

1. Insert 3D model into photographic background

The *Add-On menu – Insert 3D Model in photographic background* functions of ARCHLine.XP® enables you to survey the perspective of the photograph that shows the environment; you do this with the help of a block whose enclosing parameters you define. This perspective will be applied on the model, too.

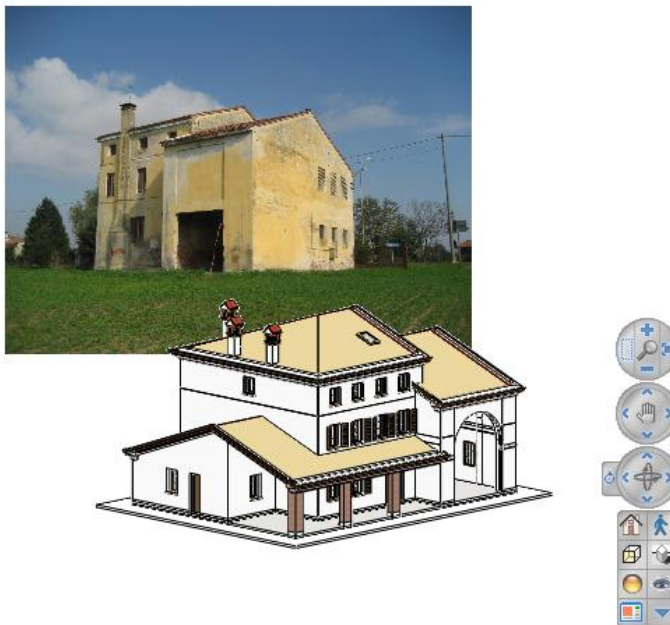
ARCH Line XP now contains a new Estimation method for inserting the 3D model into a photo. The new method is faster and easier to understand.

The old method which is based on known distances is described in chapter 15.4 of the User's Manual.

1.1. How to use the new Estimation method

1.1.1. Import the background image

1. Activate the 3D window.
2. Select **Add-on/Insert 3D model in photographic background / Import Raster Image**. Select the photo in which you want to insert the model and then place it into the 3D window by giving its bottom-left and top-right corner.



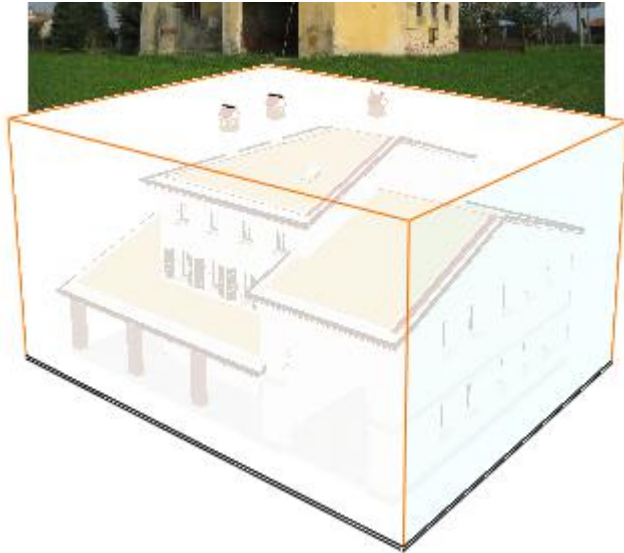
3. Double click on the photo and modify its properties: make it semi-transparent and modify the display order: bring the image on the top.

A screenshot of a software dialog box for configuring a raster image. The dialog is divided into several sections: 'File' (Name: photo.jpg, Path: C:\Documents and Settings\All Users\Application Data\Cadl), 'General Properties' (Display Order: 1 - Top-most, Layer: 08_Háttérkép), 'Insertion Point' (X: 10.06 m, Y: -2.8 m), 'Size' (Length: 27.98 m, Height: 20.99 m), and 'Rotation' (Angle: 0). The 'Transparency' section is highlighted with a red box, showing a slider set to 110. The 'Preview' section shows a small thumbnail of the image. The dialog also includes 'OK' and 'Cancel' buttons.

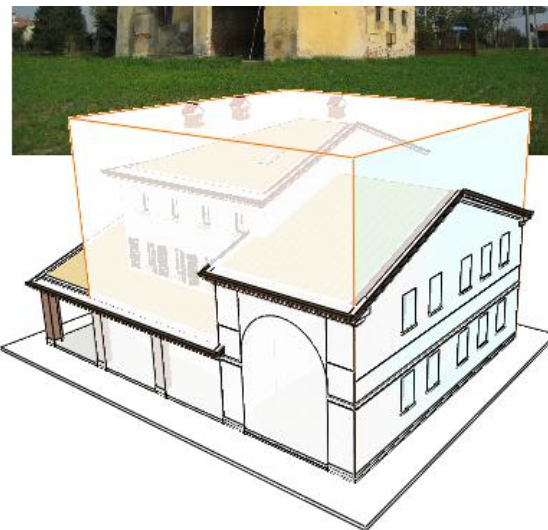
1.1.2. Define the bounding box

Select **Add-on/Insert 3D model in photographic background / Method I. –Estimation / Start** and define the bounding box:

1. First click on a facade of the building, a surface that is properly visible on the photo as well. The bounding box of the model appears.



2. Align the sides of the bounding box to the most-significant surfaces of the building by clicking on faces of the box one after the other. To reach the back faces you can rotate the model during this operation.



3. Finally, rotate the model into the view which is similar to the view of the photo and press ENTER.



1.1.3. Aligning perspective

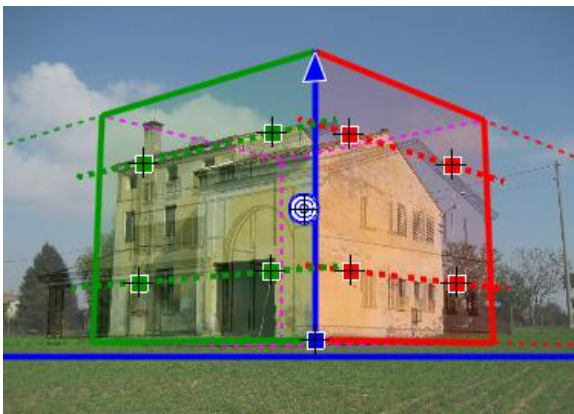
1. Move the view point () into the centre of the photo.



2. Move the thick horizontal line in blue into an approximately correct position.



3. Move the corner of the bounding box marked by the  sign to the related point on the photo, and then enlarge the model to a roughly correct size by using the  marker.




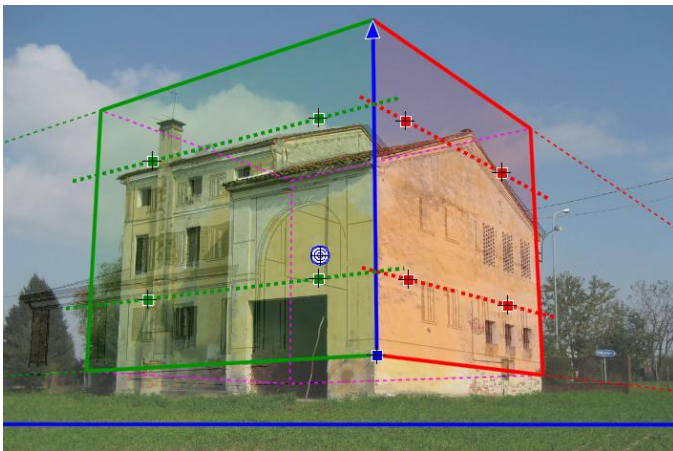
4. Find two edges which are properly visible on the photo and are parallel to the top and bottom edges of the red plane of the bounding box. Align the red dotted lines to these edges.



5. Repeat this with the green dotted lines.

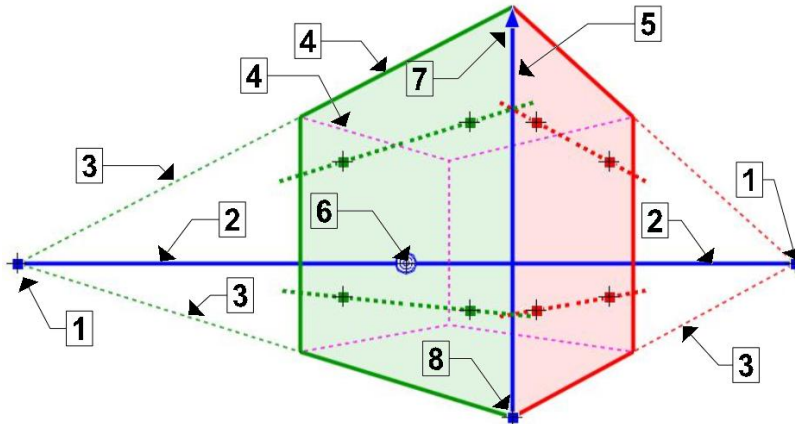




6. Enlarge the model to the correct size by using the  marker.



1.1.4. Fine Tuning

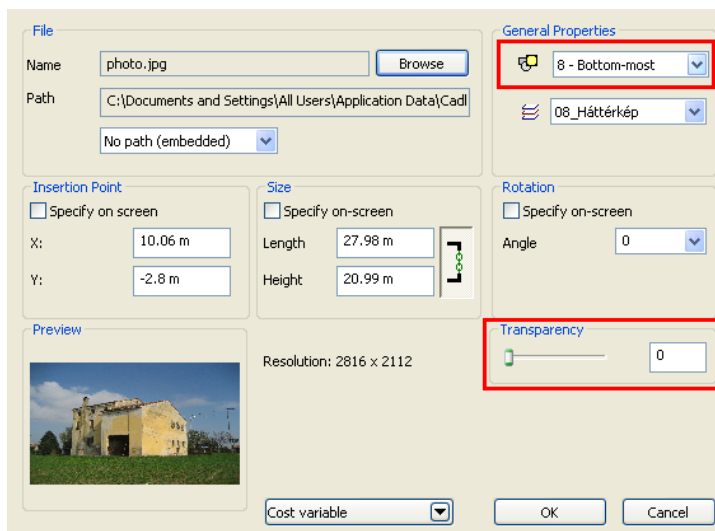
If the model does not fit the photo precisely, you can refine the alignment in several ways. Click on a point or edge marked by a number on the figure below.



1. Moves the vanishing point.
2. Moves the horizon line (up and down) and moves the nearer vanishing point (left and right)
3. Moves the related vanishing point
4. Replaces the red and green faces of the bounding box, the clicked edge will be the common edge (in blue) of the two faces.
5. Replaces the  and  points to each other.
6. Moves the view point
7. Resizes the model
8. Moves the model

1.1.5. Final steps

1. Double click on the photo and modify its properties: make it non-transparent and modify the display order: put the image on the bottom.





1.1.6. Rendering

1. Select the **Add-on/Insert 3D model in photographic background / Render** and set the Rendering Properties
2. Press then Start Rendering button and define the name of the rendered image file. The renderer saves two files, the normal rendered image with the given name like “model_to_photo.jpg” and the single background image with an extended filename “model_to_photo_back.jpg”.
3. The ARCH Line Image application appears and opens these two files. You can compose the final image using this application. See chapter 15.4.4.in Users Manual