ARC X9

BladeRender - User Manual

בלייד-רנדר - הרנדר שעובד בשבילך!

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INTRODUCTION

ARC+ X9 edition introduces a new interface for 3D visualisation.

<< Today, producing a render is necessary to sell projects. The cost for a good presentation is so high that it is better to do it by yourself. That's why ARC+ has invented this simplified interface, adapted for all the different needs of the user. >>

<< It is not just a simple product for rendering. It is fully integrated, it allows modelling and to see the results in real time, thanks to the performance of the graphics card. >>

In this manual, we will see the different functions step by step.

GENERAL INFORMATION

MINIMUM REQUIREMENTS

Intel Quad Core Processor

Windows compatible 7, 8, 8.1, x86 (2Gb RAM)

Windows compatible 7, 8, 8.1, x64 (4Gb RAM)

High resolution Graphics card for OpenGL 2.0 with 512 Mb (Nvidia, ATI)

PERFORMANCE

The 3D Bladerender works now with a 64-bit platform for editing and images production.

VISIBLE ENTITIES IN BLADERENDER

The entities which are visible in the render are:

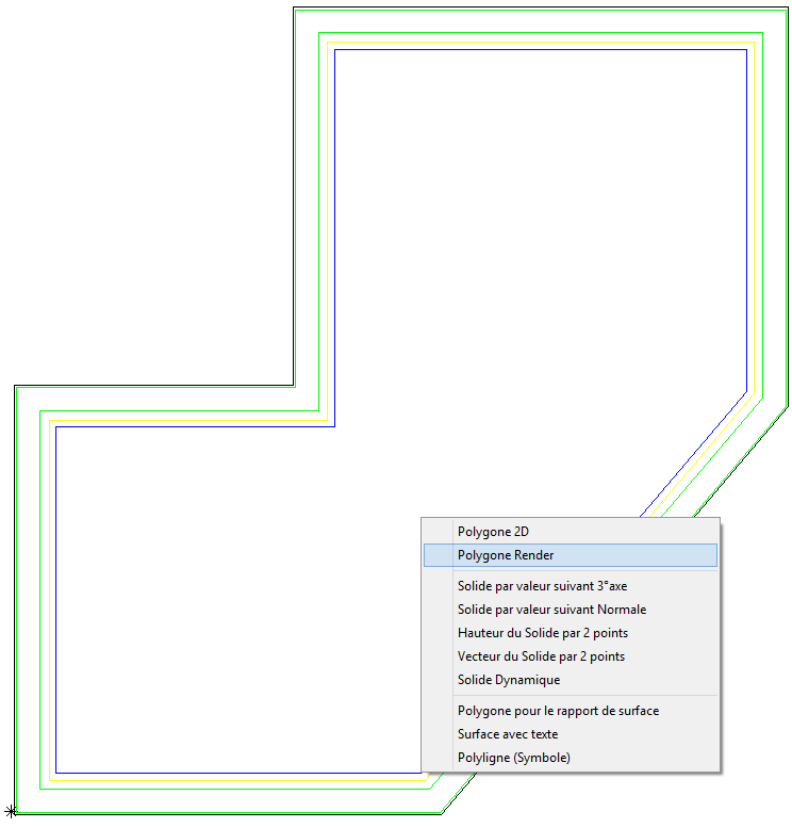
- Surfaces of 3D polygons of the model.
- The solids of the model.
- The polymesh.
- The 2D polygons with the attributes of polygon render.

- 2D polygons.
- Negative solids.
- All 2D entities.

What is a polygon render?

A polygon is a surface that is invisible in Bladerender because it doesn't have 3D attributes. When you give the polygon the attributes of the render, it is shown in Bladerender. This is useful to create the floor, for example.

To create a polygon render you just need to create a normal polygon render and use the command /newp. After closing the polygonby clicking enter, a list appears and you need to choose <<Polygon render>>.

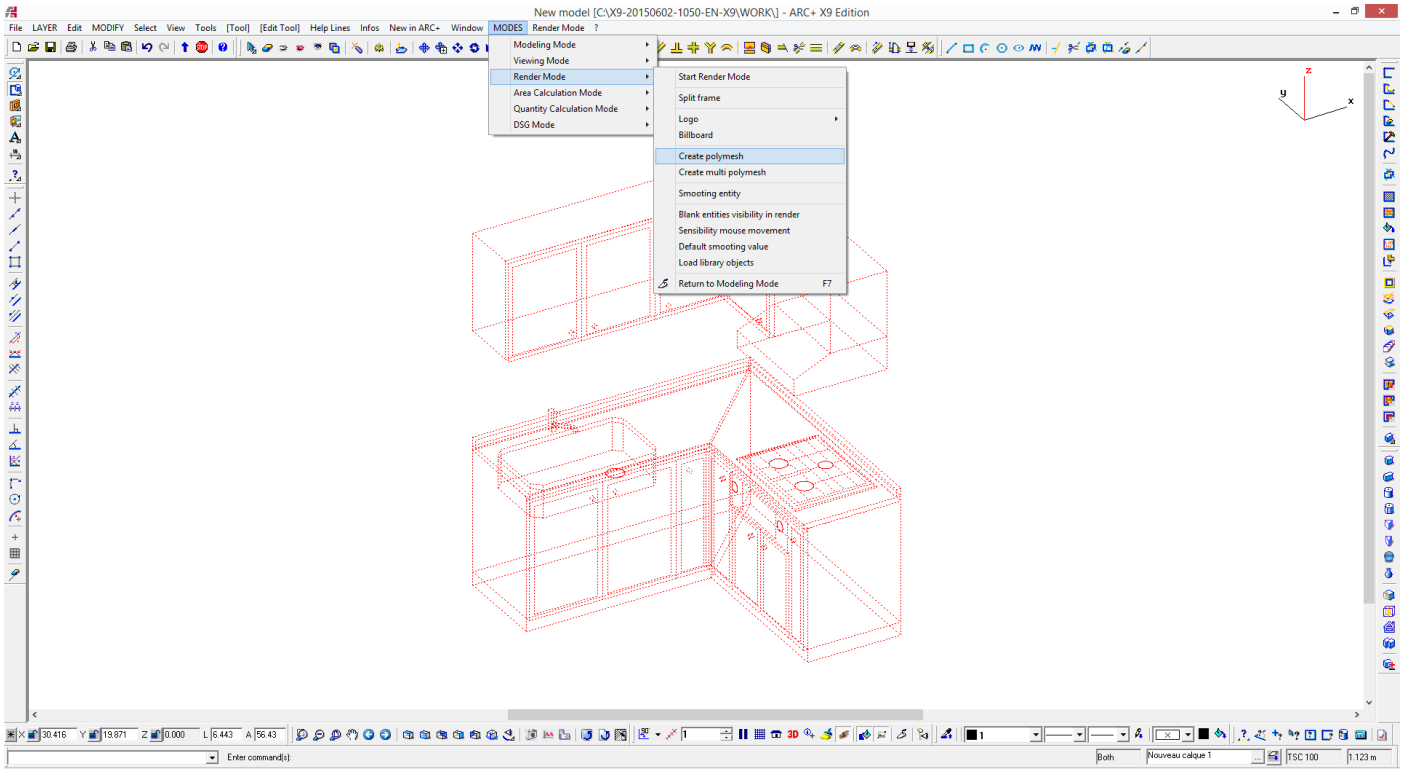


What is a polymesh?

A polymesh is a 3D block created by ARC+, starting from 2D entities. Beginning with 2D surfaces, ARC+ is able to create a solid block. This is what will be shown in Bladerender.

To create a polymesh:

- Select the entities and change them by selecting: / modes / Render mode / Create a polymesh.



Attention: a polymesh is a block without information. Nowadays it is possible to explode these polymesh to produce all the lines and surfaces that it is composed of, however it is better to not use this solution.

OPENING BLADERENDER

To open Bladerender, you need to click on the icon  which you can find in the toolbar <Mode>.

It is possible to hide Bladerender by disabling this icon. It is also possible to momentarily stop the transfer of information between Bladerender and ARC+ by clicking the icon  .

When you stop the transfer of information, the changes that you do in the project (ARC+) will not be shown in Bladerender until you enable the icon again.

WORKING WITH BLADERENDER

Bladerender is a 3D visualiser module. It will not only allow you to generate high quality photo-realistic images, but also give you the possibility to visualise a real-time render of your 3D model. This is extremely useful during and after the modelling.

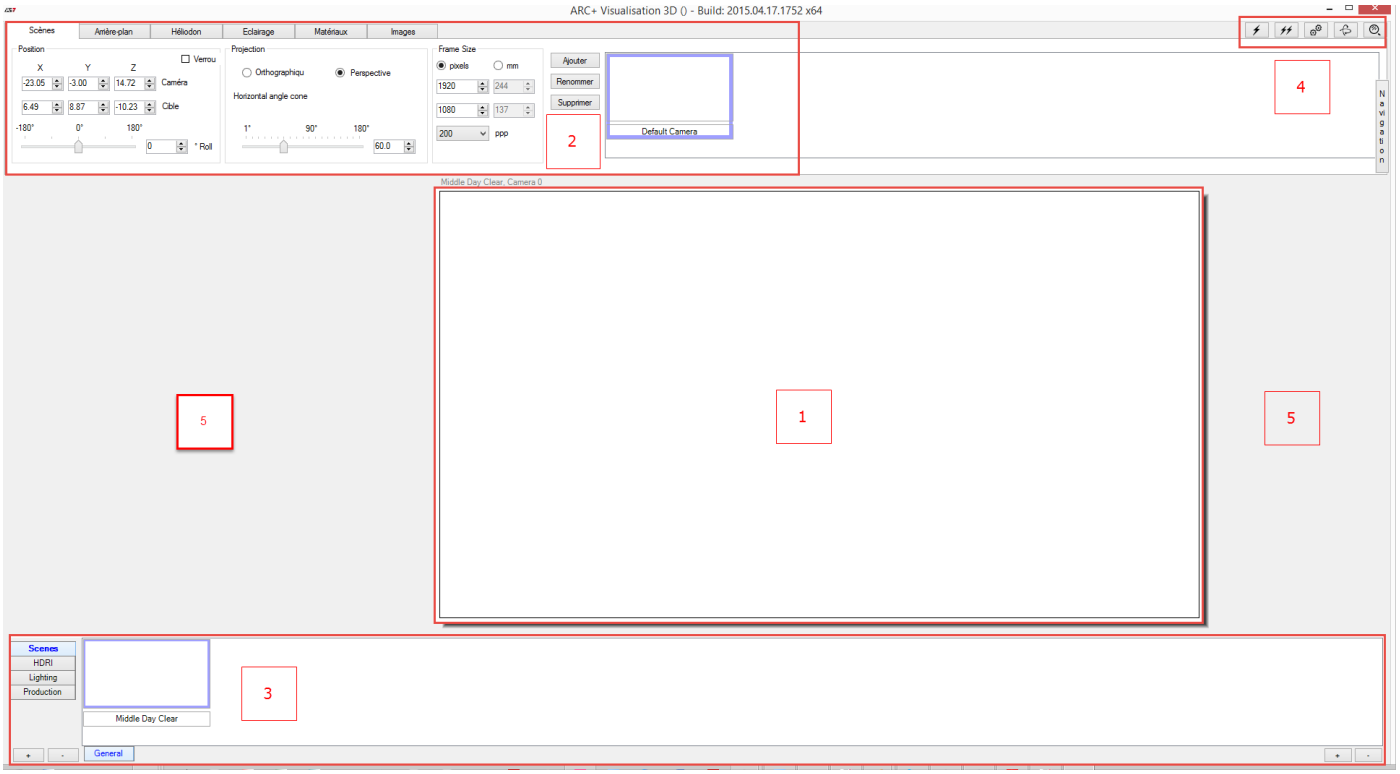
Bladerender opens in another window and it is totally independent of the window of ARC+.

TIP

- To speed up your productivity, it is suggested to work with two screens connected. In one you can have ARC+ and in the other you can have Bladerender.

THE INTERFACE

This is the Bladerender interface:



1. 3D VISUALISATION SPACE

In this space is where the 3D model will appear. It is possible to navigate it with the help of the mouse and the 2D navigation, which we will discuss later.

Using the mouse to navigate:

- Left button held down: you can navigate around the model like a camera that rotates around a target.
- Right button held down: you can navigate like a camera that swivels around itself.
- Central button: you can move like a camera fixed on a track.
  - Moving forward, you advance towards the object, go through the object and out the other side.
  - Moving backwards, you go further away from the object.
- Shift + the actions above: you advance 10 x faster.

- Ctrl + the actions above: you slow down 10 x slower.

2. EDITING TAB

This part contains all the options. It is here where you can adjust lights, materials, cameras, parameters etc.

3. TEMPLATES AND CATEGORIES

In this part you can keep all the pre-set templates and the ones that you have created.

These templates are connected to each module present in Bladerender, for example if you click on Natural Light, you will have access to the template of lighting that Bladerender proposes.

If you click on the Materials tab, you will see all the bank of materials created.

4. REAL-TIME PARAMETERS

In this part you can set the real-time parameters of Bladerender. These parameters are applied on your 3D model and they allow you to show different representations.

Please notice that the windows appear and disappear when you pass over it with the mouse.

- To activate this tab, roll the mouse over it (the border will become blue) and choose your setting.

- To disable this tab, click OK on the bottom left.

1 Quick overviews

Two different qualities of quick overview are given.

The first lightning strike is to give you a preview of the result that you will have at the end of Production. The calculation is fast and it allows you to see transparencies and reflections in the materials.

It is useful during editing for the lighting.

The icon with the double lightning strikes gives you the possibility to have a view with the same condition that you will have in the final Production.

This view gives a better calculation and it is extremely similar to the final image.

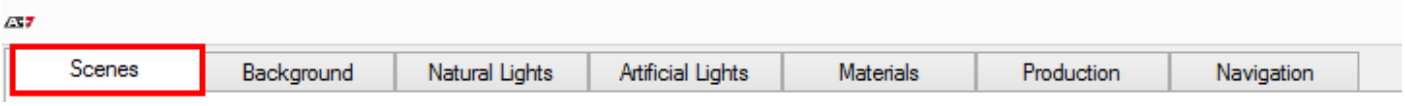
However, it depends on the parameters set in the production tab. The higher the parameters are set, the longer the calculation time will be.

- To use the double lightning strikes icon. 

To quickly use the double lightning strike icon to visualise the result, you need to set the quality to low in the production tab, or you can use a pre-set configuration.

There are different pre-set quality configurations ready to use with drag and drop.

1. Click on the ‘scenes’ tab.



On the bottom of the page, different pre-set configurations are proposed.

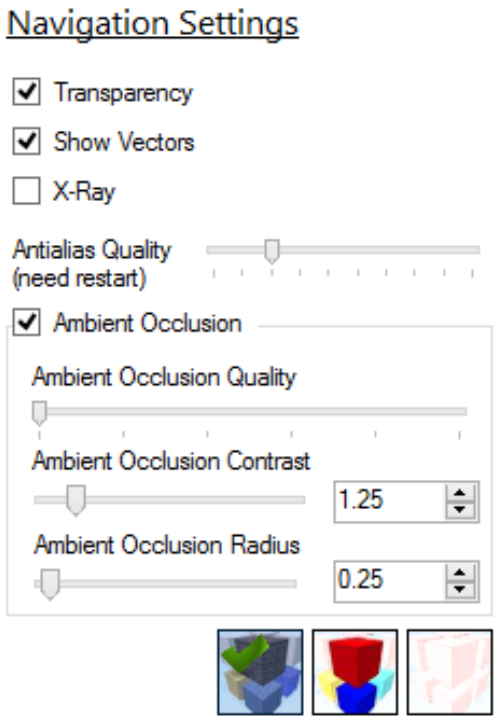
2. Click on the ‘Production’ tab and choose ‘interior’ or ‘exterior’, depending what you are working on.

Choose the pre-set configuration ‘fast light check’ or ‘interior low’ and drag and drop it onto the 3D view to activate the parameters. You can verify on the ‘production’ tab that the parameters are modified.

- To use the one lightning strike preview 

This preview is useful during the addition of materials, or to check the artificial light. It can show reflections, transparencies and other advanced parameters that in real-time are not visible.

2 The visualisation setting



This part is about visualisation in real-time. This doesn't change the result in the final production, however it allows you to change the setting of the real-time visualisation.

- Transparency

The transparency setting allows you to enable and disable the transparency of materials. In the example you can see the difference in your real-time visualisation. Of course, this is shown only in the material where the transparency is set, such as glass.

Enable

Disable

- Show Vectors

This setting allows you to activate the lines of the geometry in your model.

Enable

Disable

- X-ray

This setting makes the model transparent.

Enable

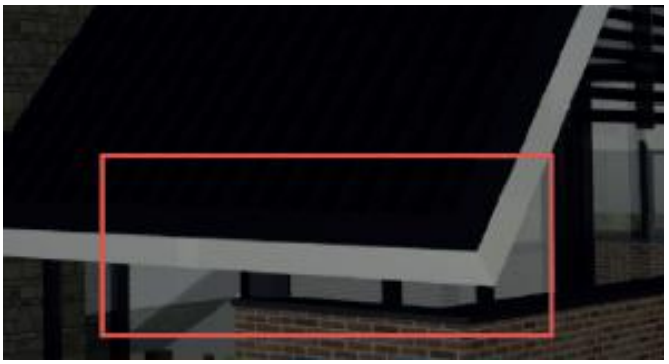
Disable

- Antialiasing

This parameter makes the model smooth. To set this parameter in real time, you need to reboot the software. The higher the parameter, the slower the navigation.

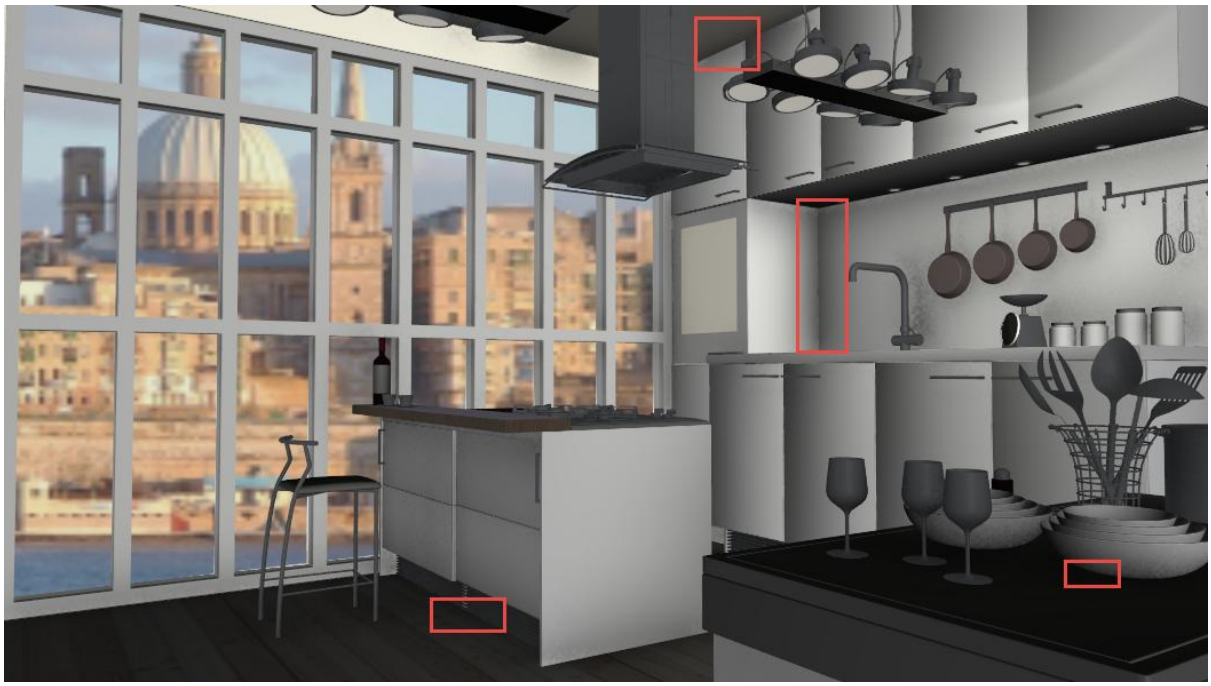
Low

Hight



- Ambient occlusion

This section allows you to set quality, intensity and ray of the ambient occlusion. The settings in this field will not influence the final result in the production, but only the real-time view.



- The representation mode

Model representation with texture (it shows the textures utilised).

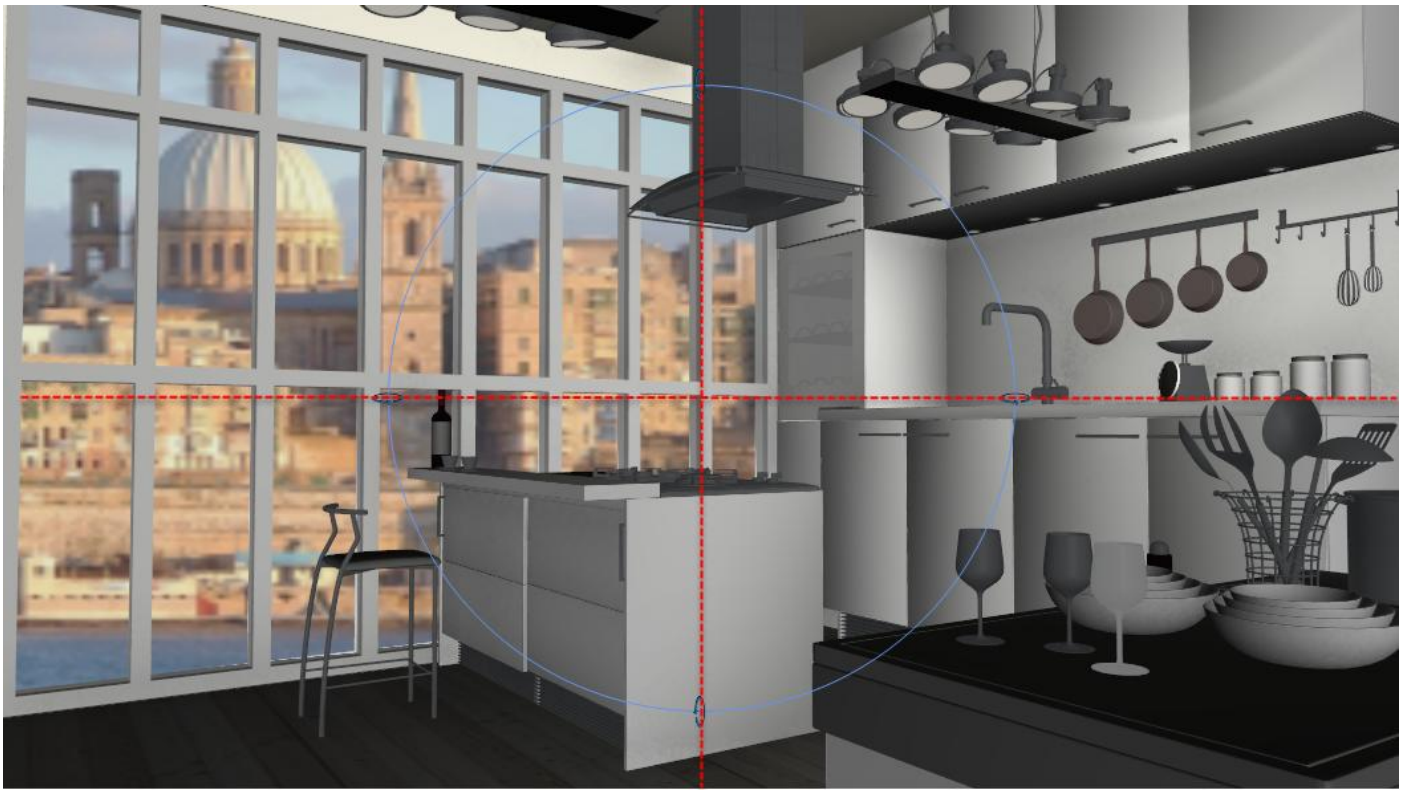
Model representation by the colour of the layers of the model.

Model representation in ‘clay’. This visualisation is practically in hidden line and it is very fast.

TIPS

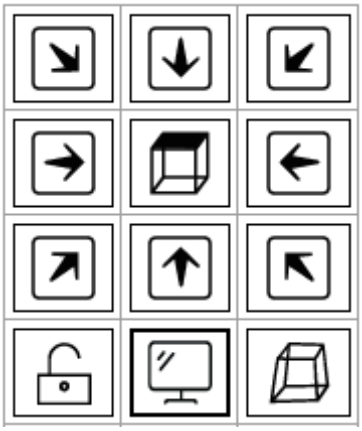
Please note: all these parameters are invisible in production, so they set the quality in real-time.

3 The rotation of the model around two axis

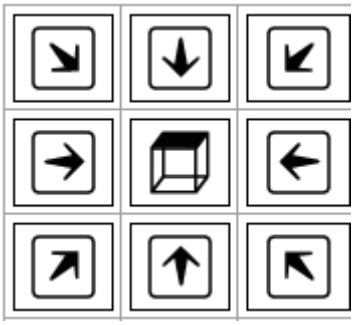


By clicking on this button you can rotate the camera around two fixed axis, one horizontal and one vertical.

4 The view

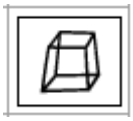


- You can choose the different views: north/south/east/west/diagonal



- Lock / unlock the view

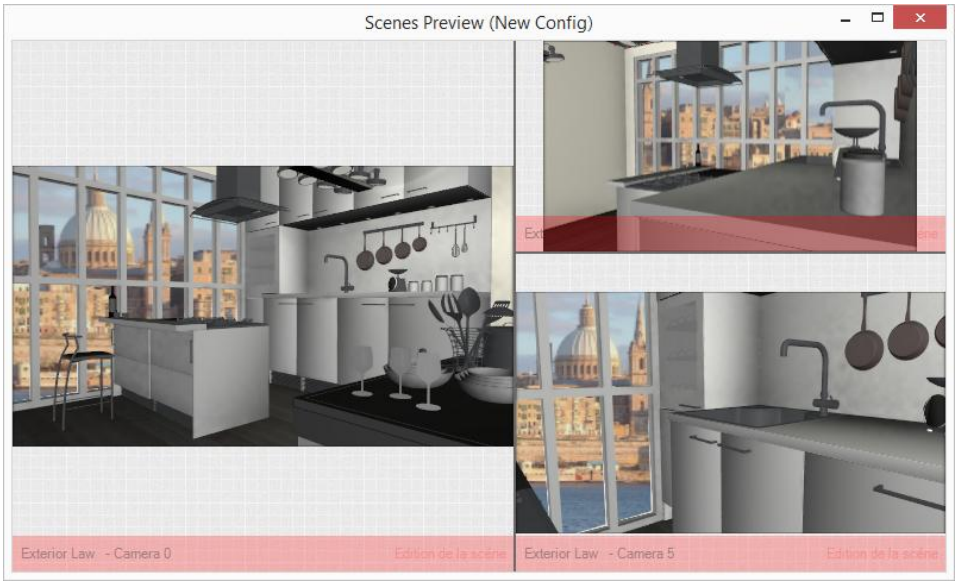
- Orthographic or perspective view.



- Preview of the scenes.

Bladerender allows you to add more scenes to your project. One scene can contains different cameras. Every scene in one model can have different parameters for lighting. We will refer to this later.

You can show the scenes of a model or organise them and edit them.



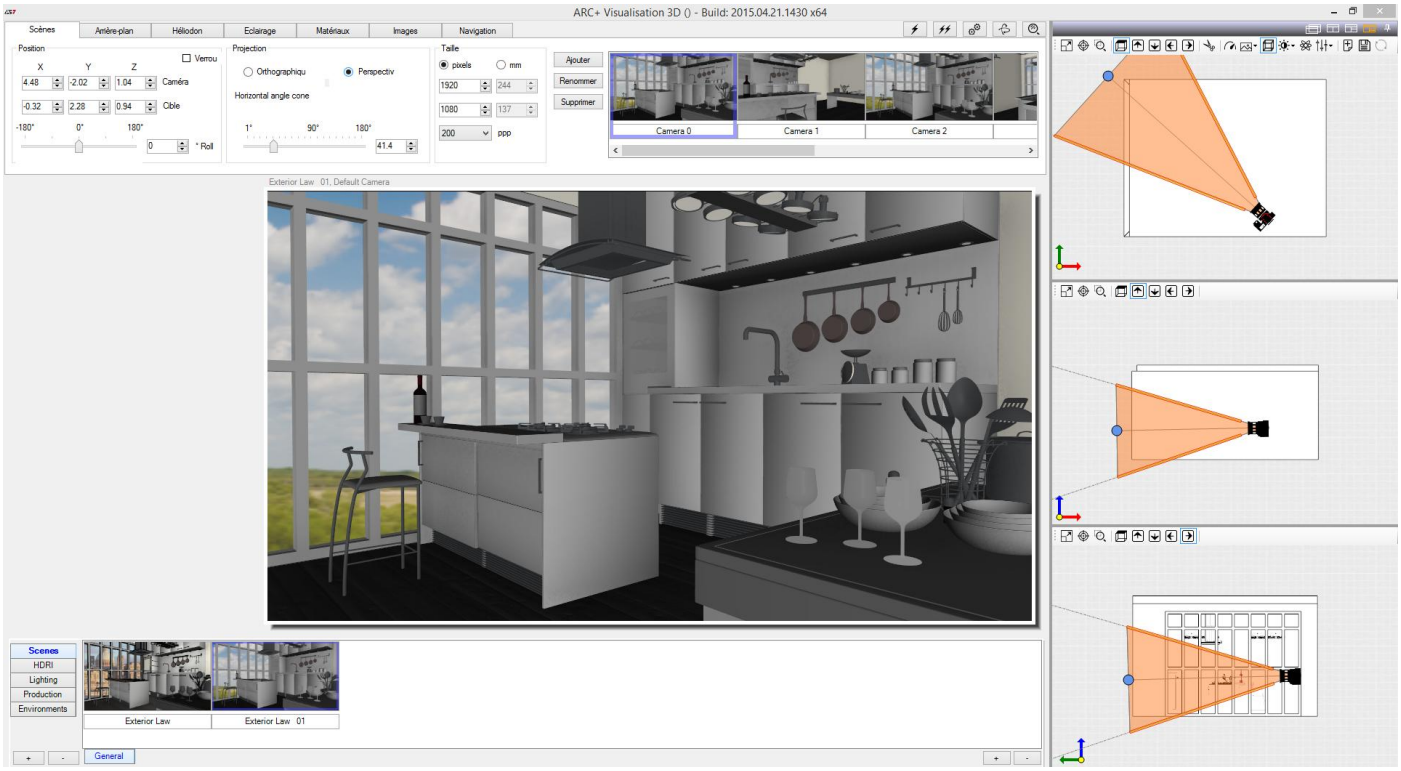
Scenes tab

The scenes tab gives access to all the parameters linked to cameras and navigation inside the model.

These are the functions available in this tab:

- 2D Navigation.
- Position of the camera.
- Projection.
- Dimension.
- Registration of cameras.
-

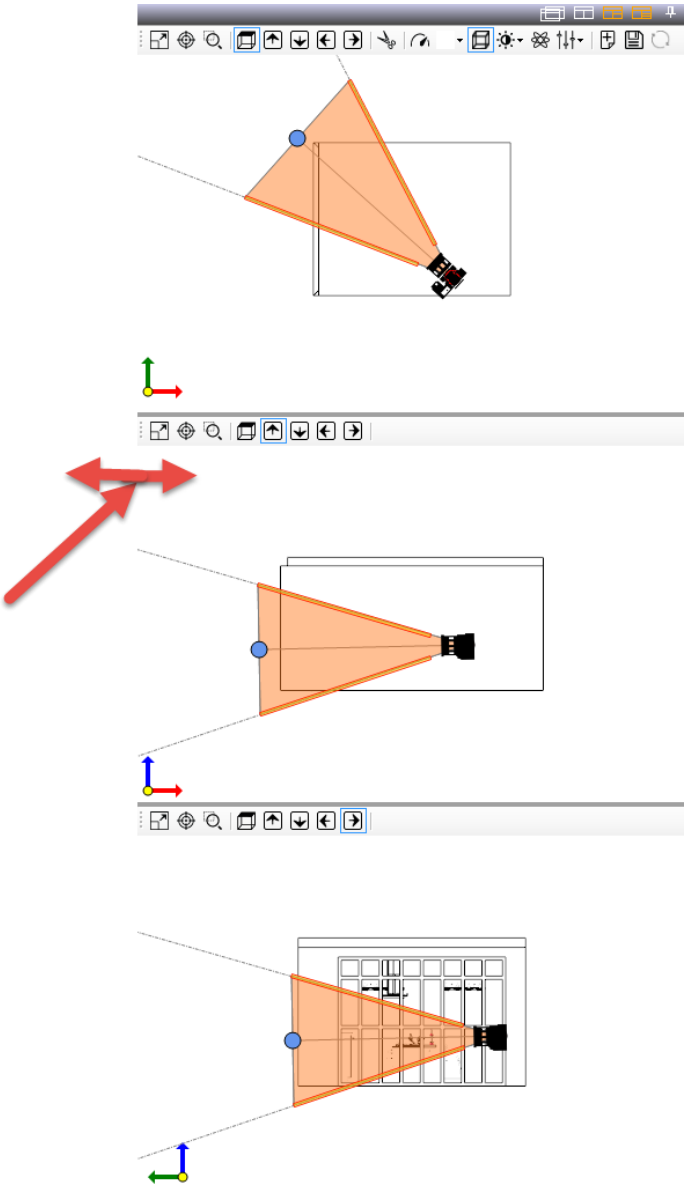
This is the interface:



2D NAVIGATION SPACE

This panel allows you to navigate in 2D mode.

Click here to enlarge the window



As you can see, there are three panels that represent the three plains of view (top/front/back or side). With these three different views you will be able to navigate freely within the model.

You can approach these three point of the interface:

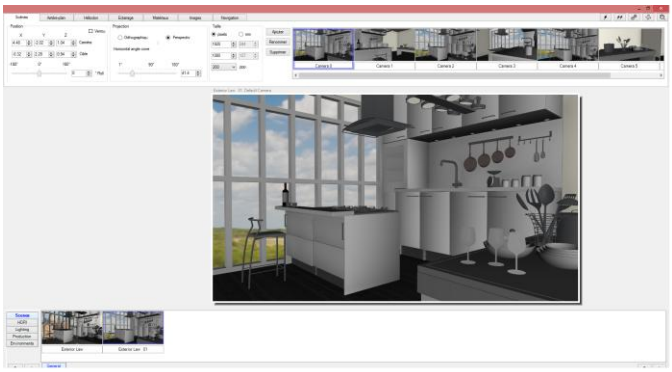
- The organisation of the 2D window and its relation to the interface.
- The dynamic control of the camera.
- All the options available.

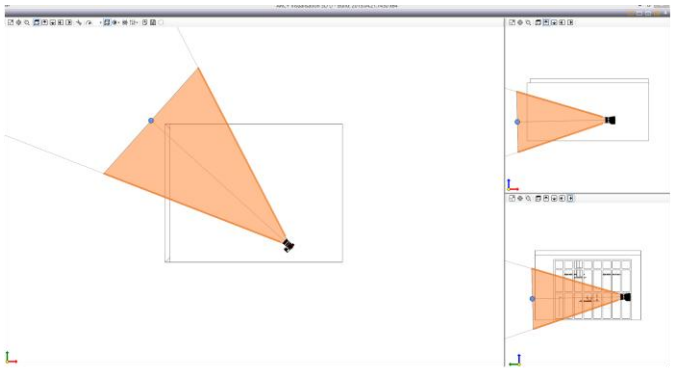
The 2D navigation interface / multi-windows

These buttons allow you to change the 2D navigation interface and the relation to the interface.

1. MULTI-WINDOWS OPTION

By clicking on this button, it is possible to detach the 2D panel from the interface. You can imagine having two screens just for Bladerender, one for the 2D navigation and the other for the 3D preview and the rest of the interface.





Screen 1 Screen 2

2. NUMBERS OF THE 2D VIEWS

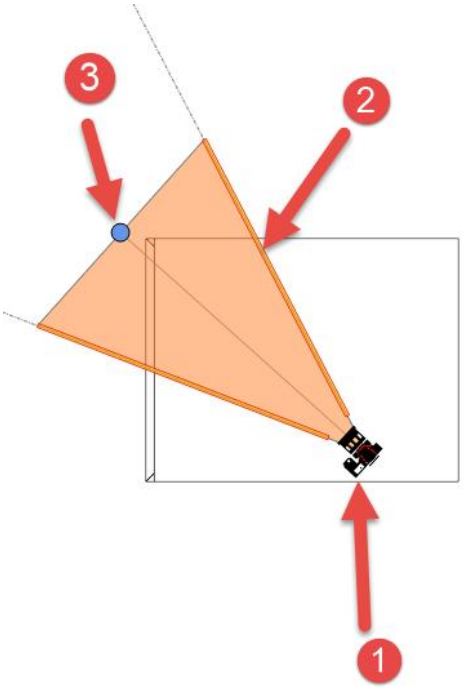
It is possible to choose combination of 2D plans, 1, 2, or 3.

The controls of dynamic cameras

In this section we will explain all the options for the dynamic control of the 2D cameras.

THE DYNAMIC CHARACTERISTICS OF THE 2D CAMERA

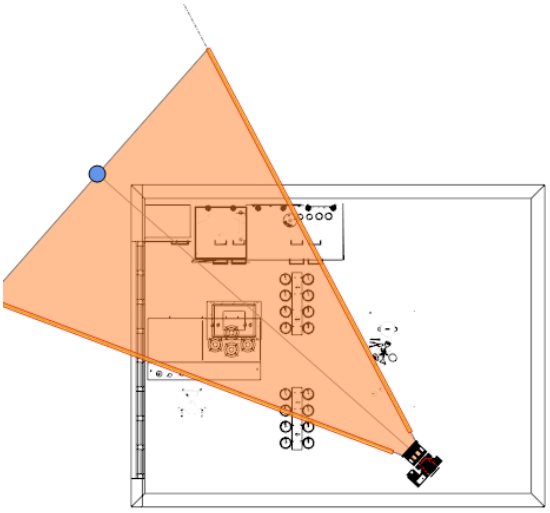
This is what the 2D camera looks like

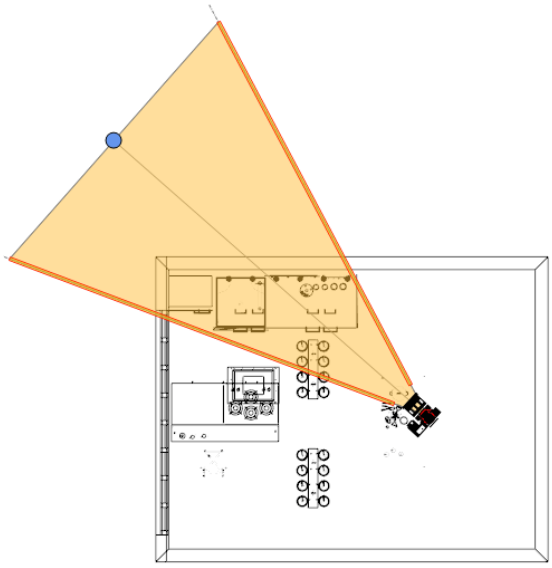


1. Camera position.
2. Focal point in mm.
3. Target of the camera.

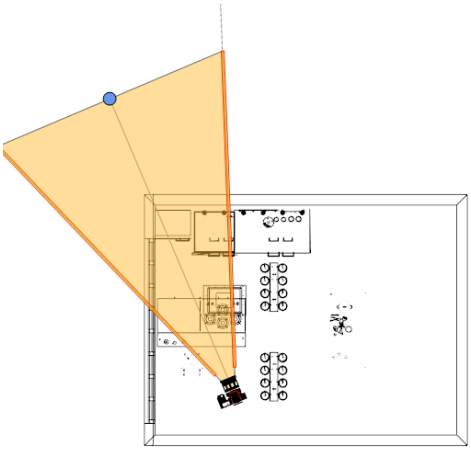
PLACEMENT OF THE CAMERA

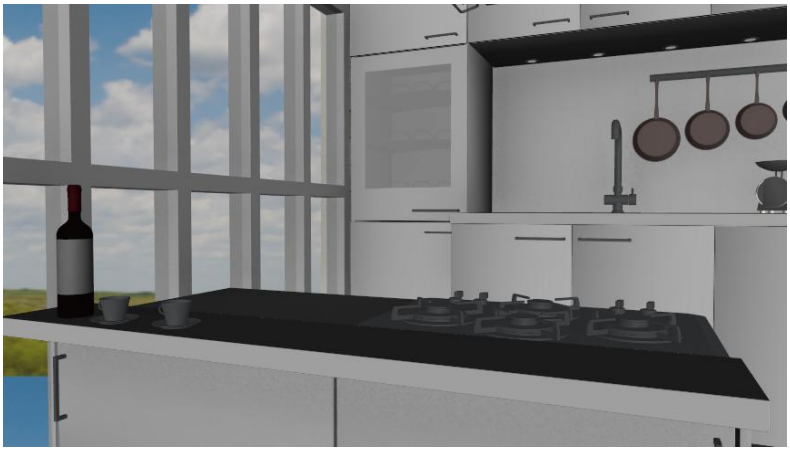
- Left click
    - On top of the orange cone: moves the camera without changing anything.

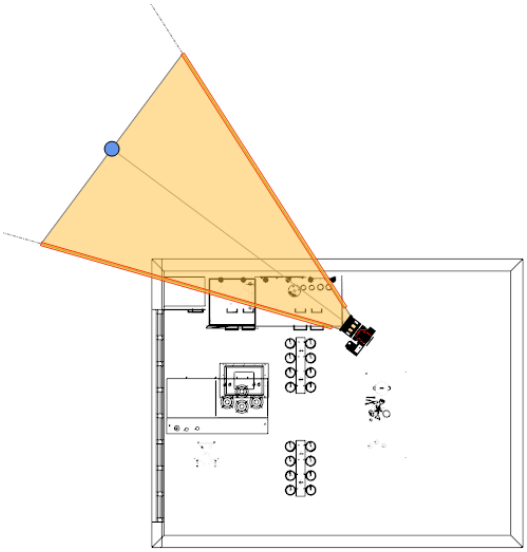




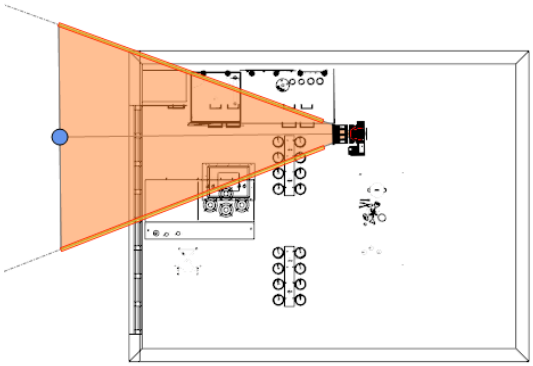
- On top of the camera: Moves the camera without changing the target point and the angle of the cone.

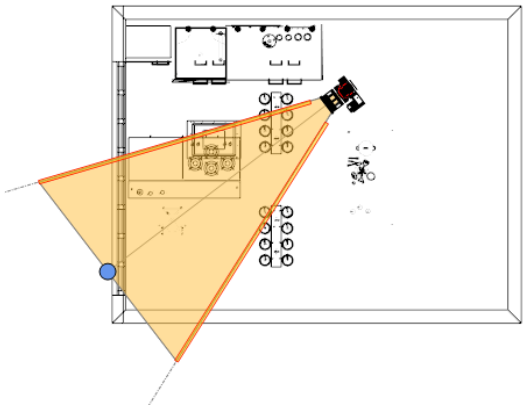






- On top of the target: Moves the target without changing the position of the camera or the cone.





CONSTRAINS / ROTATION

- Rotation of the camera around the target.

It is possible to rotate the camera around the target by clicking with the left button of the mouse on the camera whilst pressing ALT key on the keyboard.

A circle will appear on the screen and the centre will be the target.

- Linear movement of the camera along the axis of the target.

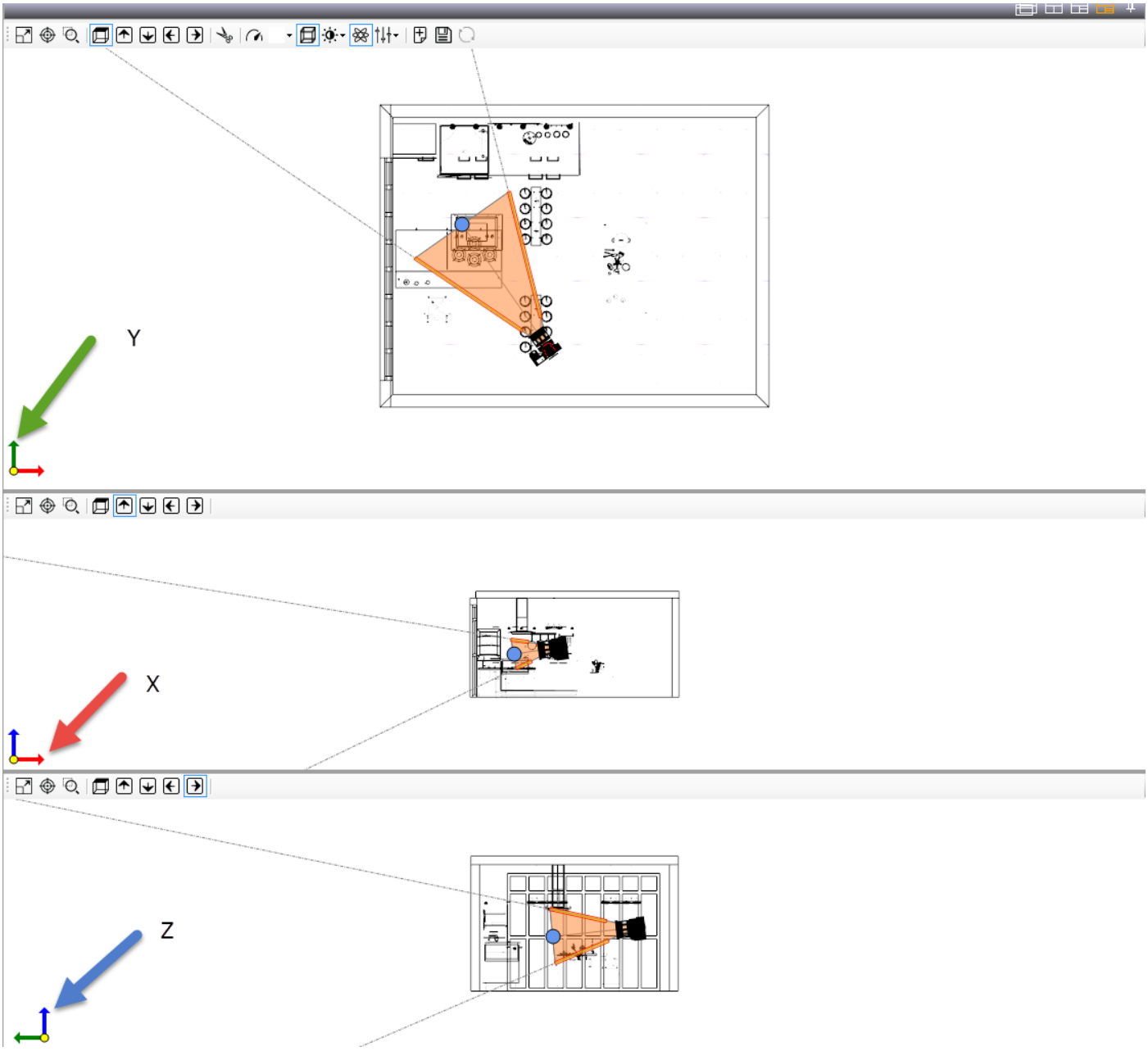
It is possible to move the camera along an axis of the target by clicking on top of the camera with the left button and holding down CTRL on the keyboard. This constrain allows you to zoom to the target.

- Linear movement of the camera along two vertical and horizontal axis.

By clicking on top of the camera and holding down SHIFT on the keyboard, it is possible to move the camera along two orthogonal axis. Eg. Plan XY: constrains the movement along the X and Y axis.

Functions of the 2D interface

1. Zoom on the model.
2. Zoom on the camera.
3. Zoom by window. Selects the area with a window where you want to zoom.
4. Views. In every 2D window (3 maximum), it is possible to choose the view. In automatic mode, the other two views refresh themselves to always have one view of the top and two of the side (north/south and east/west).

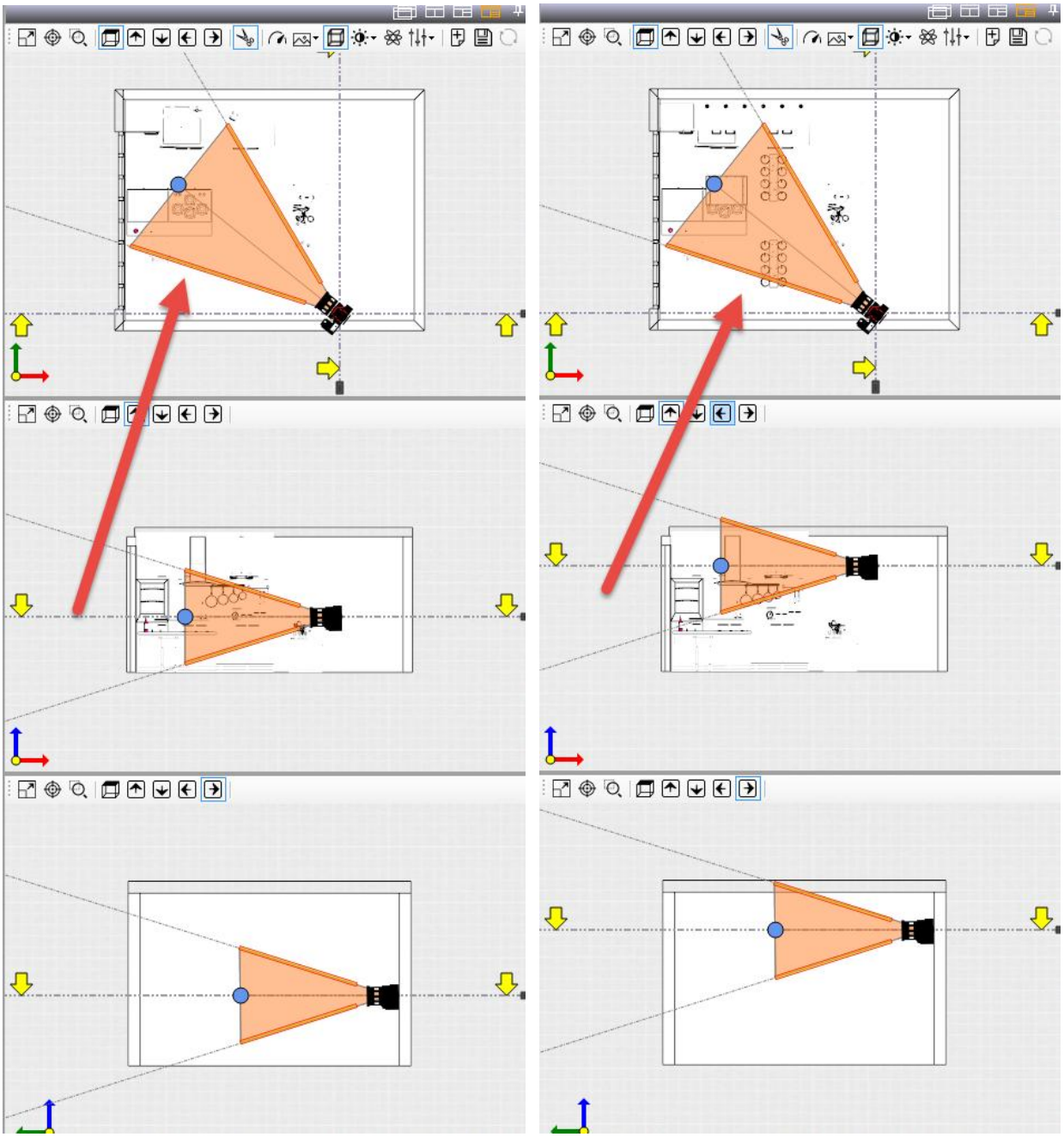

Y
X
Z

5. Sections. This function allows you to section the model in 2D, following where the camera is positioned. To move the two axis of the section you must move the camera.

The 3D model is not sectioned, only the 2D is affected by the section.

This function is very useful to navigate the model inside. The 2D view is synchronised, so by having a section in the XY view, the XZ view is automatically refreshed and affected by the section.

The button ‘sections’ is not available for the XY visualisation.



6. Quality of the 2D render. This option is useful during the modification of a big model. It allows you to speed up the calculation during the visualisation to have a lighter navigation.

7. Background. By clicking on this button, you have access to three types of backgrounds (blank, black or grid).

8. Switching the vectors on and off. By clicking on this icon, the geometric lines of the models are shown or hidden. Disabling this option shows the model like a clay model.

9. Brightness. By clicking on this option it is possible to set the brightness of the ambient and the light relative to the camera. Be careful because this mode doesn't affect the 3D view or the rendering production, it just sets the lighting on the 2D views.

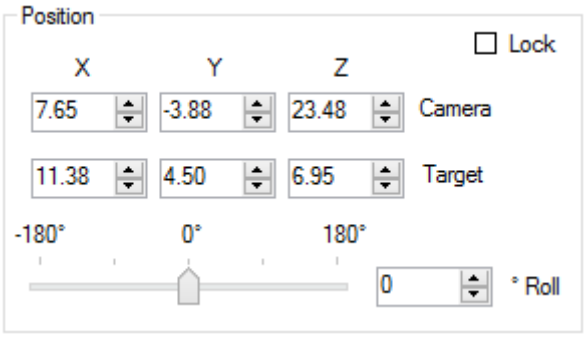
10. X-ray. This option is very useful because it makes all the materials transparent to visualise all the entities of the model without moving the position of the camera.

11. Representation modes. It is possible to choose between three representation modes: clay, model colour, and material used.

12. The options which are dependent on the version. The option of saving the model in LGA format and the import of XML files are future functions and you don't need to pay attention to this at the moment.

FUNCTIONS OF THE SCENES TAB

Position of the camera



This tab is directly linked to the 2D navigation panel and the 3D window. You can set the parameters to move a camera numerically or by moving the camera dynamically in the 2D windows.

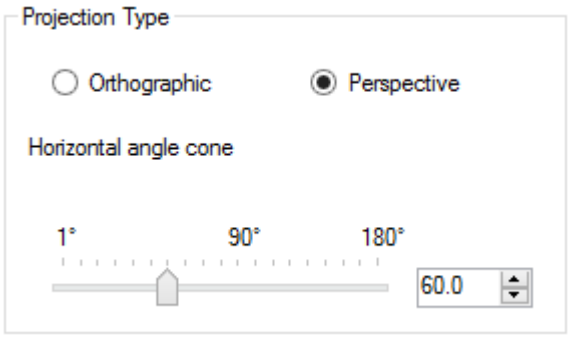
It is possible to change the inclination of the camera. This function makes a rotation of the camera linked around the axis of its vision.

In addition, each camera can be locked any time you wish from this tab or from the tab of real-time settings.

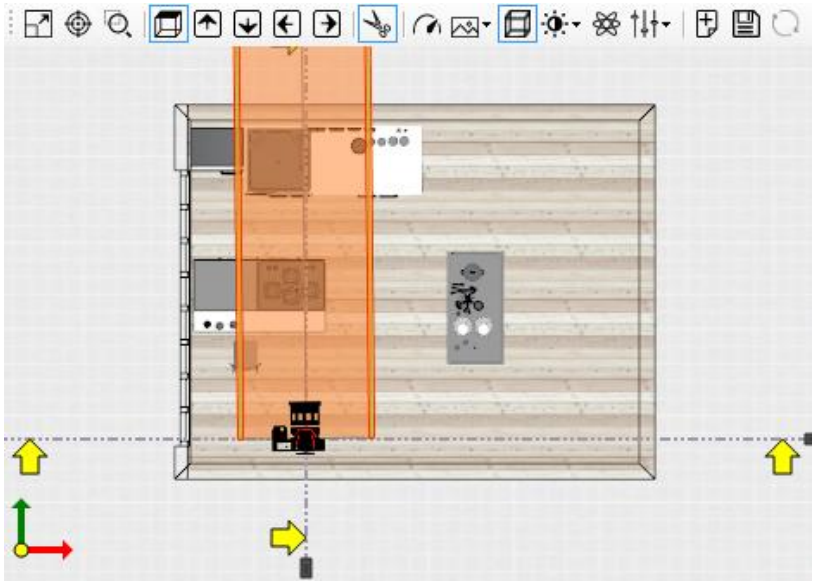
TIPS

It is possible to set the camera at a human eye-height to simulate a person's view. To do that, you need to modify the parameter Z of the camera on the tab and lock it.

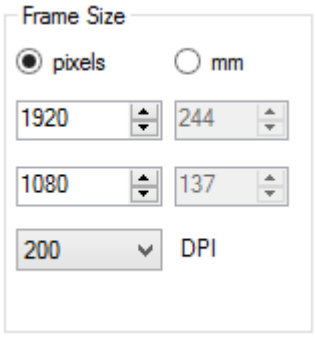
Projection Type



This panel allows you to choose the type of view of the camera. By choosing the Orthographic mode, you create a parallel view without visual deformation. When this option is enabled, the cone of the camera will change into a rectangle.



Frame Size



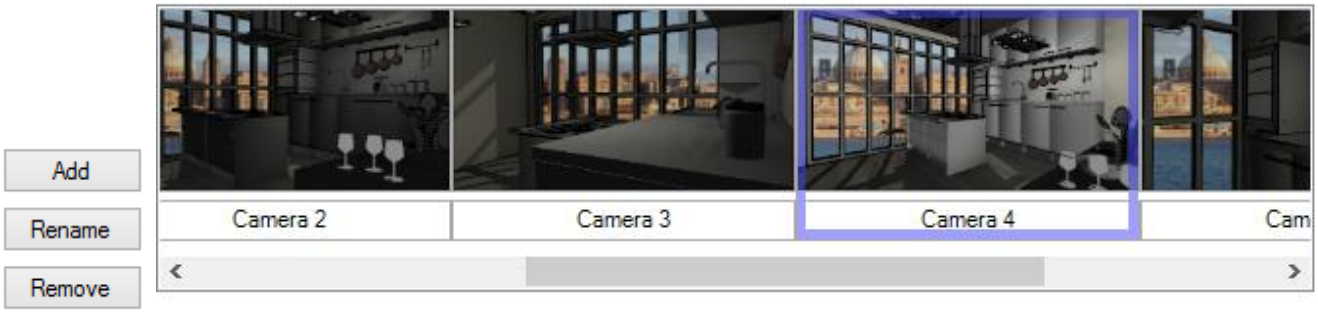
This panel allows you to choose the dimensions and resolution of your work. It is possible to set the resolution in pixels or millimetres.

It is possible to modify the DPI, which represents the number of pixels per unit of measurement. The higher the resolution, the higher the quality of the image. 300 DPI is the average of a HD image used for an A3 printing format.

TIPS

Be careful when using an image as a background. It is advised to work with the same resolution of the background image so you don't modify its quality.

Cameras

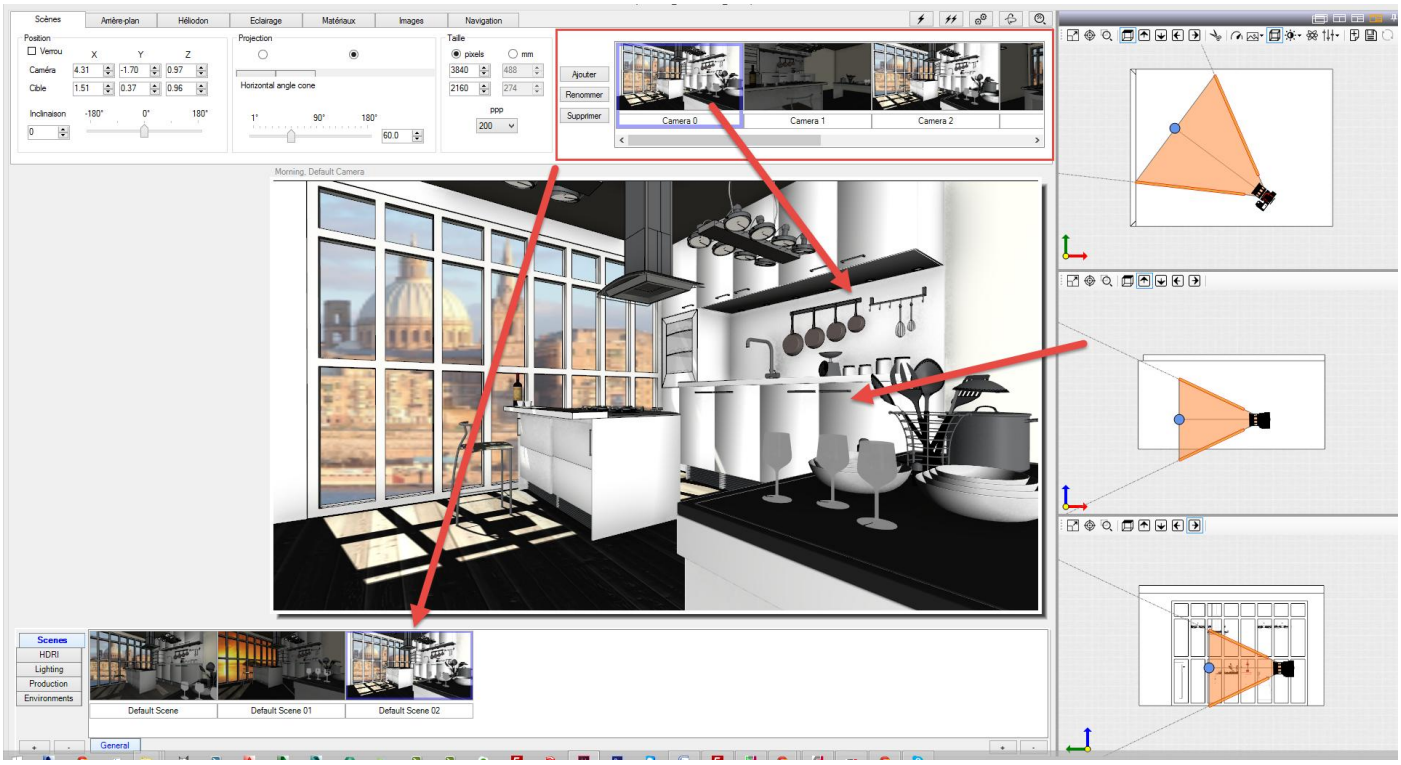


This tab allows you to register all the cameras that you like. When you open a model just one camera is present by default. By clicking on it, you can create the others.

These cameras are dynamic, they refresh the model just by clicking on them.

You can create, rename or delete them.

The concept of the scenes



It is possible to add as many cameras as you like and register all of them in one scene. One scene is like a picture of all the parameters set on your model. Therefore one scene has parameters of lighting, background, cameras and production setting. Only the artificial light and the materials applied are independent and are common for all the scenes created in your model.

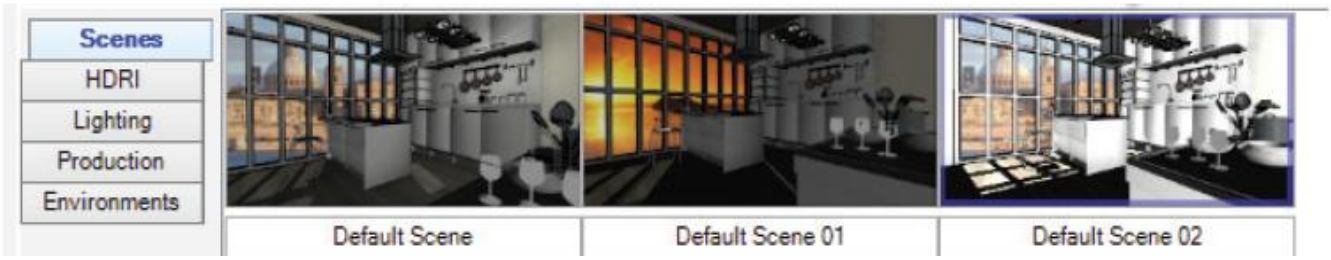
By clicking on the scenes tab, a panel is shown on the bottom of the page which contains all the registered scenes. It is possible to create as many scenes as you like and duplicate one existing scene to modify it.

Imagine editing a day-time scene and a night-time scene in the same model. You must create two different scenes.

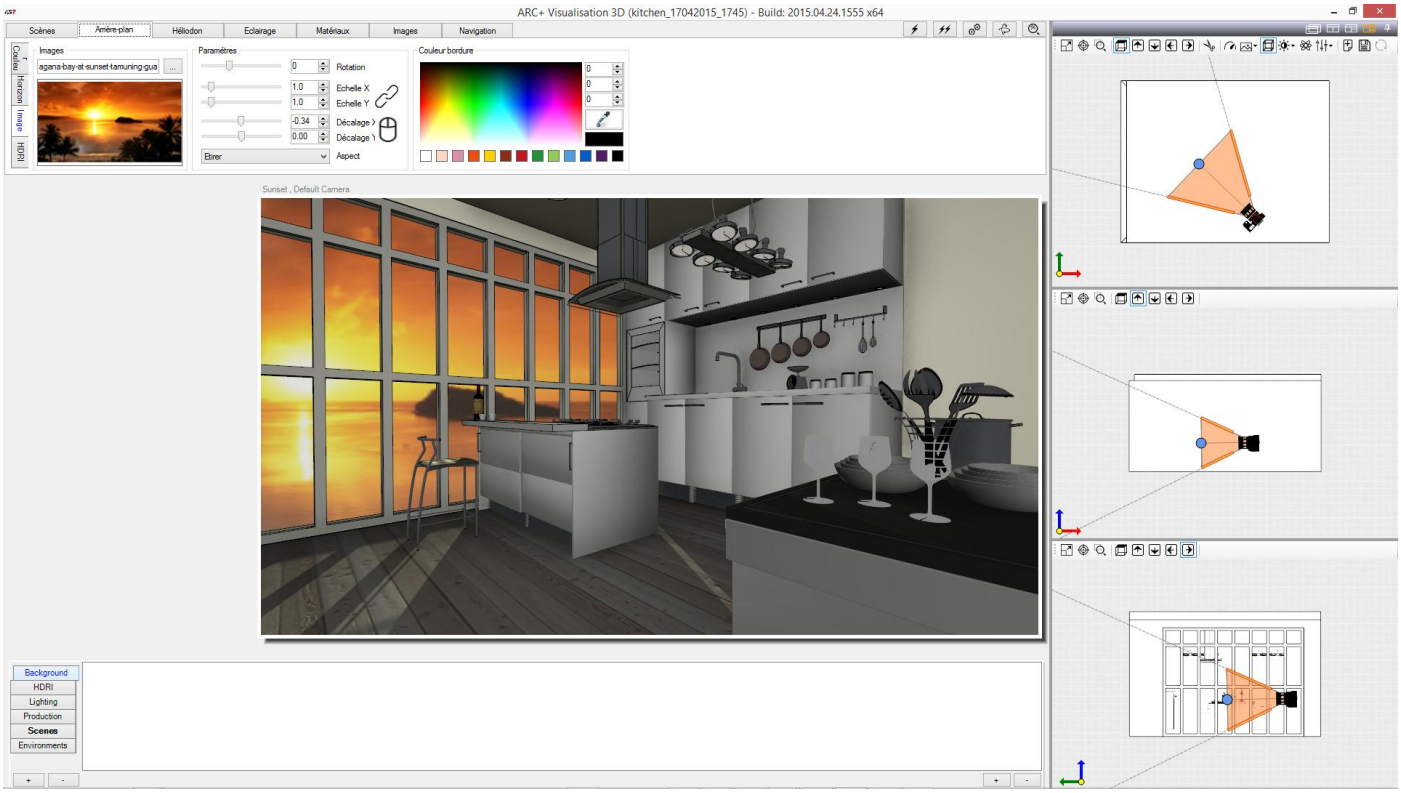
Start by editing the day-time scene, modifying the light (intensity, time, etc) and then changing the background to the effect that you want. You can create as many cameras as you like with different positions. All these parameters are registered in this scene.

Now duplicate this scene, change the lighting and background to obtain a night-time ambient. You can set artificial light that you can manage by disabling or enabling during the day-time or night-time scenes.

Starting with the same model, we can set two different scenes.



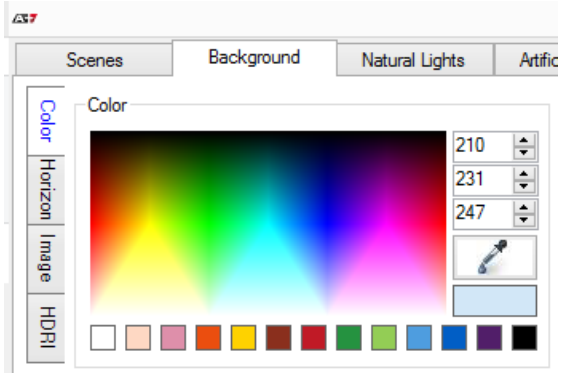
Background tab



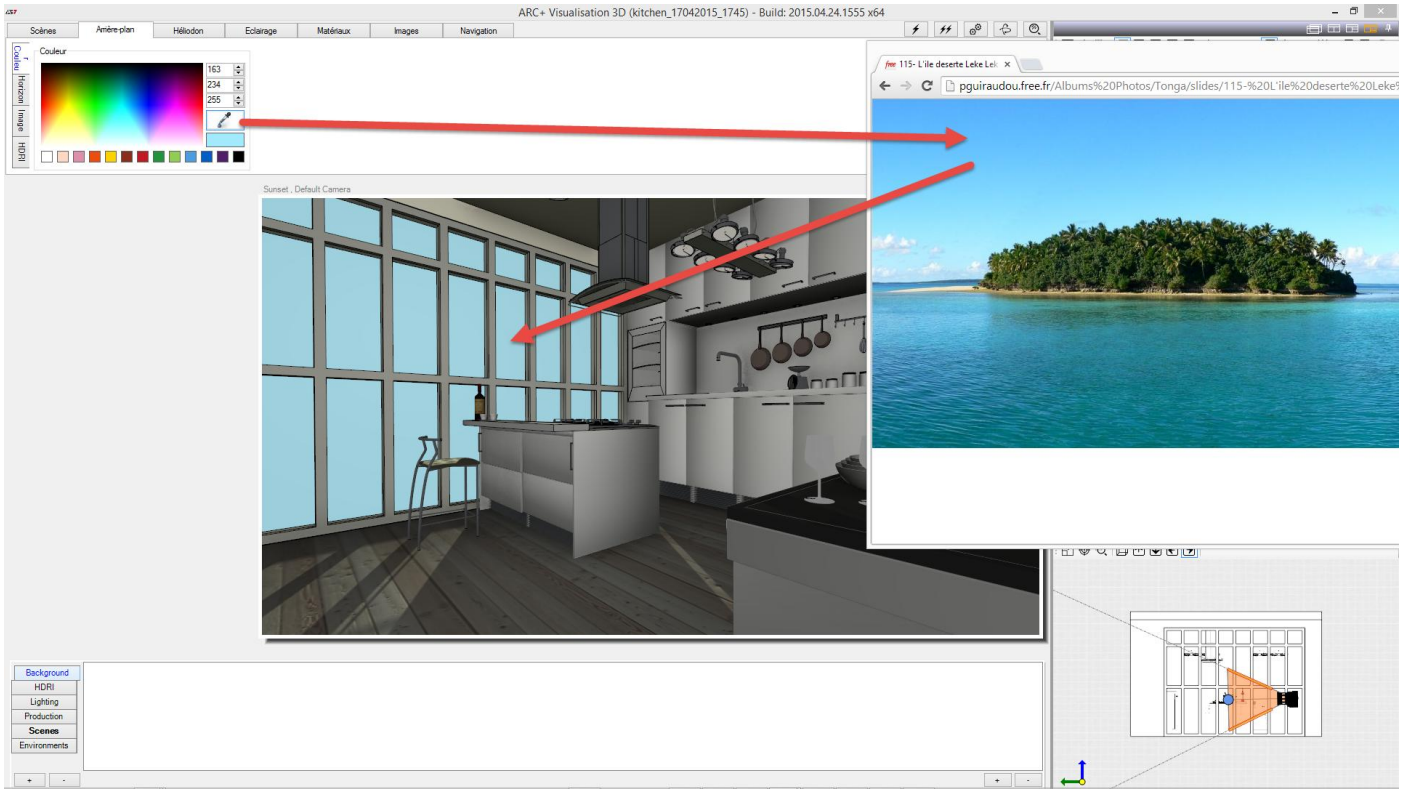
The background tab allows you to set the background of the model. Multiple options are available.

Colour

Click on the category <colour>.

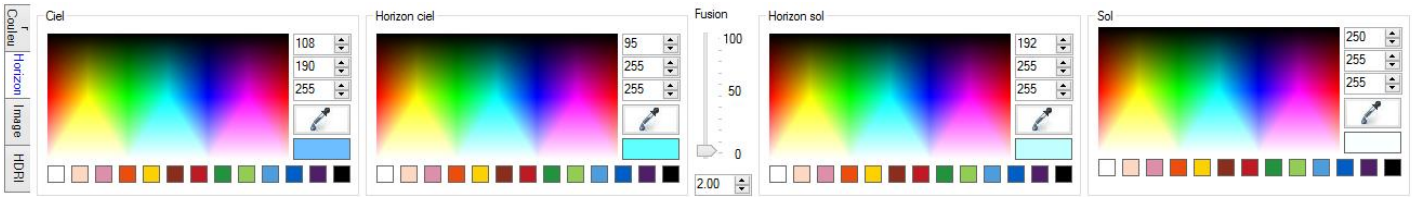


A colour palette appears. You just need to click on the colour selected. It is possible to select a colour outside the palette by clicking on the dropper and choosing a colour on your desktop or on an internet page.

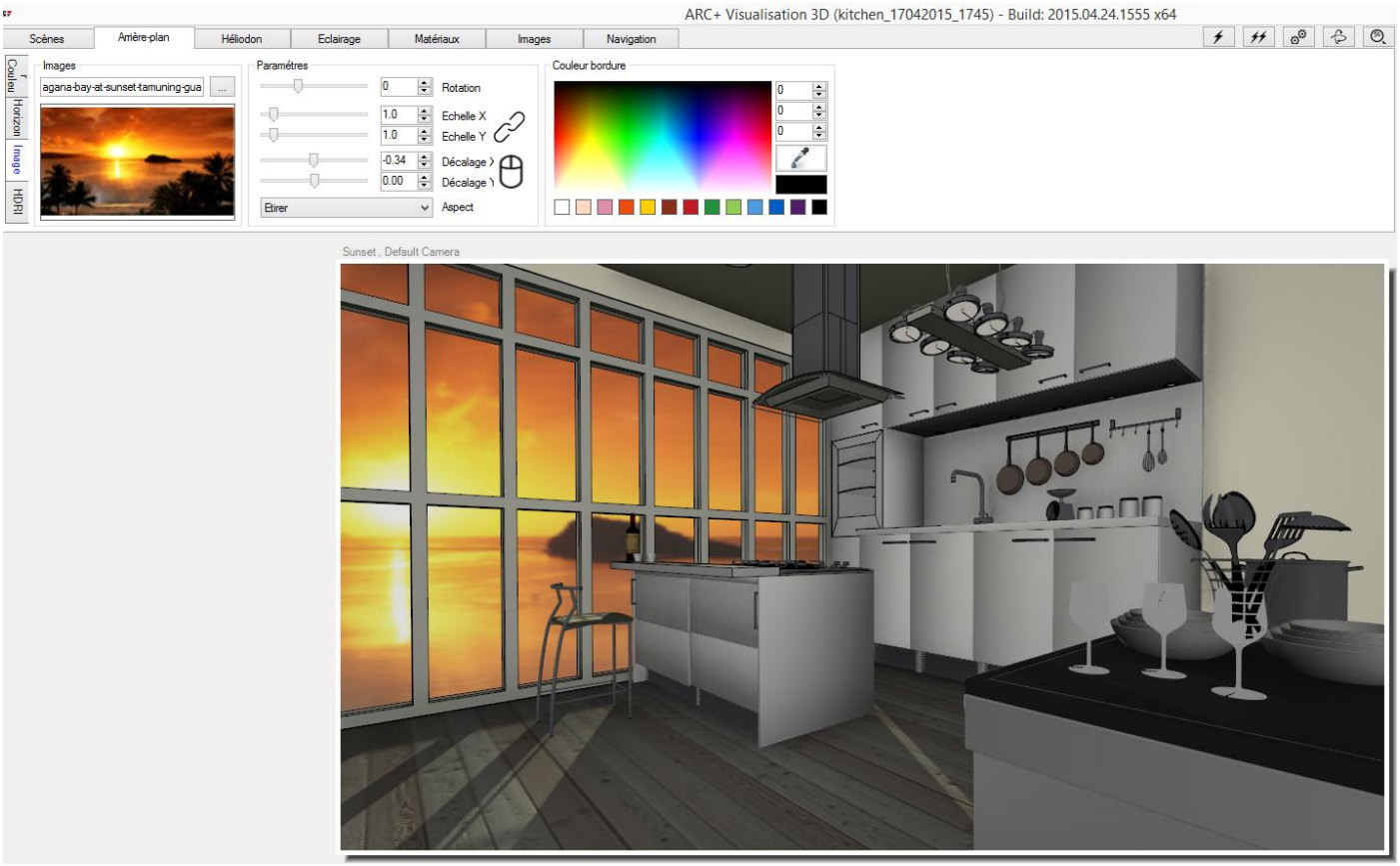


Horizon

The horizon function allows you to create four colours fading into each other.



Image

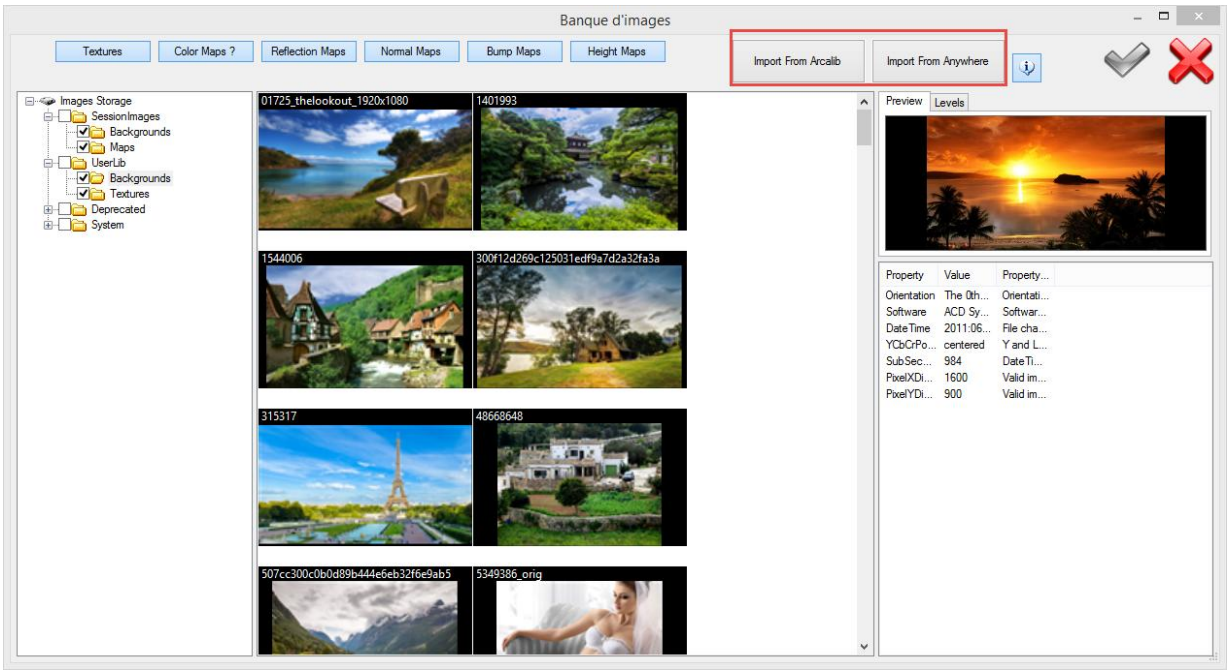


This option allows you to apply an image of your choice to the background.

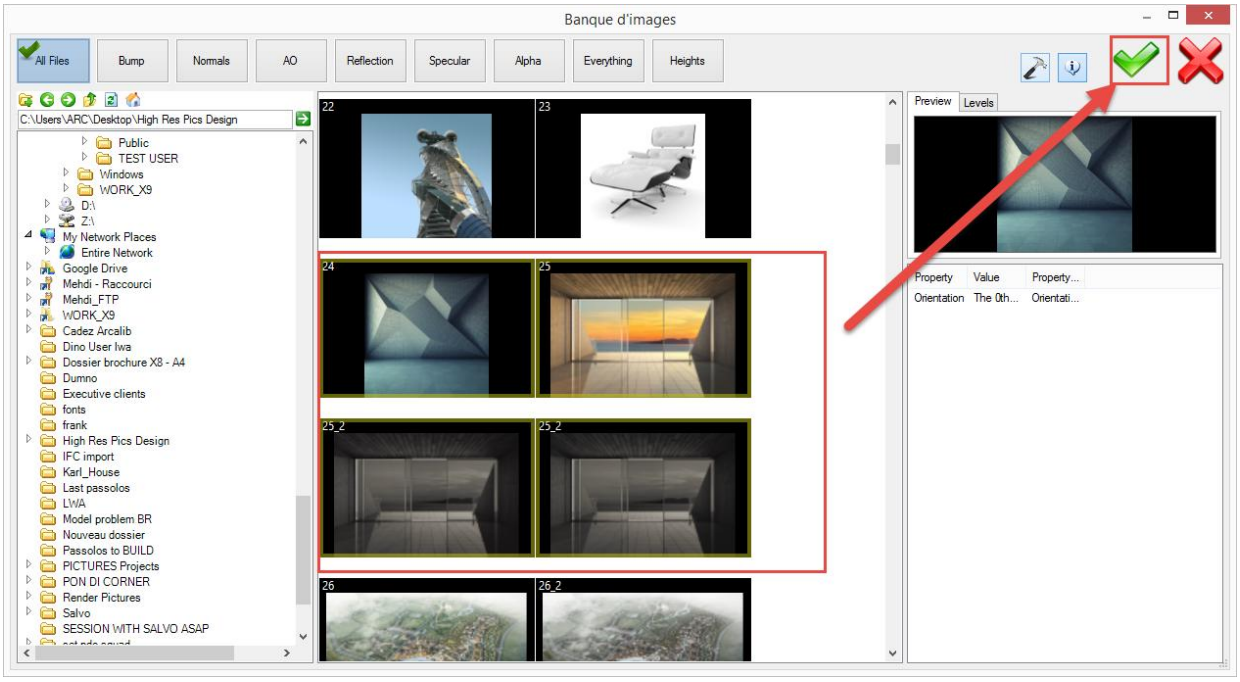
TO APPLY AN IMAGE, CLICK ON THE ICON HIGHLIGHTED BELOW

A database interface containing all your textures will appear. We will use this database for materials also and we will explain how to use it.

- You can import images in the category “session images” and “userlib”. You can also create your own category of images and import them inside it if you like. You cannot import your images in the category “system” because it is locked and impossible to change.
- Click on the category, eg. “userlib”, then “background”.
- Click on Import from any location, or Arcalib.

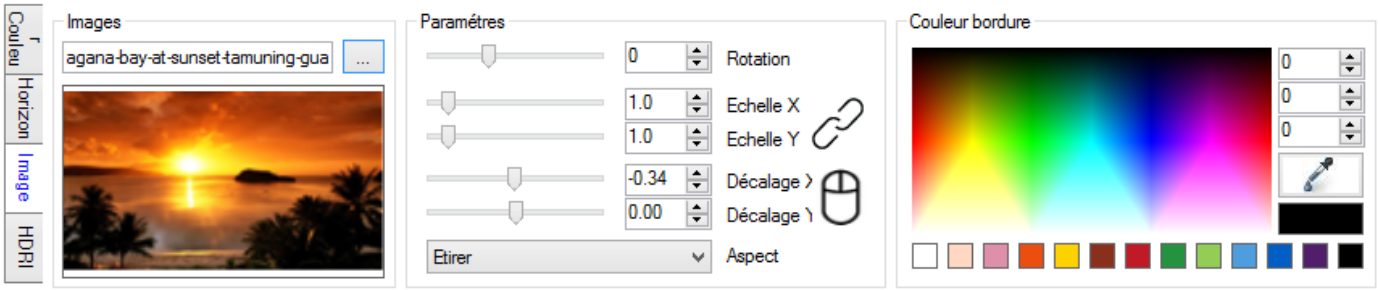


- A new window will appear. Select the image that you want to import and click OK.



- Those images are imported into the category chosen and now you can use them.

HOW TO MODIFY AND SET THE BACKGROUND



After importing the image that you chose, it is possible to change it. It is possible to:

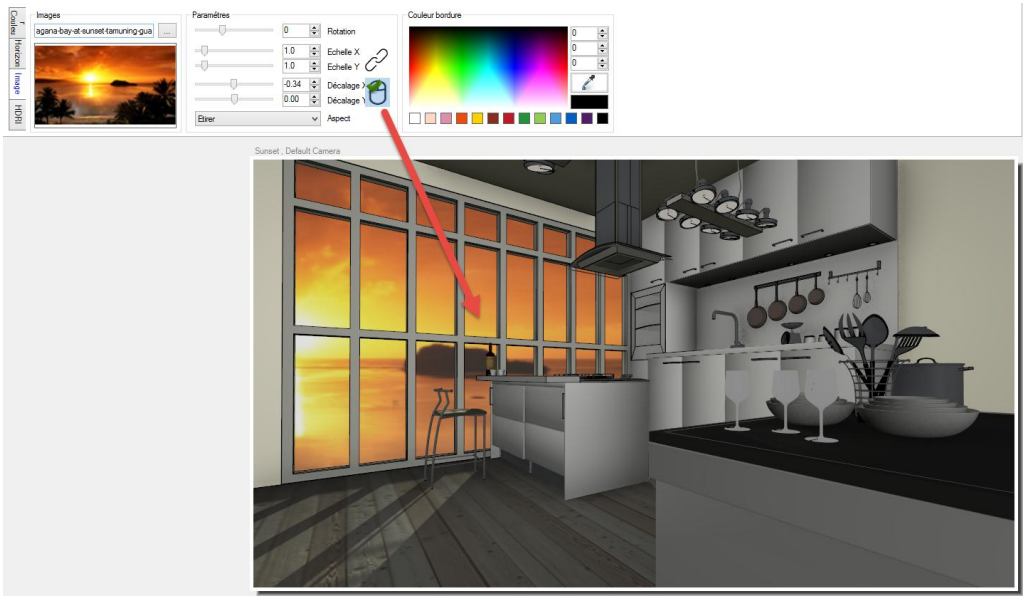
- Rotate it.
- Modify the scale.

To resize the image in proportion (to stretch or shrink the dimensions of the image with constraints), click the following icon:

- Move the background on X or Y.

By clicking on this icon:  it is possible to manually move the background.

- It is also possible to change the colour of the border.

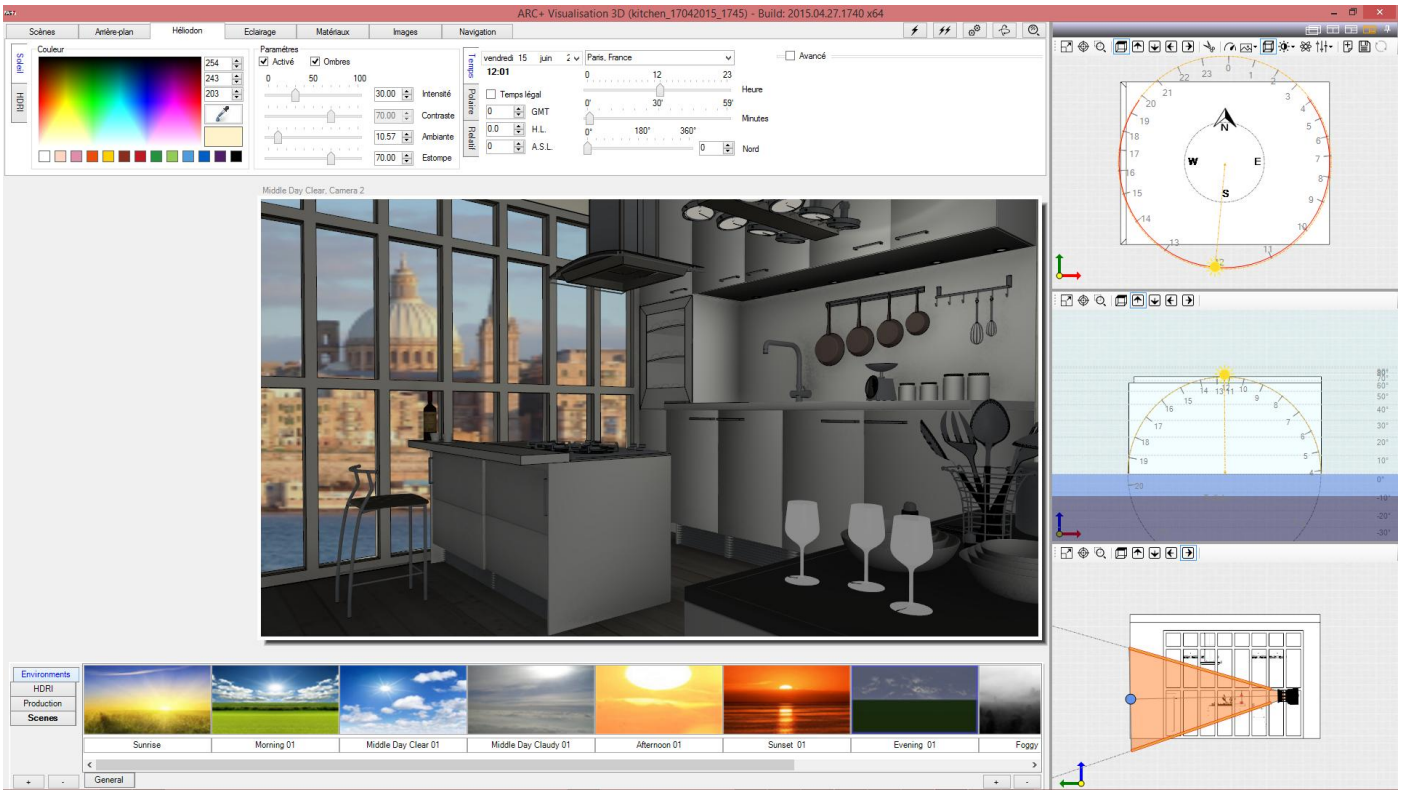


THE DIFFERENT SIZES

It is possible to change the size of the background, depending on the resolution of your project. You can choose to resize the background in:

- Letterbox.
- Centred.
- Keep the proportions.
- Stretch the image.

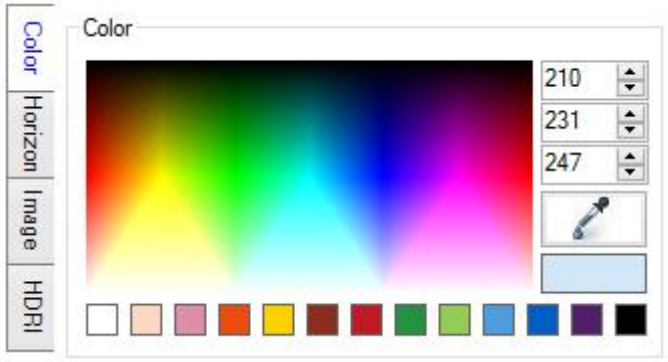
Natural light tab



This panel gives access to different settings for the natural light. It is here where you can change intensity of the sun, orientation and other parameters.

Let's discover the available functions.

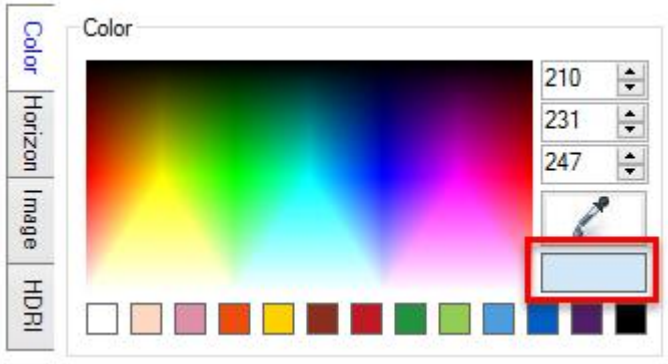
Colour of the sun



To change the colour of the sun, you have 5 options:

- By clicking a colour on the palette.
- By clicking a colour outside the palette with the dropper 
- By clicking on the suggested palette at the bottom of the colour options.

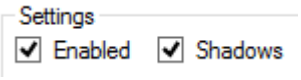
- By writing the RGB values.
- By clicking a personalised colour.



Parameters

In this panel you can modify the main parameters of the sunlight.

You can choose to disable the sunlight or disable only the shadows.



The values of the four settings vary between 0-100.

It is possible to regulate:

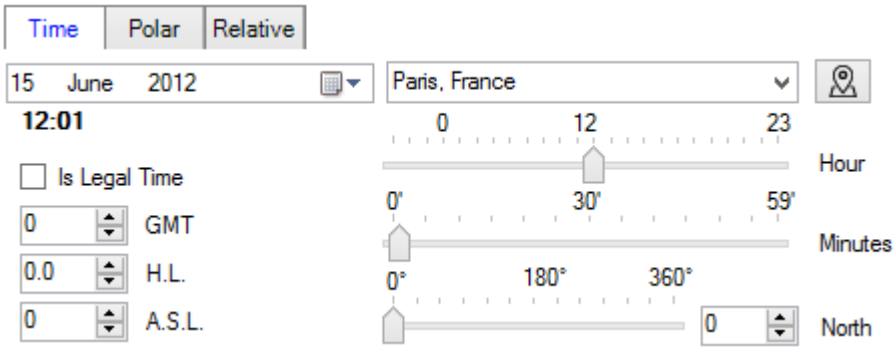
- The intensity of the sunlight.
- The contrast. The contrast is disabled when you choose the option HDRI.
- The ambient light. The ambient light is a general, global light applied to every pixel of your image. Be careful when using it, because the stronger it is, the lighter the shadow.
- The softness. The softness will make the shadow stronger or softer. The higher the setting, the softer the shadow.

The sun's orientation

In this panel you can modify the orientation of the sun to simulate a realistic scene.

Bladerender uses all kinds of parameters.

TIME

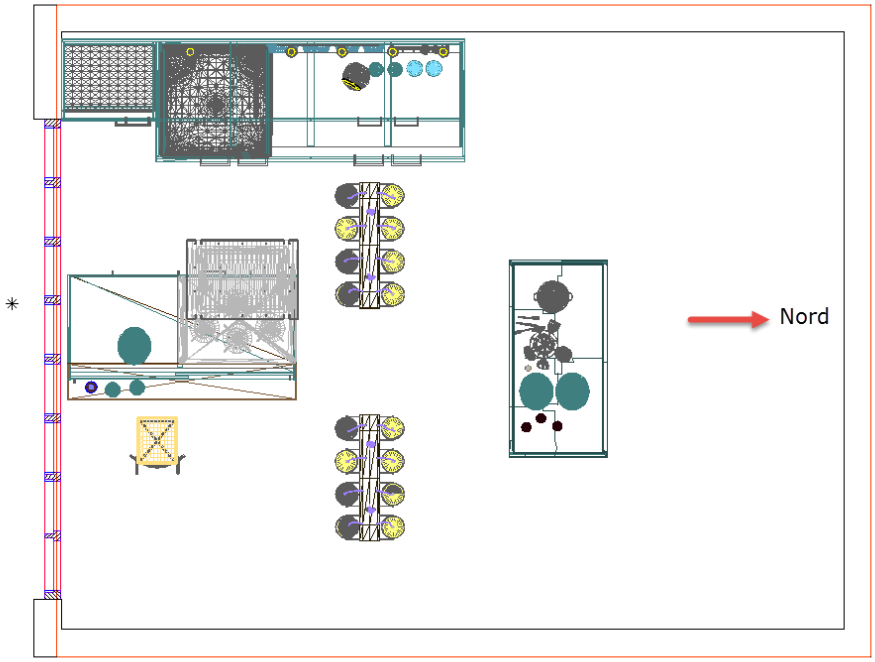


This panel simulates the exact orientation of the sun linked with the time at the location chosen.

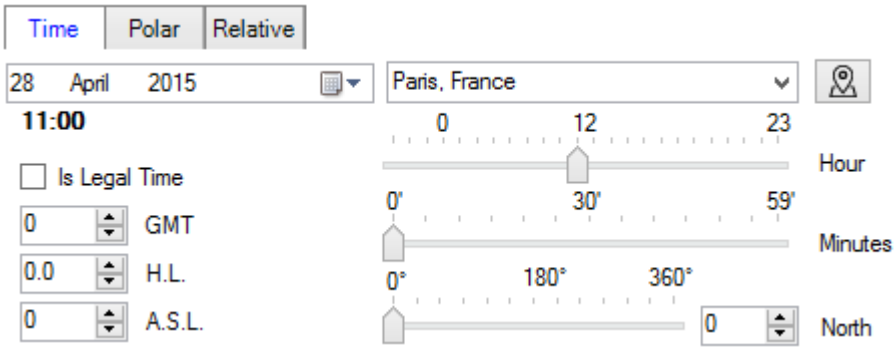
Set the date, place and time to move the sun.

To have a more realistic position, set the north and rapport to the model.

For example: Below we are simulating a scene on Tuesday, 28th April, 2015 in Paris at 11:00am.



We entered the corresponding settings and we rotate the north by 90° to simulate the real position of the house in the place where it is located.

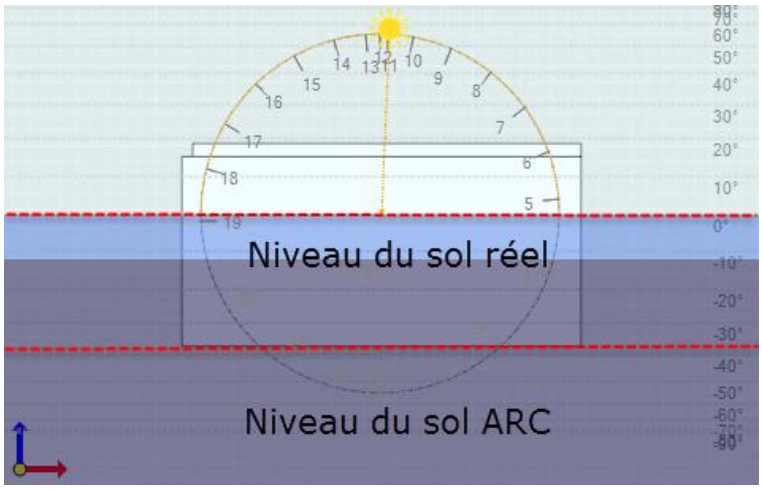


We can also set the Daylight saving time, the GMT, HL and ASL.

- The Daylight saving time moves the hour forward or backwards in relation to the place and season.
- GMT refers to the hours offset from the universal time, depending on the specified location.

- HL is a BIM parameter to set the ground-level.

In ARC+, during the modelling it is possible to define the ground-level as 0. However, the ground-level in ARC+ might not correspond to the 0 level of the sun. For example, a cave three meters deep underground doesn't have the level 0 of the sun at the bottom. If we want, we can set the 0 point three meters down.

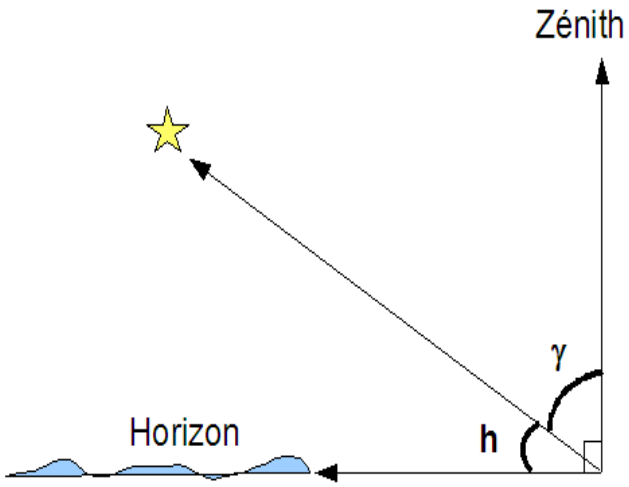


-ASL sets the altitude of the model in relation to the sea, so it changes the relation to the sun also.

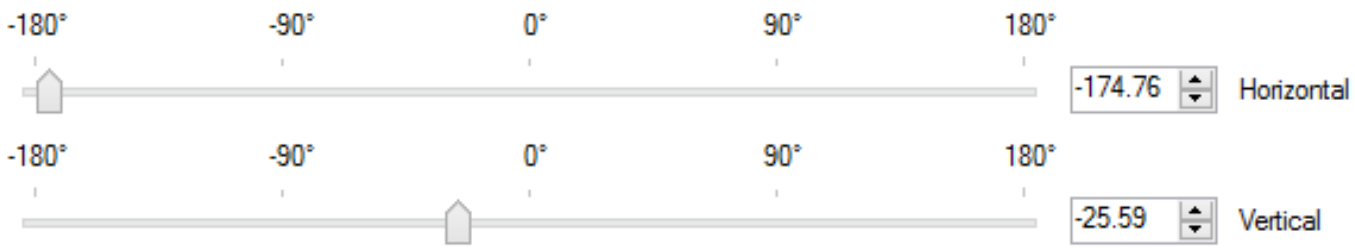
By clicking on <Advanced> it is possible to show more information, for example the time of sunrise and sunset.

POLAR

It is possible to define the horizontal position (horizon) and vertical position (zenith) of the sun and the polar coordinates.



RELATIVE

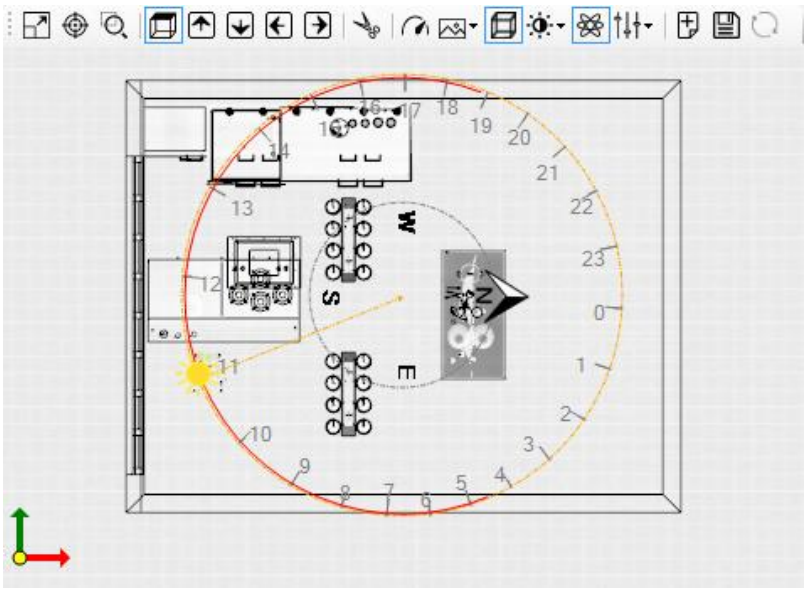


The relative coordinates are linked to the position of the camera and you can rotate both in a constrained mode. This is the best way to set the sun in a free mode. However this function doesn't show the reality of the sun's movement because in this way it is possible to set the sun in unreal positions (even under the ground if you like).

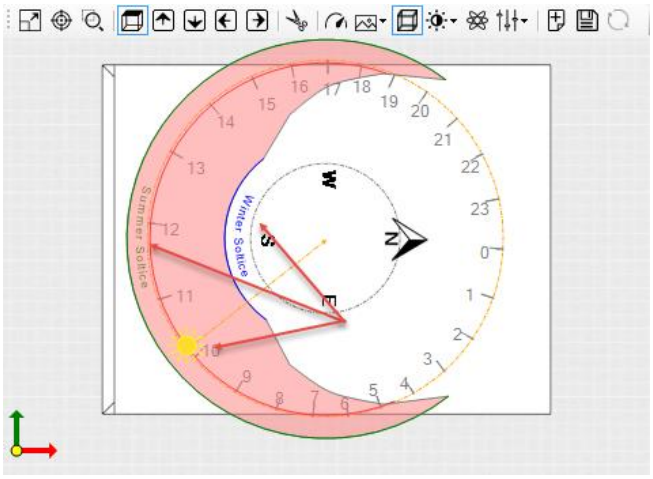
DYNAMIC SETTING

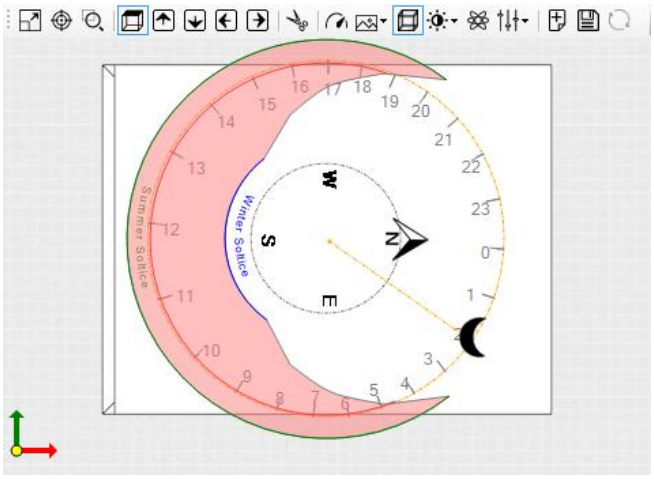
The orientation of the sun by time, polar and relative, which we have discussed above, give the possibility to define the sun by templates or settings in alphanumeric mode. However it is possible to also position the sun in a dynamic way.

By clicking on the <Natural light> tab, the 2D navigation windows on the right side show the circle of the sun. Therefore it is possible to click on the sun with the left button and move it manually. This movement will change the setting of the alphanumeric tab in real-time.



The <Advanced> tab shows all the complementary information, even in the 2D windows. The night-time is also indicated.





HDRI

The HDRI light is an ambient light. This is associated with a specific background, which has a spherical geometry that puts all the model in a globe. The characteristics of the HDRI light are that it comes from everywhere and diminishes the shadow of the sun.

Usually it is associated with a background image such as this:

Every pixel of this image emits light in accordance with the associated .hdr file. This file defines which pixels have to emit light and how much.

It is possible to enable or disable the shadows given by this kind of light.

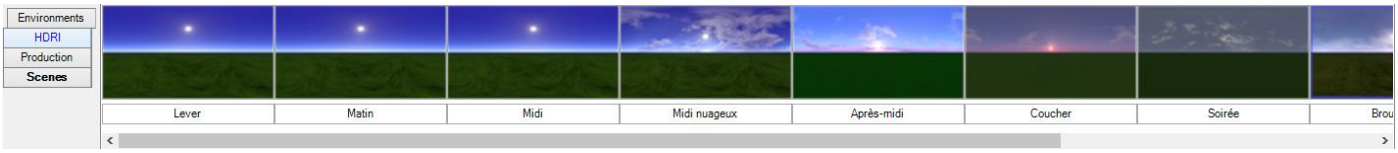
THE PRE-SET TEMPLATES

A bank of pre-set templates ready for use. A few kinds of pre-set templates are available:

- Environments.

To apply these templates, you just need to drag and drop them on the model.
These templates set the position of the sun during the day, the intensity of the sun and the HDRI light. They don't change the background.

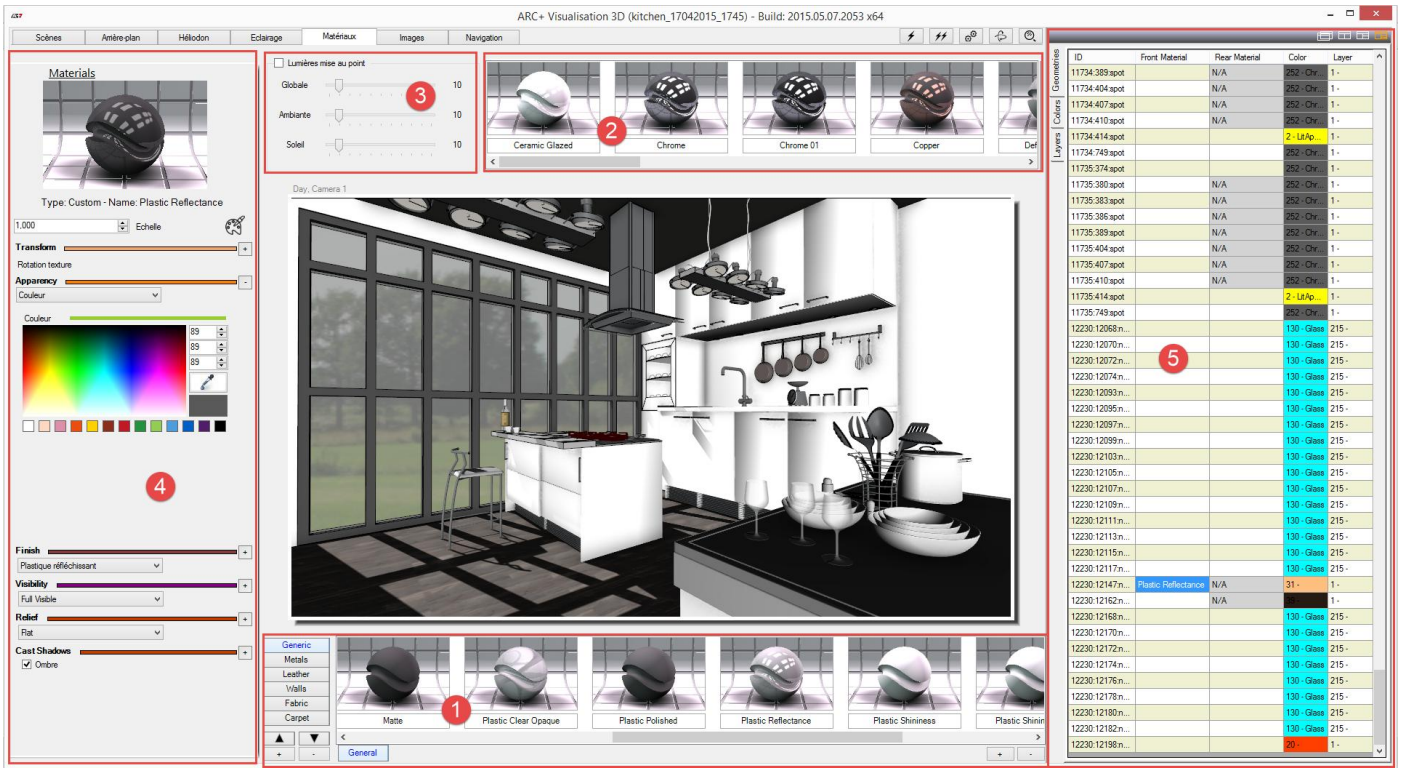
-HDRI



These templates set the intensity of the sunlight, the orientation of the sun and the background. Every pre-set template has a background compatible .hdr file.

Material tab

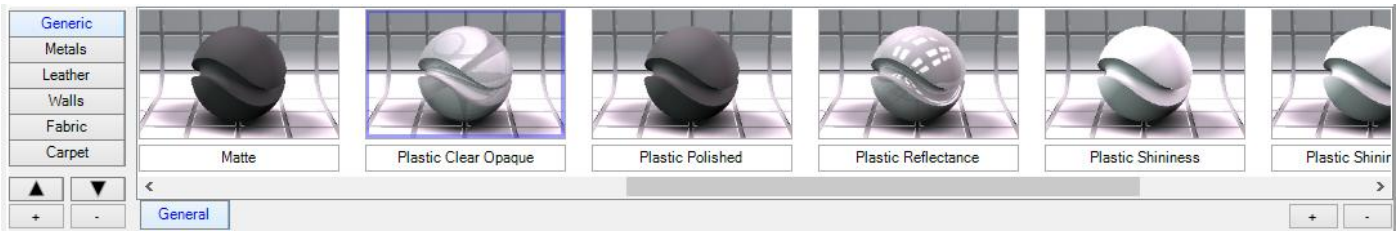
Below you can see the interface of the materials:



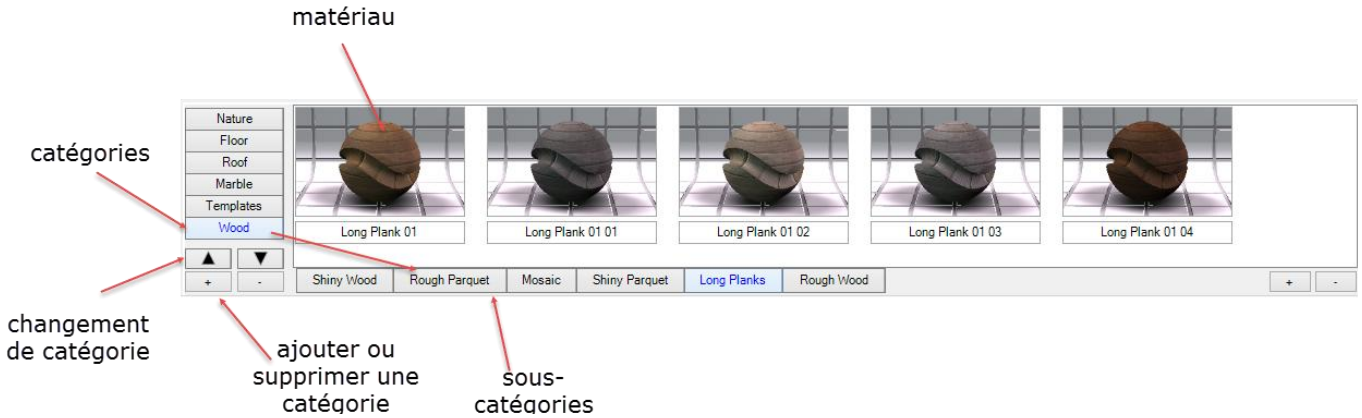
1. Materials library: Bladerender materials and your personally created materials.
2. Space to modify your material.
3. Modification panel.
4. Materials used in the model.
5. Additional light to adjust the material.

MATERIALS LIBRARY

Bladerender gives you a complete materials library. These materials are classified by category and it is possible to add others.



Every category has sub-categories that give you access to a panel with more than 500 materials. To change the category, scroll with the arrow.



The materials are locked in the library and are not modifiable.

TIPS

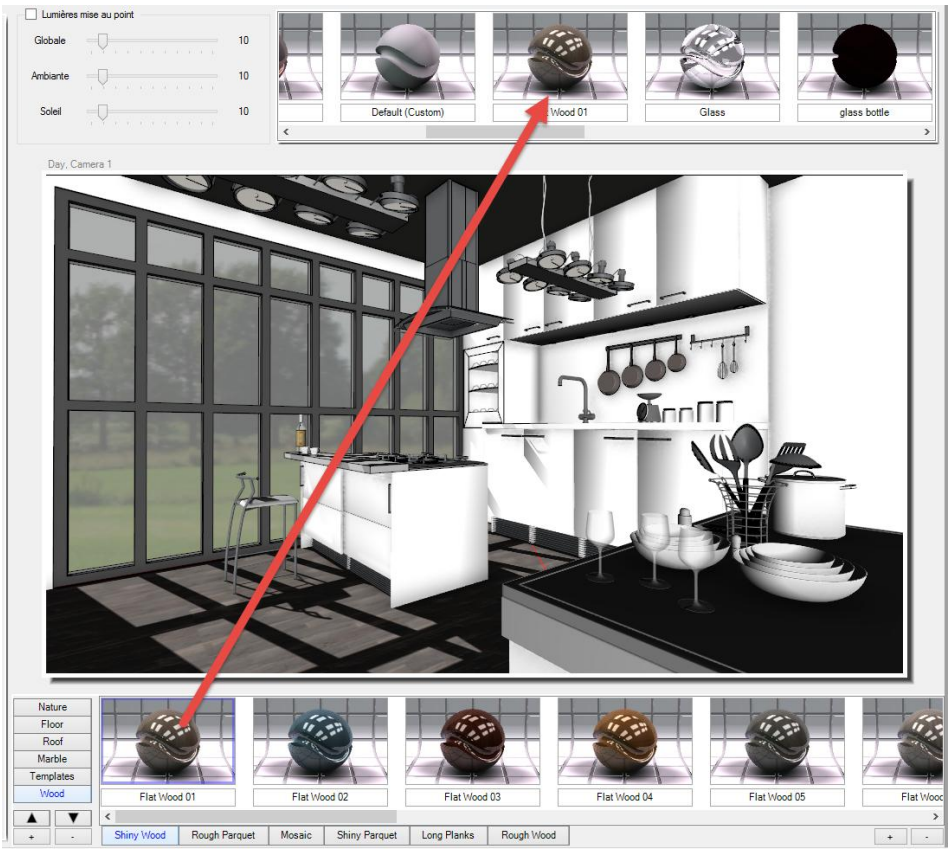
It is possible to create a new personalised category and edit the materials.

- Create a new category.

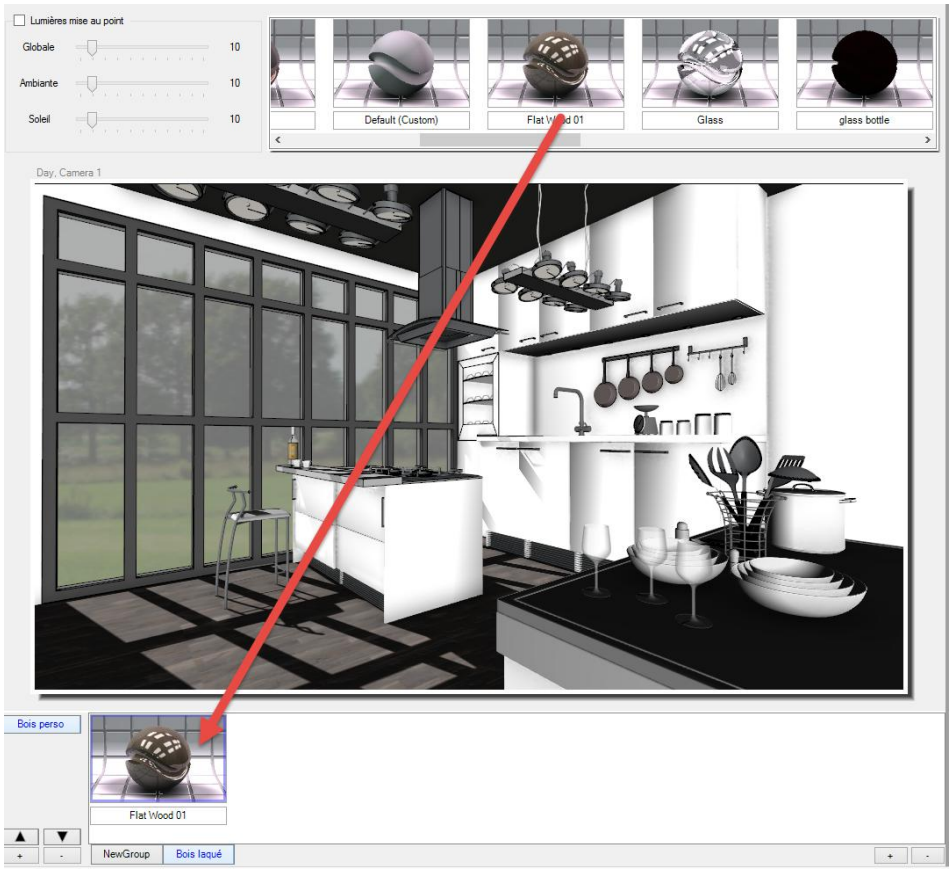
- Give the name that you wish by double clicking it.

- Add a new sub-category if you like.

- Drag and drop the selected material into the session tab at the top. Now you can modify it.



- Drag and drop the modified material into your newly created category.



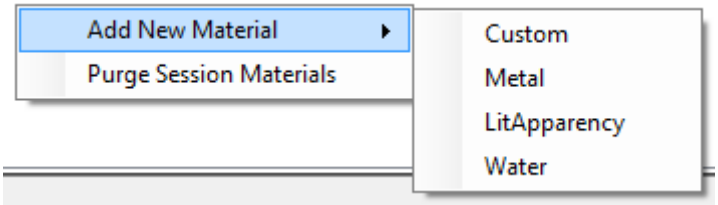
The material is copied and stored in your category and is still modifiable.

THE SESSION MATERIALS

This space has all the materials which have been applied and created in the model.

It is possible to create, delete, duplicate and rename the material, but they are available only for this model. They are not available for other models.

To keep these materials for future projects, you need to add them by dragging and dropping them into one of your personal categories. When you save your project, only these materials are kept in the file. These make the file lighter.



It is possible:

- To create a material by type, metal, light, water and custom.
- To delete a material indefinitely from the session.
- To duplicate a material.
- To purge the session: in this case, Bladerender deletes all the material not applied in the model.

TIPS

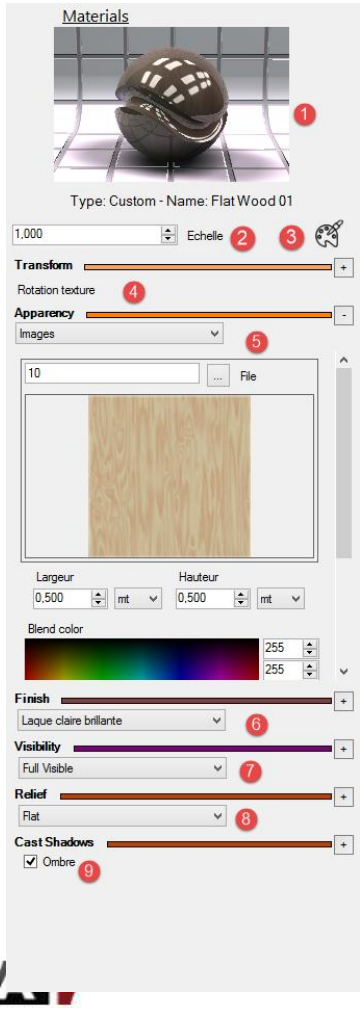
Try to purge the materials of the session to make your model lighter when you play with them a lot.

MODIFICATION PANEL

On the left of the interface is the edition mode for the materials.

Every material is composed of:

- One image or texture (jpg, png etc).
- One finishing that represents the effect (eg. Plastic, ceramic, glass, mirror etc).
- One parameter of visibility to generate the transparency.
- One parameter for the relief.



1. Preview of the material.
2. Scale.
3. Material selector.
4. Rotation/movement of the image.
5. Appearance.
6. Finishing.
7. Parameters of visibility.
8. Parameters of relief.
9. Visibility of the shadows, created by the material.

Preview of the material

The preview is automatically update after every change of the material. It allows you to see the final result in Production of your changes. However, it doesn't take care of the light interaction.

Scale

The scale parameters enlarge or shrink the size of the texture used.

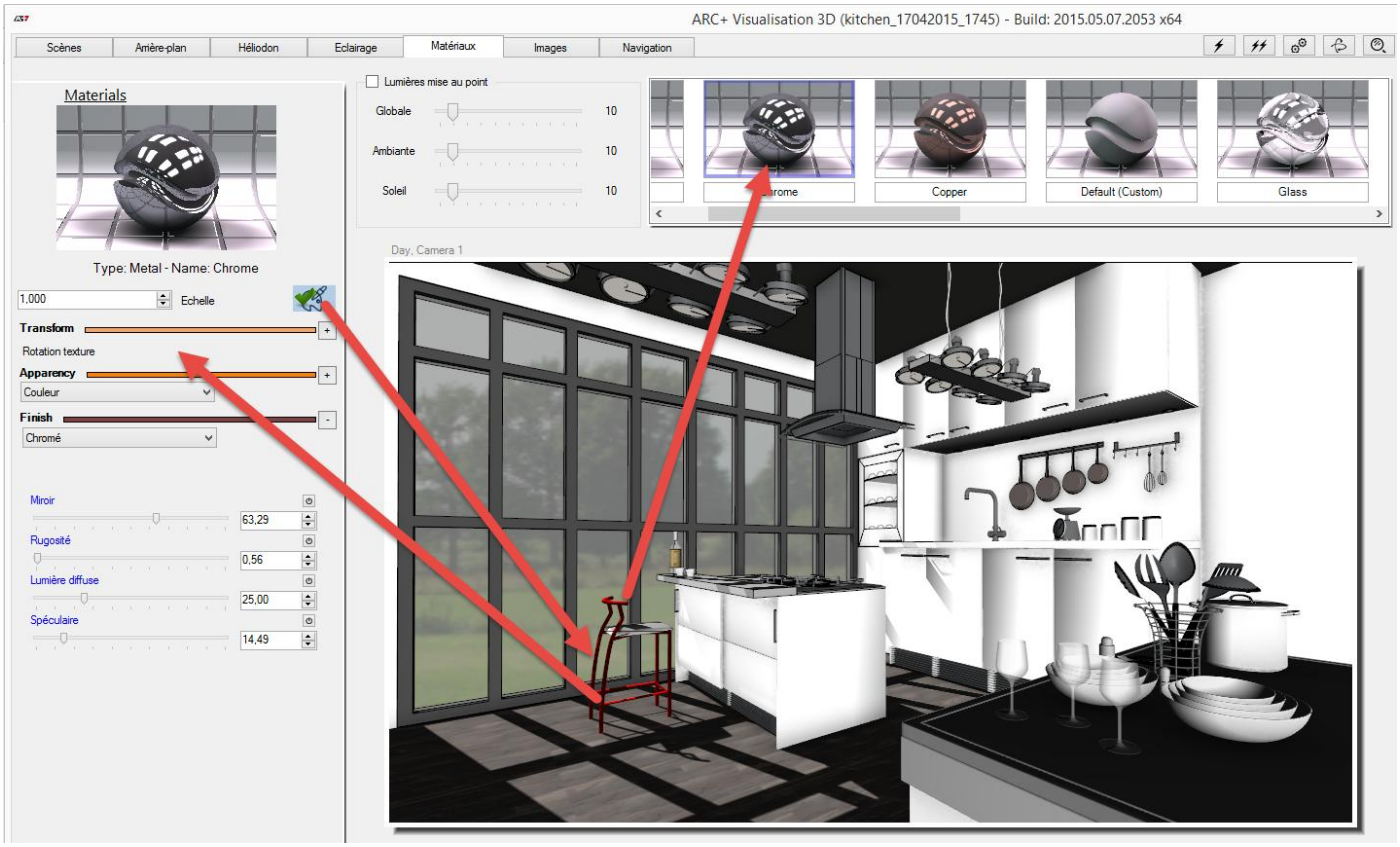
Material selector

The material selector is a very important tool. It allows you to check every material that is applied on the model.

When you activate the icon it becomes blue. After, it is enough to click on the model to recognise which material is being used.

Here is an example:

- Activate the Material selector.
- Move the mouse into the scene and every entity becomes red.
- Click on it.
- The material which is being used shows above, and on the side panel also.

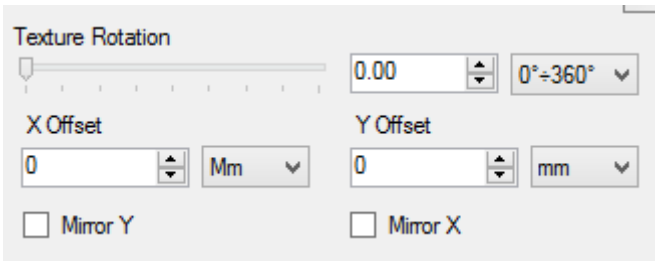


TIPS

It is always possible to active this Material selector by holding down CTRL + ALT on the keyboard.

The selection of a material highlights the material in the session tab so every change that you make will not change the material in your library.

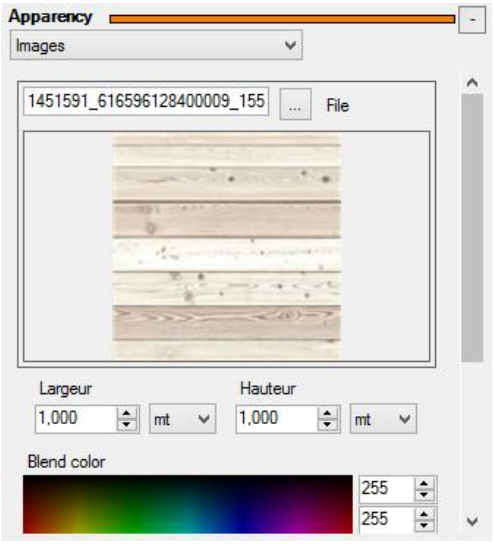
Rotation/movement of the image



It is possible to rotate and move a texture using the X and Y axis on the selected surface. This function allows you to orient the texture in relation to the entity you want to apply it.

To simulate a picture, for example, it is better to use the command /logobox in modelling. In this case, the dimensions of the texture used adapt to the polygon created with this command. You don't need to modify the size, scale or the orientation of the image because it is automatically altered.

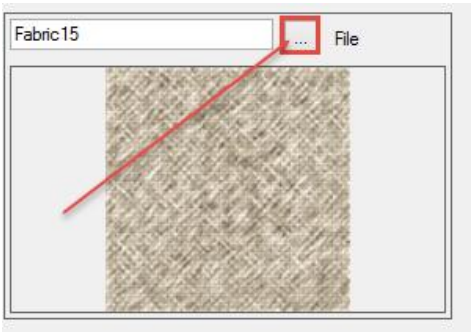
Appearance



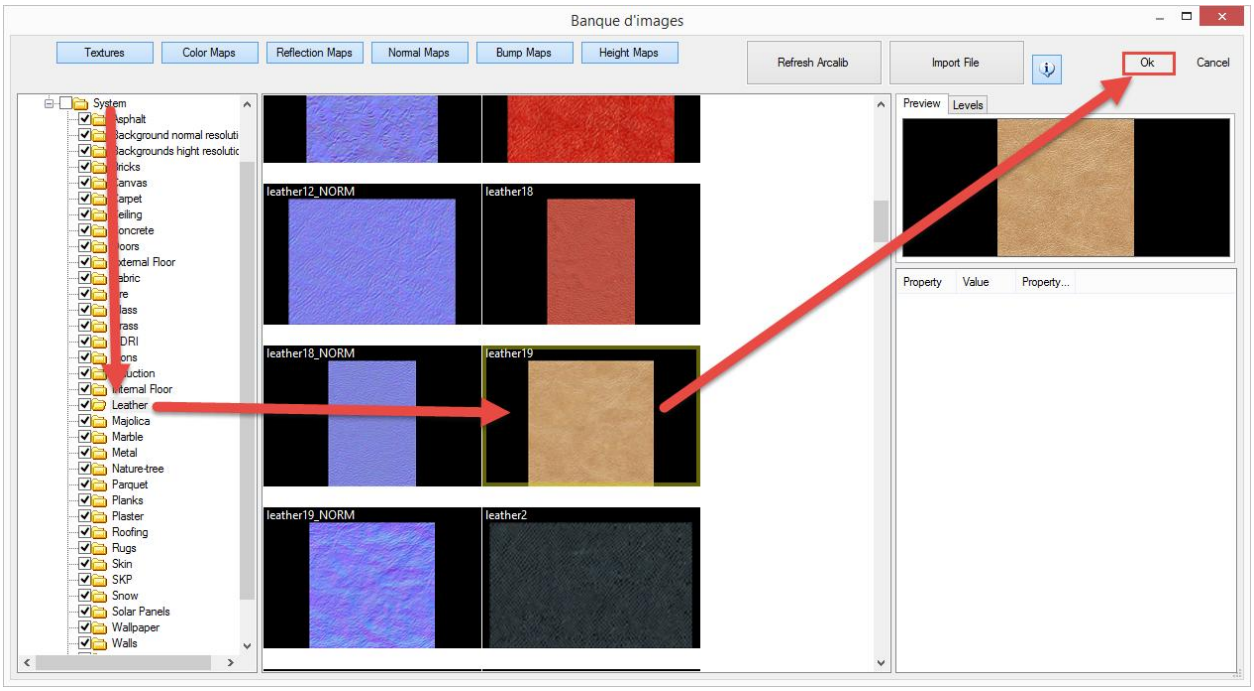
A material is a combination of colour and texture (image) and of a finishing. These are the main parameters of the ways you can modify a material. After that, you can add other effects, like visibility, relief, etc.

The textures are memorised in a database inside ARC+. The way it works is simple and we will look at it further in detail later.

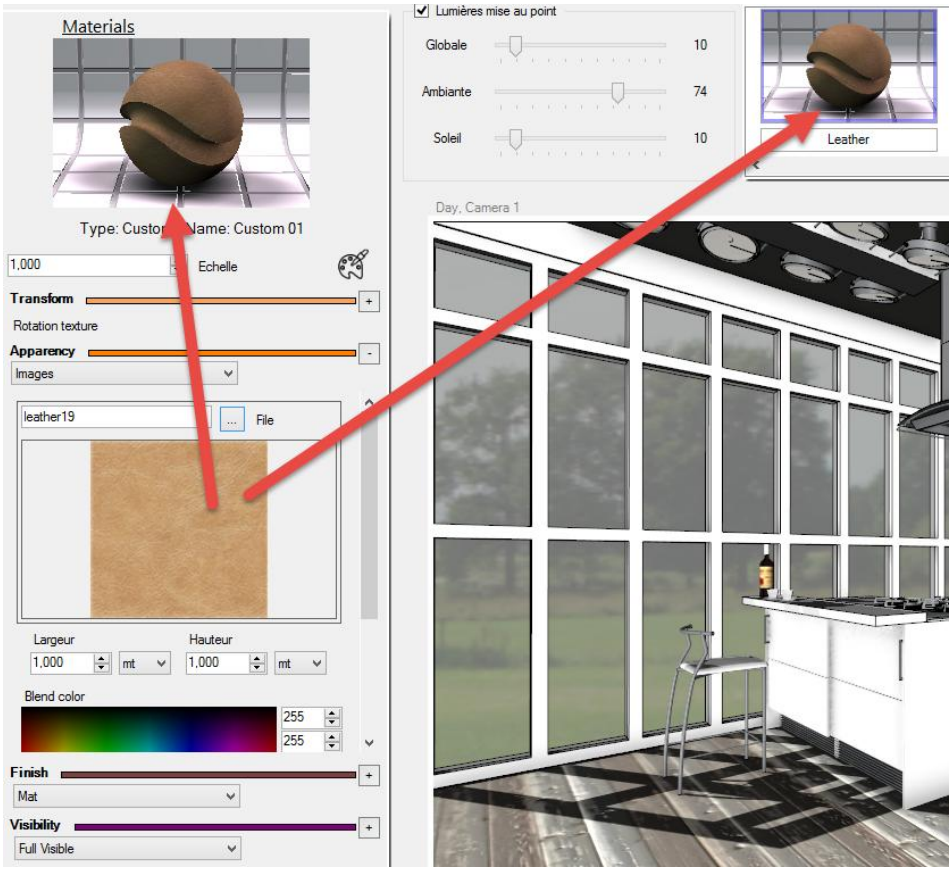
To apply a texture, you need to click on the 'file' button:



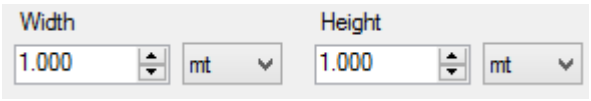
A new window will open, where you can choose and select your texture. The category "System" contains all the library of textures. Select a sub-category, and after, a picture. Click OK at the end.



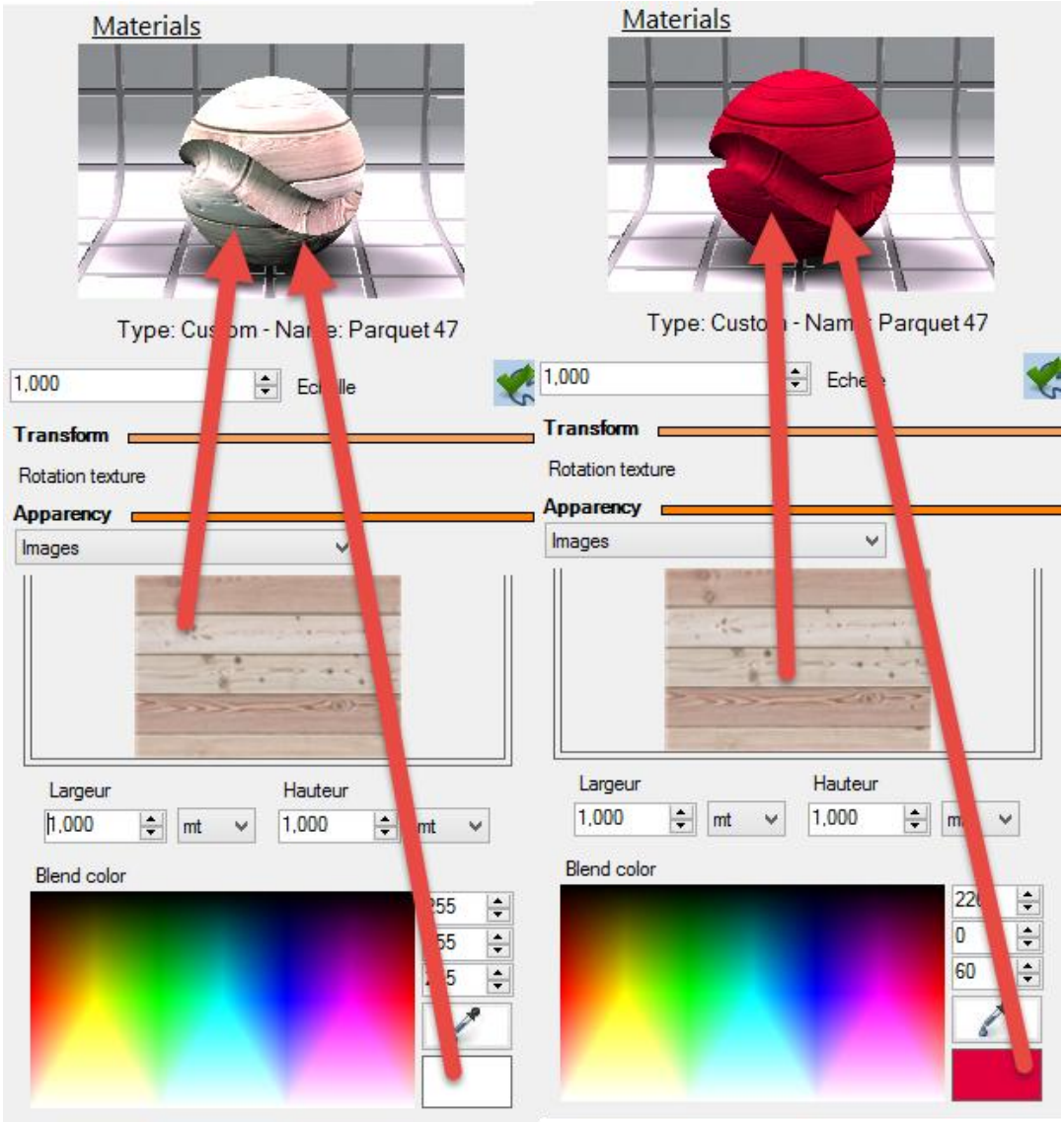
The texture selected will be applied automatically.



Therefore, it is possible to modify the dimensions of the texture. For example, if you want parquet of 1 meter squared, you can set that dimension.



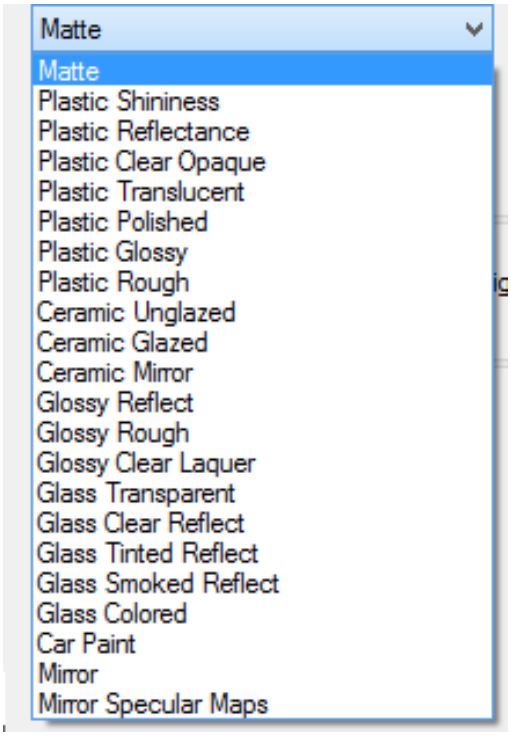
Another option of fusion colour allows you to change the colour of the texture.



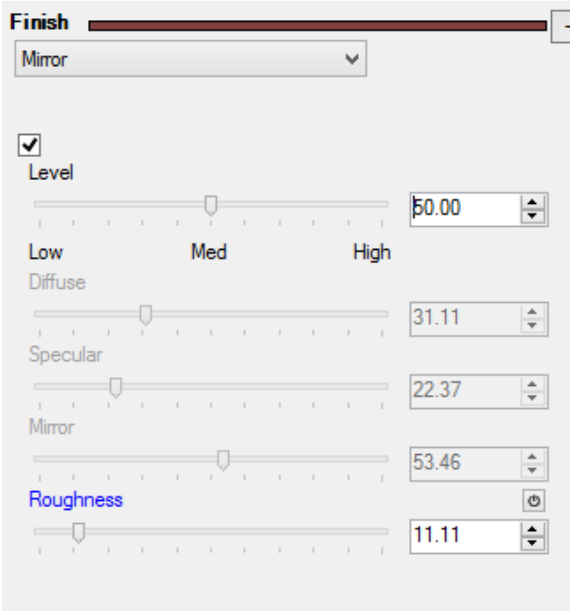
Finishing

The aspect of a material is a combination of two factors: light and the intrinsic property of the material. However Bladerender gives you pre-defined options.

These are the effects which are available:



Ever effects has physical parameters which are specific for that effect. For example, let's choose 'mirror':

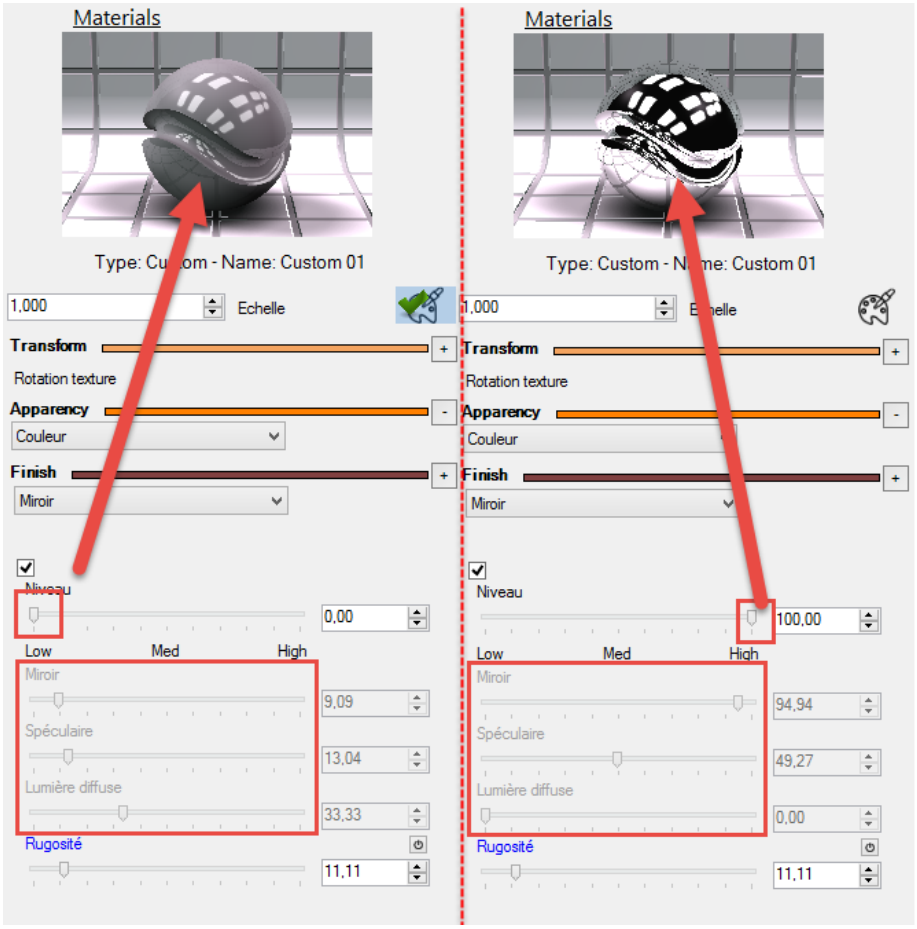


The reflection, roughness, diffusion of the light given by the material and the specular effect are the different settings that allow you to simulate the effect of a mirror.

Ever effect is different. We'll see step by step some of them, which are both common and specific.

The bar "level" allows you to use pre-defined settings. Below that, it has three different levels – low, medium and high, that modify each of the material's parameters.

By activating it, some of the settings will become grey and you cannot change them manually, but they will adjust as you adjust the 'level' bar.

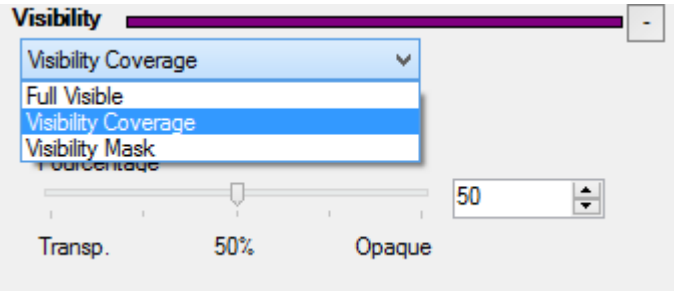


By disabling this option, you can have total control of each of the parameters. It is possible to reset the setting by clicking on this icon:

The preview of the material allows you to visualise in real-time the effect of each parameter. However, we cannot totally trust this preview for the final image. In fact, the final result of a render changes from the preview because in the preview the lighting that we choose for our preview is different. As we said before, the lighting is a main parameter that modifies the look of a material.

Parameters of visibility

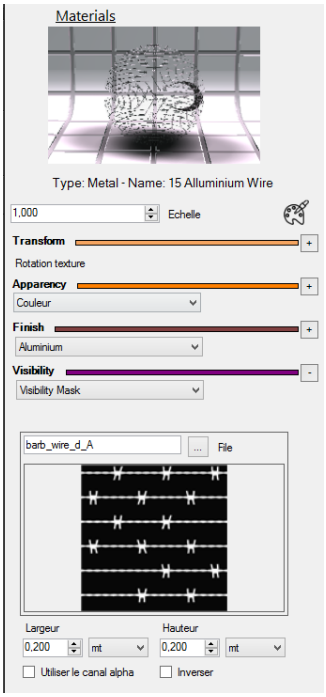
It is possible to modify the visibility of a material by regulating its transparency.



By adding a visibility mask, we can choose to make part of the picture completely transparent.

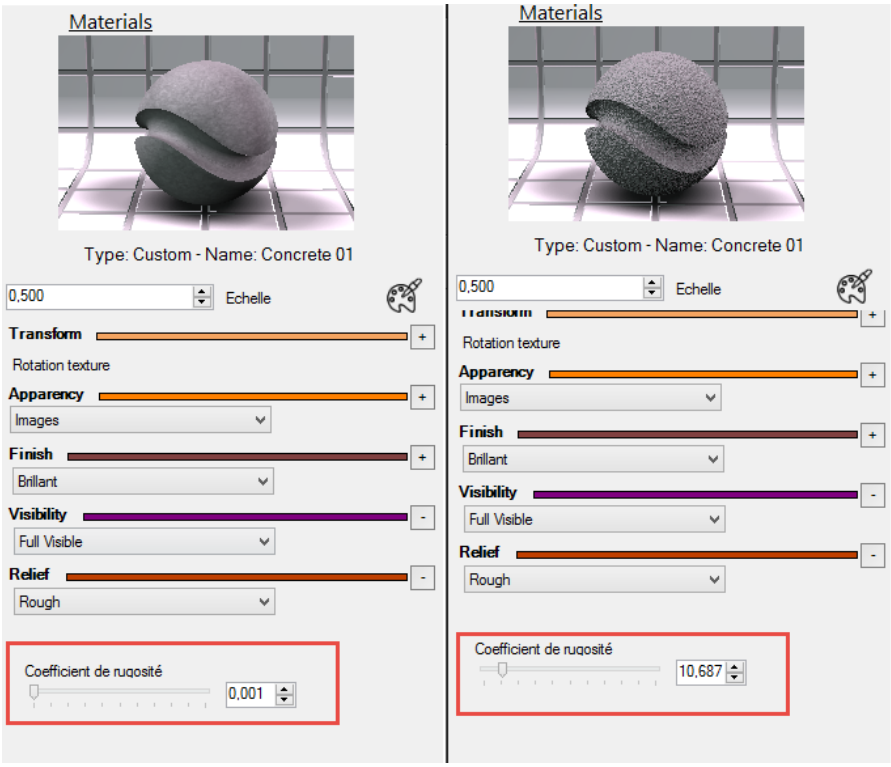
The visibility mask is a simple black and white image in jpg or png. By enabling ‘reverse’, you define which colour, black or white, will be transparent. The “Alpha channel” defines the transparent area if they are set in the texture.

It is quite useful using an editing software for images to set these masks. However, the materials library in ARC+ has a few materials with these masks. For example, a wire fence:



Parameters of relief

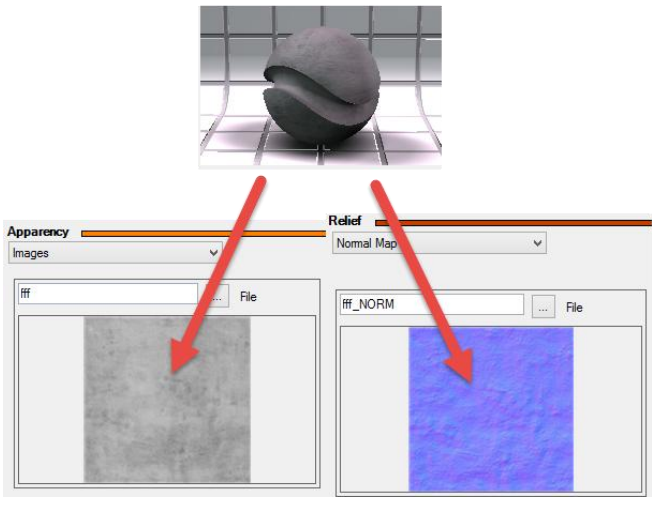
To generate the relief, Bladerender gives you the possibility to add different kinds of masks. We'll show you two of them – normal and aspect.



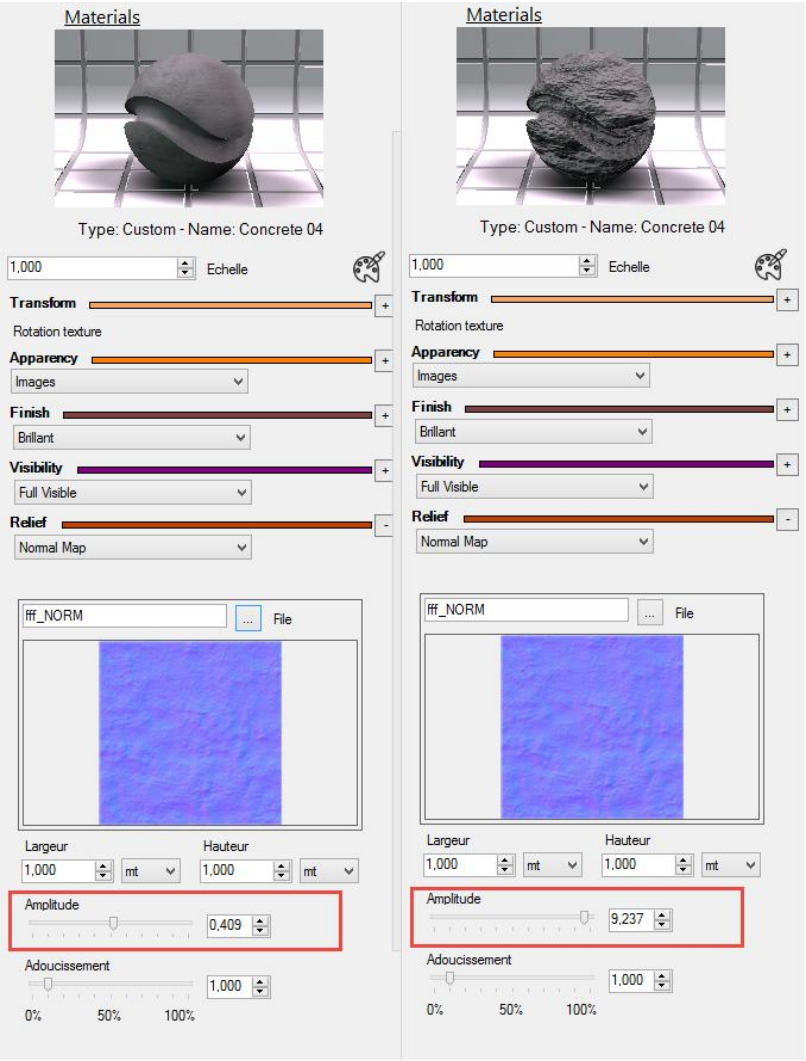
It is possible to add a roughness independent of the selected texture.

For a high quality relief, the best choice is to use a normal map. It is a normal .jpg that simulates the relief of a texture. It is usually blueish and is produced with a software starting from the texture that you are using for your material.

The gallery of materials in ARC+ has many examples.

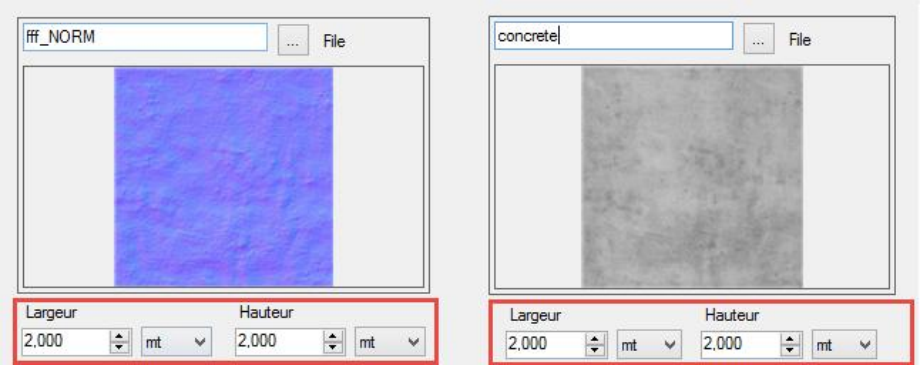


It is possible to modify the dimension of the image, the roughness and the softness of the effect.



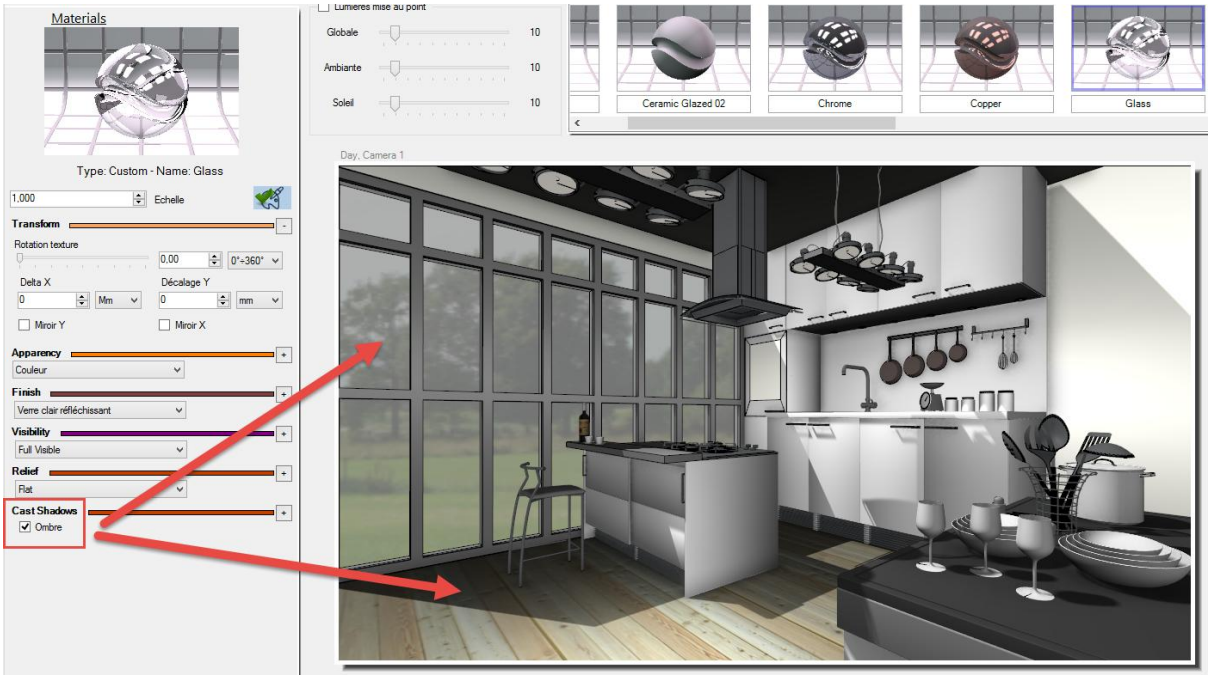
TIPS

For every map used: normal map (relief), visibility mask (transparency), etc. the dimensions must be equal and the same as the main texture chosen. These maps are all layered on top of each other.

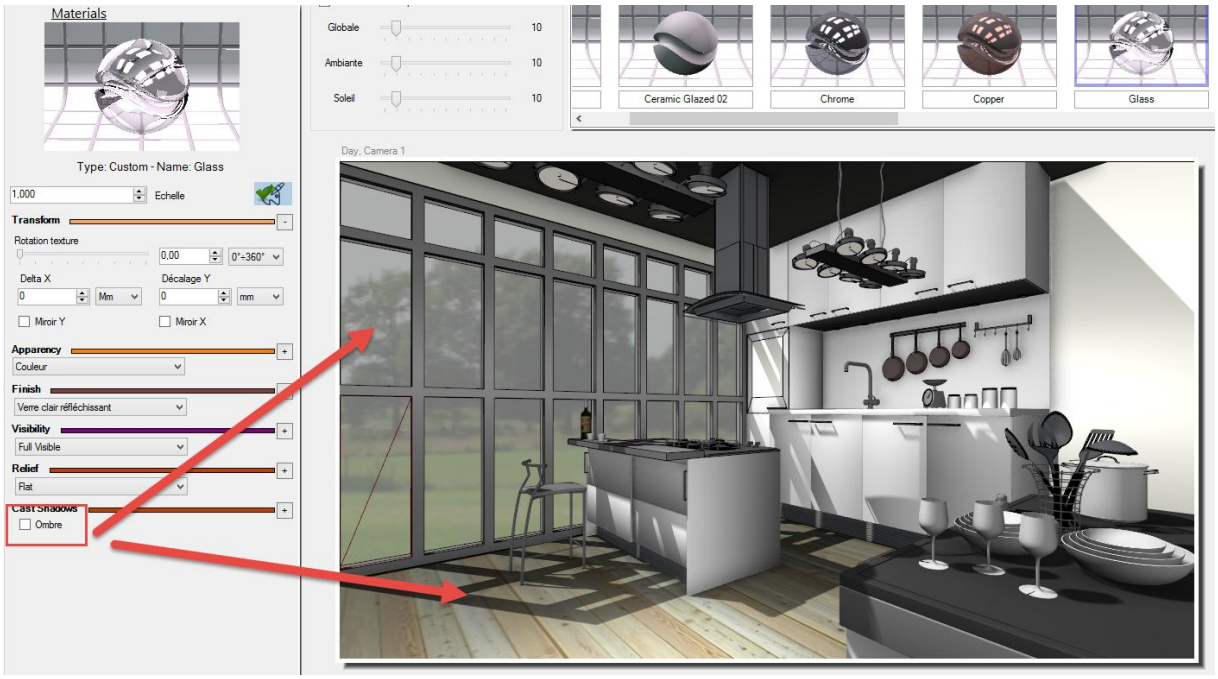


Visibility of the shadows, created by the material (Cast Shadows)

The options Cast Shadows defines if the material has to generate shadows or not. For example the window glass. If the option Cast Shadows is enabled, every surface where the glass material is applied will give a shadow.



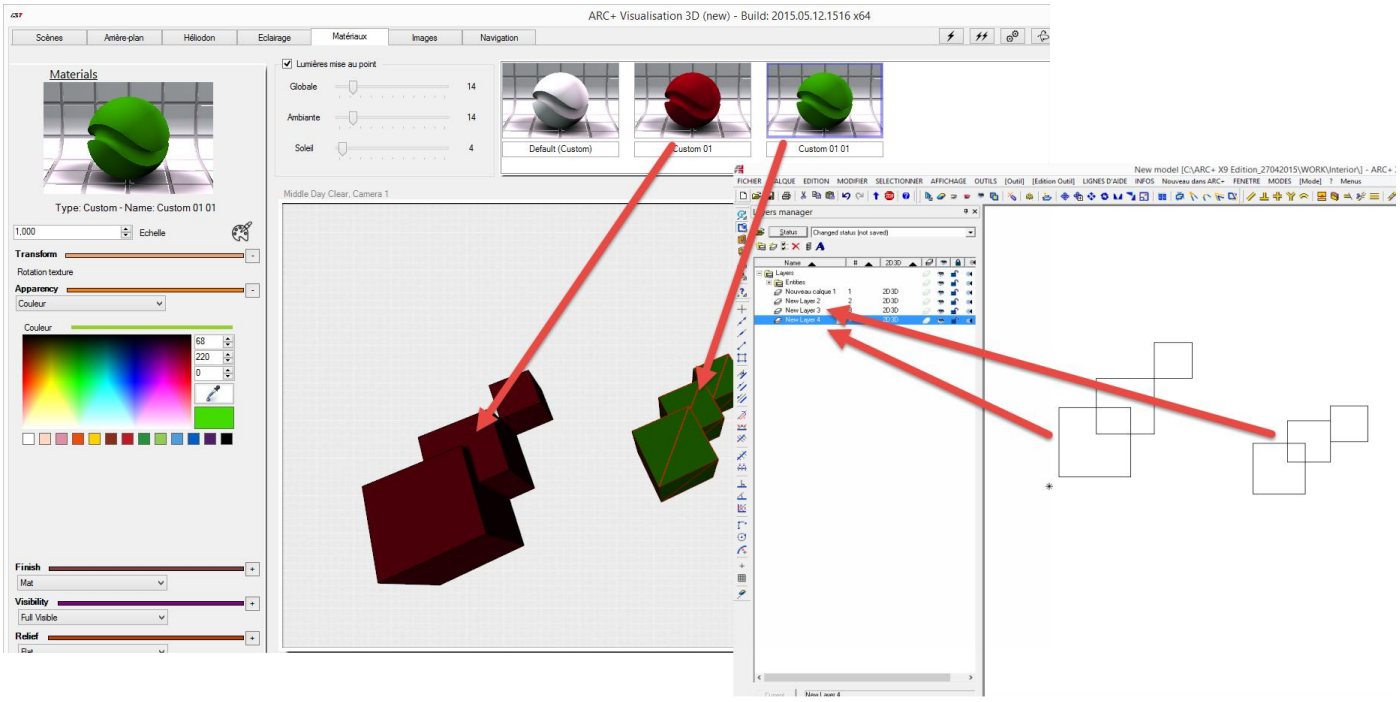
However, in reality windows allow light through, they don't really generate a shadow. The structure of the windows give shadows, not the glass. Therefore, it is clear that this option has to be disabled for glass.



MATERIALS USED IN THE MODEL

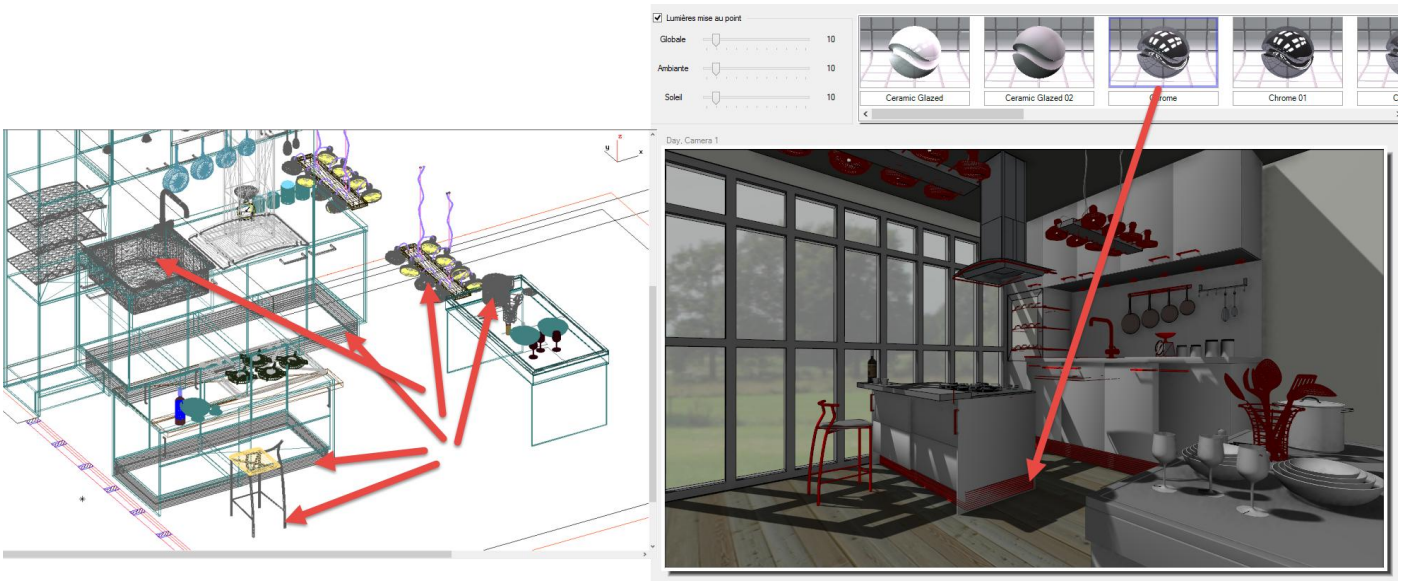
To apply a material, you just need to drag and drop the material on top of the entity. However ARC+ gives you other options to apply a material. In fact, Bladerender integrates the structure of the model 100%. Therefore, it is possible to apply a material:

- By layer - by applying a material by layer means that every entity present in this layer will be selected and will receive this material. To use this function it is necessary to create a model by layer.
  For example, layer 1 concrete, layer 2 glass, etc.



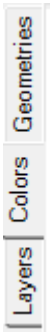
- By colour – By apply a material by colour of the model means that all the entities of the same colour will receive the same material. Therefore, we need to set our model by colour if we want to use this option.

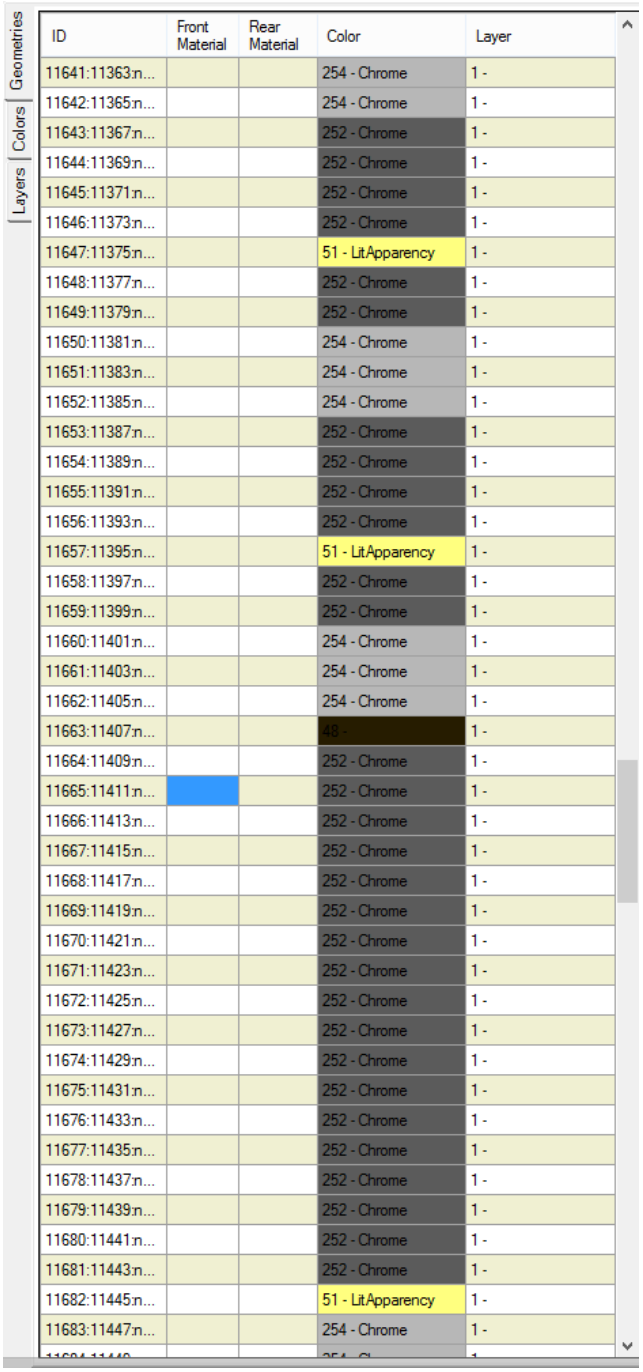
  For examply, colour 1 concrete, colour 2 glass etc.



- By entity – This option is the deepest level mode. It has priority over the other two. This kind of material application ignores the structure of the model and allows you to apply materials entity by entity.

The choice of the application mode of the material depends on the structure of your model:





Geometries | Colors | Layers

ID	Front Material	Rear Material	Color	Layer
11641:11363:n...			254 - Chrome	1 -
11642:11365:n...			254 - Chrome	1 -
11643:11367:n...			252 - Chrome	1 -
11644:11369:n...			252 - Chrome	1 -
11645:11371:n...			252 - Chrome	1 -
11646:11373:n...			252 - Chrome	1 -
11647:11375:n...			51 - LitApparency	1 -
11648:11377:n...			252 - Chrome	1 -
11649:11379:n...			252 - Chrome	1 -
11650:11381:n...			254 - Chrome	1 -
11651:11383:n...			254 - Chrome	1 -
11652:11385:n...			254 - Chrome	1 -
11653:11387:n...			252 - Chrome	1 -
11654:11389:n...			252 - Chrome	1 -
11655:11391:n...			252 - Chrome	1 -
11656:11393:n...			252 - Chrome	1 -
11657:11395:n...			51 - LitApparency	1 -
11658:11397:n...			252 - Chrome	1 -
11659:11399:n...			252 - Chrome	1 -
11660:11401:n...			254 - Chrome	1 -
11661:11403:n...			254 - Chrome	1 -
11662:11405:n...			254 - Chrome	1 -
11663:11407:n...			48 -	1 -
11664:11409:n...			252 - Chrome	1 -
11665:11411:n...			252 - Chrome	1 -
11666:11413:n...			252 - Chrome	1 -
11667:11415:n...			252 - Chrome	1 -
11668:11417:n...			252 - Chrome	1 -
11669:11419:n...			252 - Chrome	1 -
11670:11421:n...			252 - Chrome	1 -
11671:11423:n...			252 - Chrome	1 -
11672:11425:n...			252 - Chrome	1 -
11673:11427:n...			252 - Chrome	1 -
11674:11429:n...			252 - Chrome	1 -
11675:11431:n...			252 - Chrome	1 -
11676:11433:n...			252 - Chrome	1 -
11677:11435:n...			252 - Chrome	1 -
11678:11437:n...			252 - Chrome	1 -
11679:11439:n...			252 - Chrome	1 -
11680:11441:n...			252 - Chrome	1 -
11681:11443:n...			252 - Chrome	1 -
11682:11445:n...			51 - LitApparency	1 -
11683:11447:n...			254 - Chrome	1 -

This table shows all the entities present in your model and the materials applied to them. Let's analyse its structure:

The entity of the model

The first column lists all the entities in your project. Each entity has an ID. Next to this ID the name of the file where it came from is shown. This information is useful to discover which one is the selected entity.

Map of the material

It is possible to visualise which materials are applied to each selected entity. By clicking on the tab ‘Geometry’ you can see all the materials applied by geometry, colour and layer.

Geometries | Colors | Layers

ID	Front Material	Rear Material	Color	Layer
366:19:...			35 -	1 -
366:128...			252 - Chrome	1 -
366:128...		N/A	135 - Ceramic Glazed	1 -
368:178...			135 - Ceramic Glazed	1 -
368:178...			136 -	1 -
368:178...	Custom		137 - Custom	1 -
423:423...		N/A	1 - Wall	1 -
424:424...		N/A	1 - Wall	1 -
425:425...		N/A	1 - Wall	1 -
433:433...		N/A	1 - Wall	1 -
434:434...		N/A	1 - Wall	1 -
435:435...		N/A	1 - Wall	1 -
443:443...		N/A	1 - Wall	1 -
444:444...		N/A	1 - Wall	1 -
445:445...		N/A	1 - Wall	1 -
453:453...		N/A	1 - Wall	1 -
454:454...		N/A	1 - Wall	1 -
455:455...	Wall	N/A	1 - Wall	1 -
6308:63...		N/A	1 - Wall	1 -
8716:12...			254 - Chrome	1 -
8716:15...			254 - Chrome	1 -
8716:18...			252 - Chrome	1 -
9248:13...			254 - Chrome	1 -
9248:16...			79 - Chrome	1 -
9248:19...			254 - Chrome	1 -
9248:22...			254 - Chrome	1 -
9252:4:...	Glass reflect		9 - Ceramic Glazed	1 -

We can see that the entity 9252:4

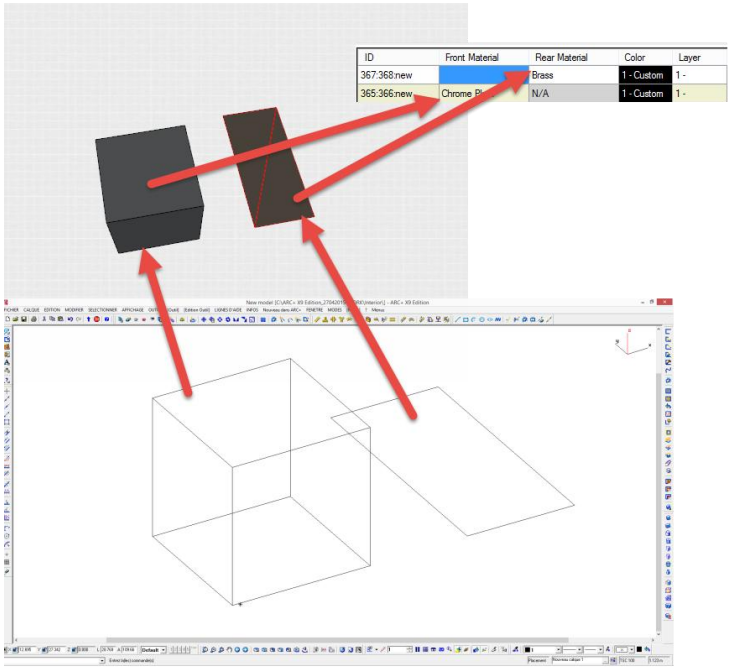
- Has material “Glass reflect” applied by geometry.
- Has the material “Ceramic Glazed” applied by colour.
- Doesn’t have any material applied by layer.

MATERIALS BY GEOMETRY

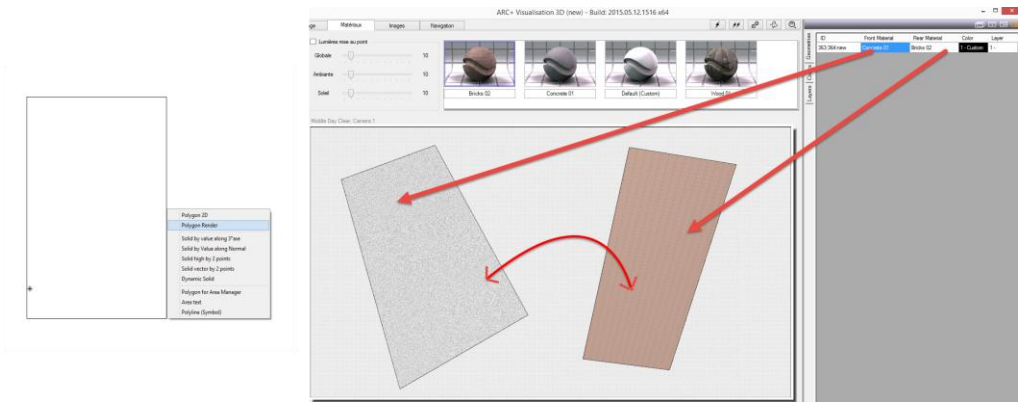
The two columns Front and Rear Material show the material applied by geometry.

Front Material	Rear Material
	N/A
Custom	
	N/A
	N/A
	N/A
	N/A
	N/A
	N/A
	N/A
	N/A
	N/A
	N/A
Wall	N/A
	N/A

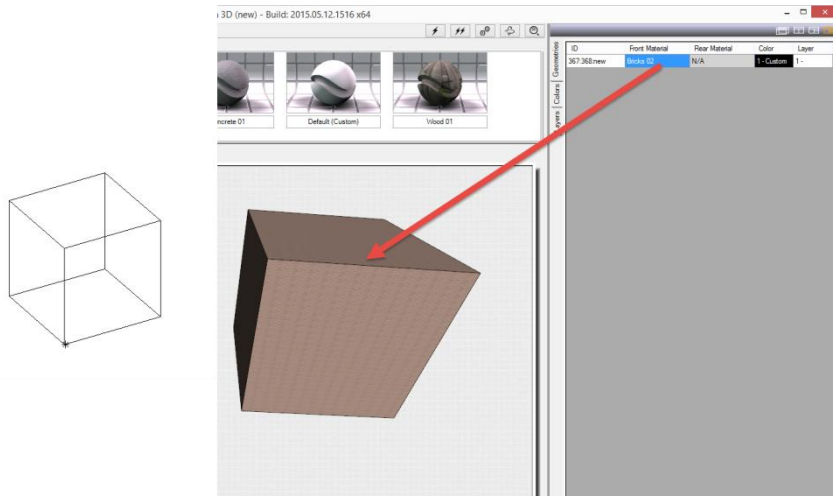
Some entities are “Bi-face”, meaning that a material can be applied to the front and the rear of the same entity.



Let’s take an example of a render polygon. It is possible to apply a material to each face of this polygon.



Now take an example of a simple cube. The attribute N/A (not applicable) appears on the rear surface of the cube because it is not modifiable.

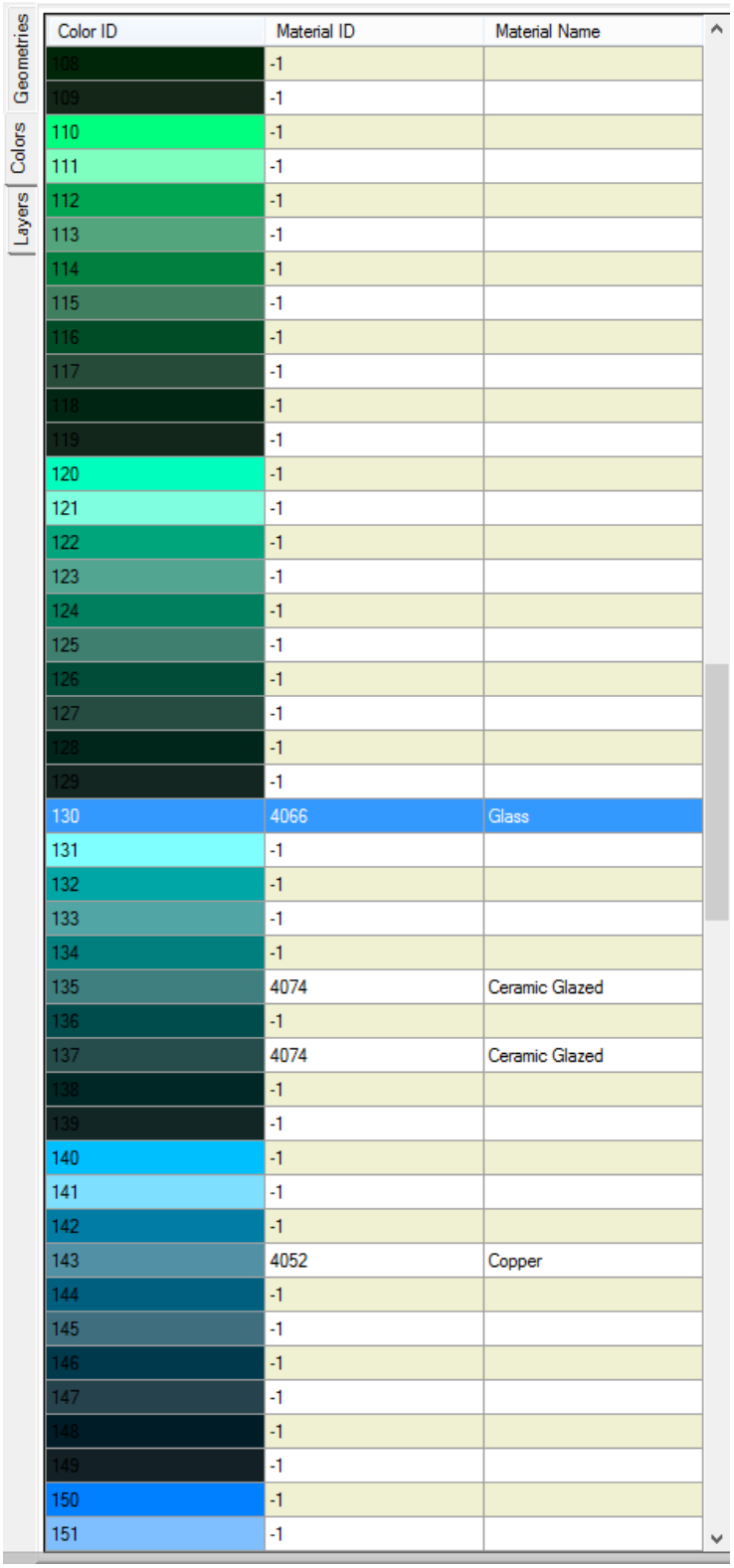


MATERIAL BY COLOUR

Geometries | Colors | Layers

ID	Front Material	Rear Material	Color	Layer
9320:9314:new			141 -	1 -
9321:9316:new			135 - Cer...	1 -
9322:9314:new			141 -	1 -
9323:9316:new			135 - Cer...	1 -
9324:9310:new			135 - Cer...	1 -
9325:9312:new			141 -	1 -
9350:9334:new			252 - Chr...	1 -
9351:9336:new			252 - Chr...	1 -
9352:9338:new			252 - Chr...	1 -
9353:9340:new			252 - Chr...	1 -
9354:9342:new			252 - Chr...	1 -
9355:9344:new			252 - Chr...	1 -
9357:9358:new		Ceramic Glazed	20 -	1 -
10831:10823:n...		N/A	135 - Cer...	1 -
10832:10825:n...		N/A	135 - Cer...	1 -
10833:10827:n...		N/A	135 - Cer...	1 -
10834:10829:n...		N/A	135 - Cer...	1 -
10835:10823:n...		N/A	135 - Cer...	1 -
10836:10825:n...		N/A	135 - Cer...	1 -
10837:10827:n...		N/A	135 - Cer...	1 -
10838:10829:n...		N/A	135 - Cer...	1 -
10839:10823:n...		N/A	135 - Cer...	1 -
10840:10825:n...		N/A	135 - Cer...	1 -
10841:10827:n...		N/A	135 - Cer...	1 -
10842:10829:n...		N/A	135 - Cer...	1 -

In this column the colour used to model your project, and the material applied to this colour appear. By clicking on the tab “colour”, you will see only the colour used in your project and the materials associated with them and the number of each entity.



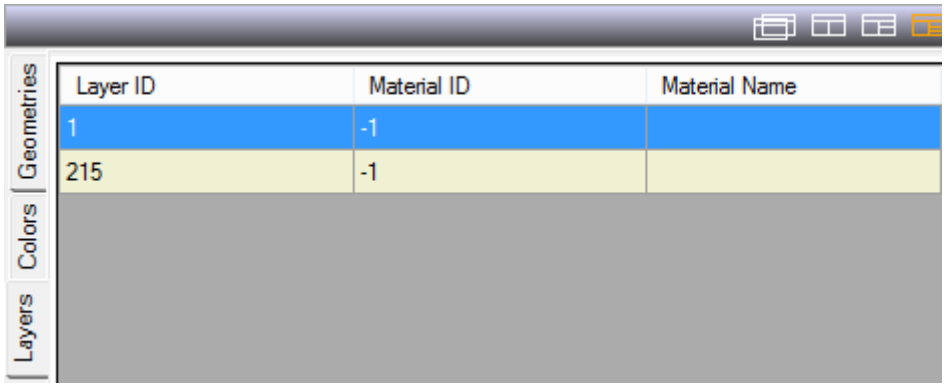
Color ID	Material ID	Material Name
108	-1	
109	-1	
110	-1	
111	-1	
112	-1	
113	-1	
114	-1	
115	-1	
116	-1	
117	-1	
118	-1	
119	-1	
120	-1	
121	-1	
122	-1	
123	-1	
124	-1	
125	-1	
126	-1	
127	-1	
128	-1	
129	-1	
130	4066	Glass
131	-1	
132	-1	
133	-1	
134	-1	
135	4074	Ceramic Glazed
136	-1	
137	4074	Ceramic Glazed
138	-1	
139	-1	
140	-1	
141	-1	
142	-1	
143	4052	Copper
144	-1	
145	-1	
146	-1	
147	-1	
148	-1	
149	-1	
150	-1	
151	-1	

MATERIALS BY LAYER

Geometries | Colors | Layers

ID	Front Material	Rear Material	Color	Layer
9320:9314:new			141 -	1 -
9321:9316:new			135 - Cer...	1 -
9322:9314:new			141 -	1 -
9323:9316:new			135 - Cer...	1 -
9324:9310:new			135 - Cer...	1 -
9325:9312:new			141 -	1 -
9350:9334:new			252 - Chr...	1 -
9351:9336:new			252 - Chr...	1 -
9352:9338:new			252 - Chr...	1 -
9353:9340:new			252 - Chr...	1 -
9354:9342:new			252 - Chr...	1 -
9355:9344:new			252 - Chr...	1 -
9357:9358:new		Ceramic Glazed	20 -	1 -
10831:10823:n...		N/A	135 - Cer...	1 -
10832:10825:n...		N/A	135 - Cer...	1 -
10833:10827:n...		N/A	135 - Cer...	1 -
10834:10829:n...		N/A	135 - Cer...	1 -
10835:10823:n...		N/A	135 - Cer...	1 -
10836:10825:n...		N/A	135 - Cer...	1 -
10837:10827:n...		N/A	135 - Cer...	1 -
10838:10829:n...		N/A	135 - Cer...	1 -
10839:10823:n...		N/A	135 - Cer...	1 -
10840:10825:n...		N/A	135 - Cer...	1 -
10841:10827:n...		N/A	135 - Cer...	1 -
10842:10829:n...		N/A	135 - Cer...	1 -

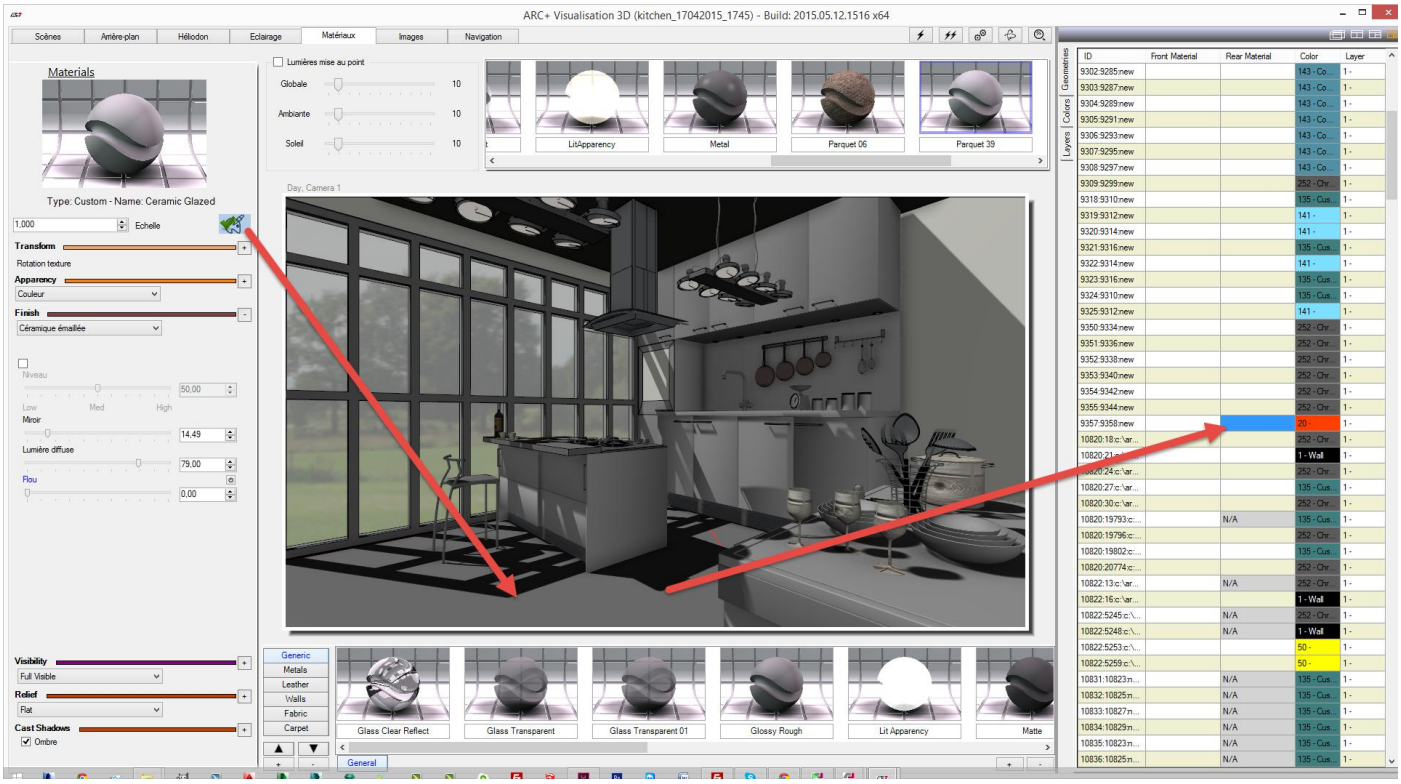
In this column you can see the layers used in your project and the materials associated with them. By clicking on the tab “layers”, you will see only the layers used, the materials and the number of each entity.



ANOTHER WAY TO APPLY MATERIALS

It is possible to apply materials directly on the list of the structure of the model. Instead of doing a drag and drop on the 3D, you can do the drag and drop directly on this list.

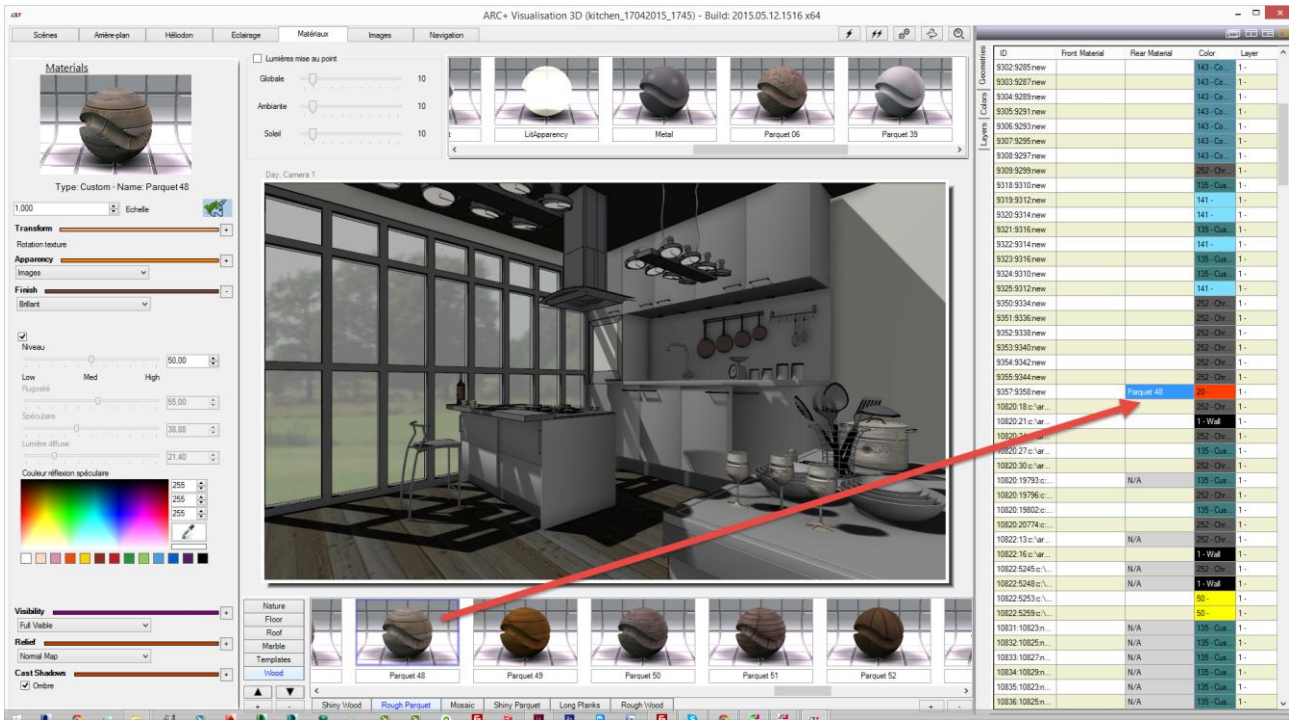
For example, we want to apply the material ‘parquet’ on the floor:



First of all we need to know which entities represent the polygon of the floor. To do that you need to:

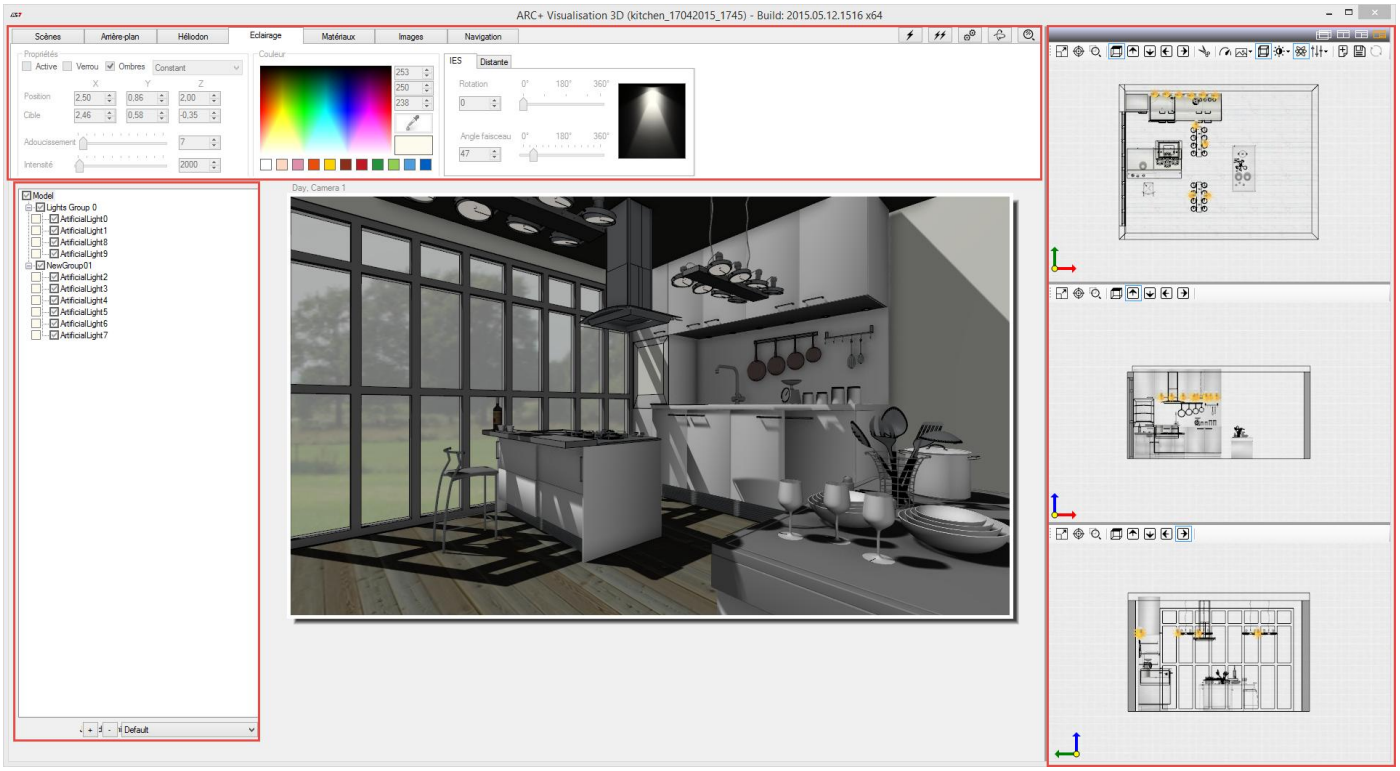
- Click on the dropper.
- Click on the floor (the border of the entity will become highlighted in red).
- On the side-list, the row of the entity will become highlighted.

Select the material and drag and drop it directly onto the floor.



In the same way, to apply a material by colour or layer, it is enough to drag and drop it onto the highlighted row.

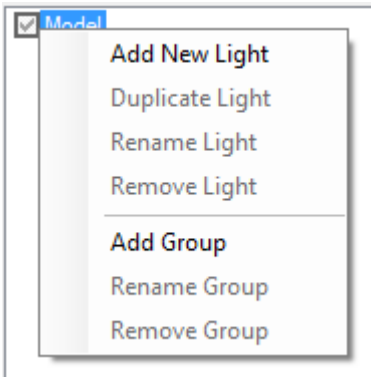
ARC+ gives you the possibility to add artificial lighting to your scene. This illumination is based on IES files. These IES files come from companies who manufacture these kinds of lamps (Siemens, Philips etc).



ADDING ARTIFICIAL LIGHT

It is possible to give a structure for the lighting and to give these by groups.

To add a group, just click with the right mouse button on the option Model, then choose ‘Add a Group’.



This will create a new group without a name. To rename it, you can choose the option ‘rename group’.

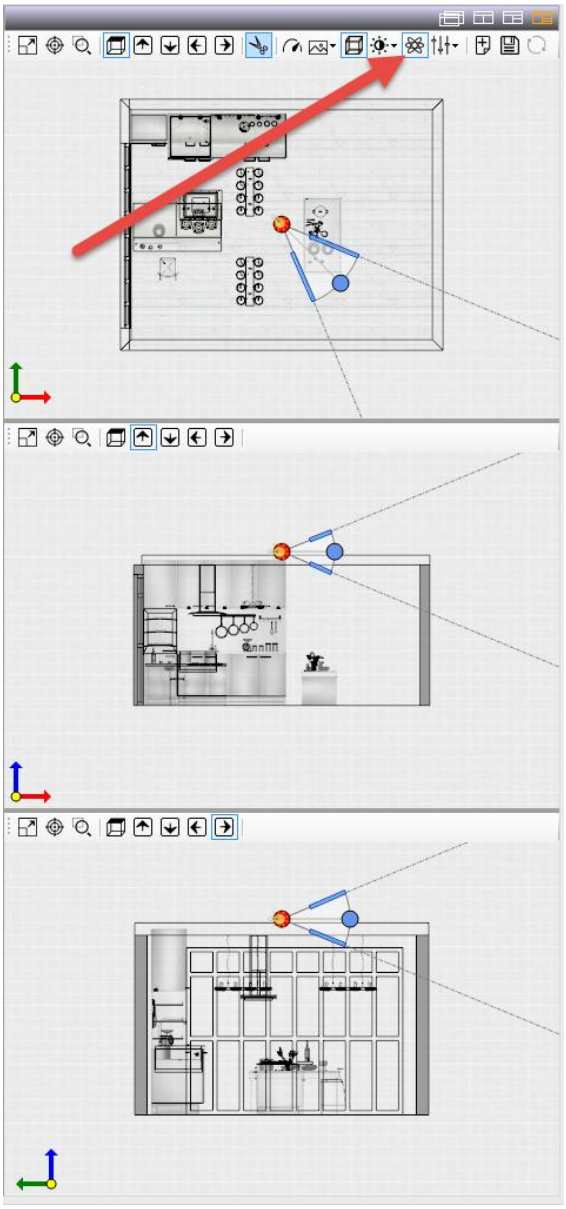
Now we can add a light to the group. To do that, right click on the group and choose ‘Add new light’. A new light will automatically be created. To rename, cancel or delete it, the procedure is the same for the groups.

Therefore, it is possible to create a few groups of lights to enable and disable them easily.

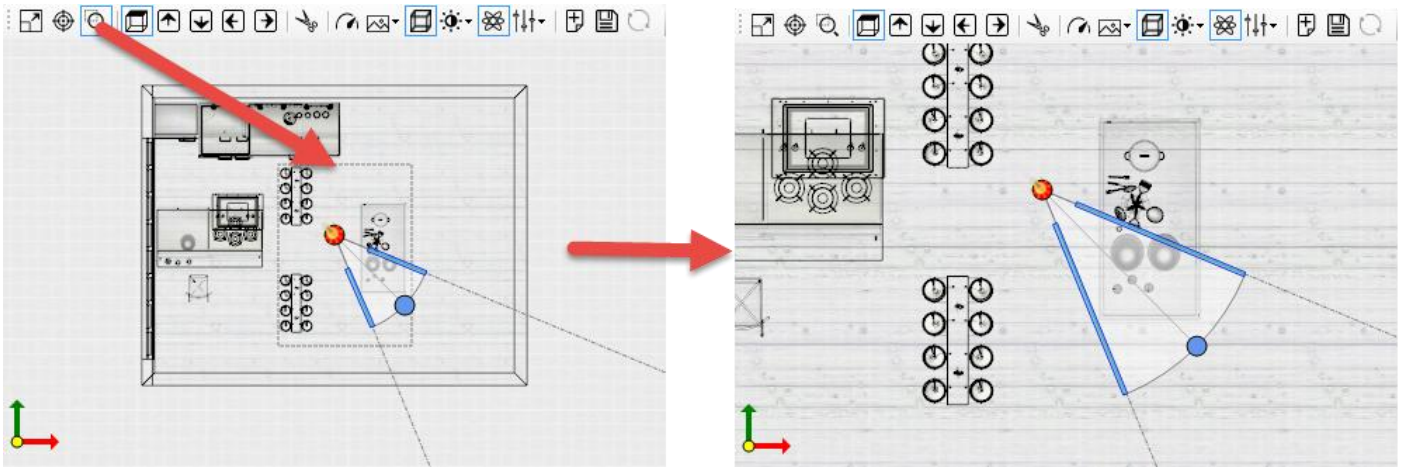
THE POSITION OF THE LIGHT

In the side window of 2D navigation, it is possible to manually move the artificial light you have created.

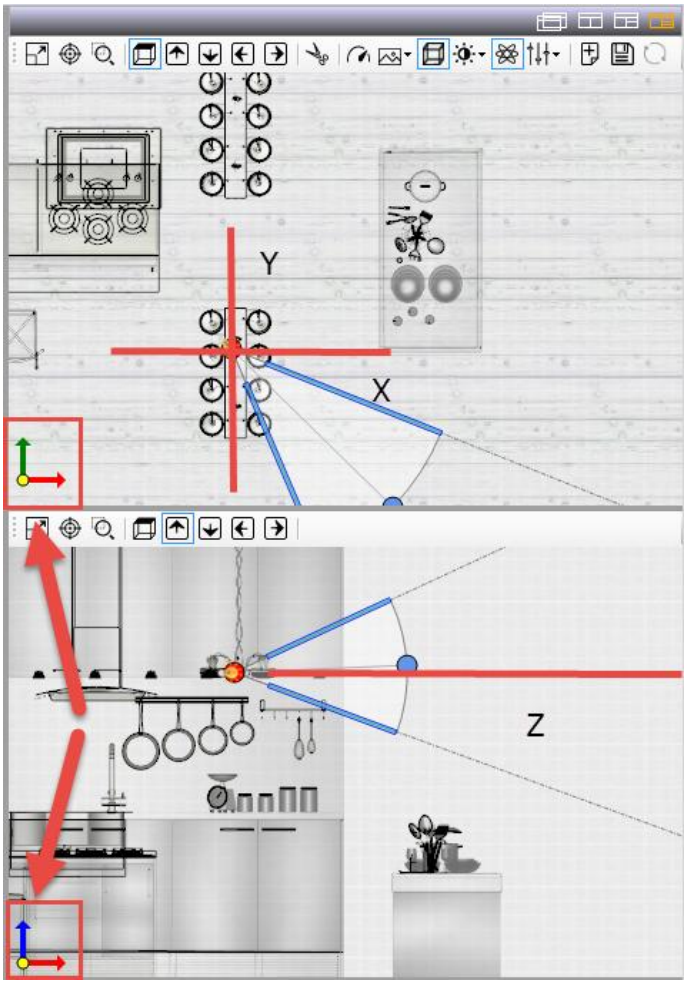
To completely visualise the model, it is suggested to work in X-ray.



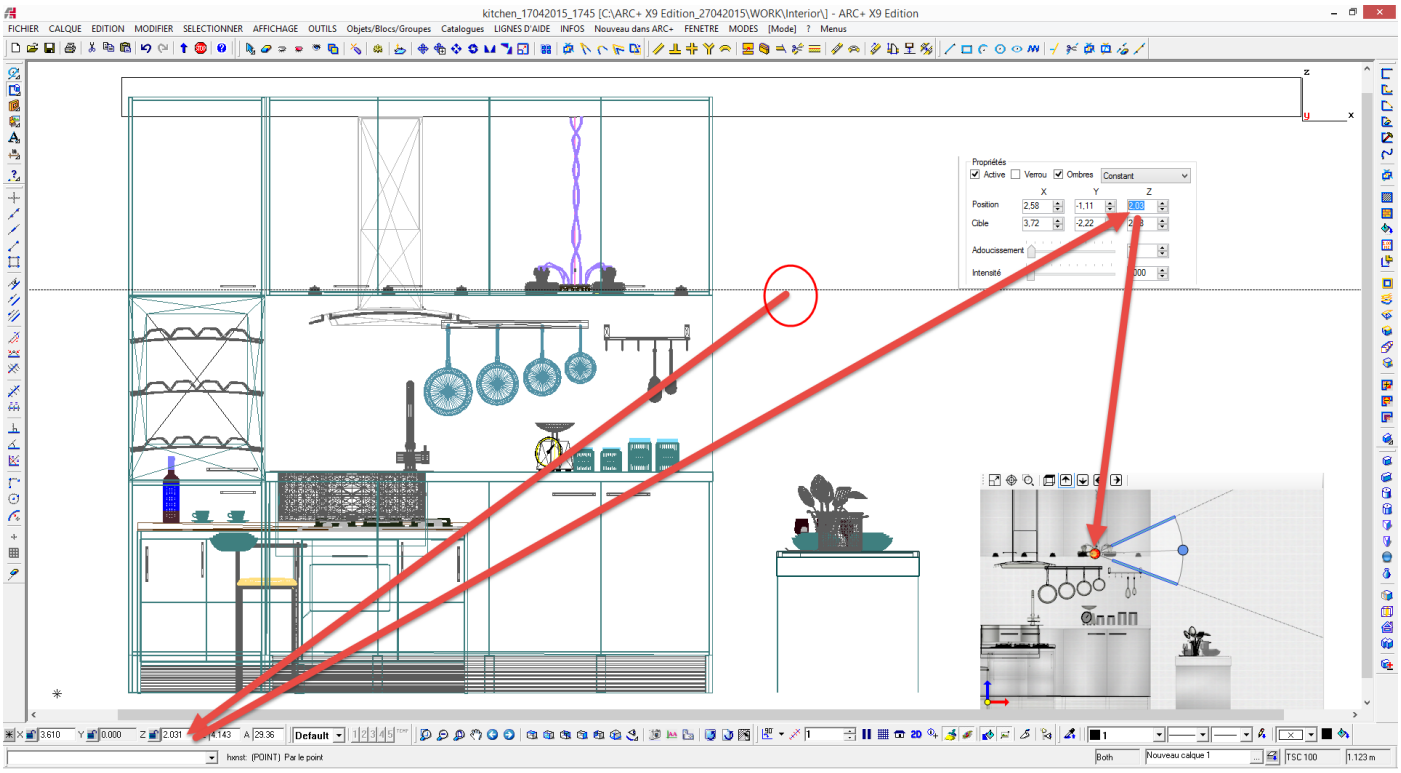
Therefore, for a better visualisation of the light you have created, it is suggested to work with the different zooms, by window, zoom on the light, or zoom on the model.



The 2D windows allow you to move the light in XY or in Z.

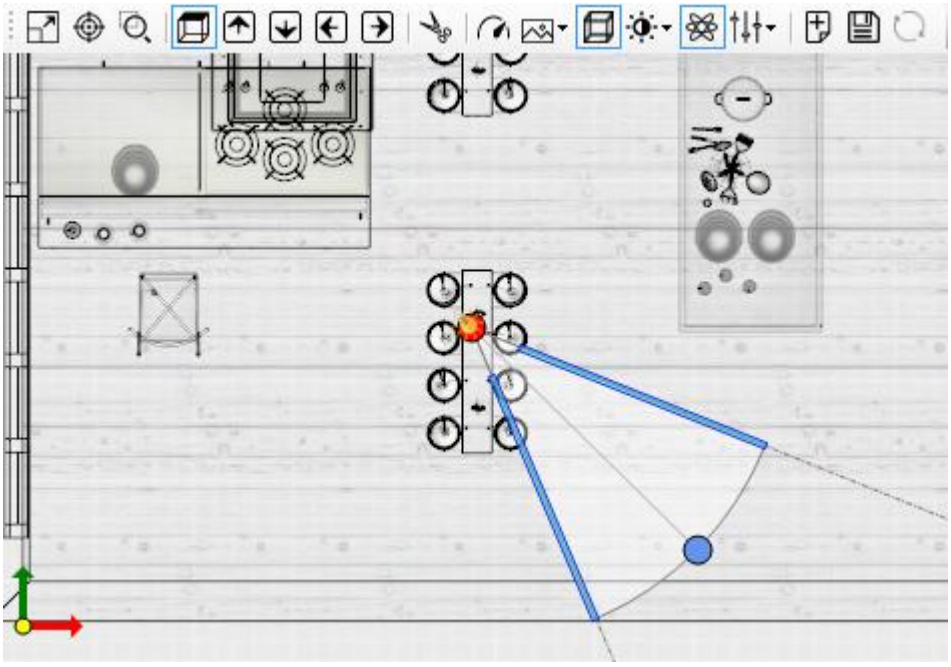


It could be difficult to manually move the artificial light, so you have the possibility to use the coordinates to do the same thing. For example, move the light on the XY plain and use the alphanumeric tab to move it on the Z axis.

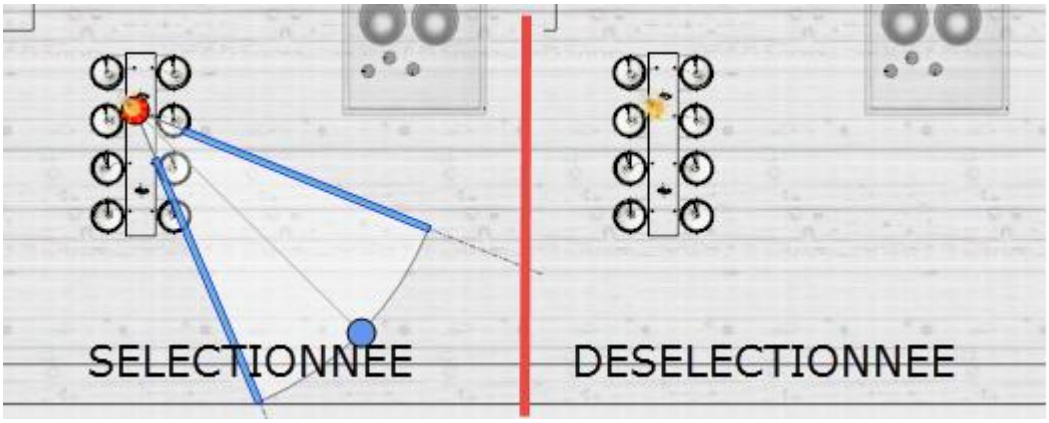


Now the light is positioned on the X, Y, Z and we need to orient it.

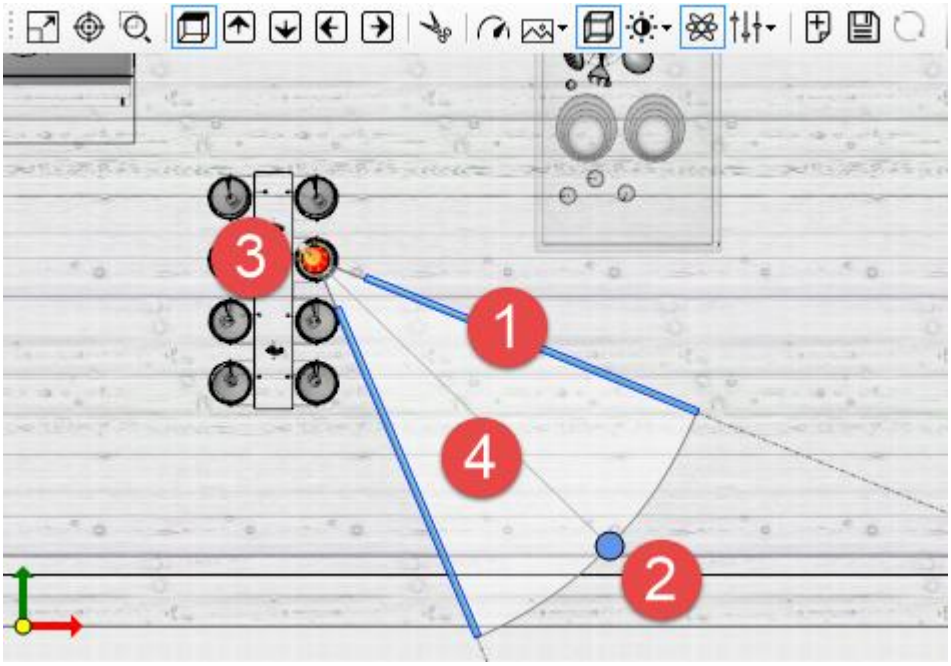
Each light has a specific cone that is modifiable in a dynamic mode. To do that, use the option of dynamically moving and rotating.



When a light is selected, (by clicking on it in the 2D window, or selecting it in the structure tree), the light becomes red and its cone appears. If it is disabled, the light becomes grey.

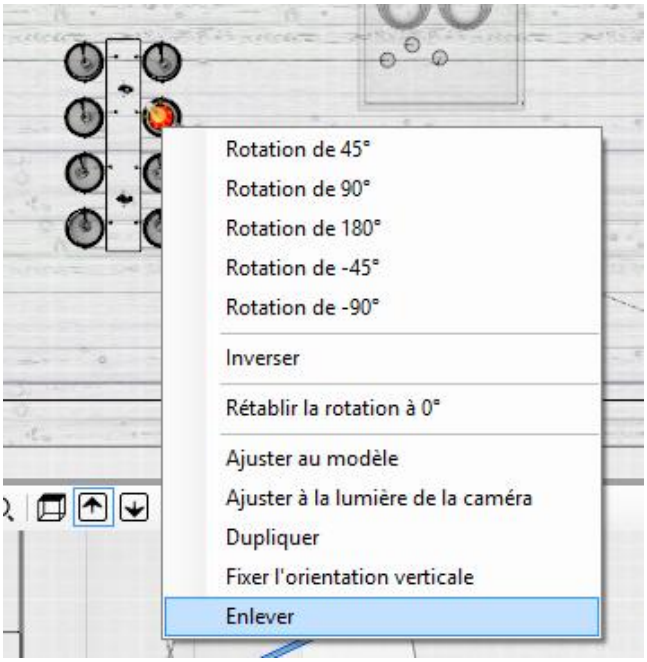


The artificial light has 4 handling points.



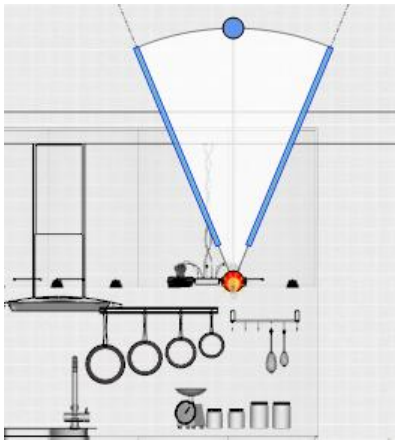
1. To modify the cone.
2. To move the target without moving the position of the light.
3. Move the position of the light without moving the position of the target.
4. Move the whole light.

You just need to right click on the artificial light to show the drop-down menu.

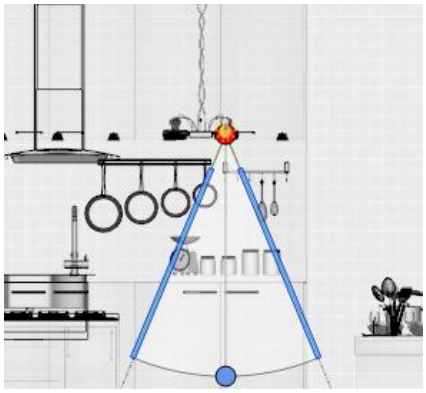


This menu allows you to delete, duplicate the light and to do a precise rotation of the target.

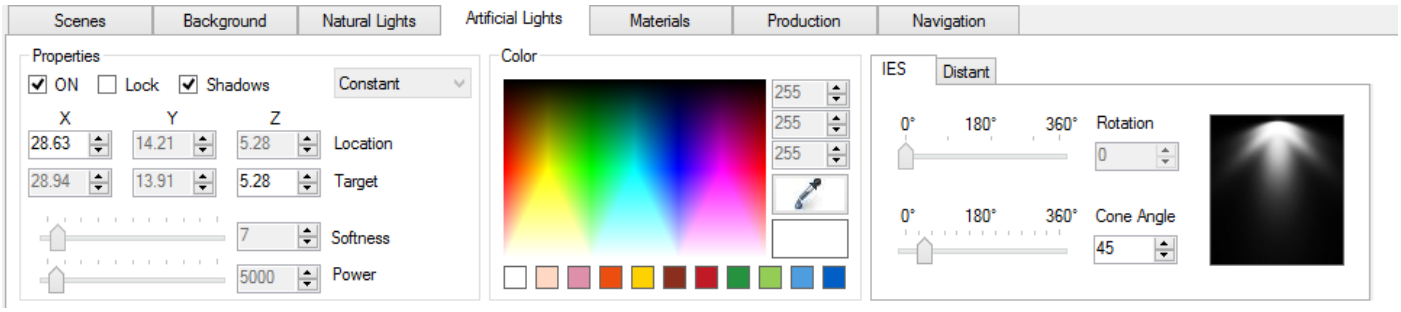
Usually the light's cone needs to be vertical. To do that you can choose the option 'set vertical orientation'.



To rotate the light in the opposite direction, you can choose the option 'rotation by 180°'.



SETTING THE ARTIFICIAL LIGHT

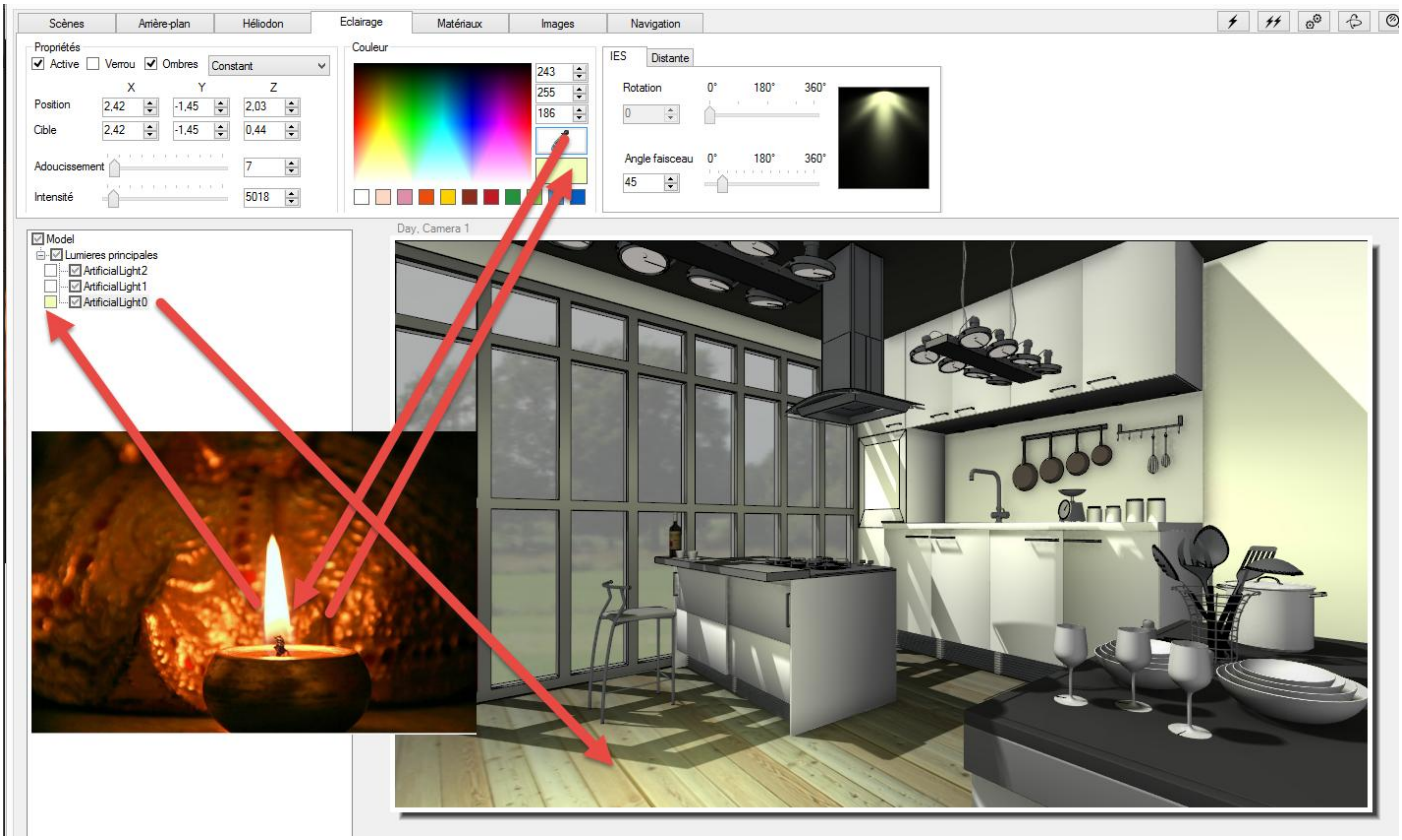


This panel allows you to set the characteristic of the light created.

By modifying the properties it is possible to:

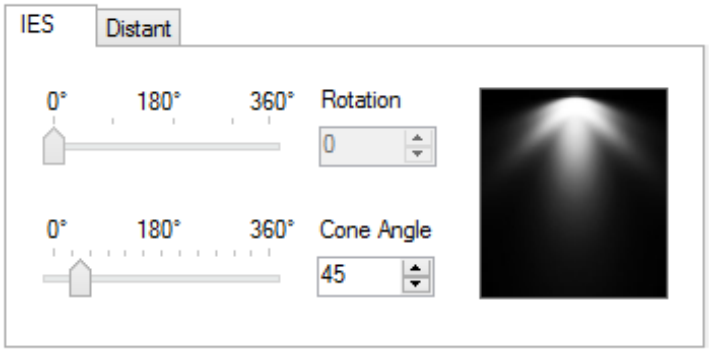
- Enable and disable the light.
- Lock the position of the light.
- Allow the light to generate a shadow or not.
- Choose the type of light (constant or inverse). Inverse: the intensity of the light changes with distance to target. Constant: the intensity of the light is always the same (not realistic).
- Position: to define where the light is set.
- Target: to define where the light has to show.
- Softness: the shadow become graduated.
- Intensity: To set the Lumen.

Then it is possible to also change the colour of the light. This option is the same as can be done to change the materials' colour.

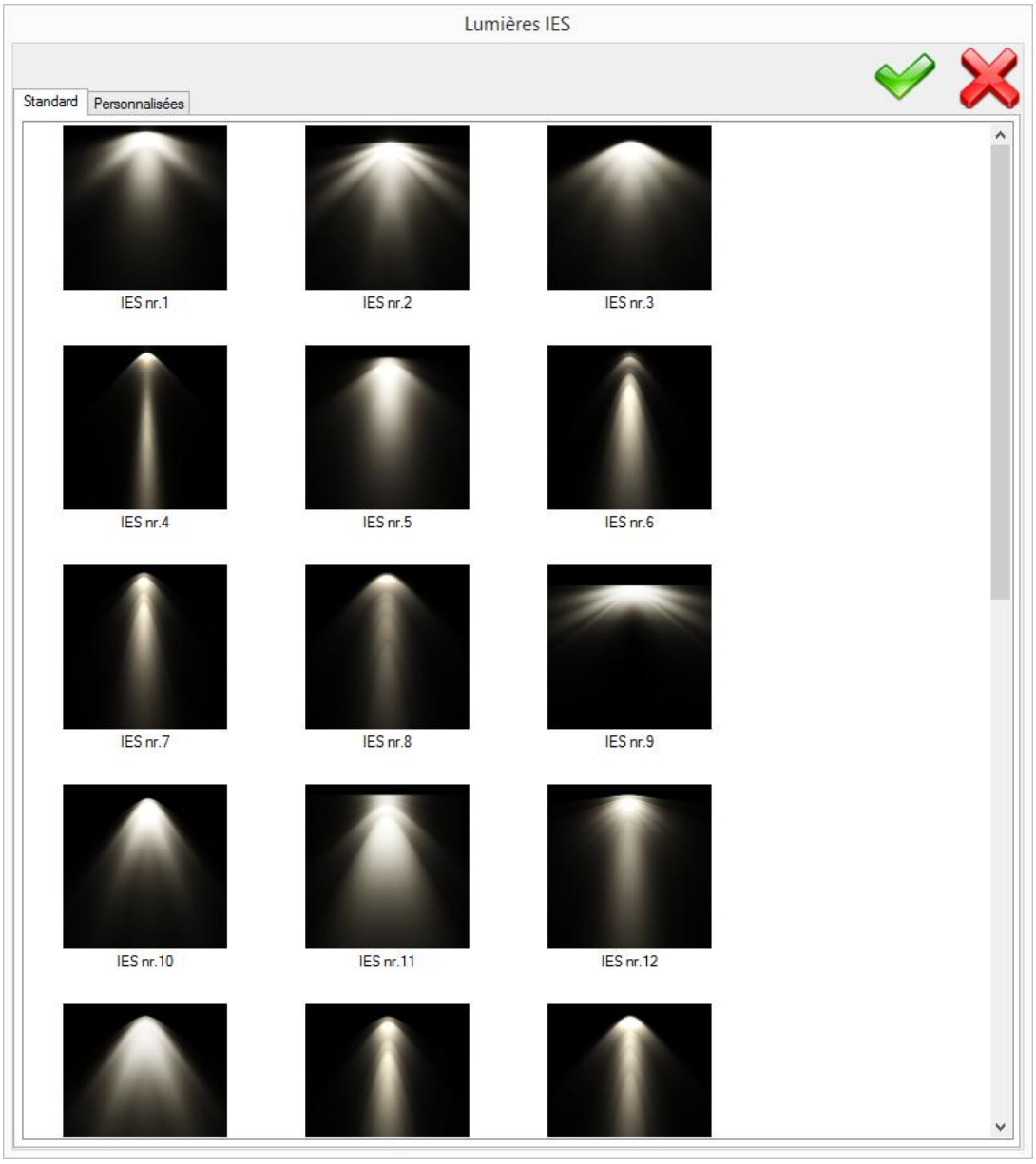


The panel on the right allows you to choose the type of light. You have two options: IES or Distant.

IES defines the axis of the goniometric parameters intrinsic in the shape of the light you chose.



The preview of the selected IES light is visualised in this panel. By clicking on it, you have access to the library of light.

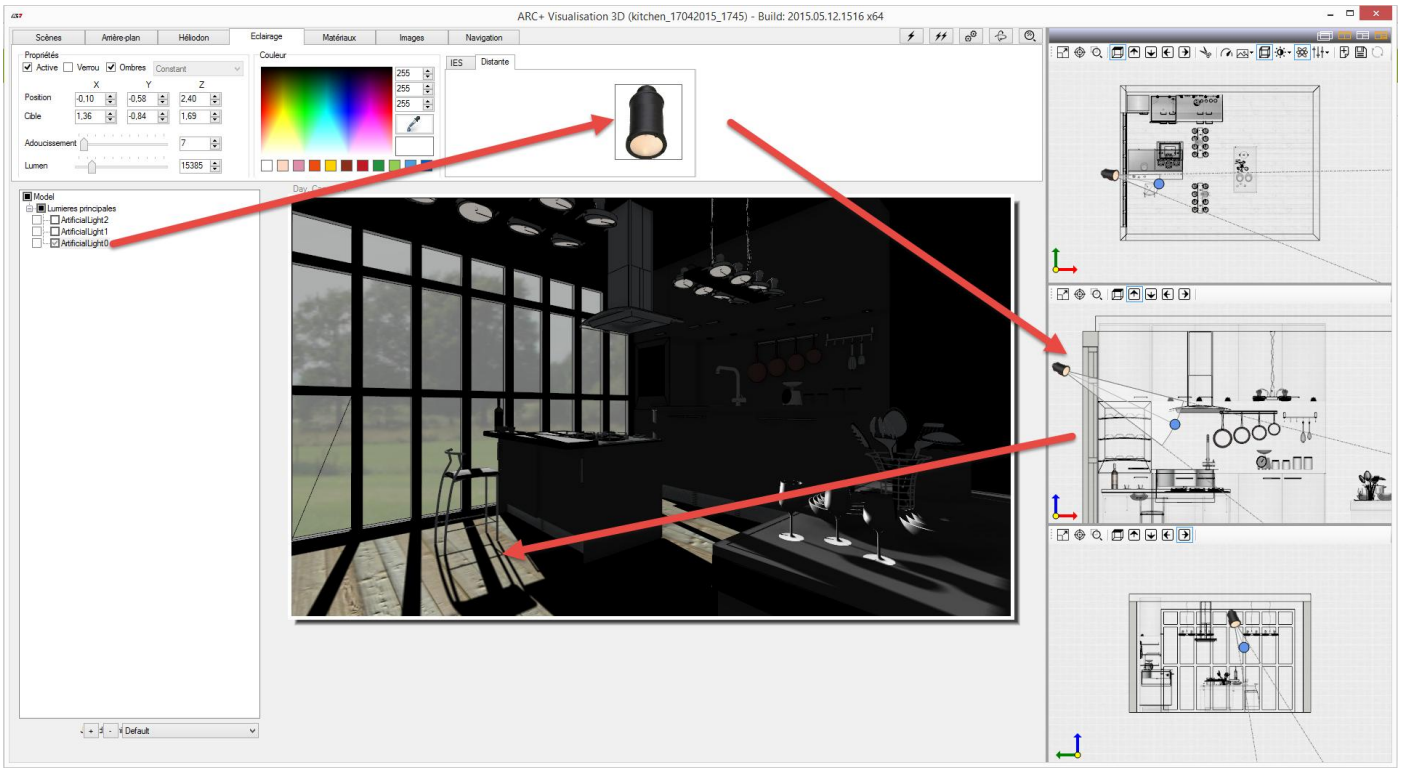


You just need to click on the light that you prefer. For every model of the library, you can change the cone of the light.

Another category of IES light is available by clicking on the tab ‘Custom light’.

With this kind of light you can rotate it around the Z axis because some of them have an asymmetrical lighting.

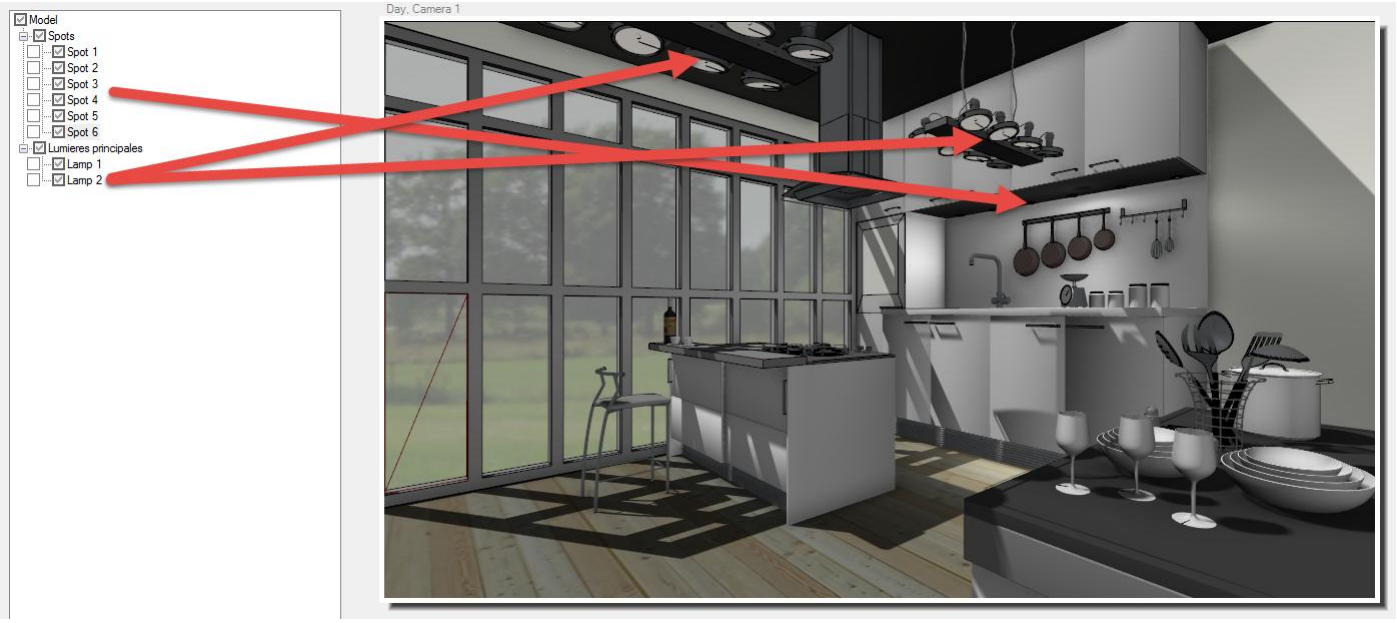
The option ‘Distant’ gives a kind of light where all the light rays are parallel and the intensity is constant. You can think of this as similar to sunlight, which behaves the same way because the distance between the sun and the Earth is very big.

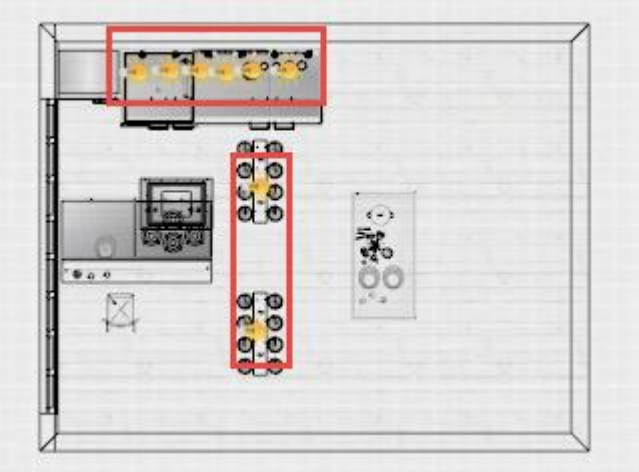


THE MODELS

It is possible to save configurations of lighting. These configurations save the settings and the kind of light created.

For example: Create two groups of lights, one for the main light and another one for the secondary lights.

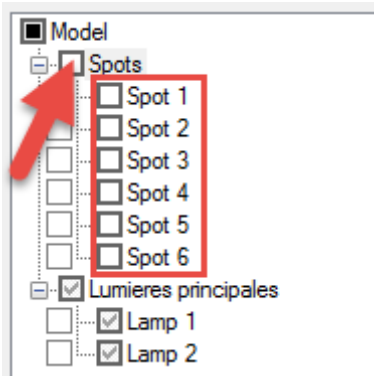




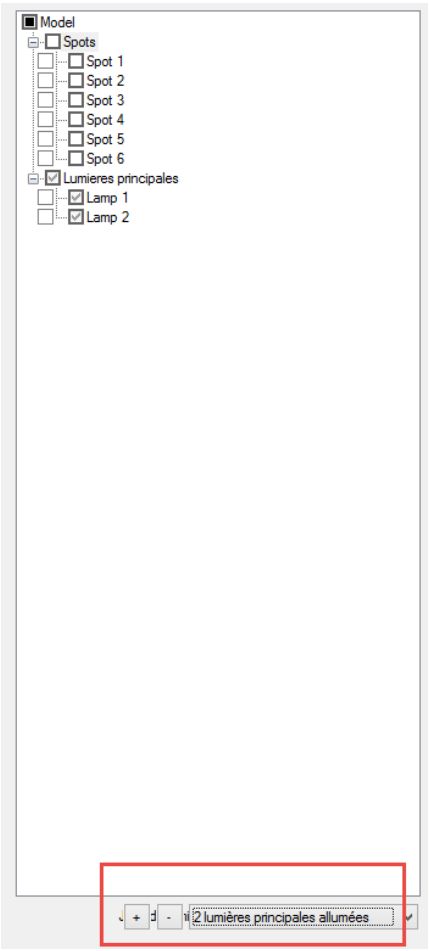
Imagine three configurations:

- All lights on.
- All lights off.
- Only the main lights on.

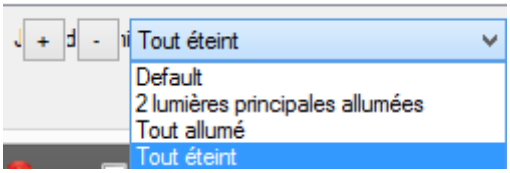
To create these configurations, for example only the main lights on, you must disable the lights, unchecking the box of the configuration.



You can save this configuration by clicking the plus symbol and renaming it.



Repeat the operation for all the other configurations that you like.



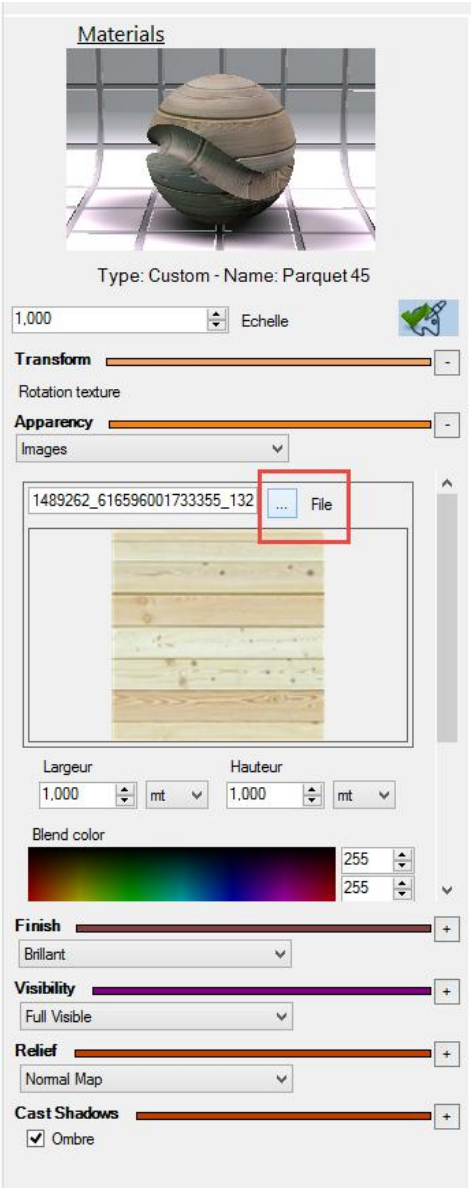
You can save the project and the configurations will always be available.

PERFORMANCE

For performance issues, it is not possible to have all the artificial lights visible in the 3D windows during real-time mode. This mode could reduce the general performance of everything, so it is possible to visualise only one light at a time in the 3D windows (in real-time mode).

To visualise all the lights at the same time you can use the two other render modes:

The use of textures and the structure of the material library.

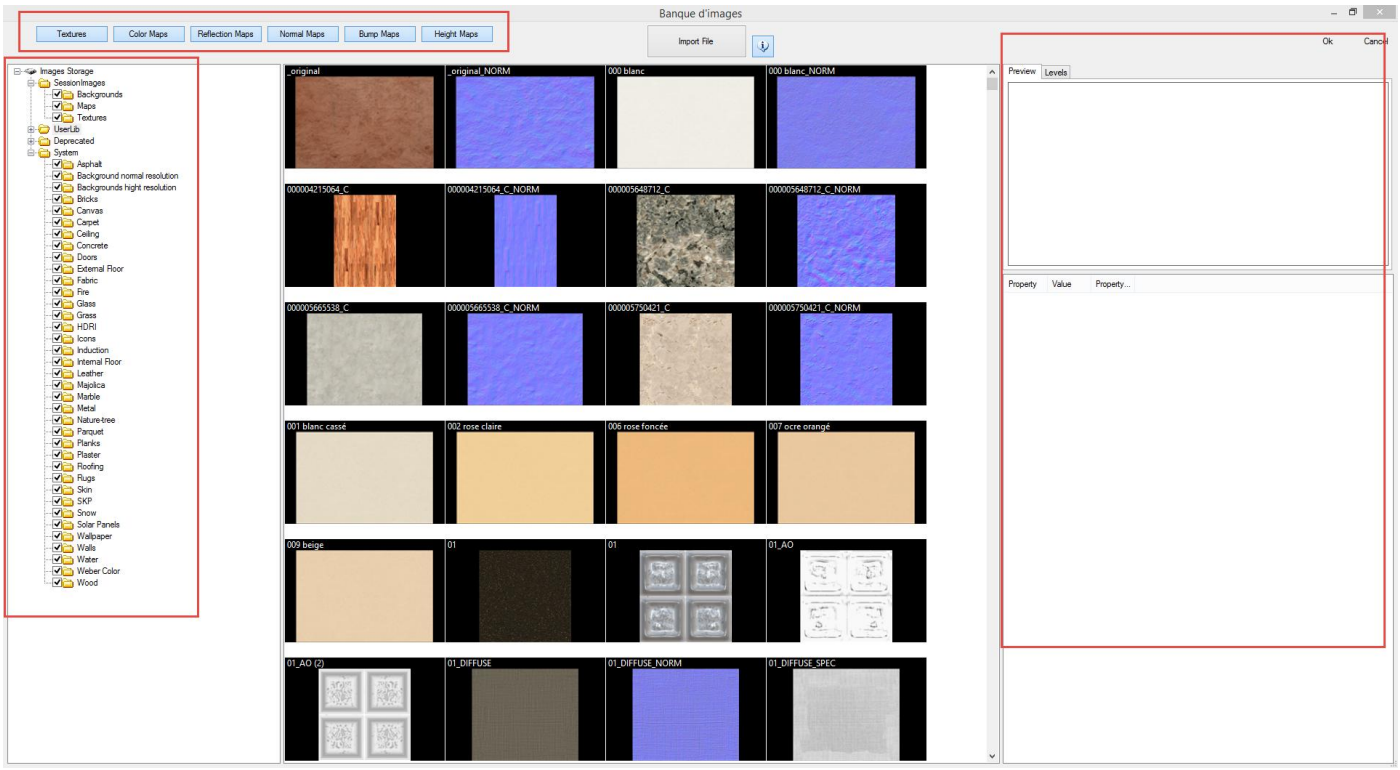


In this section we will analyse how to memorise textures/images.

ARC+ gives you simple mode to play with textures in your project. In fact, everything is managed internally within the system. Let's analyse how it works.

From the material options, you can select a picture and go in the image library.

This is the interface where you can manage and select the textures.



On the left you have all the different categories.

The category 'session images' is specific. All the times used in your project will be stored in this category. This is the concept of 'session' and this means that the materials created in the session are only available in the file where they were created.

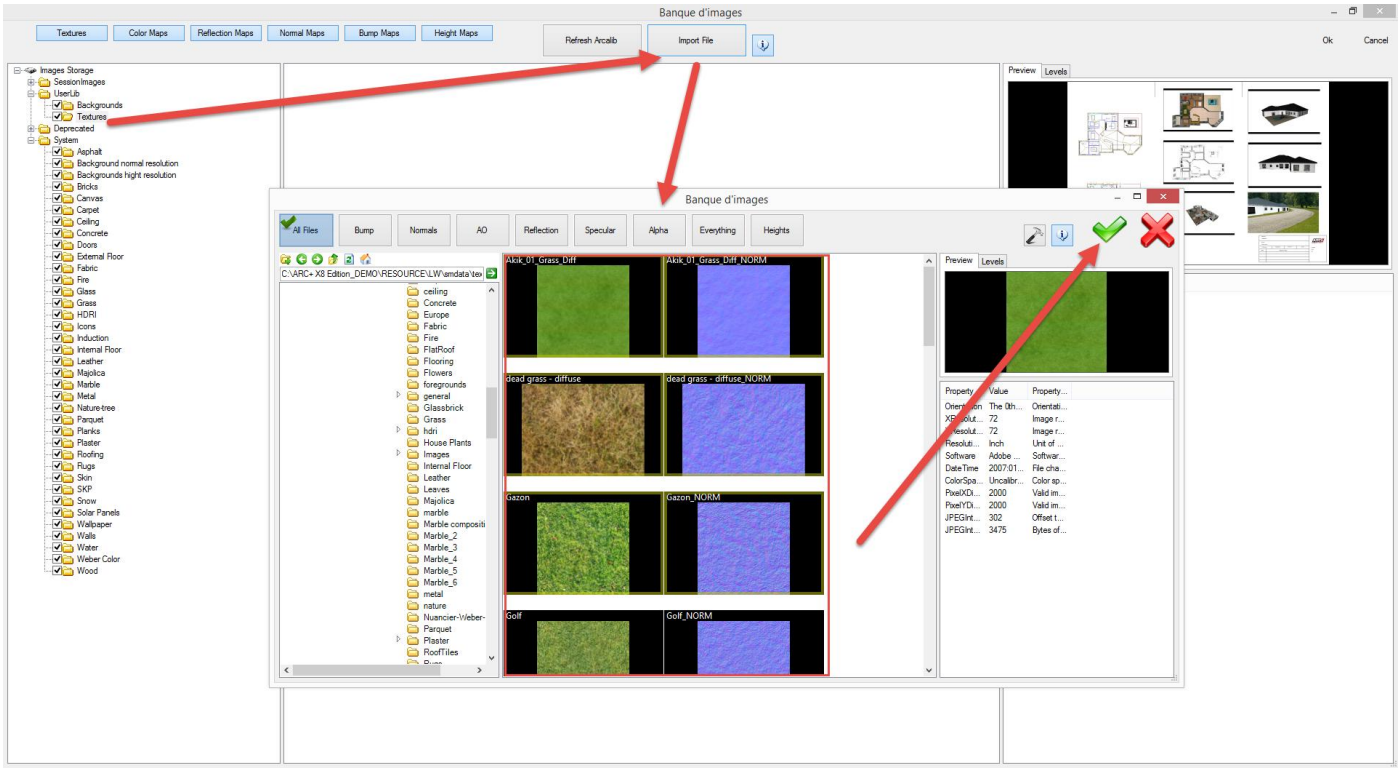
The category 'Userlib' is a personalisable category where you can create folders and sub-folders to save your own textures.

Finally, the category 'System' contains all the newly proposed textures in ARC+. This category is not modifiable. To add a sub-folder, you can right click on the name of any category and choose 'add folder'.

Sometimes, if you click on a category, the sub-folders aren't shown because they are empty. To see the empty folders, it is necessary to click on the category and choose 'show empty folders'.

HOW TO IMPORT A NEW TEXTURE INTO A CATEGORY

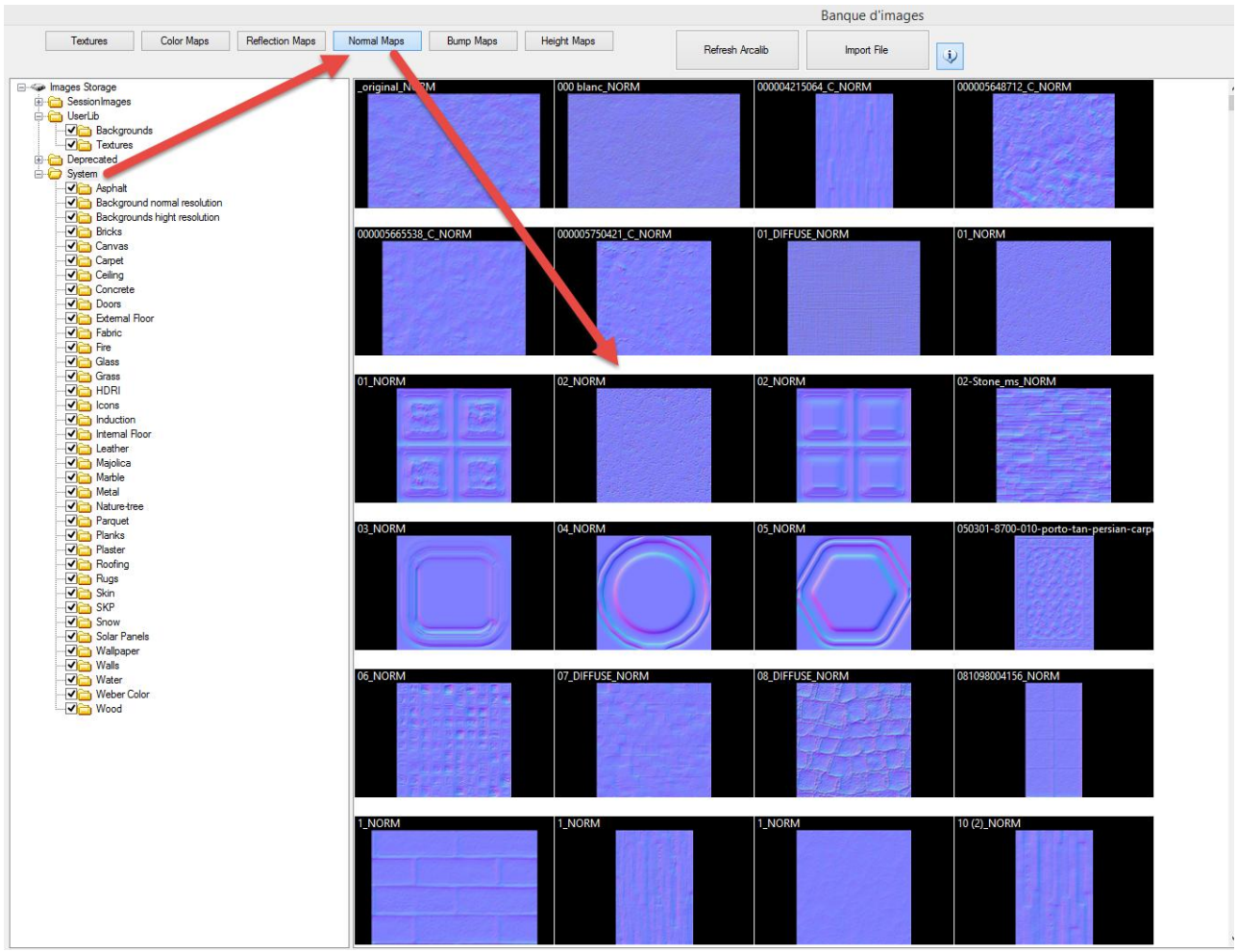
To import new textures into a category, you need to click on the folder where you want to store it and select ‘import file’. A new window will open, which is the selection window. Choose all the images that you want to add and click OK.



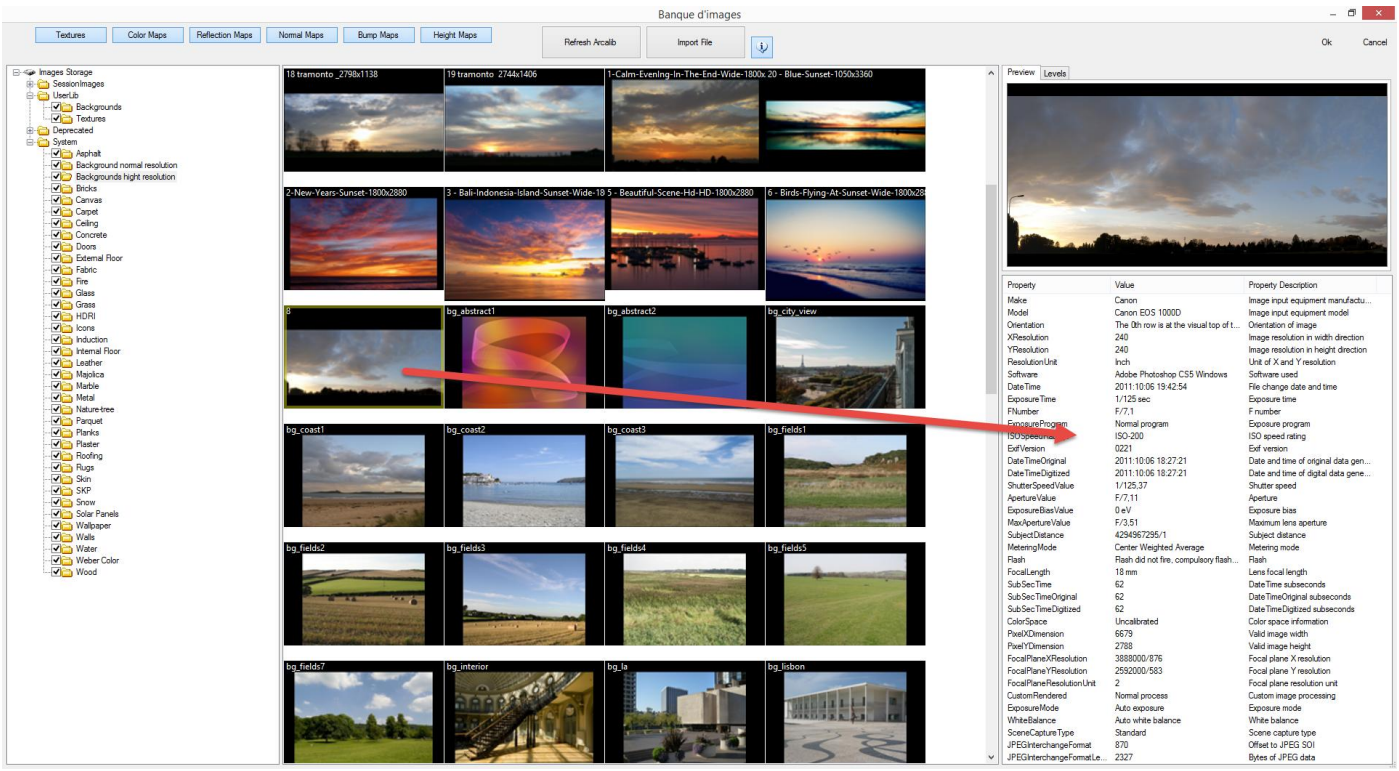
The textures are then ready to be used.

INFORMATION AND FILTERS

It could be interesting to visualise textures by map, for example all the normal map’s textures. To do that you need to activate the specific filters.



Each texture has the possibility to keep information. By clicking on an image, if it contains information, that information will appear on the right of the screen.



Some of this information could be important, like the resolution of an image or the length of the focus etc. So when you choose an image, for a background for example, you can easily understand if that image is big enough for your project or if you need to change it.

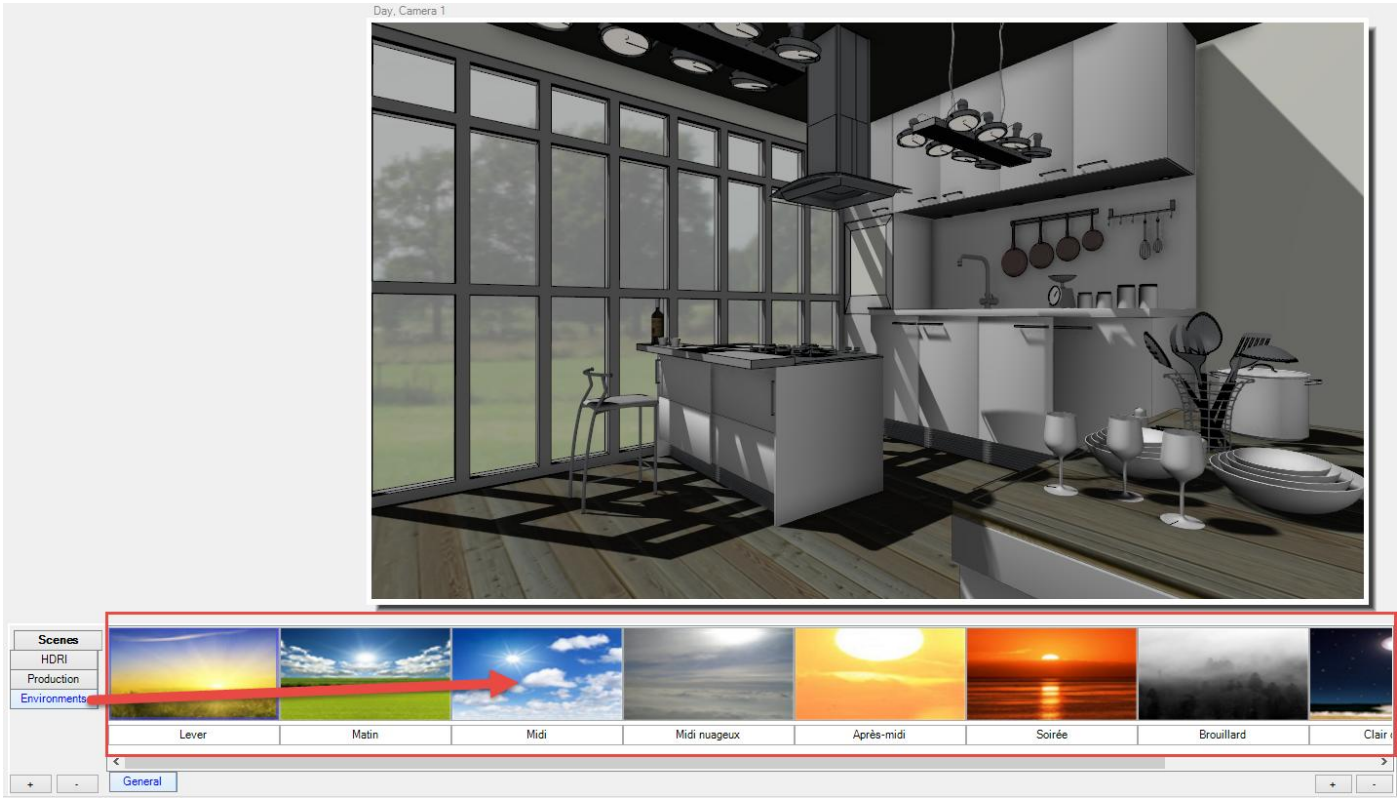
It is also possible to have access to the levels of the image.

The pre-configurations

The pre-configurations are the most important and advanced functions that allow you to memorise all the settings and parameters that you like.

We already have in Bladerender a few pre-sets, for example the 'environment' tab. Here it is possible to visualise in the bottom part of the screen these different lightings. They set the direction, intensity and the colour of the sun. We will see how to create new ones and how to use them.

It is not possible to modify or delete the pre-sets already given by ARC+.



We have six different tabs: scenes, environment, HDRI, production, environmental colour and color horizon.

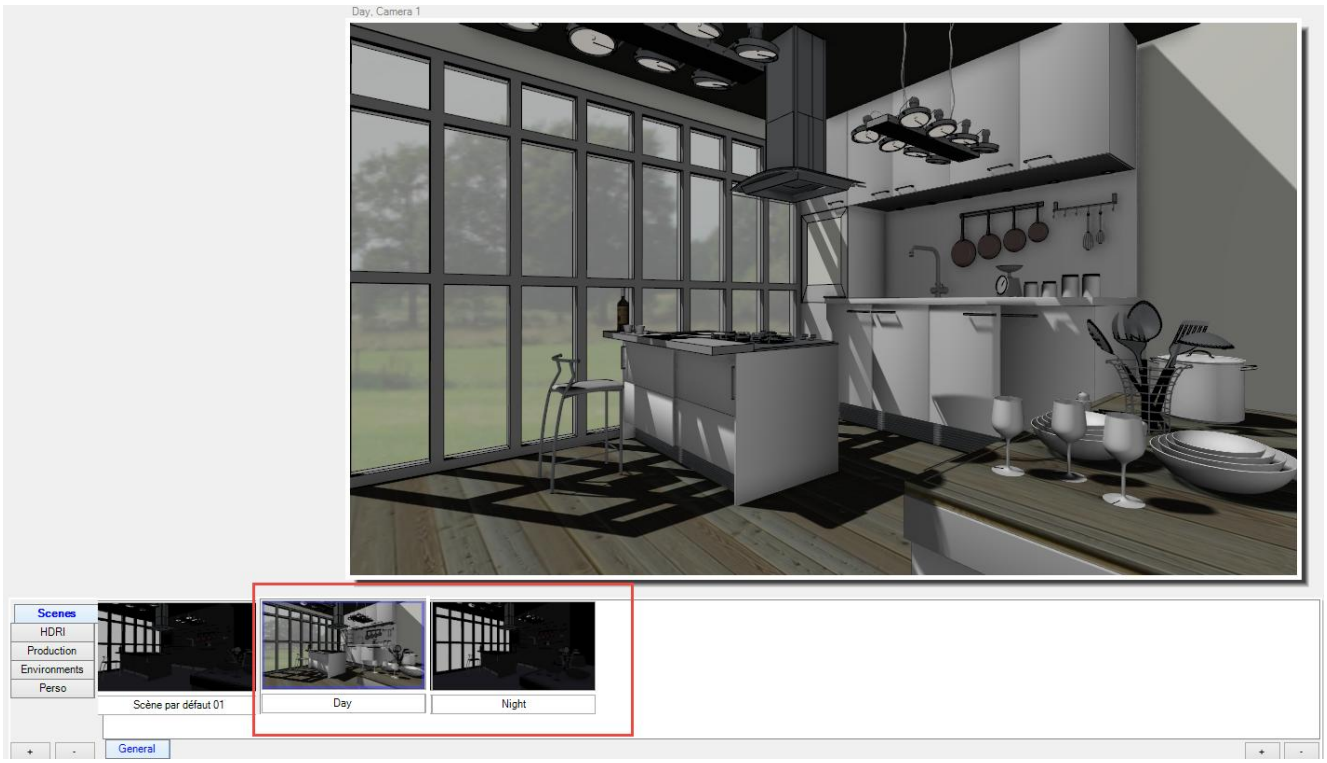
Scenes

This category is a different kind of pre-setting because the scenes create and stored here are directly linked to the model being used. It is like the material session because they are available only in the model where they are created or modified.

The scenes are a type of picture. They are pictures of parameters used at this moment, such as lighting, cameras, background etc. Therefore, you can create scenes by night and day and save them with all the different parameters.

Only the materials and artificial light are independent parameters from the scene.

It is not possible to have a group of artificial light in one scene and a different one in another scene.



HDRI

The HDRI tab contains the pre-sets of HDRI light and the background.

Environment

The environment tab contains the lighting of a scene, but without the background.

TIPS

When you modify a render, try to use one of these models. It is easy to use and it is also possible to change whatever you prefer, for example the background.

Production

The production tab is very important because it contains the settings for the calculations of the final render. Choosing by quality, this pre-set modifies the setting of the image tab in the main part of Bladerender.

The higher the selected quality, the slower the render.

The first pre-set available, 'light control', reduces the resolution of the final image a lot. It is good to check the lighting of your model in a quick way. When you are satisfied with the lighting, you can select a higher quality.

TIPS

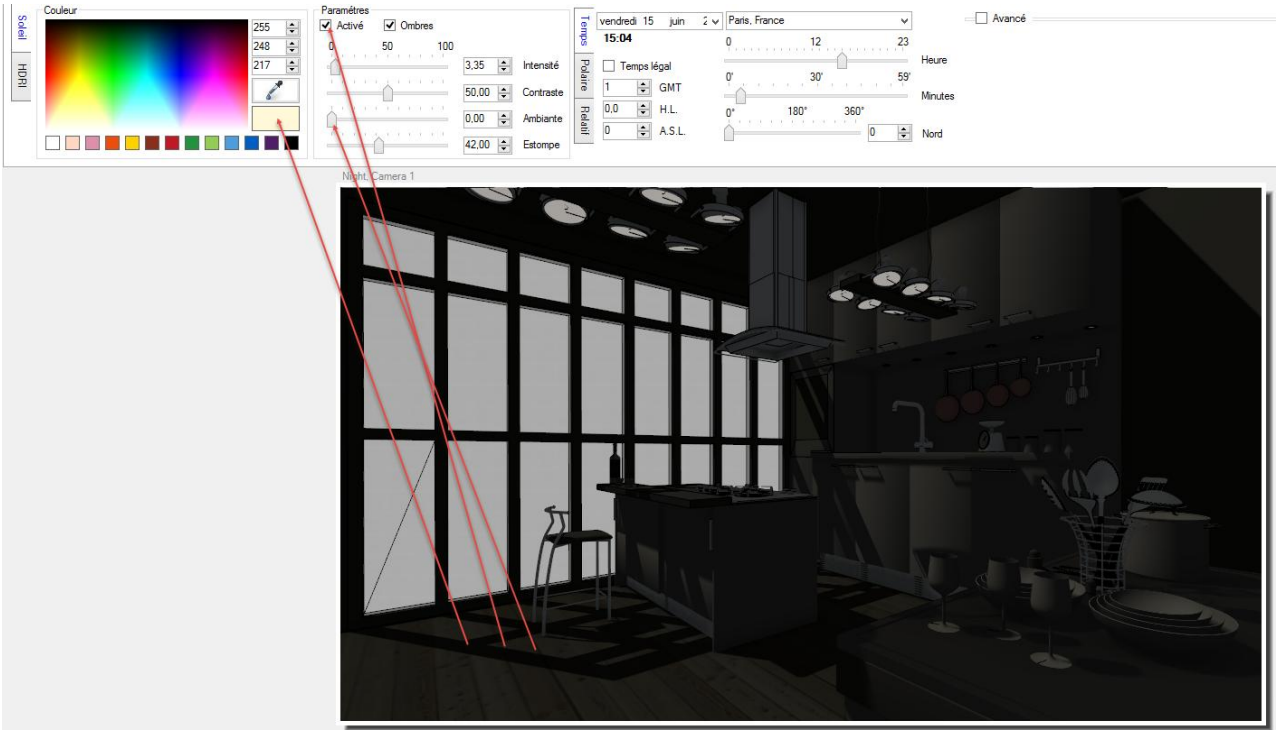
The preview in real-time allows you to anticipate the final result, however sometimes it is better to directly produce a final image without going through intermediate steps. The image calculation is lower than the preview. That's why the 'light control' is important, because keeping the resolution really low gives a fast preview of the real final image.

HOW TO CREATE AND ADD NEW PRE-SETS

To create a new pre-set, start by adding a new category:

Click + or – to add or remove a category. You can rename it with a double click and after you can add new pre-settings.

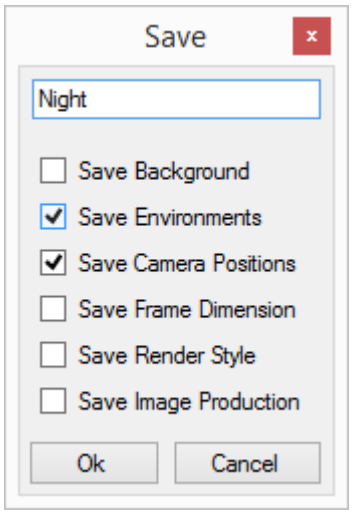
First you must set your configuration. Let's imagine we are creating a night pre-set. You can reduce the sunlight drastically to simulate the night light.



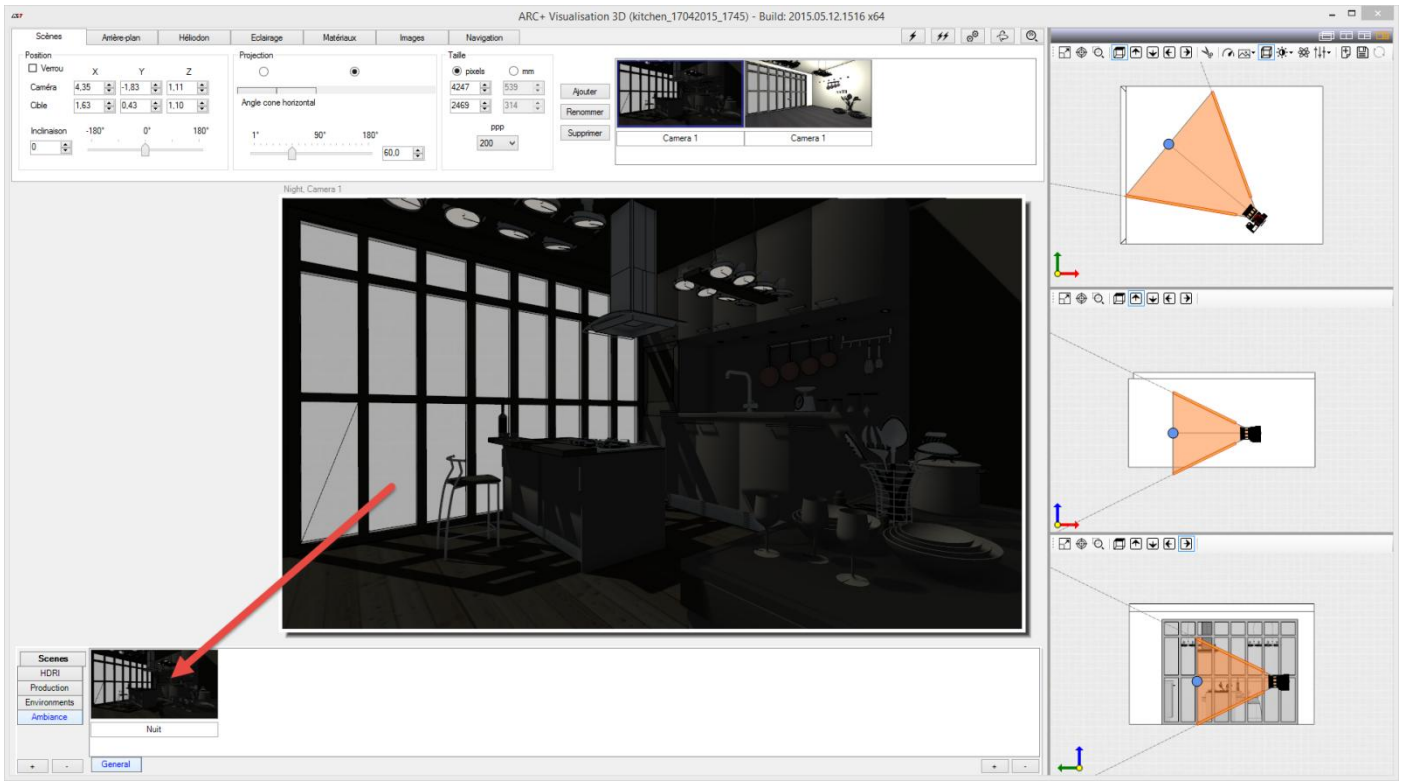
You can add a night background. It is possible to add a few cameras, for example 'ortagonal views'.

After that, save the model as ‘night’.

By right clicking, select ‘add a scene’ and choose what you want to save in this pre-set, for example lighting, camera position etc. Then confirm by clicking OK and the pre-set will be saved.



It appears with the thumbnail of the current image.



You can always duplicate, delete and rename this pre-set, or even change its thumbnail with a chosen image.

In a pre-set, it is possible to save:

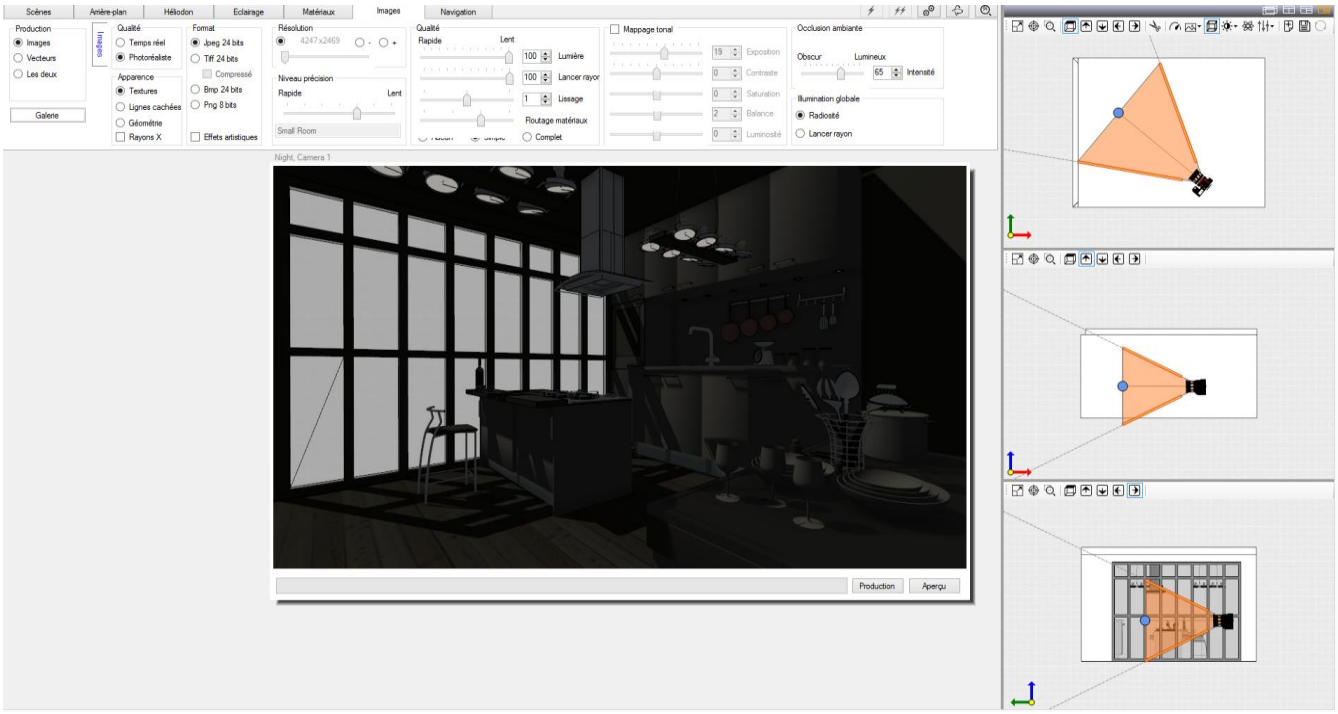
- The background and its configuration.
- The cameras and their positions.
- The dimensions of the screen.
- The render style in real-time.
- The production parameters for the final image.

TIPS

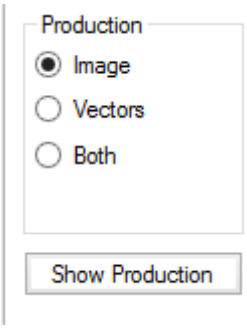
This pre-set concept is very useful if it is used with a method. When you create a pre-set, it is better to save the settings common for all the project that you can work with. That's why saving the background is not the best solution, because it is very easy to choose a different image project by project.

The Image tab

This is certainly the most difficult to understand, as it sets the type and the time for a render calculation.



Production



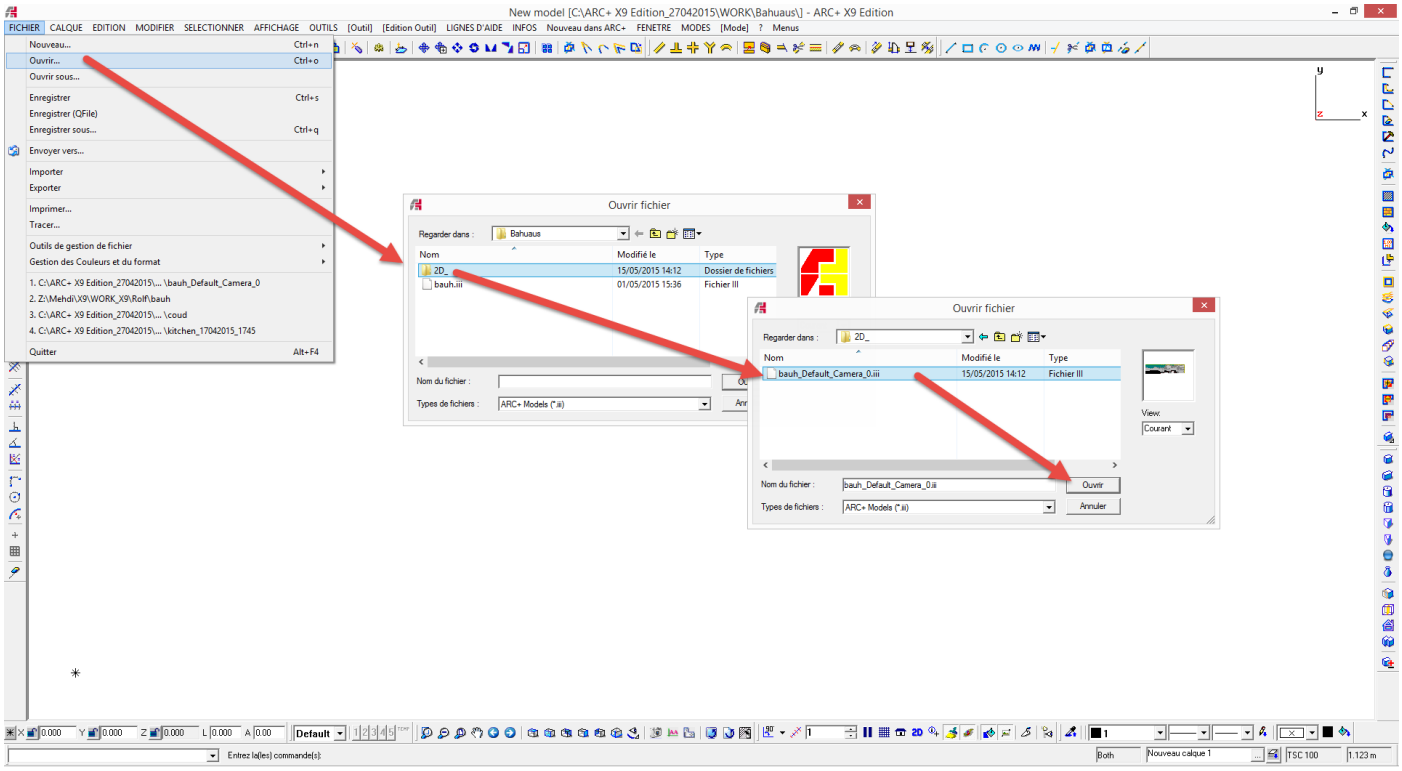
Choose the type of representation that you want, image or lines.

The option ‘lines’ generates a 2D vectorial file that is possible to open in ARC+.

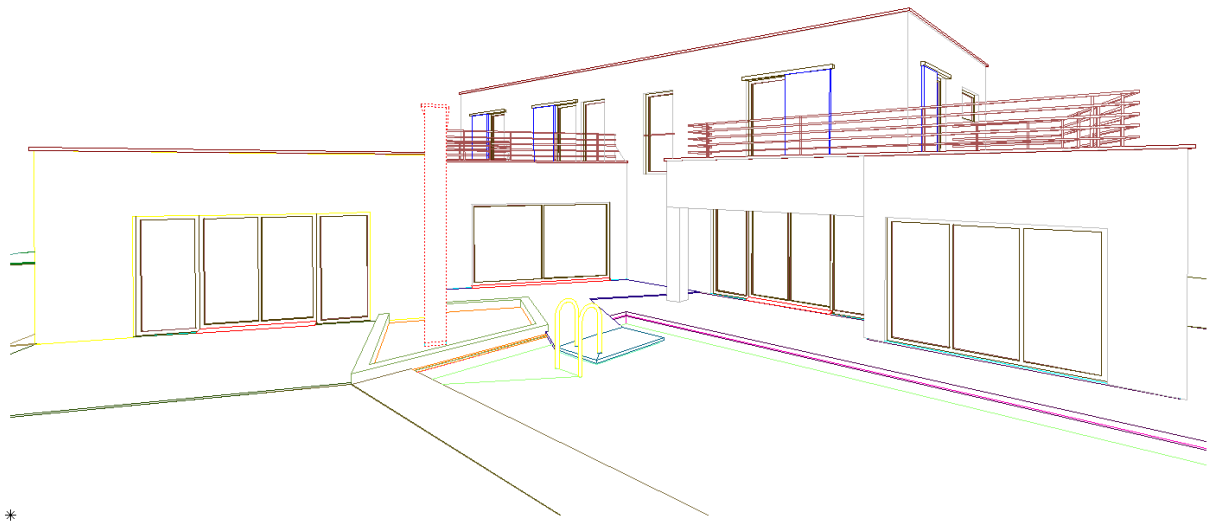
An example of this model:

Select ‘vectors’ and choose the colour that they must have. After, click on production to generate this ARC+ file. That file will take the same name of the camera from where it was generated.

To see the result, open an ARC+ section and this file is automatically stored in a folder with the name ‘2D_’, near where you saved your 3D model.



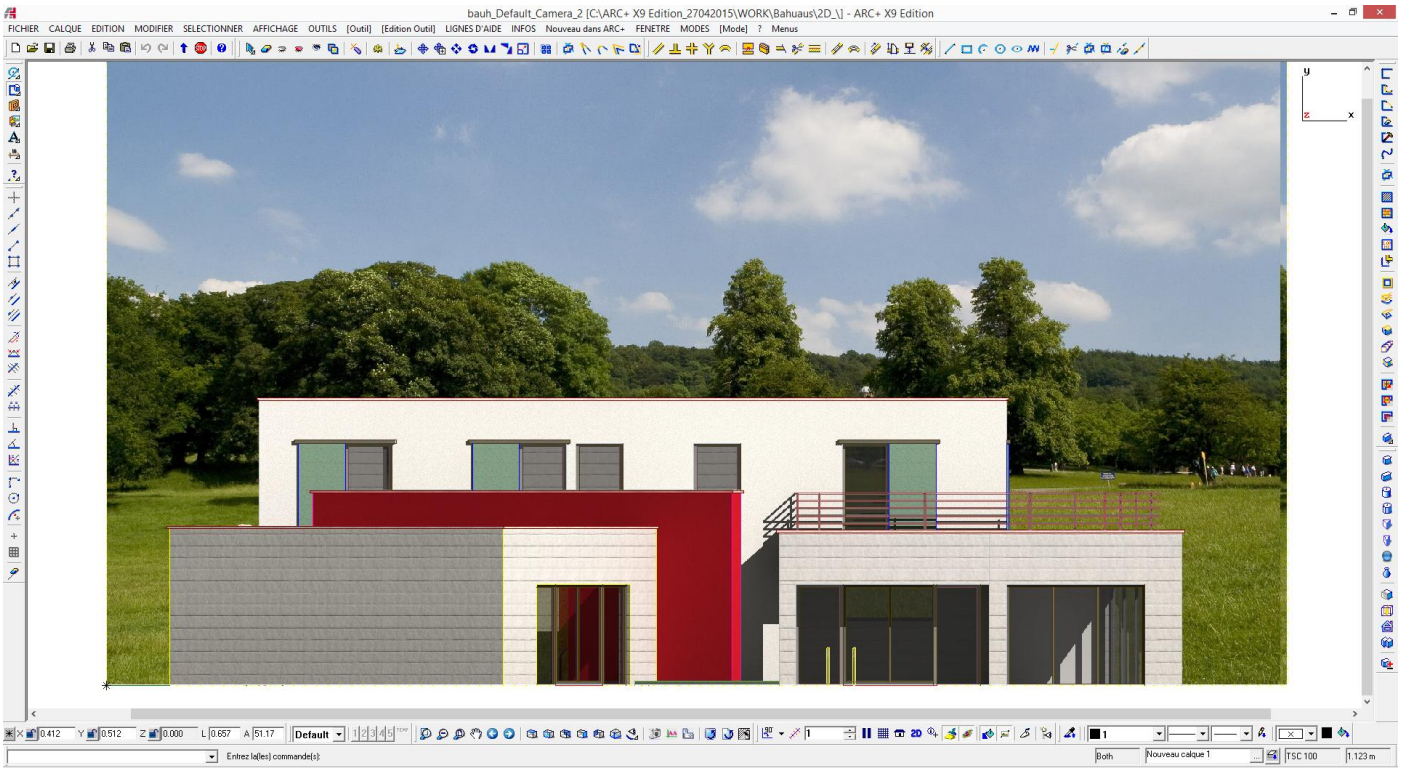
The file is visualised by vectors transformed into lines by ARC+.



By choosing the option ‘both’, ARC+ overlays the rendered image, plus the vectored file. This is a good effect to play with shading and geometry.

This is also useful to generate 2D files from the render, as documentation files. You can always add dimensions and notes.

Remember to set the view as ‘orthogonal’ to avoid deformations.



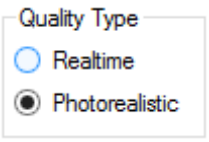
To use these files in production, you need to scale it because the 2D image produced will have different dimensions to the original file. The command to do that in ARC+ is /mcs2p.

Select a distance, insert the right value so the model will be re-scaled.

It is possible to modify the file because the generated lines allow ARC+ to use snaps on the entity.

Let’s now see the production of an image.

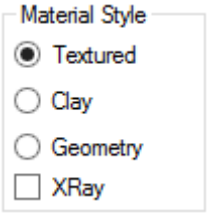
Quality



Two quality options are available:

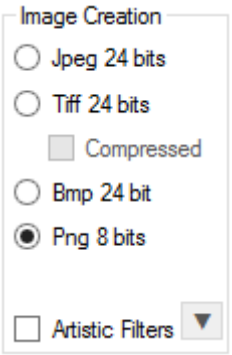
- The ‘real-time’ option creates an image with the same quality of the 3D preview.
- The ‘photorealistic’ option creates an image with the maximum quality possible.

Material style



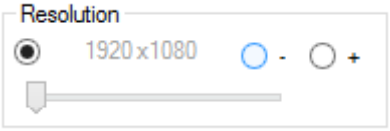
In this panel you can choose the type of render style to use, with texture, like a clay model, with the colour of the geometric lines or with X-ray.

Image Creation



In this panel you can set the format of the final image. By clicking on the option ‘artistic effects’, ARC+ creates the final image, plus other images with filters.

Resolution



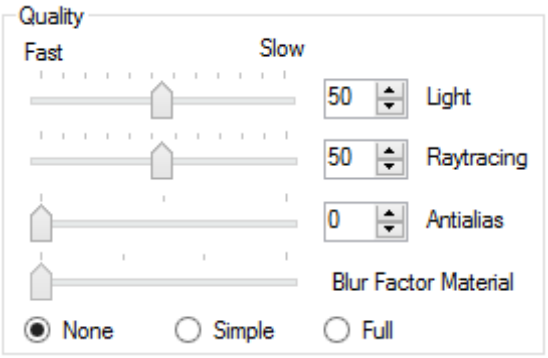
By default the resolution of the image is the same defined in the Scenes tab.

It is possible to modify the resolution by clicking on the + or -.

Detail Precision

The detail determines the quality and the time of the calculation. The higher the detail, the slower the calculation.

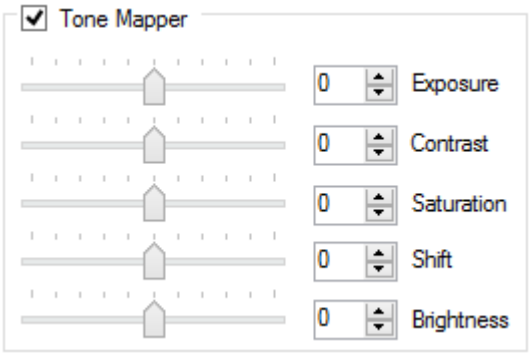
Quality



This panel allows you to regulate the light quality, the calculation algorithm, the smoothness of the entities and the blur.

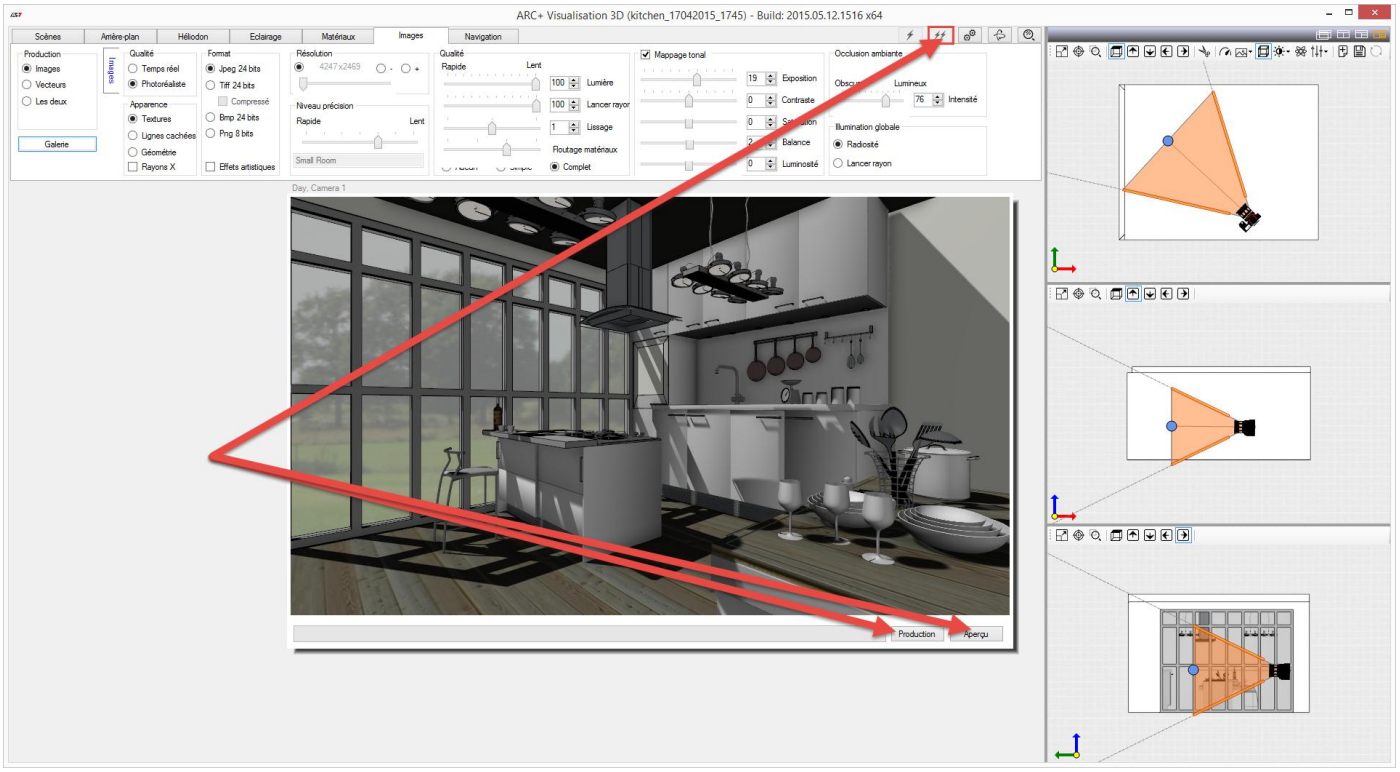
Attention: The parameters of blur and anti-alias (smoothness) can really slow down the time of calculation. Therefore, for an external render, it is advised to not use a full blur.

Tone mapper



This option is very important. It is like a post-production editor (equaliser), so all the changes done in this panel will not be shown in real-time.

The modifications are shown only in the preview or in the final image.



TIPS

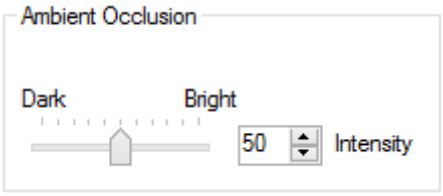
In preview it is better to disable the tone mapper and set the sunlight or the artificial light.

Why?

Because the tone mapper equalizes the full lighting of your image, so it is advised to enable it only at the end of your setting.

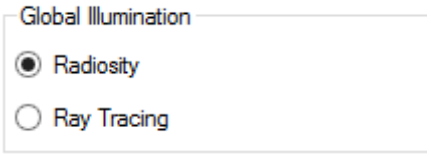
If an artificial light is present, for example in a night setting, it is advised to disable this option.

Ambient Occlusion



Set here the value of the shade in the corners. For an interior scene it is better to use a darker setting.

Global Illumination

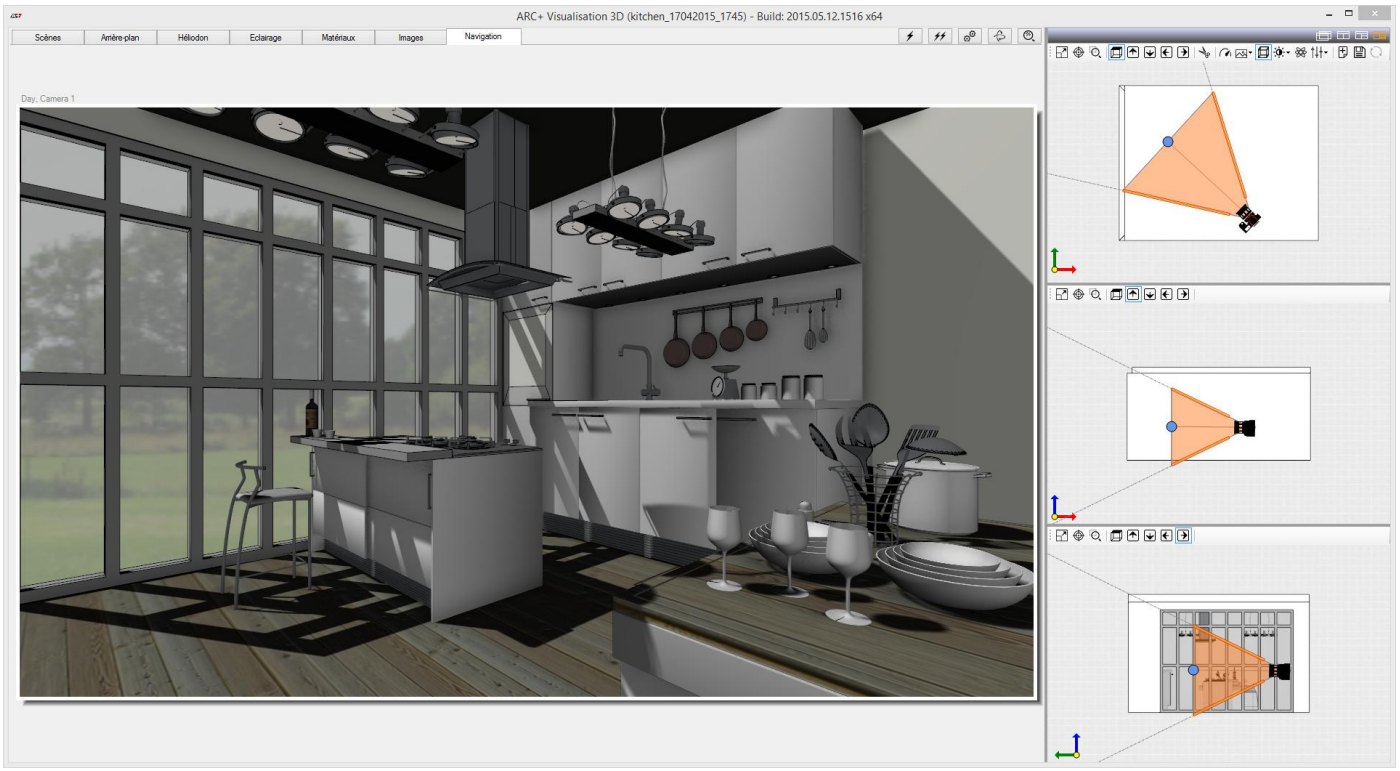


The Global Illumination sets the type of algorithm used to produce the final image.

For an external image, the parameter ‘Ray Tracing’ is enough.

For an interior scene with more details, it is better to use ‘Radiocity’ mode.

Navigation



This tab allows you to navigate in the model in real-time and in a full screen mode.

The interface is simplified and only the 3D preview and the side windows are present.

This mode can be used to show your project to clients.

The full process

The following scheme reviews the full process to generate a render in ARC+:

Positioning of cameras (scene tab).

Maintain a camera in a modification mode

⇩

Apply light pre-set to the model (environmental)

Let's only focus on the shadows and ignore the full lighting of the scene.

⇩

Rotate the light and set its parameters.

⇩

Apply the materials in the Materials tab.

Create your own materials in session or in a library if you want to reuse them.

⇩

Use the pre-set 'light preview' in the pre-configuration tab to quickly check your final lighting.

⇩

If the scene is too dark, the first modification should be in the 'image' tab, by changing the exposure.

⇩

Select the type of the render you desire.

Increase the quality of the image.

Launch the render.