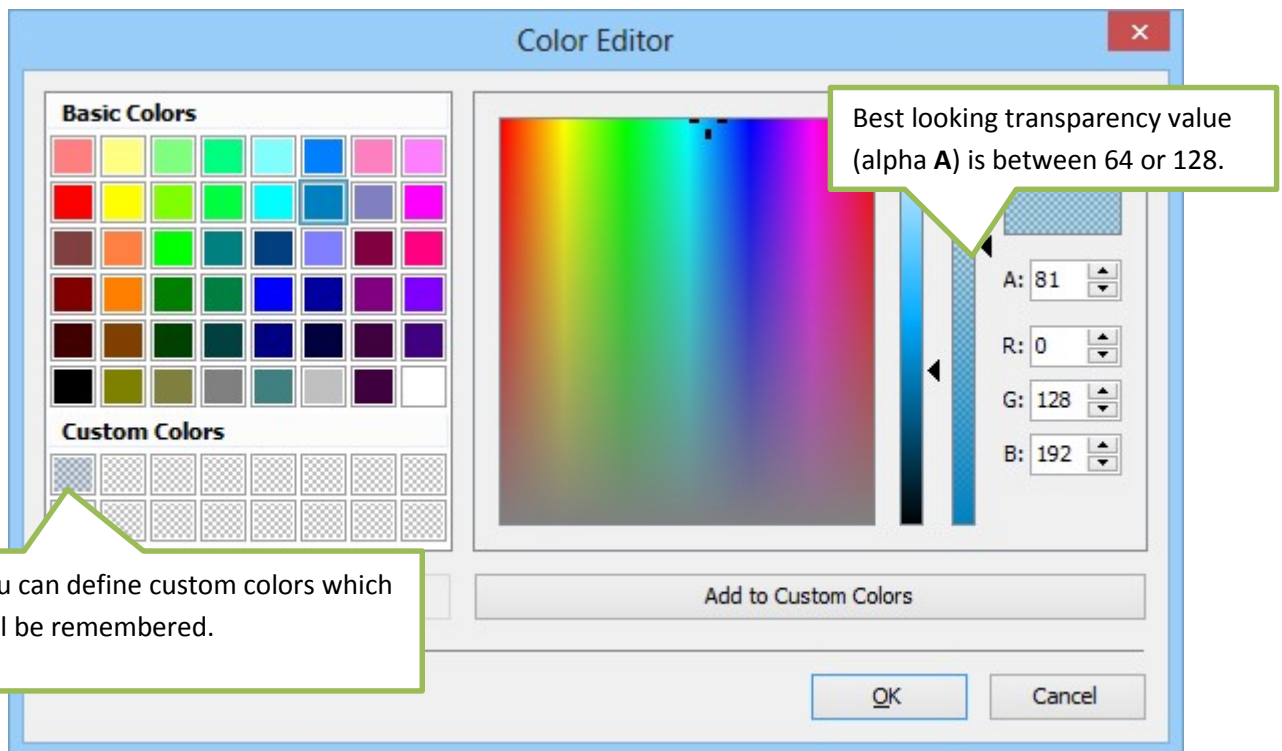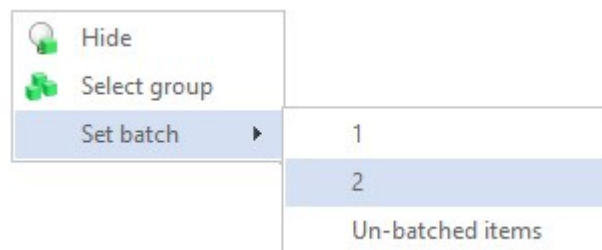
Load CSV file.

Save CSV file.

Plugin remembers colors for each window. When you set any color with transparency value (alpha) to zero default/original color for objects will be restored.

Color choosing

Best looking transparency value (alpha **A**) is between 64 or 128.

You can define custom colors which will be remembered.

Assign objects to groups

When grouping window is visible an there are selected object, you can change object's group in viewer context menu (right click on 3D view).

Export

This option allows to export specific data to CSV file. Only objects assigned to batching groups are exported.

CSV file format:

- Text file with nine columns:
    - IFC GUID
    - BATCH – batching group
    - NAME – name from IFC
    - DESCRIPTION – description form IFC
    - ENTITY – IFC entity type
    - TAG – IFC tag
    - X-min,Y-min,Z-min – minimal X,Y,Z coordinates for object geometry (if exists), measured in millimetres
- First row contains columns headers
- Example:

```
IFC GUID,BATCH,NAME,DESCRIPTION,ENTITY,TAG,X-min,Y-min,Z-min
1NUwuM00DiBJ4qDZStCZCq,1,Steel Assembly,,IfcElementAssembly,A7,11643,0,477
1NUwuM00DiKJ4qDZStCZCq,1,Steel Assembly,,IfcElementAssembly,A7,3668,0,477
1NUwuM00Dipp4qDZStCZCq,1,Liner,,IfcElementAssembly,A48,14973,1220,2031
```

Demo limitations

In demo selecting, editing and exporting for a few random groups from the list is blocked. There is also limit for number of view refresh caused by plugin to about 100.

Release notes

2.0.0

- Change name from "Project JAIN" to "MTS plugin"
- Plugin now uses IFC GUID to identify objects
- Plugin operates also on whole element assemblies (IfcElementAssembly)
- Batching information can also be loaded from CSV file
- Batching information and real-time status can be saved to CSV file
- User can add, delete, rename groups and assign elements to then in BIM Vision
- Plugin displays object count for groups
- Export data to CSV

Contact and copyrights

If you have any suggestions or questions please write to: tech@bimservices.co.za with "MTS plugin for BIM Vision" in title.

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Plugin uses FatCow icons (http://www.fatcow.com/free-icons)