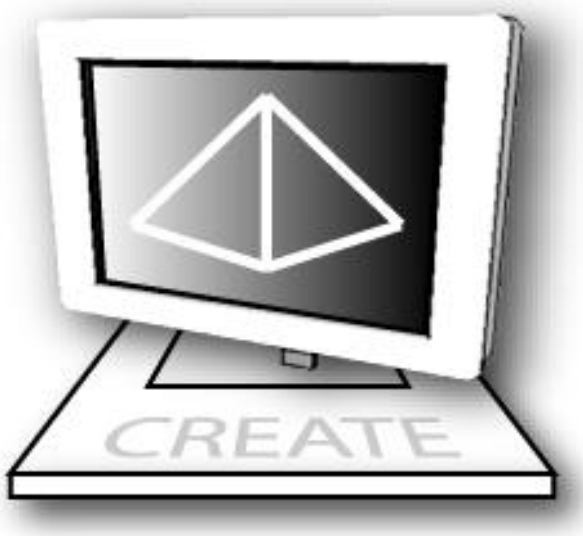
Halden Virtual Reality Centre

HVRC CREATE

User Guide

Model Bank Tool

HVRC CREATE Administration Tools



HVRC CREATE

Release 4.2.2

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HVRC CREATE: Model Bank User Guide.

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1 Overview

1.1 HVRC CREATE

HVRC CREATE 4 is the fourth generation of the CREATE tool suite, and builds on the technical platform and functionality established during the implementation of earlier versions of the software, as well as valuable feedback gained from usability evaluations and research work by the development team.

The CREATE control room design tools combine advanced interactive 3D technology with server-based user, project, and file management, providing an integrated package that supports and traces the various stages of a human-centred design process.

The software has been designed to support a flexible, iterative, design methodology, where a control room design is refined and tested many times before a final design is reached. This contrasts with traditional control room design methods where the design process only goes through one or two human factors review iterations, and where it is necessary to build a costly physical control room mock-up. Design iterations are tracked by the system.

When these virtual reality tools are used, it is not necessary to wait until a physical mock-up has been constructed before commencing design verification and validation against human factors guidelines, so greater emphasis can be placed on finding an optimal design solution for safe and efficient control room operation. Users with a variety of technical skills can operate the software, so control room operators, designers, human factors specialists, engineers and managers can all participate to some degree in the design process.

CREATE provides features designed to support and enhance communication between the various interest groups involved in a design project. Support for communication between the layout designers and reviewers is integrated into the system, while it is possible to extract electronic documents such as models, designs and reports for distribution to other interested parties.

The CREATE tools support the management of a reusable database of 3D objects, the interactive construction of control room layouts, and the validation of control room layouts against guidelines.

The CREATE tools are based on cross-platform Internet and Java technology and open standards such as VRML97 (ISO/IEC 14772-1:1997), DAE/COLLADA (ISO/PAS 17506:2012), XML, and HTML.

1.2 Model Bank Tool

The Model Bank Tool is used to manage the Model Bank. 3D Models in the Model Bank are be used to construct (rooms and objects) and verify (manikins) control room layouts.

Models in ISO VRML97 format are stored in a hierarchical database on the server. The models are grouped in categories, which can contain models and sub-categories. A model can be of one of the following types: *manikin*, *room* or object.

The category structure is managed using the Model Bank Tool.

It is also possible to save original 3D model files in the Model Bank together with the VRML model. The original files can be exported, and the Model Bank's version control facility can be used to replace an existing model with an improved version of it.

The Model Bank Tool client can also be used as viewer for VRML models.

In addition to ISO VRML, the Model Bank Tool can also import 3D models in the KMZ and COLLADA formats directly to the Model Bank, without requiring prior conversion to VRML.

2 Getting Started

2.1 System Requirements

The minimum *recommended* requirements for the HVRC CREATE Tools are:

- Intel Core i5 (8th gen) x64 processor or similar
- 8GB RAM
- 64-bit Microsoft Windows 10 or Apple macOS 11
- Discrete 3D graphics accelerator with at least 2GB memory and OpenGL 3.3 driver support
- For Microsoft Windows: 250MB free disk space for the complete tool suite.
  For macOS: 1GB.
- A three-button mouse (or a two-button mouse with scroll-wheel "button")

Use the option or alt-key on your keyboard in combination with the left mouse button to simulate the middle mouse button if you do not have three mouse buttons.

2.2 Installation

Important: See System Requirements above before installing.

On Windows, the installer called “CREATE Tools Installer” installs the full set of tools, including the Model Bank Management Tool. Double-click on the installer and follow the instructions.

On macOS, simply drag the Model Bank Tool (or the whole folder enclosing it) from the installation image into your Applications folder.

2.3 Starting the Model Bank Tool

To run the Model Bank Tool, open the CREATE directory, which was created when you installed the tools, and double-click on the Model Bank Tool icon.

Depending on what options you selected when running the installer, you may also be able to start the tool by double clicking on an icon on the Microsoft Windows desktop or by selecting it from the Start menu (in the "HVRC CREATE 4.0" group).

Important: The first time you run a CREATE tool, a wizard will appear that guides you through configuring your connection to a CREATE Server. After the wizard has completed, you can change your settings via the Preferences Window (see The Preferences Window - section 6.1). Ask your system administrator or project manager for assistance if you do not know what to enter.

The information above assumes that you are using Microsoft Windows. On other platforms, the installation follows the platform conventions to provide easy access to the installed software.

2.4 Support

Please send questions, bug reports, or requests for new features to: create-support@ife.no

When submitting bug reports, please include the following information:

- A description of the result and how it differed from what you expected
- The conditions or circumstances under which the problem occurred
- Any other information that could be useful to isolate the problem, including the version of CREATE you are using, the version of the operating system of your computer, and the type of graphics card you are using. An overview of useful technical information is displayed in the tool’s About dialog, located in the Help menu, and can be copied into an email or saved to disk in a text file.

2.5 User Identification

Before you can use the Model Bank Tool to do any work, the server administrator or your project manager must have assigned a login name and password to you. If you do not have a login name and password, then contact the server administrator or your project manager for assistance.

When the Model Bank Tool starts up and needs to retrieve data from the server, it will usually request that you enter your login name and password. If this does not occur then you should check that the CREATE server address has been correctly set (see The Preferences Window – Section 6.1). If the server address is correct, then you should verify with your system administrator or project manager that the host is currently operating and accessible on your network. You will not be able to use the Model Bank Tool to do anything other than access items in the Help menu and specify the server address in the Preferences Window if you are not logged on to a CREATE server.

Important: After a successful login, you can enable an auto-login feature via the Preferences Window so that you do not need to enter your username and password each time.

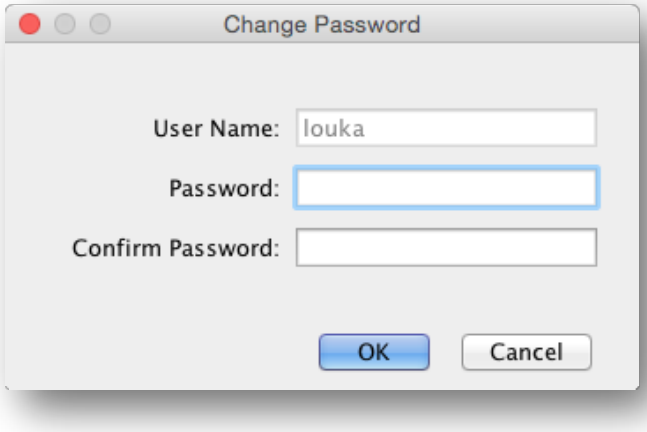
2.6 Changing Your Password

You can change your password via the Edit > Set Password… menu item. For security reasons, you should change your password regularly and use a password that is difficult for other people to guess.

You must be logged on to a CREATE server in order to change your password.

To change your password:

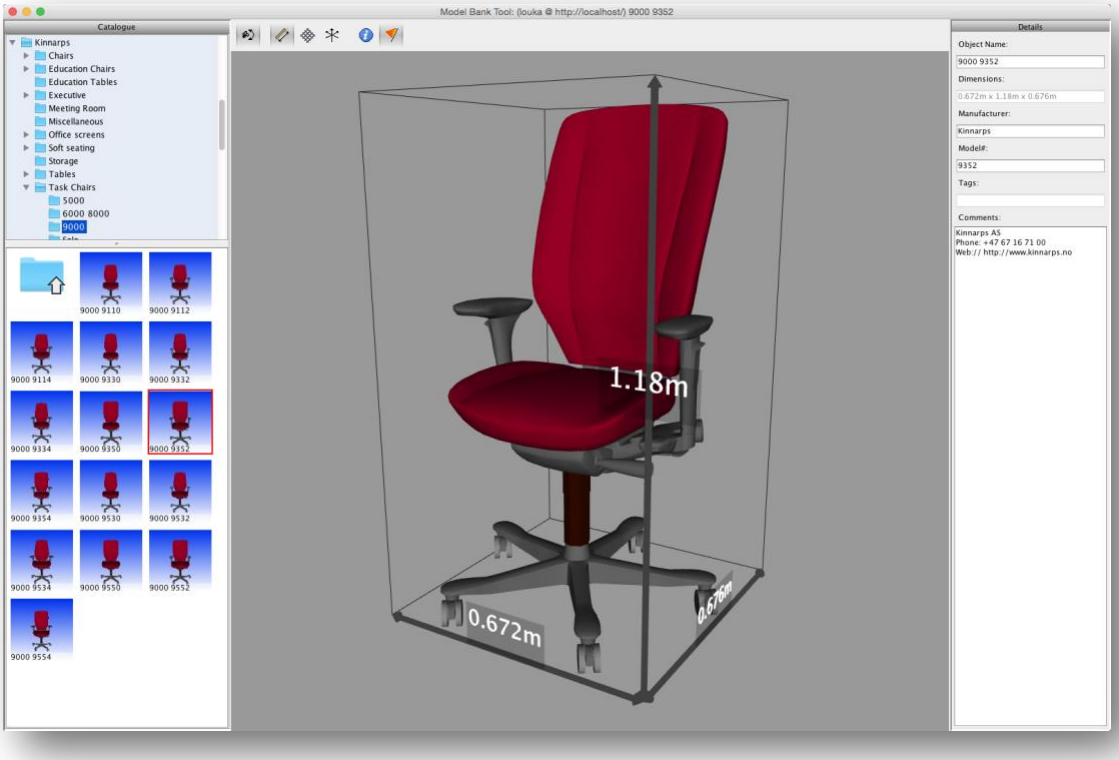
1. Select Edit > Set Password…
2. The Change Password dialog will appear:



The Change Password Dialog

3. Enter a new password into the Password field
4. Enter the new password again in the Confirm Password field
5. Click on OK to commit the change or Cancel to abort

2.7 Overview of the User Interface



The Model Bank Tool User Interface

The primary Model Bank Tool user interface consists of a large window with a window title bar, main menu bar, and a number of panes with the main features of the tool easily accessible.

The window title bar indicates which user you are logged in as and which server you are using, as well as the name of current model you are viewing.

The menus in the main menu bar are described in Menus (see Section 4).

The use of the panes is described in Managing the Model Bank (section 4).

On the left side is the Model Bank Panel (see Browsing categories – Section 4.1), where the categories on the server can be browsed at the top and the bottom panel displays icons of the models in the selected category.

In the middle is the 3D View with a toolbar (see Viewing Models – Section 4.2). The 3D View is an interactive 3D window where models are displayed.

To the right is the Details Panel (see Editing model details – Section 4.7).

3 Creating 3D models for the Model Bank

3.1 File format

The internal file format used for models in the Model Bank is ISO VRML97 (Virtual Reality Modelling Language). VRML files can be exported from most high-end 3D modelling packages, including the free 3D modelling tool Blender.

Details about ISO VRML97 can be found on the Web 3D Consortium website: http://www.web3d.org/

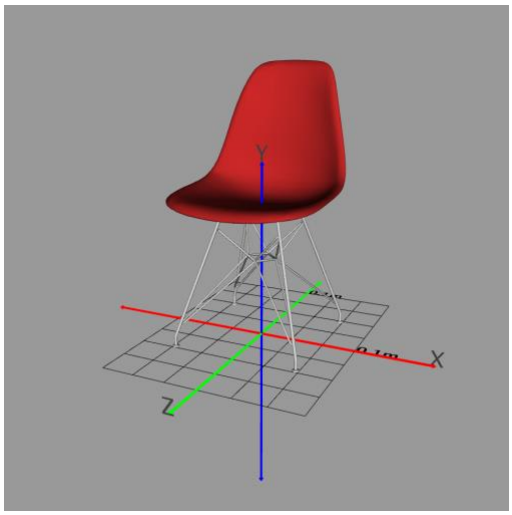
You can also directly import models stored in the COLLADA (DAE – Digital Asset Exchange) and KMZ formats using the Model Bank Tool. Many 3D modelling packages can export data in these formats, including Trimble SketchUp. Most online 3D model archives and an increasing number of furniture and equipment manufacturers provide models in at least one of these three supported formats.

Regardless of whether VRML, KMZ, or COLLADA is used to transfer a 3D model into the Model Bank, the same basic rules apply in order to produce models that are optimised for use in HVRC CREATE. These are described in the following sections. Note that when importing models into the Model Bank Tool, functionality is provided to correct common issues on-the-fly, however if you are producing models yourself then it is useful to be aware of the 3D modelling practices that can make your model more efficient and trigger special features in the CREATE tools.

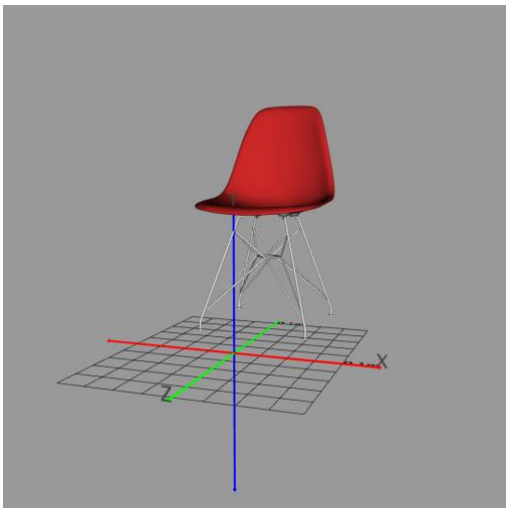
3.2 The origin and centre of rotation

When a model is dropped on a surface in the Layout Tool, the origin is the point where the model will initially be attached to the surface. When that model is rotated then it is rotated around the Y-axis around the origin. Using an appropriate origin is therefore important. For example, a model of a chair would normally have its origin at floor level with the Y-axis passing through the centre of the model.

Below are two pictures of the same model. In the first picture, the model's centre of rotation is correct, while in the second picture, the centre of rotation represents an example of a location that would be difficult to work with interactively as the object will be positioned and rotated relative to that position when the user moves the object in the Layout Tool.



Centre of rotation OK



Centre of rotation not OK

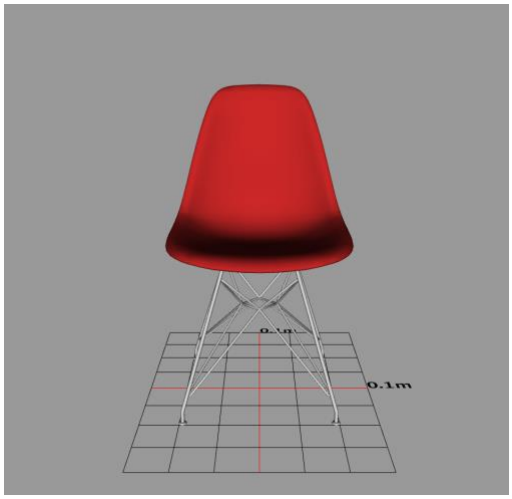
For objects that will be attached to walls and ceilings then the model's Y-axis should be defined as if the object were to be placed flat on the floor. This ensures that the correct orientation is obtained when the object is placed on a wall or the ceiling. For example, a wall clock should be modelled with the clock face facing up and a ceiling lamp should be modelled upside down. To see examples, have a look at existing objects in the Model Bank that are intended to be placed on walls or the ceiling.

The "Import Model" functionality in the Model Bank Tool enables you to correct the orientation and origin if necessary to the default centre of base. In special cases you may want the origin to be somewhere other than the middle of the base of the model, but this is rare for typical CREATE use-cases.

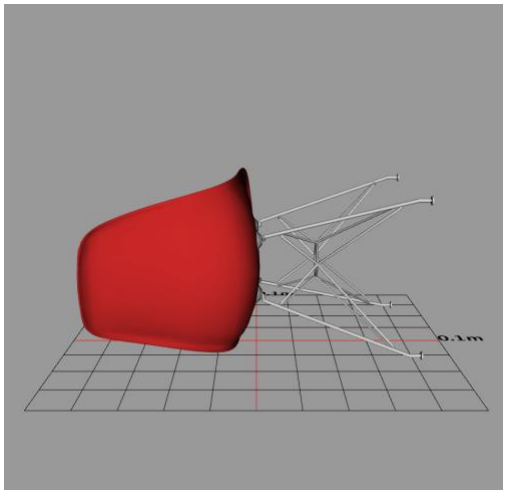
3.3 Orientation

Models should be produced so that they are flat in the XZ-plane and with orientation around the Y-axis set to neutral (0). When a Layout Tool user rotates an object, it is rotated around the y-axis of the model relative to the centre of rotation (origin) of the object, relative to the surface on which the object is placed.

Below are two pictures of the same model of a chair. In the first picture, the model's orientation is correct (with the legs on the group plane, which is the XZ-plane), while the orientation of the chair in the second image is, of course, inappropriate. When you load a model into the Model Bank Tool then it should normally face the user, if it is an object that is placed on the floor, e.g. a table or a shelving unit that stands on the floor. While there is no harm in such units being oriented differently around the Y-axis, since the Y-rotation can be modified in the Layout Tool, it is easier for the end-user if the direction that objects face in is consistent.



Orientation OK



Orientation not OK

3.4 Lights

3D models representing lights can be used for "light" models and are permitted to contain 3D lights that cast light. All other models that would not naturally cast light should not contain lights. Room models may contain lights. But that is not required as the Layout Tool provides a general 'indoor lighting' option which is normally preferable. 3D models added to the Model Bank can have realistic lighting effects baked into their textures, however these will, of course, not affect other models added to a layout. A baked room can be very effective for showcasing a final design but is not recommended for conceptual design work where you are likely to want to export a “clean” 3D model from the Layout Tool to other tools for further detailing or high-quality rendering, including baking of shadows for a showcase version of a final layout.

3.5 Inline files

A 3D model file (VRML97, DAE, KMZ) imported into the Model Bank may contain internal references to other 3d data files, image files for textures, and other resources. If the referenced files are not in the same directory (or a sub-directory) as the main model file, the Model Bank Tool will attempt to copy them and reorganise the file structure of copy of the model that will be added to the database, so the resulting model in the Model Bank is guaranteed to be complete.

3.6 Textures

Textures should follow usual conventions for 3D models intended for interactive applications. Textures should not be larger than necessary to conserve texture memory -- it is not typically necessary for textures to be larger than 512x512 in size, and it is generally good practice to provide images using powers of 2 (i.e. 4x4, 8x8, 16x16, 32x32, etc.) pixel dimensions for optimal performance. Most graphics cards do not support textures larger than 4096 x 4096 at all.

We recommend using PNG-format for textures to avoid compression artefacts, although for photographic-type images, JPEG may give adequate results with smaller file sizes. PNG is preferable to GIF when using transparency as it supports finer control of transparency levels.

The colour of surfaces and the textures are blended, so you should normally use white materials "under your textures" if you want the texture's own colour to dominate.

3.7 Supported VRML and COLLADA features

Only static ISO VRML 97 geometry is supported. Animations, scripted, or interactive features are generally ignored. This is also the case for such features in formats such as COLLADA.

3.8 Creating manikins in VRML

Manikins should be modelled following the ISO/IEC FCD 19774 H-ANIM 1.x standard. See: http://www.h-anim.org/ for details.

For a model to be used as a manikin in HVRC CREATE to evaluate line of sight and reach, the follow nodes are required:

```
HumanoidRoot
  skullbase
    l_eyeball_joint
    r_eyeball_joint
```

and

```
l_shoulder
    l_elbow
      l_wrist
        l_middle_distal_tip
r_shoulder
```

These node names may optionally have a `hanim_` prefix. Note that these nodes have to be in the file in the correct order, with no nodes between those specified, otherwise the manikin may not work correctly in the Layout Tool and Verification Tool. It is also important that the joints above are positioned without rotation for correct reach to be calculated. For both arms to be handled with differing lengths `r_elbow, r_wrist` and `r_middle_distal_tip` can also be specified, otherwise it is assumed that the right arm is the same length as the left arm.

Note that IFE can supply custom-specified manikins for CREATE that fulfil these requirements. Please contact CREATE Support for assistance.

3.9 Creating rooms

Rooms can be modelled in the Layout Tool itself or in a 3D modelling package for inclusion in the Model Bank. This section concerns pre-modelled rooms that will be added to a Model Bank.

Rooms can be modelled in a way that makes it possible to hide and show parts of the room to make viewing and editing easier in the Layout Tool or Verification Tool. In most cases, at least the ceiling should be identified to enable the user to hide it and more easily access the contents of the room.

To make part of a room identifiable, that part (node) has to be named in the model data. Note that when part of a room is hidden or shown, any children of that part will also be toggled. The model should therefore be structured appropriately.

VRML97 Example:

```
#VRML V2.0 utf8
DEF Room Group {
  children [
    DEF Floor   Transform { … }
    DEF Ceiling Transform { … }
    DEF Walls   Transform { … }
    …
  ]
} # end of Room
```

Note that …in this example indicates additional code.

3.10 Defining ideal snap locations (snap boxes) for modular models

A model can contain one or more invisible snap boxes that indicate the ideal locations where associated models (e.g. modular furniture or walls) can be joined together. The models can then be rapidly attached to each other in the Layout Tool.

When two snap boxes collide in the Layout Tool, the box belonging to the model that is being moved will be aligned so that it's centre and orientation is the same as the snap box belonging to the stationary model (for more details see the Layout Tool documentation).

Requirements for snap boxes in a model:

- Snap boxes must have a name (node identifier) starting with 'snapBox'. If there are more than one snap box in the model the ids should be unique for each snap box. The snap box should be a modelled as a Shape (typically with Box geometry).
- Snap boxes should not use shared geometry or appearances.
- The transparency field of the Material node should be used to set the snap box invisible.

VRML97 Example:

```
DEF snapBox Shape {

  appearance Appearance {
    material Material {
      transparency 1.0
    }
  }

  geometry IndexedFaceSet {
    Coordinate {
      Point [
        …
      ]
    }
  }

}
```

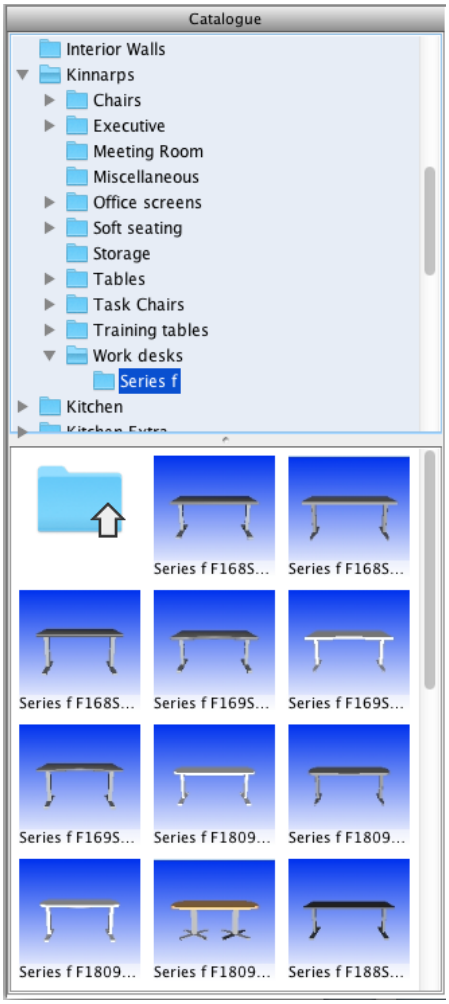
Note that … in this example indicates additional code.

4 Managing a Model Bank

The Model Bank Tool is used to install and update 3D models that can be used to construct control room layouts. Models are stored in a hierarchical database on the server. The models are grouped in categories, which can contain models and sub-categories. The Model Bank tool can be used to manage categories and models on the Model Bank server and to view both models on the Model Bank server and VRML, DAE, and KMZ models on a local file system.

4.1 Browsing categories

Model Bank categories can be browsed in the Model Bank panel. There are three types of categories – *object* categories, *room* categories, and *manikin* categories. Empty categories are greyed out in the tree view of the Model Bank. Categories can have sub-categories.



Model Bank Panel

To browse categories:

1. Click on a category in the tree or a category icon to select it. Icons of the models in the category and subcategories of the selected category will be showed in the lower part of the Model Bank panel.
2. If a category contains subcategories a handle is placed next to that category in the tree view of the model bank. By clicking the handle you can choose to show or not show the subcategories.

4.2 Customising catalogue icon display

It is possible to choose between small or large model and catalogue icons and to choose whether to display an item's name on the model icon.

To choose small icons:

1. Select View > Small Catalogue Icons

To choose large icons:

1. Select View > Large Catalogue Icons

To display an item's name on the model icon:

1. Select View > Catalogue Icon Text

4.3 Viewing models

3D models on the local file system in support formants, and models in a Model Bank can be viewed in the 3D View pane. The 3D view is an interactive 3D window with a toolbar above it.



3D View

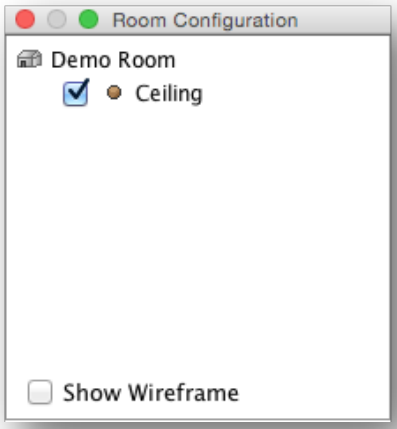


3D View toolbar

From left to right the buttons in the 3D view toolbar are:

(Please note that only the first six buttons are always visible in the 3D View toolbar).

Study Model button	is used to toggle between “study” state, and “auto rotate state”.
Show Dimensions button	is used to toggle the dimension visualization on or off.
Show Grid button	is used to toggle the grid on or off.
Show Coordinate System button	is used to toggle the coordinate system on or off.
Model Information button	is used to toggle a window with information about the loaded model (See Viewing model information).
Model Details button	is used to toggle the Model Details side-panel that can be used to edit data about the item the model represents, such as it’s name, manufacturer, price, and other comments (see Editing model details).
Snap Box Visibility button	is used to toggle the visibility of snap boxes in the model. This button is only visible if there are snap boxes defined in the loaded model.
Room Configuration button	is used to display a room configuration window for room models. Note that the room configurator is just for temporarily examining the model and doesn’t make any permanent changes in the model. This button is only visible if a room model is loaded. It enables you to toggle visibility of named parts of a room model.



Room Configuration window

To view an existing Model Bank model:

1. To view a Model Bank model in the 3D View click on the model icon with the left mouse button, or drag it into the 3D View by pressing the left mouse button over the icon and drag it to the 3D View before releasing the left mouse button (see Browsing categories).
2. A red frame around the model icon indicates that this is the loaded model.

See also:

Adding a new model to a Model Bank

4.3.1 Navigation

The user can toggle between two states for displaying a model in the 3D View. If the Study Model button is not selected, the model is displayed rotating and fit to the 3D view – this is a non-interactive mode.

If the Study Model button is selected the user can rotate, zoom and pan the model.

To rotate the model:

1. Make sure the Study Model button is selected.
2. Use the left mouse button (by dragging) to rotate the model in the 3D View. Imagine an invisible bounding sphere around the model that you rotate.

To zoom the model:

1. Make sure the Study Model button is selected.
2. Use the middle mouse button (by dragging) in the 3D view to zoom the model.
   Zoom in by dragging the mouse cursor with a vertical movement from top to bottom.
   Zoom out by dragging the mouse cursor with a vertical movement form bottom to top.

To pan the model:

1. Make sure the Study Model button is selected.
2. Use the right mouse button (by dragging) in the 3D view to pan the model. The model will be moved in the direction you drag the mouse.

4.3.2 Displaying a visual grid

A grid indicating the position of the ground relative to the model can be toggled in the 3D View.

To toggle the grid:

1. Select the Show Grid button or the View > Show Grid menu item to show the grid.
2. Deselect the Show Grid button or View > Show Grid menu item to hide the grid.

To configure the grid:

1. Select View Grid Options… to display the grid options dialog.
2. Press OK or Apply to apply changes or Cancel. Pressing OK or Cancel dismisses the options window.

4.3.3 Indicating the centre of rotation of an object

A coordinate system with x- y- and z-axes that indicates the position of the model's centre of rotation can be toggled in the 3D View.

To toggle the coordinate system:

1. Select the Show Coordinate System button or the View > Show Coordinate System menu item to show the coordinate system.
2. Deselect the Show Coordinate System button or the View > Show Coordinate System to hie the coordinate system indicator.

4.3.4 Displaying object dimensions and bounding area

An indication of the dimensions of the model can be toggled in the 3D View.

To toggle 3d labels showing the model dimensions:

1. Select the Show Dimensions button or the View > Show Dimensions menu item to show the dimensions.
2. Deselect the Show Dimensions button or the View > Show Dimensions menu item to hide the dimensions.

4.3.5 Viewing model as a wireframe

Viewing a model as a wireframe can help you to identify potential problems with the model, such as misplaced polygons or poor optimisation (more polygons than necessary).

To view a model as a wireframe:

1. Select View > Wireframe.
2. Deselect View > Wireframe to turn off wireframe viewing.

4.4 Adding a new model to a Model Bank

A VRML model on the local file system can be added to a Model Bank as-is. It can be of one of these types: normal Object, Room, or Manikin. Each of these types of models is handled in a slightly different way.

When you select Open... from the File menu a dialog appears where you specify the type of model that you will open. You will then be able to select a file and open the model. The model is displayed in the 3D view but must be saved if you want to store it in the Model Bank. To save the model to the server, select File > Save…

If you open a model that is detected to conform to the requirements of a manikin as a normal object, then you will be asked to confirm that you want to open it as an Object rather than a Manikin.

Note that white space or non-ASCII characters in file names are not permitted. You will be able to open and view the model regardless of the filename format but will not be allowed to save it unless the filename is conformant. Please modify the filename and then open the model again if the Model Bank Tools gives a warning about this. If the model uses resources (such as textures files) with filenames that do not conform then use the Import Model method (see next paragraph) to open the model instead.

Alternatively, models can be imported in the VRML, KMZ or COLLADA format using the Import Model… option in the File menu, which offers an additional dialog displaying a preview and controls to perform quick fixes for typical issues with models, such as correcting origin, rotation, scale, and orientation. See Importing a COLLADA, KMZ or ISO VRML97 3D Model for details. Support for additional 3D model formats can be enabled via the Preferences dialog (See Expert Preferences).

Note that if you double-click on a file in order to open it then (if the Model Bank Tool is the default handler for that 3D model type) a VRML97 file will be opened as an Object as if opened using File > Open… while other COLLADA and KMZ files are treated as if you had selected File > Import.

See also:

Storing the original 3D model files with a new model

Expert Preferences

Exporting a model

4.4.1 Adding a new model

To open an ISO VRML97 model of an object without modification:

1. To open a model on the local file system choose File > Open … and select Object type from the dialog that appears.
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A file chooser will be displayed where you can select the VRML model you want to open. Browse the file system, select the VRML file and click the Open button.

To open a model of an object in any supported 3D format with preview and other options:

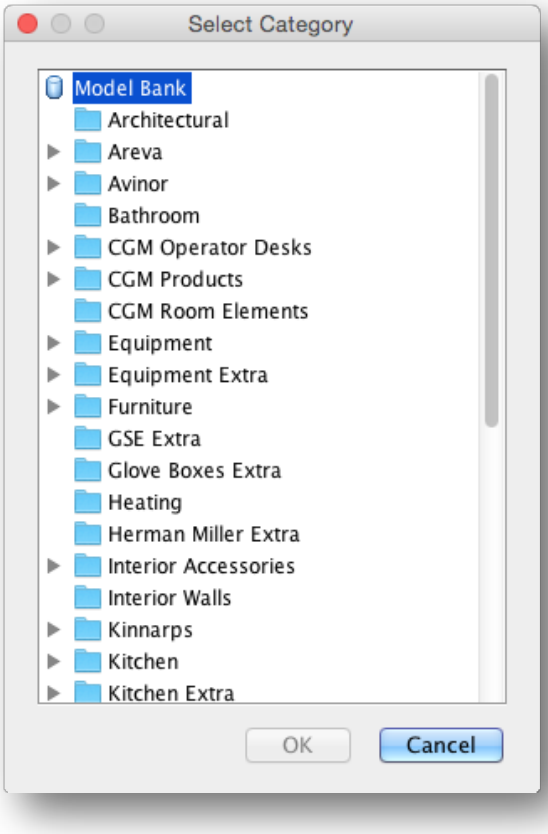
1. To open a model on the local file system choose File > Import … and select Object type from the dialog that appears.
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).

3. A file chooser will be displayed where you can select the 3D model you want to open. Browse the file system, select the 3D model file and click the Open button.

To add a new model to the Model Bank server:

Open a model from the local file system (see above).

1. If you wish to enter details for the model do that in the Details panel.
2. Choose File > Save…
3. A Select Category dialog will be opened. Select the category you want to save the loaded model to and click the OK button. Only categories for object models are available in the Select Category dialog – an object model cannot be saved into a room category or a manikin category.



Select Category dialog

4. The model is now saved on the server in the selected category.

See also:

Storing the original 3D model files with a new model

4.4.2 Adding a new room

To open an ISO VRML97 room model without modification:

1. To open a room model on the local file system choose File > Open … and select Room type from the dialog that appears.
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A file chooser (see Adding a new model) will be displayed where you can select the VRML room model you want to open. Browse the file system, select the VRML file and click the Open button.

To open a model of a room in any supported 3D format with preview and other options:

1. To open a room model on the local file system choose File > Import … and select Room type from the dialog that appears.
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A file chooser (see Adding a new model) will be displayed where you can select the 3D room model you want to open. Browse the file system, select the 3D file and click the Open button.

To add a new room model to the Model Bank server:

1. Open a room model from the local file system (see above).
2. If you wish to enter details for the room model do that in the Details panel.
3. Choose File > Save…
4. A Select Category dialog (see Adding a new model) will be opened. Select the category you want to save the loaded model to and click the OK button. Only room categories are available in the Select Category dialog - a room model can only be saved into a room category.
5. The room model is now saved on the server in the selected category.

See also:

Storing the original 3D model files with a new model

4.4.3 Adding a new manikin

To open an ISO VRML97 manikin model without modification:

1. To open a manikin model on the local file system choose File > Open … and select Manikin type from the dialog that appears
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A file chooser (see Adding a new model) will be displayed where you can select the VRML manikin model you want to open. Browse the file system, select the VRML file and click the Open button.
4. The manikin file will be checked to see if it is a valid manikin file. If it isn't a valid manikin file the user will see a warning, and the model will be treated as a normal model.

To open a model of a manikin in any supported 3D format with preview and other options:

1. To open a manikin model on the local file system choose File > Import … and select Manikin type from the dialog that appears
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A file chooser (see Adding a new model) will be displayed where you can select the 3D manikin model you want to open. Browse the file system, select the 3D file and click the Open button.
4. The manikin file will be checked to see if it is a valid manikin file. If it isn't a valid manikin file the user will see a warning, and the model will be treated as a normal model.

To add a new manikin model to a Model Bank server:

1. Open a manikin model from the local file system (see above).
2. If you wish to enter details for the manikin model do that in the Details panel.
3. Choose File > Save…
4. A Select Category dialog (see Adding a new model) will be opened. Select the category you want to save the loaded model to and click the OK button. Only manikin categories are available in the Select Category dialog - a manikin model can only be uploaded into a manikin category.

5. The manikin model is now saved on the server in the selected category.

See also:

Storing the original 3D model files with a new model

4.4.4 Importing an image for use as an object

You can import images to be used as objects in a layout. This can be useful for rapidly creating static images for computer displays, posters, sheets of paper, and so forth. Note that the Layout Tool provides a similar opportunity using a parametric Image Surface object, however the Model Bank Tool enables you to create image objects that can be easily shared between projects and provides a wizard to enable rapid sizing to standard display and paper sizes.

To import an image:

1. To import a locally placed image, choose File > Import Image…
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A file chooser will be displayed where you can select the image file you want to import. Browse the file system, select the image file and click the Open button.
4. An Image Import Wizard, where the user can choose model dimensions and image optimisations, will be opened. Choose the desired values and click the OK button to generate an image model, or Cancel to abort.

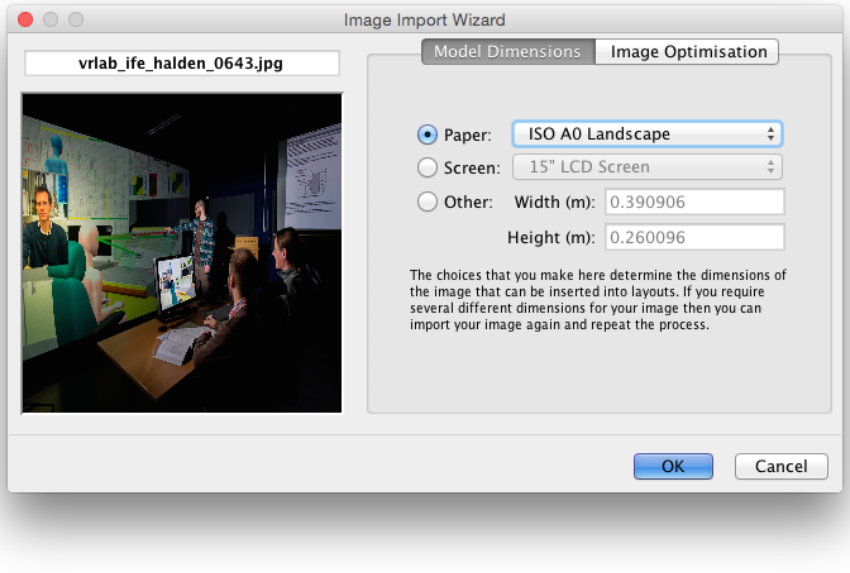


Image Import Wizard

To add a new image model to the Model Bank server:

1. Make sure that you have an image on the local file system opened (see above).
2. If you wish to enter details for the image do that in the Details panel.
3. Choose File > Save…
4. A Select Category dialog (see Adding a new model) will be opened. Select the category you want to save the loaded model to and click the OK button. Only object categories are available in the Select Category dialog – an image can only be uploaded into an object category.
5. The image is now saved on the server in the selected category.

4.4.5 Importing an ISO COLLADA, KMZ or ISO VRML97 3D Model

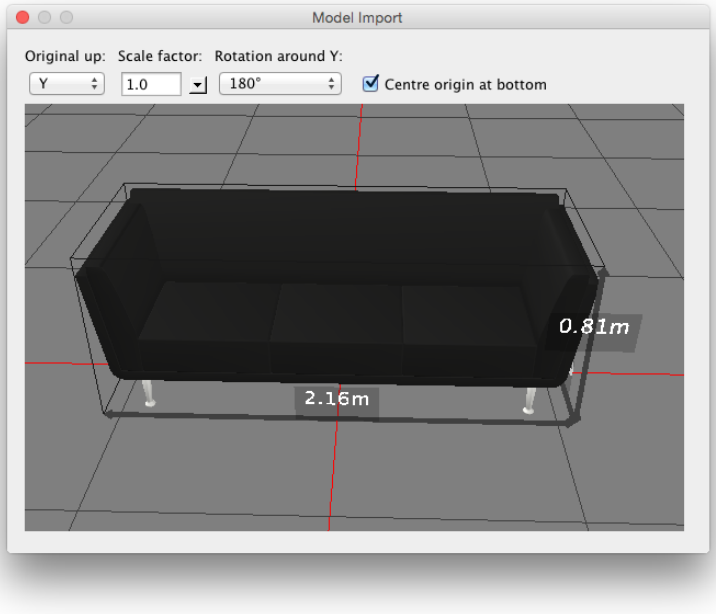
Importing a model enables you to preview it and perform and correct issues with it before adding it to the Model Bank database. Note that VRML models can be either opened or imported but the result is not the same, even if no manipulations are selected. When Import is used, the model geometry is optimised and textures regenerated so the VRML data will be modified by import. When using Open to add a VRML model then only paths to resources are modified in the VRML file added.

The last selected model manipulation options are presented as default in the preview dialog, making it quicker to import multiple models with the same issue (e.g. a set of models all need to be rotated around Y 180 degrees and need scale corrected from cm to m).

In addition to ISO COLLADA (DAE), ISO VRML97 (WRL), and KMZ (compressed Keyhole Mark-up Language with embedded COLLADA model, as used by Google Earth) formats, support for additional 3D formats can be enabled via the Preference dialogue. These include LWO, OBJ, PLY, and SCENE (Ogre3D) formats. See Expert Preferences for details.

To import a new model with option for additional processing during import:

1. To import a model on the local file system, choose File > Import Model…
2. If you already have a locally placed model opened, you will be asked if you want to save this to the Model Bank server (see below).
3. A dialog will appear requesting you to specify the type of model you will open (object, manikin, or room). Select a type and the press OK, or Cancel to abort the operation.
4. A file chooser will be displayed where you can select the model you want to open. Browse the file system, select the file and click the Open button, or Cancel to abort the operation
5. A dialog will appear displaying a preview of the model and controls you can used to perform some common manipulations to it. The resulting model will be displayed in the main 3D View when you close the preview dialog.



Model Import dialog window.

To add a new model to the Model Bank server:

Make sure you have a model on the local file system opened (see above).

1. If you wish to enter details for the model do that in the Details panel.
2. Choose File > Save…

3. A Select Category dialog will be opened. Select the category you want to save the loaded model to and click the OK button. Only categories for object models are available in the Select Category dialog – an object model cannot be saved into a room category or a manikin category.

See also:

Expert Preferences

Storing the original 3D model files with a new model

Exporting a model

4.4.6 Storing the original 3D model files with a new model

The original files (e.g. 3D Studio Max or Blender files) used to create a 3D model can be archived together with the model added to the Model Bank by placing copies of those files in a zip-archive.

The zip archive with original files can be exported from the Model Bank for future editing by selecting File > Export Model… when the model you want to export has been loaded into the 3D view.

To archive the original files together with a new model:

1. Place a zip-archive in the same folder as the model file you will open to add to the Model Bank. The zip file should have the exact same name as the model file, except for the file extension, which should be .zip. For example, if the VRML file is named 'model.wrl' then the original file (or zip archive) should be 'model.zip'.
2. The original file will then be detected and stored with the model if the model is opened or imported and subsequently saved to the server (see Adding a new model).

See also:

Exporting a model

4.5 Installing a package containing a set of models

A model package is a set of models that have been archived together for easy distribution and installation. For example, upgrades to the standard models and optional categories may be supplied as Model Bank Packages that can be installed using a single operation by a Model Bank Tool user.

To install a model package:

1. Select File > Install Package…
2. Select the package file (a zip archive) that you wish to install in the file dialog that appears (or Cancel if you change your mind).
3. The package data will be installed on the server and the model bank catalogue view will be refreshed.

4.6 Exporting a model

A model can be exported from the Model Bank Server. If the original 3D model files were included in the zip file when a model was uploaded to the Model Bank server (See Section 4.4), the original files will be exported together with the model.

To export a model:

1. Open a model on the Model Bank server (see Viewing Models).
2. To export the uploaded files for the loaded model choose File > Export Model…
3. A file chooser will be displayed where you can select the folder you want to save the model files in. Browse the file system, select a folder and click the Open button.
4. The model files are now saved in the selected folder.

See also:

Adding original 3D model files

4.7 Editing model details

Model details for a model in the Model Bank can be edited. These are the details that are shown to end-users of the Layout Tool and can appear in inventory reports produced using the Layout Tool.

To edit model details:

1. Open a model (see Viewing Models).
2. Enter or modify details about the model in the fields of the Details side-panel.
3. When you have finished making changes, choose File > Save to commit them to the database.

See also:

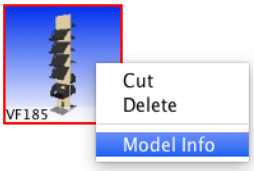
Tagging models with meta-data

4.8 Viewing model information

Information about a model and its associated resource files (typically texture data) can be viewed.

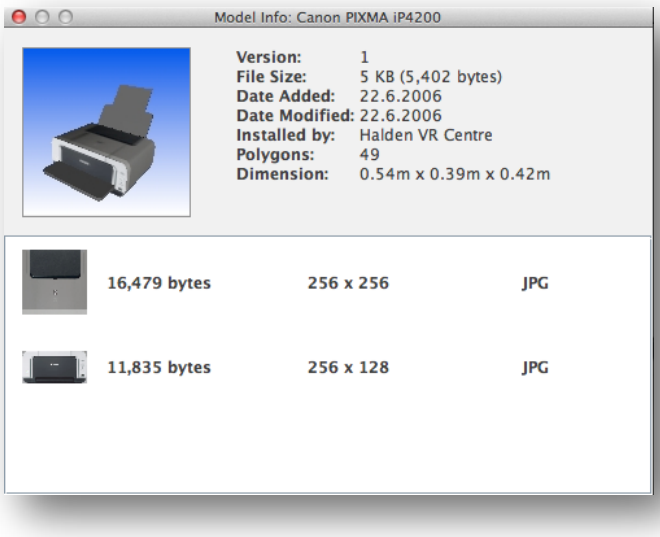
To view model information:

1. To view model information for the loaded model choose Window > Model Info…, use the Model Information button in the 3D view toolbar (See Viewing Models), or right click on the model icon and selecting 'Model Info' in the popup menu.



Model Info menu item in popup menu

2. If the model info window is opened it will be updated with information about the currently loaded model.



Model Info window

4.9 Moving a model to a different category

A model can be moved to a different category. When a model is moved to a different category, a copy of the model is placed in the new location and the original is deleted (see Deleting a model). If a model is to be moved to a category where there is already a model (including hidden models) with the same name then the moved object must be given a new name, otherwise the move operation is not permitted.

To move a model:

1. To select a model to be moved, choose Edit > Cut Item, or right-click on the model icon (see Browsing categories) and choose Cut in the popup menu. Note that the Cut Item menu item in the main menu works on the loaded model, the Cut menu item in the popup menu works on the model the icon represents.
2. Select the category you want to move the model to and choose Edit > Paste, or right-click on the category and choose Paste in the popup menu.
3. The model is now moved to the new category.

4.10 Deleting a model

A model can be deleted. When a model is deleted, it remains archived on the server but is flagged as hidden. It is logically no longer available but physically remains on the server. A hidden model can no longer be selected (it is not shown) in the Project Management Tool for use in new projects. However, the hidden model remains available to existing projects that use it.

To delete a model:

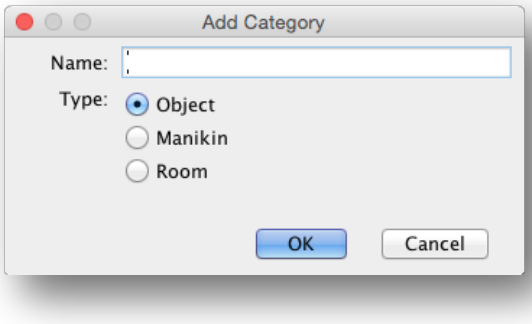
1. To delete a model choose Edit > Delete Item or right-click on the model icon (see Browsing categories) and choose Delete in the popup menu. Note that the Delete Item menu item in the main menu works on the loaded model, the Delete menu item in the popup menu works on the model the icon represents.
2. You will then see a confirmation dialog where you are asked if you really want to delete the model. If your answer is yes the model will be deleted.

4.11 Creating a new category

New categories can be created anywhere in the hierarchy (except in hidden categories). A category can be of one of these types: object category, room category or manikin category.

To create a new category:

1. Select the category you want the new category to be a subcategory of. If you want to create a category at the top level, you select the Model Bank root node.
2. Choose Edit > Add Category… or right-click on the selected category (see above) and choose Add Category… in the popup menu.
3. An Add Category dialog will be displayed where you enter the name of the new category and select type (object, room or manikin). When you are finished click OK, or Cancel to abort.



Add Category dialog

3. A new category is then created on the Model Bank server.

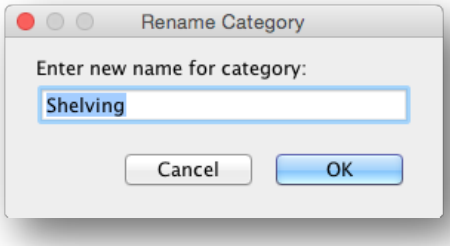
4.12 Renaming a category

A category can be renamed. The same mechanism as for moving a model is used (see Moving a model to a different category) but in this case all models and sub-categories in the original category also are copied before the original is deleted (see Deleting a model).

Any already hidden categories and models in a category that is being renamed are not copied from the original to the new location.

To rename a category:

1. Select the category you want to rename.
2. Choose Edit > Rename Category… or right-click on the selected category (see above) and choose Rename in the popup menu.
3. A Rename Category dialog will be displayed. Enter the new name of the category and click the OK button, or Cancel to abort.



Rename Category dialog

4. The category is now renamed.

4.13 Moving a category

A category can be moved. The same mechanism as for moving a model is used (see Moving a model to a different category) but in this case all models and sub-categories in the original category also are copied before the original is deleted (see Deleting a model).

Any already hidden categories and models in a category that is being moved are not copied from the original to the new location.

To move a category:

1. Select the category you want to move.
2. Choose Edit > Cut Category or right-click on the selected category (see above) and choose Cut in the popup menu.
3. Select the category (or the Model Bank root node) you want to move the category to and choose Edit > Paste or right-click on the category and choose Paste in the popup menu.
4. The category is now moved to the new location.

4.14 Deleting a category

A category can be deleted. When a category is deleted, it remains archived on the server but is flagged as hidden. It is logically no longer available but physically remains on the server. All models (see Deleting a model) and sub-categories in the deleted category are also deleted (flagged as hidden). A hidden category and its children can no longer be selected (it is not shown) in the Project Management Tool for use in new projects. However, the hidden category remains available to existing projects that use it or its children.

To delete a category:

1. Select the category you want to delete.
2. Choose Edit > Delete Category or right-click on the selected category (see above) and choose Delete in the popup menu.
3. A confirmation dialog will be displayed, and you will be asked if you are sure that you want to delete the category – click the OK button to delete the category.
4. The category is now deleted.

4.15 Set background colour in the 3D view

The background colour in the 3D view can be changed. The chosen background colour will be remembered the next time the Model Bank Tool is used.

If no background is selected then a white background is drawn, which is often appropriate to use when printing.

To change the background colour in the 3D view:

1. Select View > Set Background Colour…
2. Choose the preferred colour in the 'Set Background Colour' dialog and click the OK button.
3. Select View > Show Background

4.16 Printing a model

A full-page image of the 3D view can be printed.

As the aspect of your paper will often differ from that of the image on the screen, you may need to zoom out the image in the 3D view a little to ensure that it fits on your page without getting clipped.

You must always set the orientation of the paper using the page setup dialog.

Note that the dialog windows shown by the Model Bank Tool will depends on the operating systems you are using, so the actual dialog window on a computer running Linux will differ from the equivalent dialog window on a computer running Windows or OS X.

You can turn off the background for a white background when printing (see Set background colour in the 3D view).

To set up the page:

1. Select File > Page Setup…
2. Choose the required settings and confirm or reject your changes

To print the current guideline and procedure or index:

1. Select File > Print…
2. Choose the required settings
3. To ensure correct results, do not select orientation using the print dialog (Use File > Page Setup… instead)
4. Press OK to print or Cancel to abort

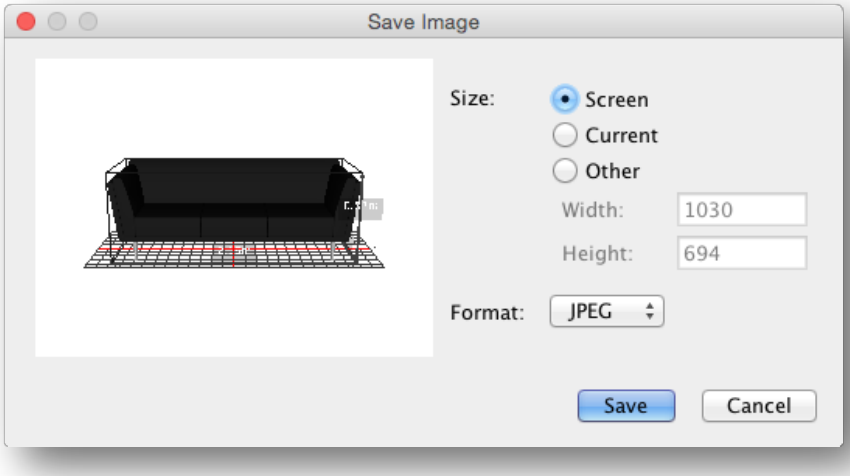
4.17 Exporting a 2D image of a model

A 2D graphic of the 3D view can be exported in either PNG or JPEG format. PNG is recommended for best image quality while JPEG gives smaller file size.

The dimensions in pixels of the exported image are configurable, enabling you to control the aspect and resolution of the image produced.

Image Size options:

- Screen – Produces an image with model fit to the resolution of you main display (e.g. 1920 x 1080 if you are using a HD-resolution display)
- Current – Produces an image that is the same size as the 3D view currently displayed
- Other – Produces an image with model fitted at the resolution specified. A warning will be given for especially high-resolution images as this option can potentially result in an out-of-memory situation. Therefore, always save your work before using this if you intend to attempt resolutions greater than about 4096 x 4096.



Save Image dialog

To save a 2d graphic image of the 3D view:

1. Select File > Export 2D Graphic…
2. Select options in the dialog that appears.
3. Choose Save to display a file save dialog or cancel to abort.

4.18 Tagging models with meta-data

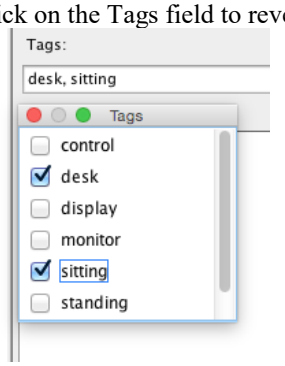
In the Layout Tool, the designer can tag models with meta-data that describes the purpose or role of an object in a layout. This can be used to automate aspects of testing against requirements and guidelines. The Model Bank Tool also support tagging of models with general tags that, if set, save time for the designer using the models. For example, computer screens can be tagged with “display”, work desks as “desk” and so on. The set of tags that can be set in the Model Bank Tool is limited in comparison with those that can be set in the Layout Tool as the tags set in the Model Bank Tool are intended to be irrespective of the guideline set used in the Layout Tool or Verification Tool.

Tags are set on individual options by clicking on the Tags field under Model Details, and then ticking the tags that apply.

For convenience, if updating a large number of models, a tool (Model Tag Editor) for batch-modifying tags (both setting and removing) is provided in the Window menu.

To add/remove tags for an individual model in the Model Bank:

1. Load the model in the 3D view and make sure that the Details panel is displayed to the right
2. Click on the Tags field to reveal a dialog with scrolling list of tags

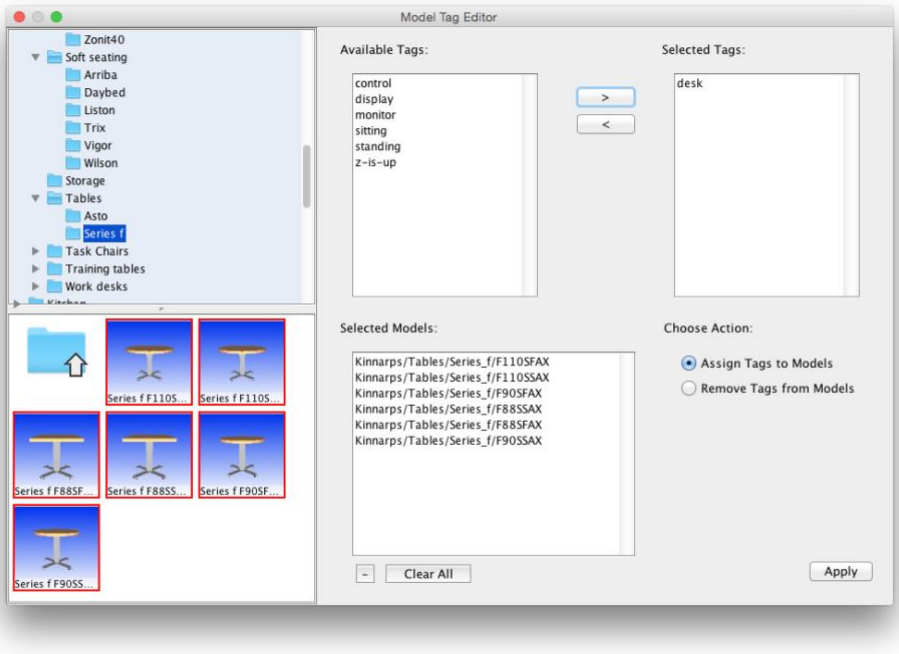


3. Select/deselect tags as appropriate for the model. Note that the selected tags are listed in the tags field.

4. Select File > Save to store the changes

To batch add/remove tags to multiple models in the Model Bank:

1. Select Window > Model Tag Editor
2. The Model Tag Editor window will appear (see image below).
3. Add the tags that you want to work with from the Available Tags to Selected Tags panel using the add and remove (< and >) buttons.
4. Select the models that you want to modify using the Model Bank view and model icons in the Model Tag Editor window. Note that you need to click on each model to select it but you can also right-click on the category and choose “Select all in folder”. The objects that are selected as listed in the Selected Models list.
5. You can remove individual models from the Selected Model list by selecting them and pressing the – button. You can also press Clear All to empty the list
6. Choose the action that you want to perform. Either you assign the selected tags to all of the selected models or you remove the selected tags from all the models. Note that removing a tag that is not actually assigned to a model will have not effect.
7. To apply the changes, press the Apply button. Note that changes are saved if you confirm the changes after pressing Apply. To cancel, just close the dialog without applying changes

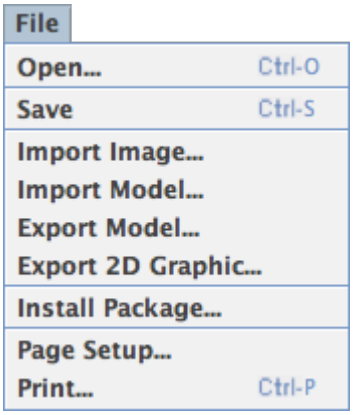


The Model Tag Editor window

Note that is you tag a model with z-is-up then the initial viewing position and rotation behaviour of the 3D viewer will adjust to make viewing the model more in line with that information, however the 3D model data itself is not affected by this.

5 Menus

5.1 File Menu

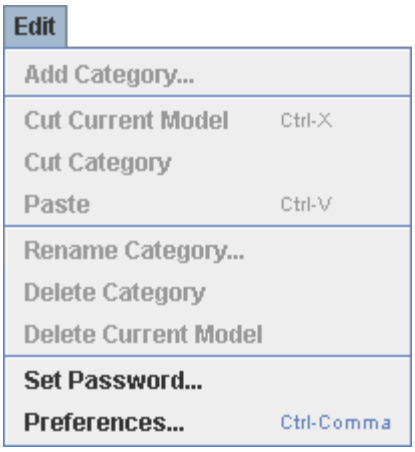


The File menu holds menu items for managing files locally and on the server, menu items related to printing and a menu item for exiting the program.

Some of the available items in the File menu have keyboard shortcuts (shown to the right of the menu items above).

Open…	is used to open a model (not room or manikin). (See Add a new model)
Save	is used to save a model to the Model Bank (See Add a new model to the Model Bank) and to save changes to model details for a model already in the database.
Import Image…	is used to import and image as a flat 2D object (See Add a new image).
Import Model…	is used to import a 3D model in VRML, KMZ or COLLADA format (See Importing a COLLADA, KMZ or ISO VRML97 3D Model).
Export Model…	is used to export a model from the Model Bank database (See Exporting a model).
Export 2D Graphic…	is used to export a 2D image of the 3D view to file (see Exporting a 2D image of a model).
Install Package…	is used to install a pre-made package containing a set of models
Page Setup…	is used to set printing properties (See Printing a model view).
Print…	is used to print the 3D view (See Printing a model view).
Exit	is used to quit the Model Bank Tool. If you choose this menu item then you will be requested to confirm that you want to quit. All unsaved work will be lost if you exit without first committing changes.

5.2 Edit Menu

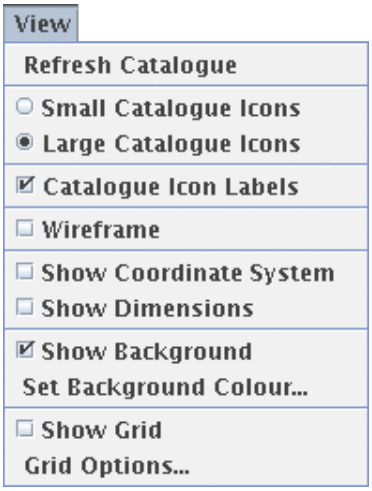


The Edit menu holds menu items for managing the categories and items on the Model Bank server and it holds menu items for changing password and switching to a new Model Bank server.

Some of the available items in the Edit menu have keyboard shortcuts (shown to the right of the menu items above).

Add Category…	is used to add a new sub category to the selected category in the Model Bank (See Creating a new category).
Cut Current Model	is used to cut (select to be moved) the loaded model (See Moving a model to a different category).
Cut Category	is used to cut (select to be moved) the selected category in the Model Bank (See Moving a category).
Paste	is used to paste the selected item – category or model – into the selected category in the Model Bank (See Moving a model to a different category and Moving a category).
Rename Category…	is used to rename the selected category in the Model Bank (See Renaming a category).
Delete Category	is used to delete the selected category in the Model Bank (See Deleting a category).
Delete Current Model	is used to delete the loaded model in the Model Bank (See Deleting a model).
Set Password…	is used to change your password (See Changing Your Password).
Preferences	is used to open the Preferences Window (See The Preferences Window for usage information).

5.3 View Menu



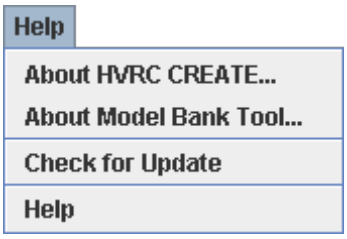
Refresh Catalogue	Refresh the category overview from the Model Bank database.
Small Catalogue Icons	select this to see small icons of the models.
Large Catalogue Icons	select this to see large icons of the models.
Catalogue Icon Labels	select this to display an item's name on the model icon.
Wireframe	select this to display the model as a wireframe (see Viewing model as a wireframe)
Show Coordinate System	select this to display an indicator at the origin of the coordinate system with an indication of the X, Y and Z directions (see Indicating the centre of rotation of an object).
Show Dimensions	select this to display the model enclosed in a wireframe box indicating the dimensions of the model (see Displaying object dimensions and bounding area).
Show Background	select this to display a coloured background.
Set Background Colour…	is used to change the background colour in the 3D view (See Set background colour in the 3D view).
Show Grid	select this to display a grid under the model.
Grid Options…	is used to configure the grid (colour and spacing).

5.4 Window Menu



Model Info…	is used to display a window with information about the loaded model (See Viewing model information).
Model Tag Editor…	is used to batch modify tags associated with models instead of setting tags for each model using the Details panel (See Tagging models with meta-data).

5.5 Help Menu

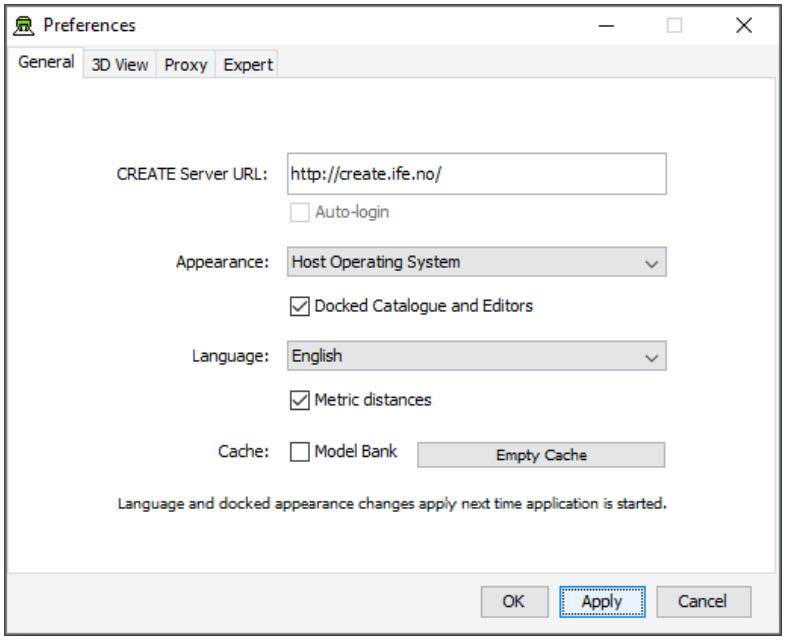


The Help menu provides access to copyright information about this software and to online help.

About HVRC CREATE…	Display copyright information about the CREATE tool suite.
About Model Bank Tool…	Display technical information about this tool.
Check for Update	is used to check if the latest version of this tool is being used.
Model Bank Tool Help	Access the online user guide for the Model Bank Tool.

6 Configuration

6.1 The Preferences Window



The Preferences Window

The first time you use one of the CREATE tools you will normally be presented with a wizard that assists you in setting the configuration options that you need to get started using HVRC CREATE. Subsequently, you can adjust your personal configuration via the options in the Preferences Window.

The Preferences Window can be accessed from the main menu bar's Edit > Preferences… menu item. The keyboard shortcut to open the Preferences Window is ctrl-comma (or command-comma).

Changes to preferences are global and therefore affect all CREATE tools that you use, however they are also personal and will not affect any other users of CREATE that share a computer as long as you are not sharing a computer user account.

There are four sets of preferences in the Preferences Window, the most important of which is the "General" set, which is used to enter the address of the CREATE server that will be used. The individual sets and the options they contain are described in the subsections below.

The Preferences Window has three buttons:

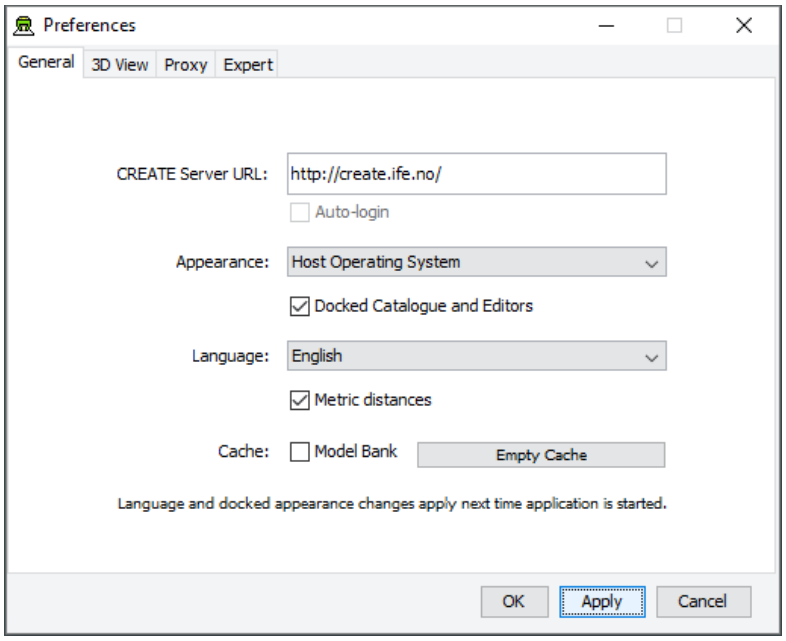
- OK is used to update the preferences and close the window
- Apply is used to set the update the preferences but not close the window
- Cancel is used to dismiss the window without making any changes

Clicking Apply followed by Cancel is equivalent to clicking OK.

A configuration file containing your preferences is created in your home directory and will be applied the next time you run a CREATE tool.

Closing the window by clicking on the close box (top right of the window) is equivalent to clicking on the Cancel button. Hitting the escape key is also equivalent to clicking on the Cancel button.

6.1.1 General Preferences



The General Preferences section of the Preferences Window with server create.ife.no set

The General Preferences section of the Preference Window is used to set the CREATE server URL, to specify the appearance of the CREATE tools, and to toggle caching to local disk of 3D models in the Model Bank.

Important information about changing the server URL:

- In general, it is recommended that you change the server URL setting either immediately after starting up a tool or immediately after saving any unfinished work to the current server, to avoid any risk of data loss before switching to a different server.
- If you are behind a firewall and are using a proxy server to access the internet then you should also refer to Proxy Preferences – section 6.1.3 if you need to access a CREATE server that is not on your local network (e.g. to access the demonstration server on `create.ife.no`).

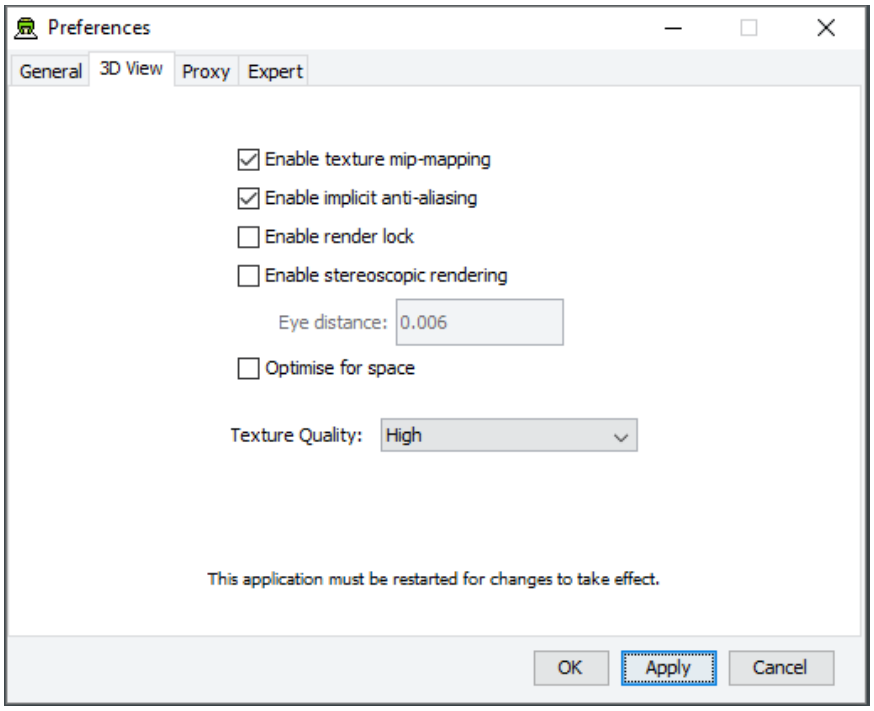
If some features of the tool are not working correctly and the software is reporting server access errors then the reason may be that the server is incorrectly configured, in which case you should report this to your CREATE server administrator.

The General options are described below:

CREATE Server URL	The server URL is the Web address of the CREATE server where all CREATE system and project data is stored. It is shared by all of the tools. If you attempt to modify the server URL then you will be asked to confirm the change. Changing the server URL to a non-existent host will render the tools unusable until a valid host URL has been entered. Changing the server URL before saving any work that has been done during the current work session will result in any unsaved data being lost. **Important: See notes above regarding changing the URL.**
Auto-login	If you are logged onto a CREATE Server then this option will be enabled. Once enabled, you can select it to indicate that you would like the tools to remember your user name and password for the current server and use it to automatically log on to the server at any time where you would otherwise be prompted to enter user name and password. The password is stored in encrypted form in the create preferences file for security reasons.

Appearance	The default Appearance is that of the host operating system. The host operating system appearance normally gives the CREATE Tools a look similar to that of other applications on your computer. The cross-platform setting provides a consistent user interface look and feel regardless of whether you are running the software on Windows, Linux, Mac OS X, or some other operating system.
Docked Catalogue and Editors	This option (currently only used by the Layout Tool) causes the Model Bank Catalogue and Editors side panels to be detached from the main application window. When detached, the panels appear as floating windows that can be moved freely around your computer screen. This is especially useful if you have multiple displays attached to your computer as you can then move the Catalogue and Editor panels to a different display, giving more space to work with the 3D view on your main display. This option takes effect the next time the Layout Tool is started.
Language	The text of the HVRC CREATE tools user interfaces can be displayed in English, US English, French or Norwegian. By default this option is set to system default, enabling the software to select the language automatically depending on your operating system language settings. However, you can also select the language specifically. For example, this can be useful if you are working on an international project where English is the project language, but your personal computer is otherwise configured to use a non-English language.
Metric distances	If you want distances to be displayed using U.S. measurement units then you can turn this option off, otherwise distances are displayed in metric units.
Cache	If Model Bank caching is enabled then frequently used models load faster as copies of the models are read from the local hard drive, rather than transferred over the network, each time the model is loaded. The effect of this depends on the speed of the network and the size of the models. The greatest benefit of using caching is achieved when frequently accessing models over a slow connection to a server. Since the model cache is stored on the local disk, it is important that there is sufficient disk space (a few megabytes is usually sufficient) and that you are not using an insecure computer and an insecure user account to access the models (from which the cached models could be copied). Pressing “Empty Cache” deletes the data in your local cache, freeing up disk space. Caveat: If you are using a computer where your home directory is on a server (rather than stored locally on the computer that you are using) then turning on the cache may actually slow down the loading of Model Bank data, if the network connection to the CREATE Server is not significantly slower than the connection to your home directory. **We do not recommend turning on the cache if your home directory is on a network server.**

6.1.2 3D View Preferences



The 3D View Preferences section of the Preferences Window

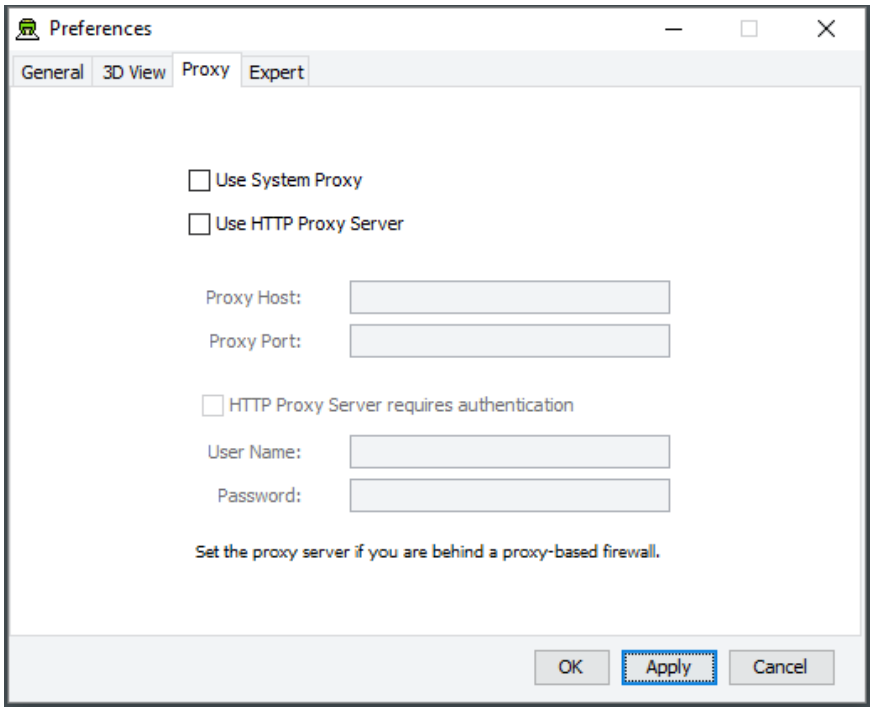
The 3D View Preferences are only applicable to the tools that display 3D graphics, and offer control over the way in which the 3D graphics are rendered. These options generally have no effect until the application has been restarted as the affect the way in which the 3D view is initialised.

The 3D View options are described below.

Enable texture mip-mapping	Enable generation of multi-resolution textures when textured models are loaded. This option improves the appearance and performance of textures, however some older graphics cards may not support this feature and the loading of textured models may be significantly slower if this option is enabled.
Enable implicit anti-aliasing	Allow the display driver to control full-screen anti-aliasing settings. If you have a graphics card with support for anti-aliased rendering then this option enables will cause the tool to acknowledge your anti-aliasing set-up. This option can greatly improve the visual appearance of the 3D view but there may be a performance impact, and some older graphics cards may not support this feature.
Enable stereoscopic rendering	Enable initialisation of 3D views in stereo mode. This option will only have an effect if you have a graphics card that supports active stereoscopic rendering. Unless you are actually using stereoscopic hardware, you should not enable this option as stereoscopic rendering will decrease the overall performance of the 3D view as it requires more effort of the graphics card. Default off.
Enable render lock	Controls rendering execution. Try changing this if you have driver problems. In general, you should leave it off. This option is offered only because it can resolve graphics driver problems in some special cases. Default off.
Optimize for space	Optimize 3D geometry to use less memory at the expense of slower performance. Disable this if you need to squeeze out a little more performance. In most cases the difference is unperceivable so we recommend leaving it on. Default on.

Texture Quality	If your layouts contain many high-resolution image surface parametric objects then you may reach a point where the rendering performance degrades significantly as you run out of memory on the GPU. You can improve performance by reducing the maximum quality used for texture rendering. Note that the images themselves are always stored at high resolution within CREATE so this only affects their appearance (both in the 3D view and when exporting 2D images). You can safely work with this set to Low if you want to maximise performance while working on a design, and increase it when you are ready to output high quality images. Default is High.

6.1.3 Proxy Preferences



The Proxy Preferences section of the Preferences Window

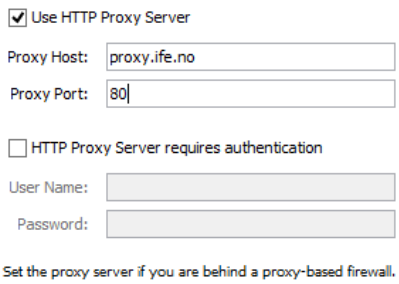
If you are behind a firewall and are using a web proxy server to access the Internet then you will need to configure the CREATE tools to use a proxy server if you wish to access a CREATE server that is not on your local network (e.g. to access the demonstration server on create.ife.no).

To enable proxy support, check the Use HTTP Proxy Server option, enter the server address (without entering `http://` in front of it and without any trailing slashes) in the Proxy Server field and the port number in the Port field. If you leave the port field blank then the default port (80) will be used.

To disable proxy support, uncheck the Use HTTP Proxy Server option.

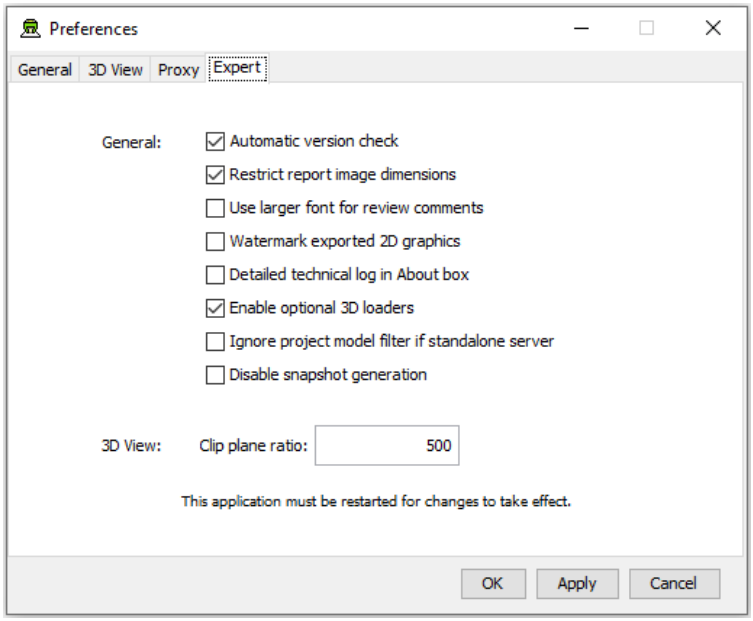
If necessary, select Proxy Server Requires Authentication and enter your network (i.e. not CREATE) user name and password.

Note that changing these items while in the middle of doing work with a CREATE tool is not recommended. Change these settings immediately after starting up a tool or after saving any unfinished work to avoid any risk of data loss.



Example of a filled-in Proxy Preferences section of the Preferences Window

6.1.4 Expert Preferences



The Expert Preferences section of the Preferences Window

The Expert preferences provide access to additional options, described below.

Automatic version check	Turn off the automatic daily checking for a new release of the HVRC CREATE Tools. If you turn this off then you will not be informed automatically of new updates, but can still check for updates manually via the Help-menu (Help > Check for Update). Default on.
Restrict report image dimensions	In versions of CREATE up to 4.0, snapshots of the 3D view added to reports in the Verification Tool were exact duplicates of the image in the 3D view, with the same resolution and aspect. From CREATE 4.0, the snapshots are taken with a consistent aspect to always fit neatly into a report page, with landscape or portrait format depending on the current 3D view aspect. Default on.
Use larger font for review comments	When using a non-Latin character set for entering review comments or procedures, some users may find the text easier to read if a large font is used than the system default size. Default off.
Watermark exported 2D graphics	If this option is enabled then “HVRC CREATE” and the name of the licensee is inserted at the top left on exported images. In the demo version of CREATE then this cannot be turned off. Default off.

Detailed technical log in About box	Select to enable detailed technical logging of system behaviour in the log in the About box. This is useful for troubleshooting if you experience technical issues with the software, and you need to contact CREATE support for assistance. Enabling this option has a small negative effect on the system performance. Default off.
Enable optional 3D loaders	Select to enable 3D loaders, to support importing 3D models in glTF, LWO, OBJ, PLY, and SCENE (Ogre3D) formats. These are described as optional as they are not guaranteed to load all files in those formats correctly but are useful as they can load most files in those formats. Saving your work before attempting to import a model for the first time in one of these formats is recommend. Default on.
Clip plane ratio	If you experience tearing effects in the 3D view then this may be because your graphics processor is unable to draw surfaces that are close together with sufficient accuracy. Reducing this number may minimise that effect, although at the cost of not being able to view near surfaces as closely. Similarly, if you are not having any problems with tearing then you might want to try increasing this number in order to be able to move even closer to surfaces before they disappear from view. A ratio of 1000 is a good choice for most modern discrete graphics cards. Default is 500.
Ignore project model filter if standalone server	If you are using a standalone CREATE Server (as opposed to a networked server), on the same machine that you are running the CREATE Tools on, then you can opt to ignore any project level model filters set for the Model Bank. This makes all categories and models visible in the Layout Tool regardless of any filters that have been specified using the Project Management Tool. If you are the only user of the server then this can be useful as you will see all new categories added to the Model Bank without having to update the project context using the Project Management Tool. Default is off.
Disable snapshot generation	Enable a partial workaround to enable CREATE 3D tools to run on hardware that does not fully support the 3D hardware minimum requirements. Default is off.