# Rendering Basics in KeyShot

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# Agenda

Sending the model to KeyShot

Adding Materials

Adding an Environment

Modifying the scene

Creating a Rendering

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# KeyShot in Solid Edge

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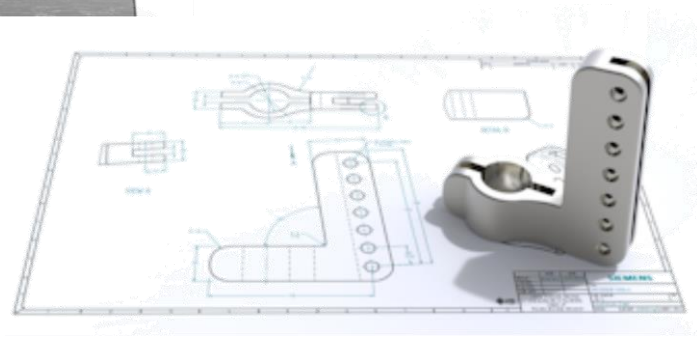















# Sending the model to KeyShot

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# Model to KeyShot

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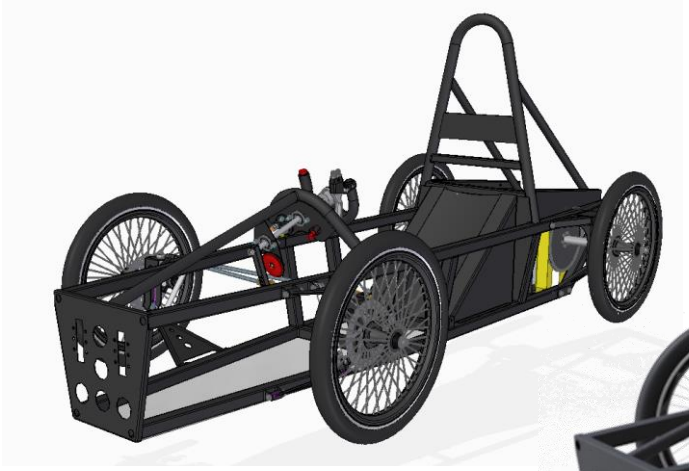
- Included with every installation of Solid Edge is the Best-in-class rendering software – KeyShot.

- Individual parts or assemblies can be sent to KeyShot straight from Solid Edge with a single mouse click from the Tools tab.











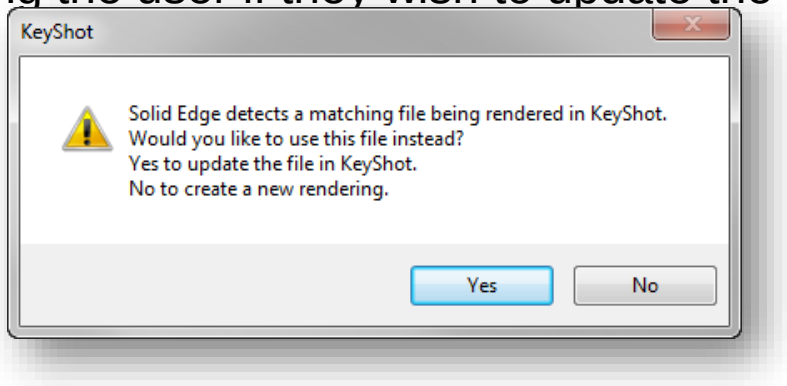
# Model to KeyShot

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- Once you send a model to KeyShot using the KeyShot Render button, it becomes linked to the model (Live Linking).
  - Changes can be made to the model in Solid Edge and when you click the KeyShot Update button, the changes are reflected in KeyShot.
  - Changes that have been made to the model in KeyShot initially, material changes, lighting, etc., are maintained on update.



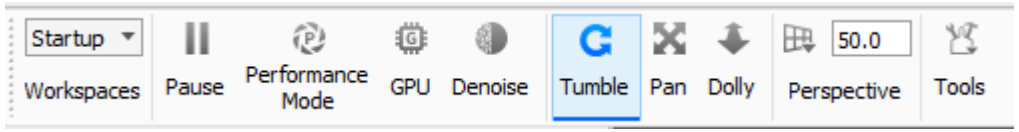

  - If the KeyShot render file was saved, closed, and reopened, the KeyShot Update button will be **inactive**.
  - The original rendering linked to the model is still detected and a message is presented when the KeyShot Render button is clicked, asking the user if they wish to update the existing rendering or create a new one.
  - If the original rendering is not open in KeyShot when the Render button is clicked, a new rendering will be created.



# KeyShot Navigation

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- There are 3 buttons in the ribbon bar that control what a left mouse click and drag will do.



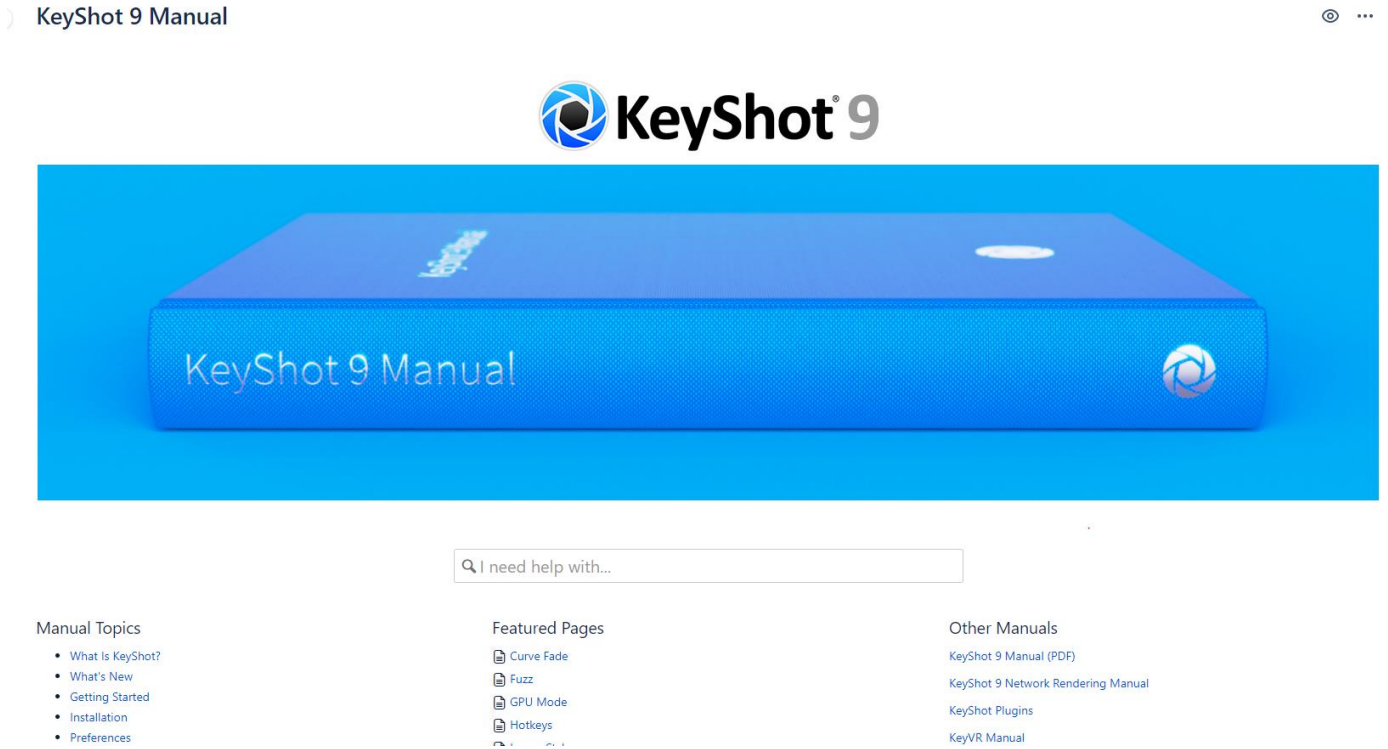

- Tumble Camera (Default)
  - Left button click and drag will rotate the part
- Pan Camera
  - Left button click and drag will pan the part in the window
  - Also accomplished with middle button click and drag
- Dolly Camera
  - Left click and drag will zoom the model in and out
  - Also accomplished with scroll wheel

# KeyShot Resources

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- KeyShot includes a detailed and searchable PDF format Manual to help you along the way.





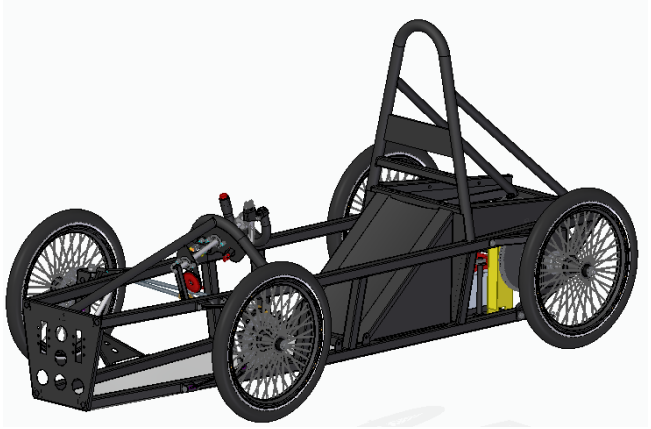

# Adding Materials

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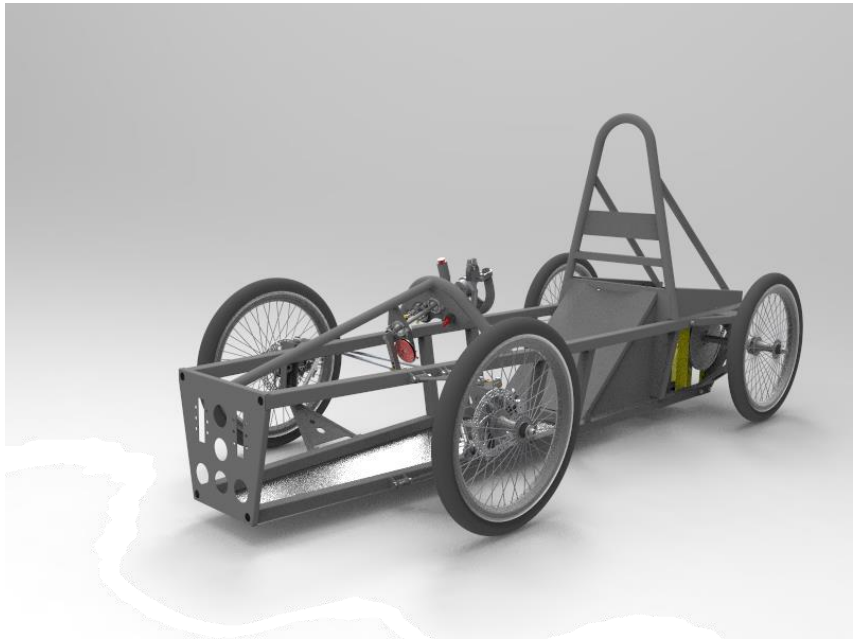
# Perspective

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- The colors of the model in Solid Edge are mapped to KeyShot colors, however you will most certainly want to add your own materials and colors to the components in KeyShot to get a more realistic look.







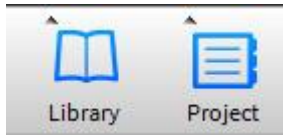
- Adding perspective to the model in KeyShot is necessary to generate a photo-quality rendering.
  - Somewhere around 40.0 typically looks realistic.



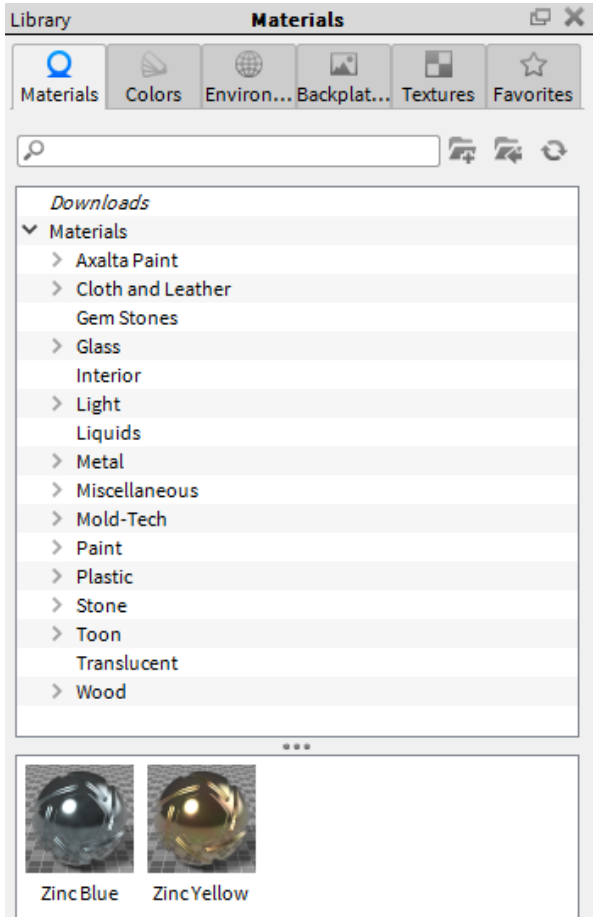
# Materials

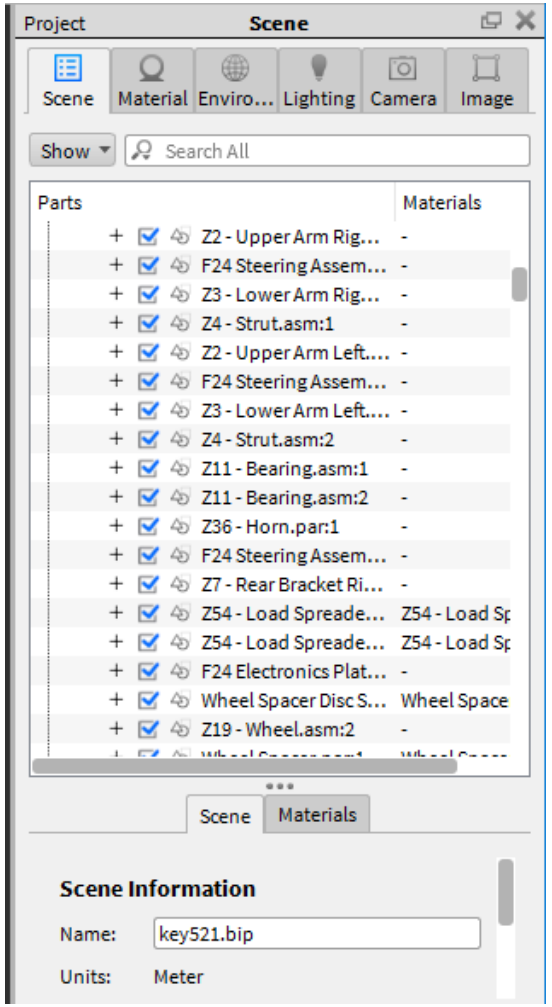
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- KeyShot includes an extensive library of materials, colors, lighting, textures, environments and backgrounds.




- The Project pane is what is currently applied in the open project.
  - Contains the “Scene” tab which is similar to the Assembly PathFinder in Solid Edge.
  - Materials, Environment, Lighting and Camera settings applied to the project can all be modified in their respective tabs.

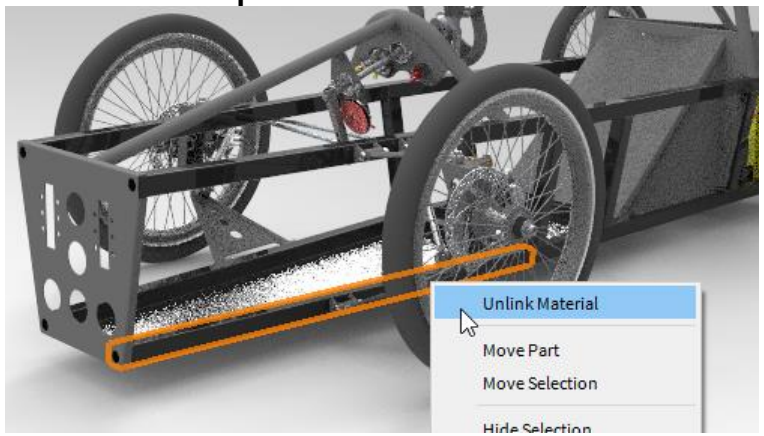


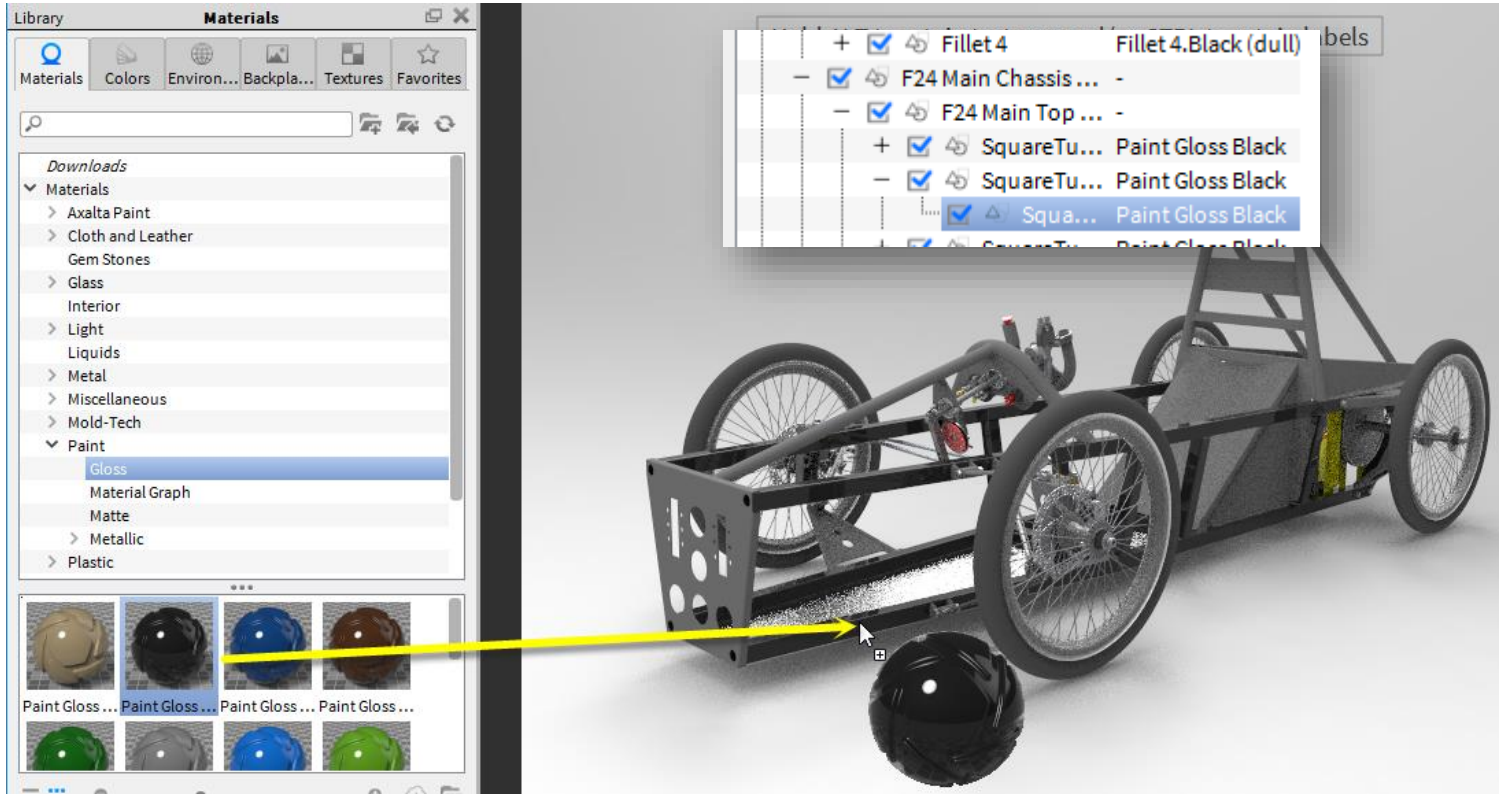



# Materials

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- To apply a material to a component, simply drag the one you want from the library and drop it on the part in the graphics window.
  - All of the components within the subassembly with the same material definition are also assigned that same material by default.
    - If you want a component to be a unique material, you can right click on a component and unlink its material.

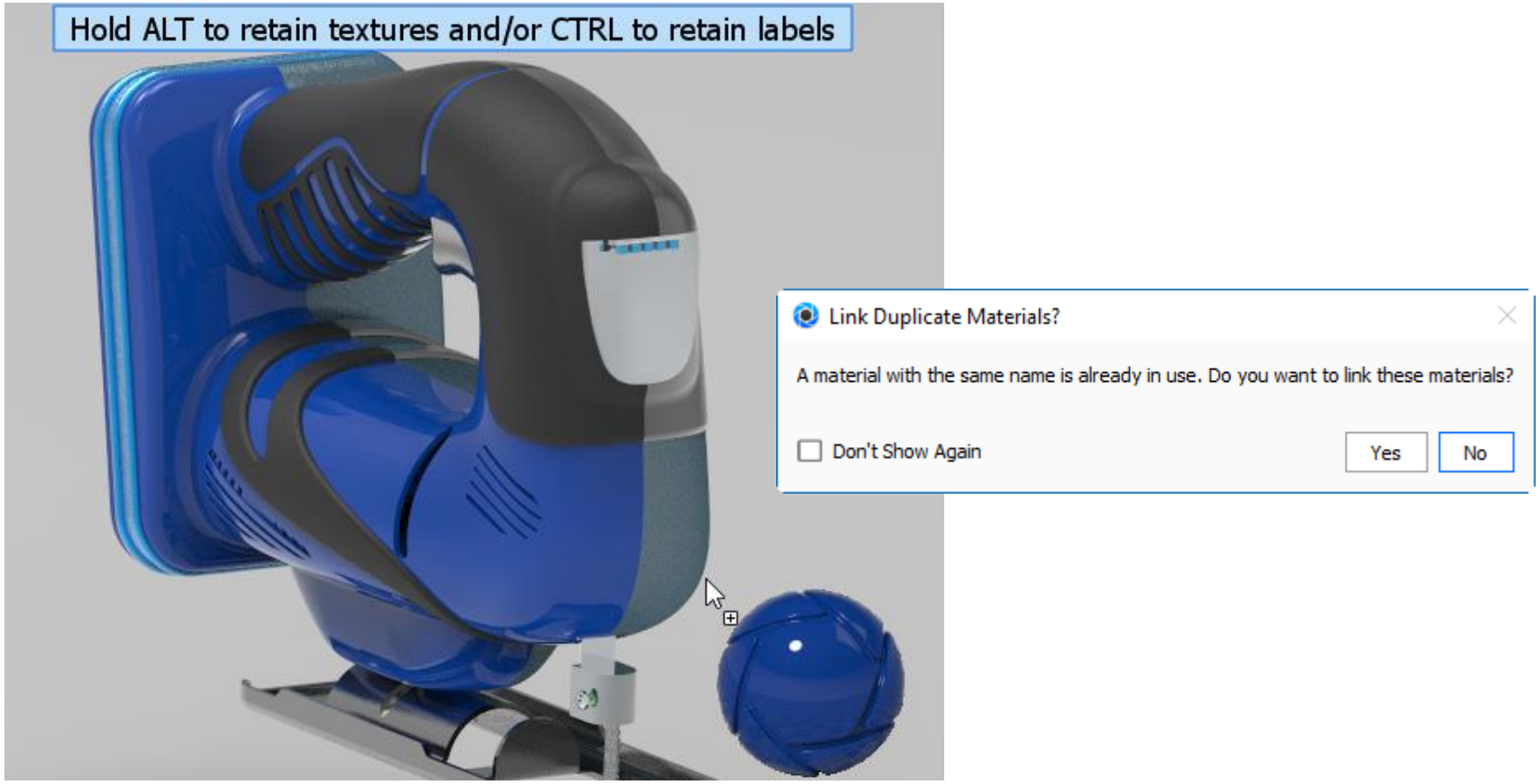


# Materials

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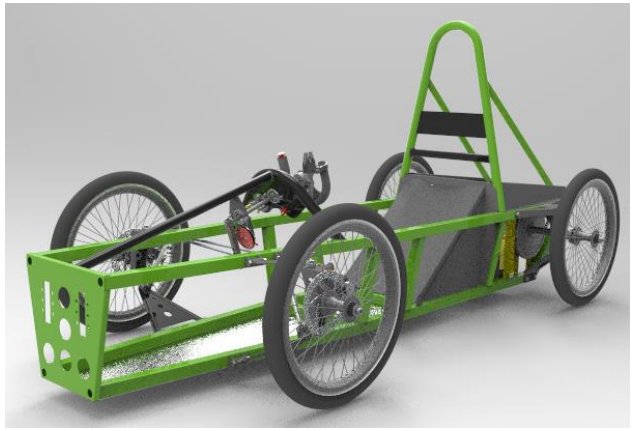
- If you drag the same material on 2 different parts, you will be prompted with the option to Link the materials.
  - This option can be disabled to only link materials manually later.

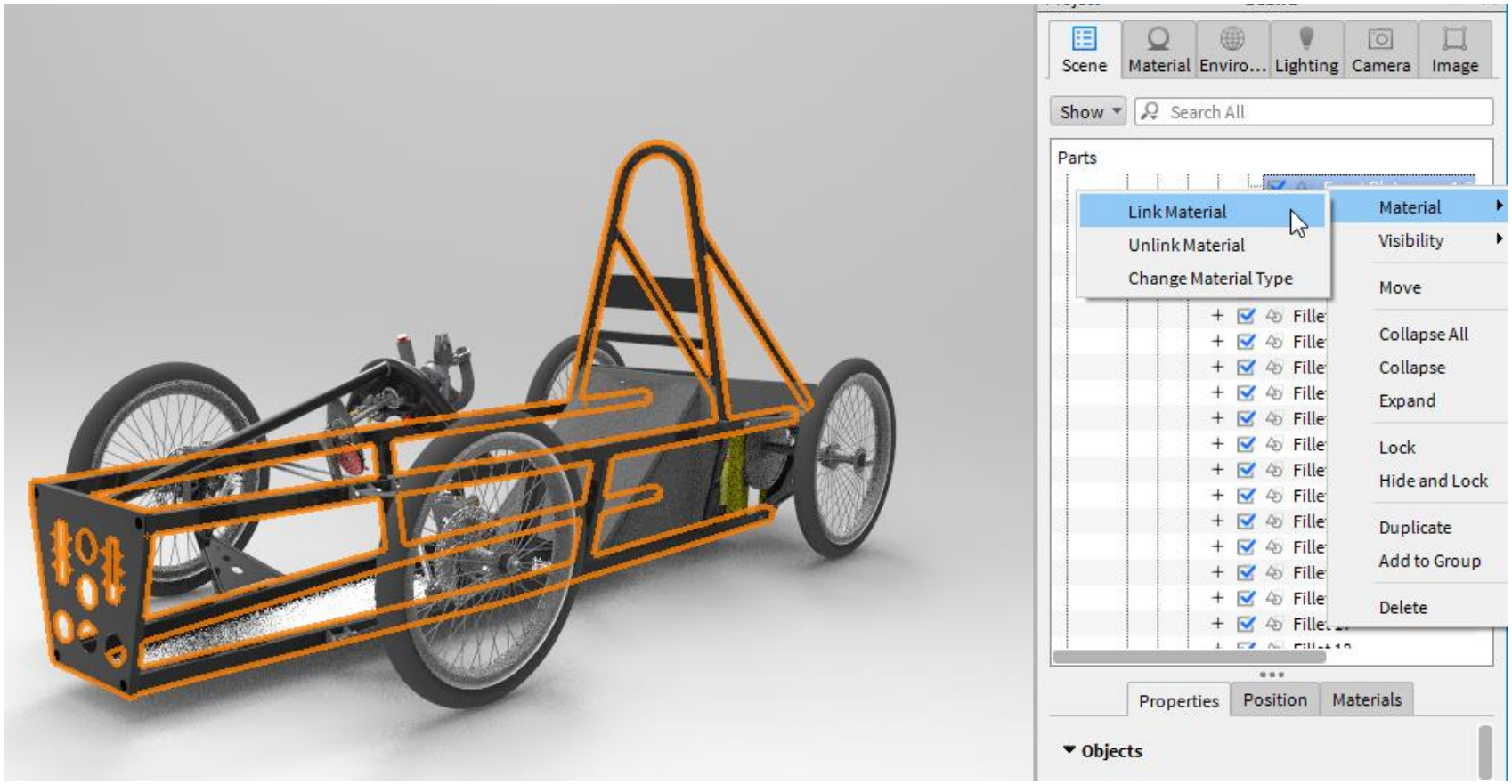


# Materials

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- If you want unrelated parts (not in the same subassembly) to have the same material definition and to be linked for future material changes, you can select the components, right mouse click on the material **in the scene tab** of the project pane, and Link Materials.
  - Changing one of these components later will now change all of the linked components.



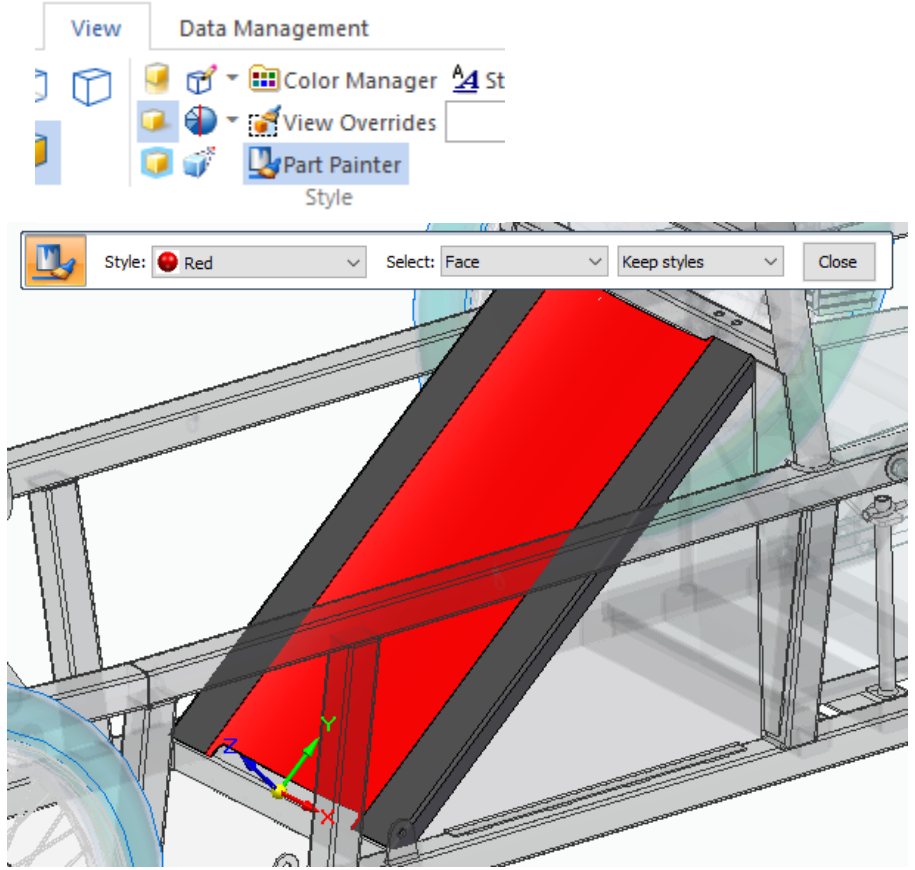


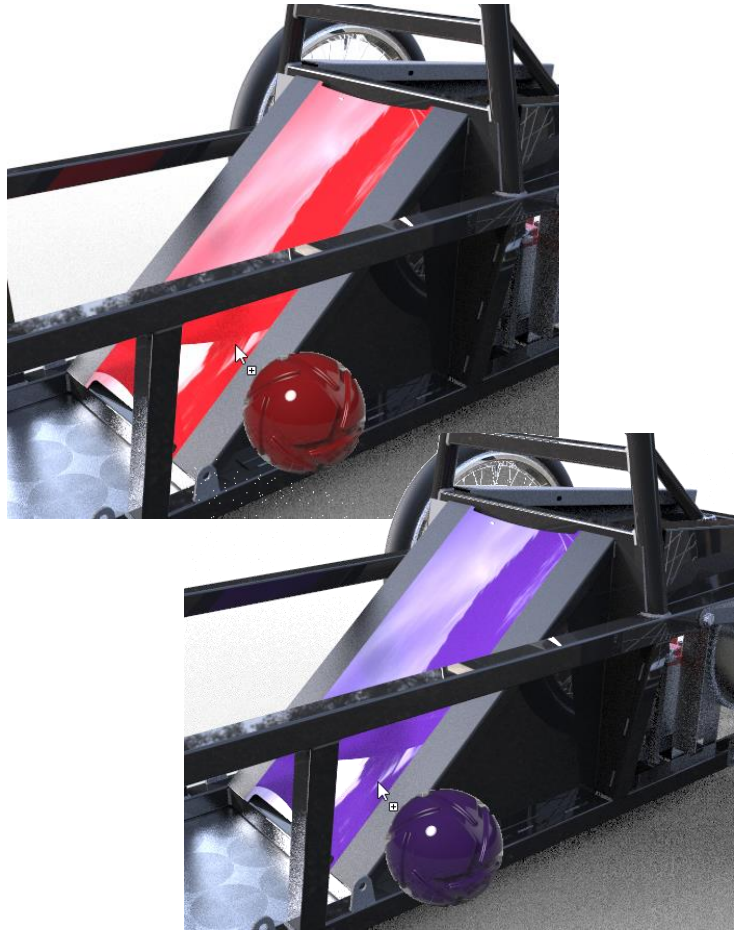
# Materials

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- Individual faces of parts cannot be assigned a unique material in KeyShot unless the faces have been painted a unique color in Solid Edge **before** sending the model to KeyShot.



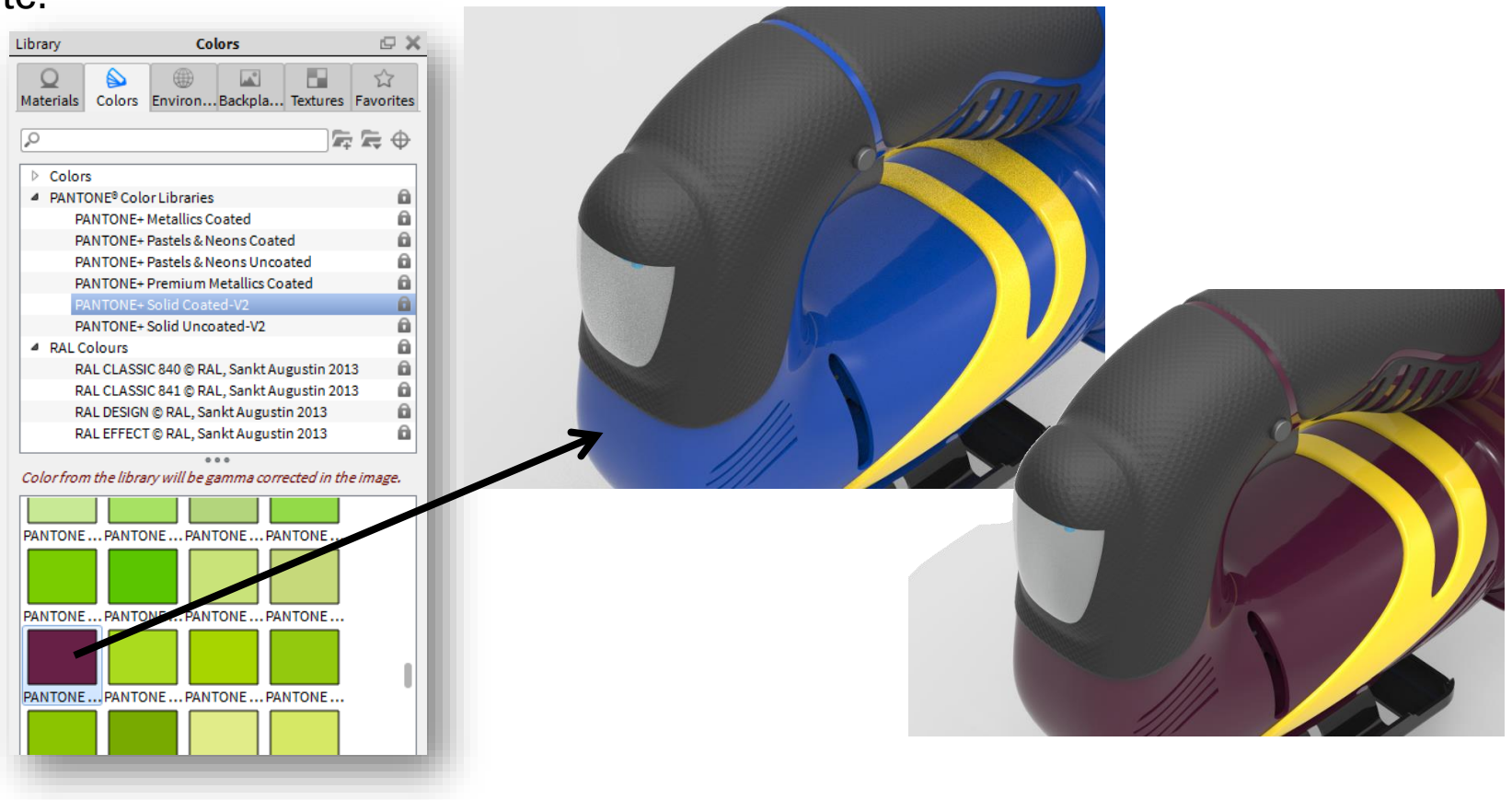


# Materials

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- The **Colors** tab in the Library pane can be used to simply alter the color of a particular material without changing any of its other material properties such as reflectivity, transparency, roughness, etc.





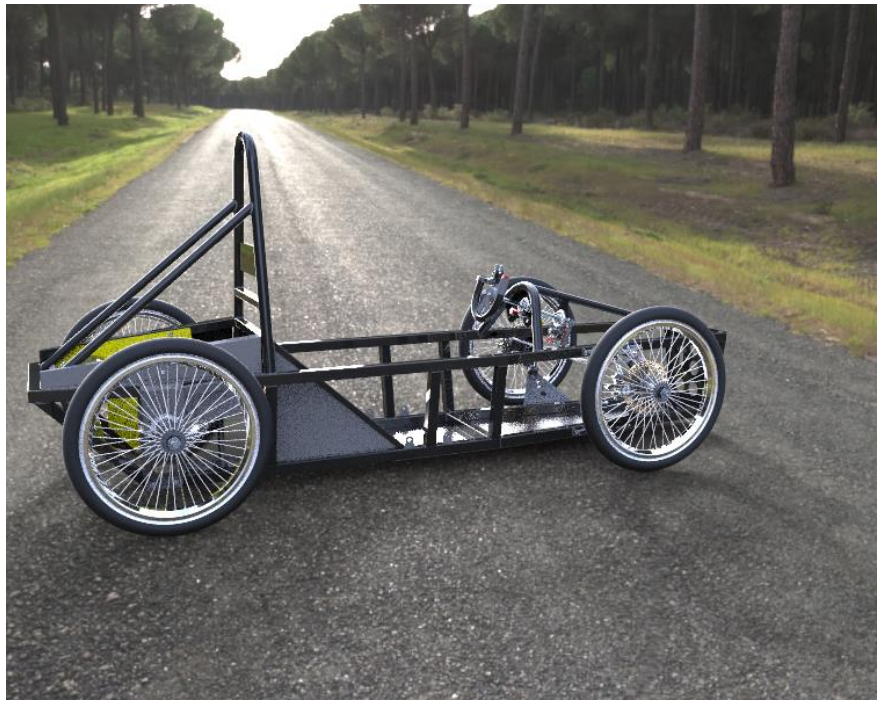

# Adding an Environment

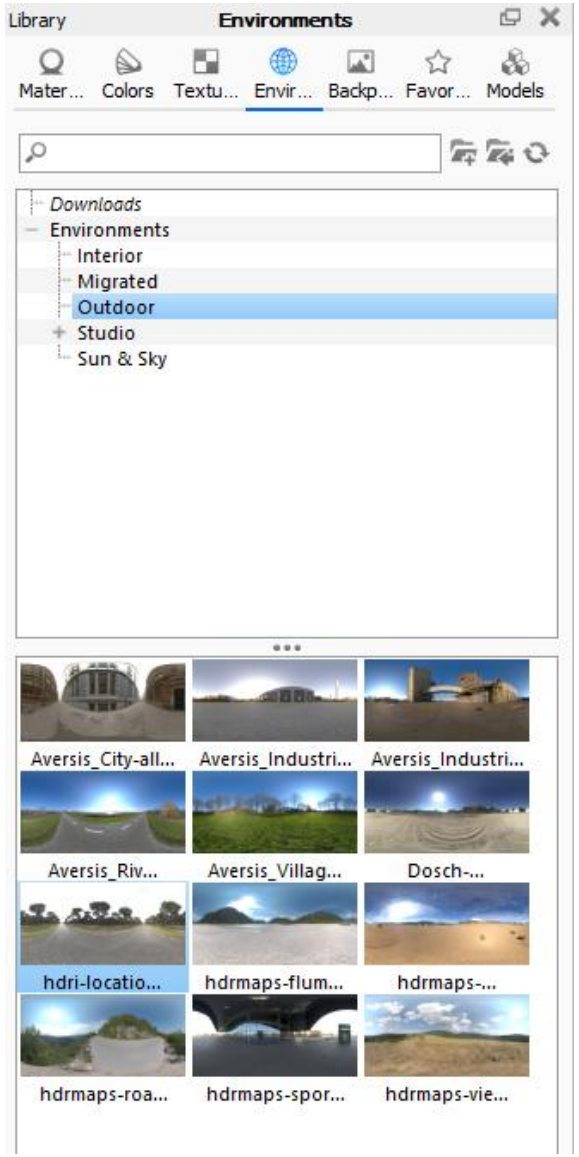
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# Environments

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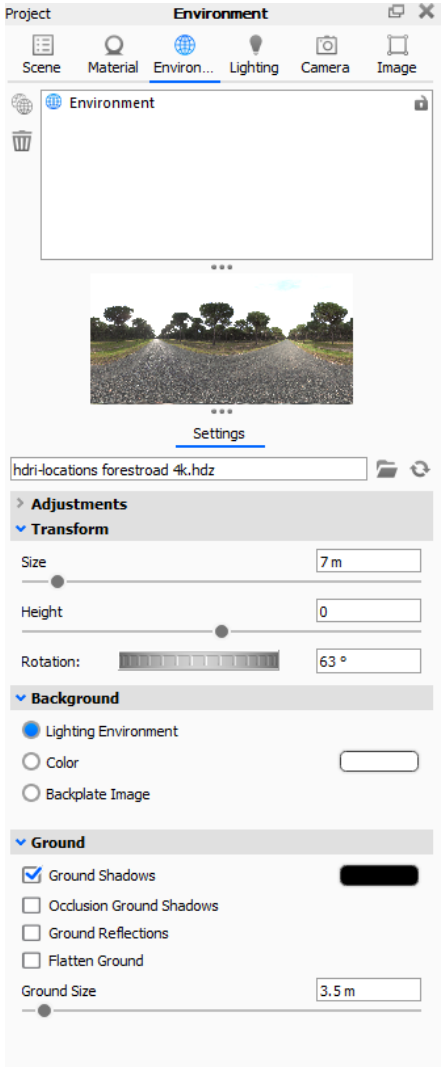
- The Environment tab enables you to place your part or assembly in a realistic lighting environment.
  - Interior, Outdoor, or Studio lighting
    - Interior and Outdoor also include a 360° environment image.
  - Drag and drop the environment onto the graphics window.



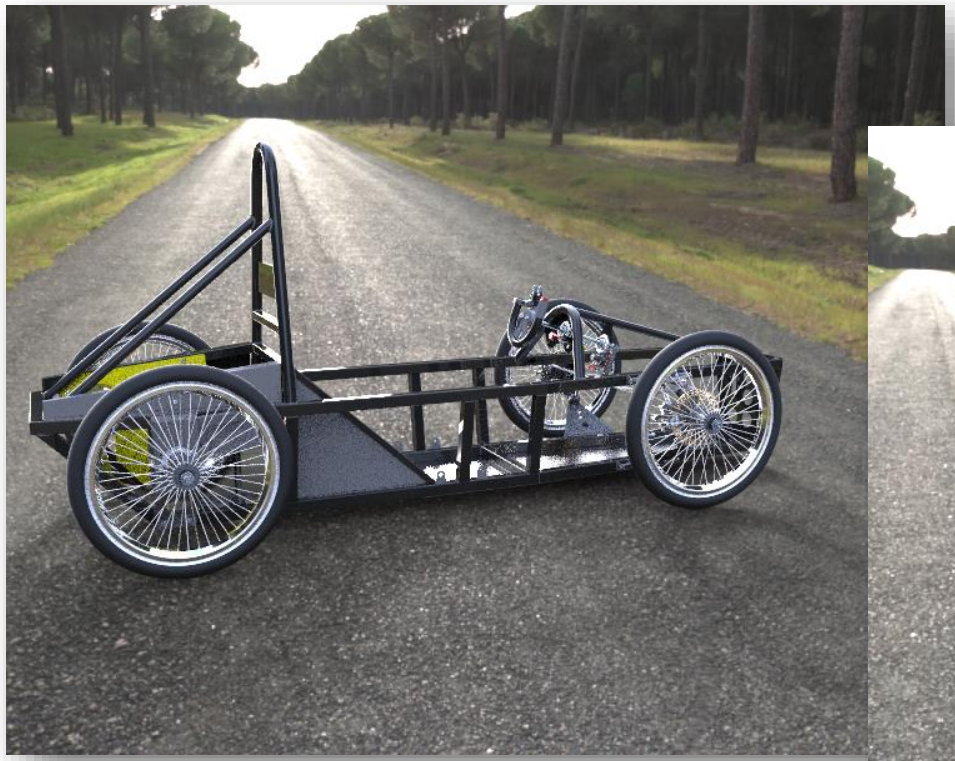


# Environments

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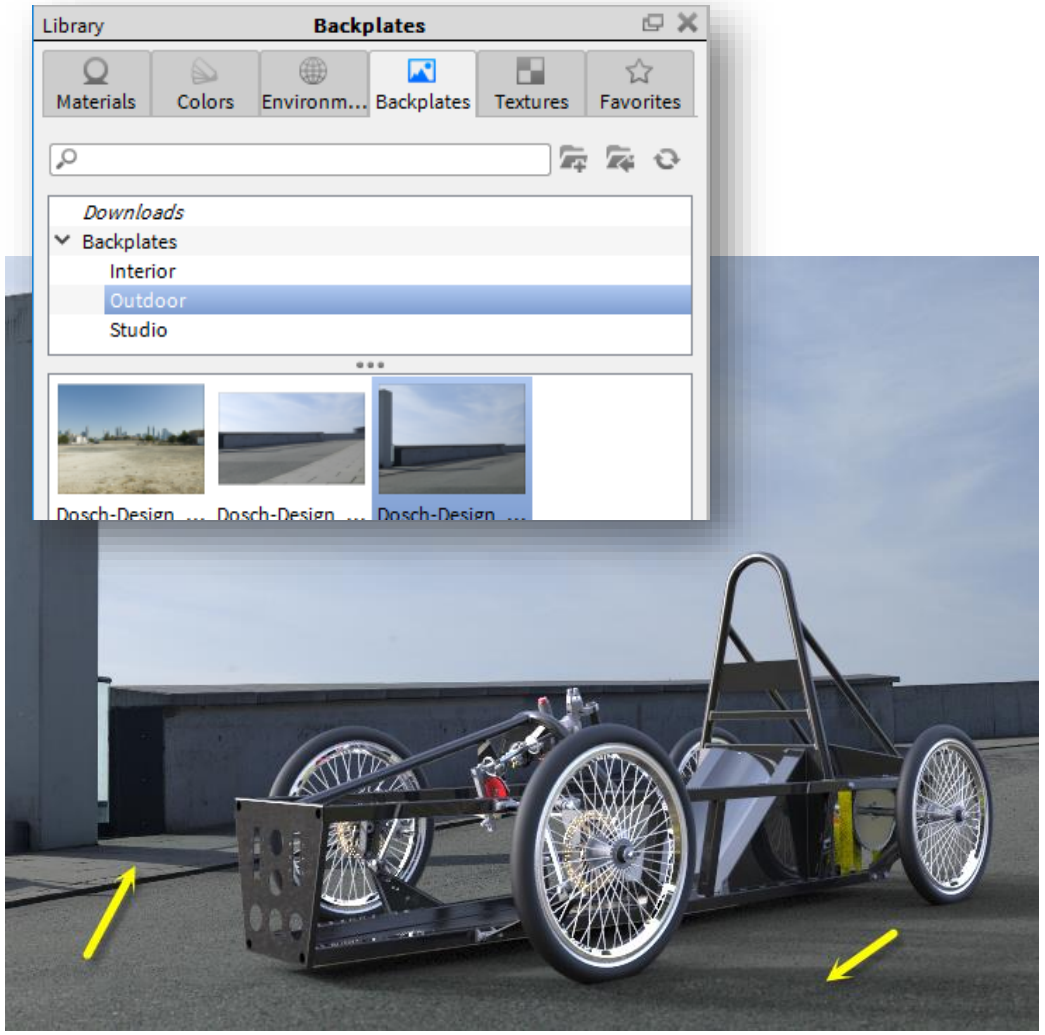

- On the Environment tab In the Project pane you can rotate the environment relative to the model by dragging the rotation wheel.



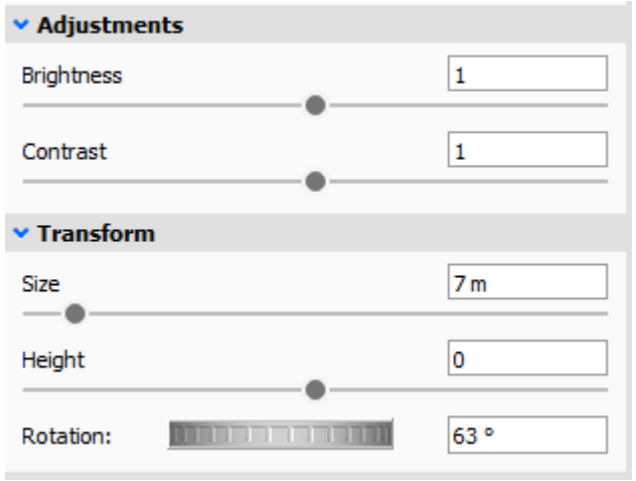


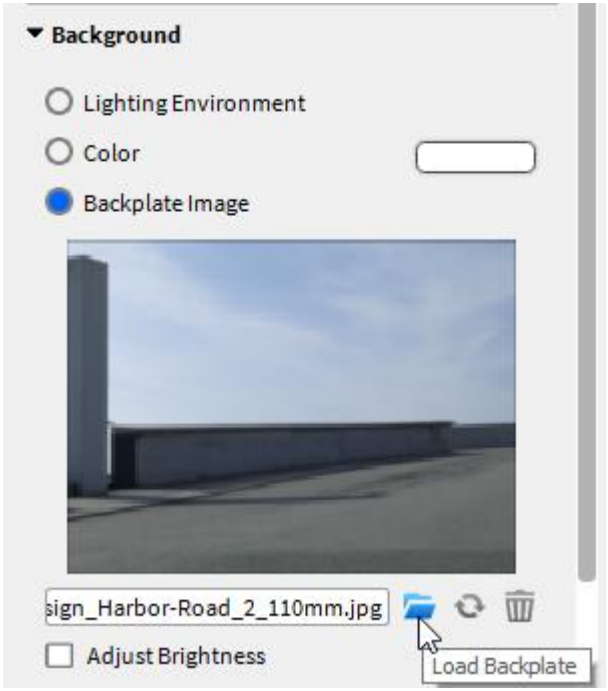
# Backplates

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- Backplates are static 2D images that you can drag into the graphics window to place your model in front of that can your model to appear to be in a realistic environment.
  - You may add your own photograph or graphic as a backplate from the Environment tab in the Project pane.
  - Rotate the environment to adjust the location of shadows to match the backplate image.



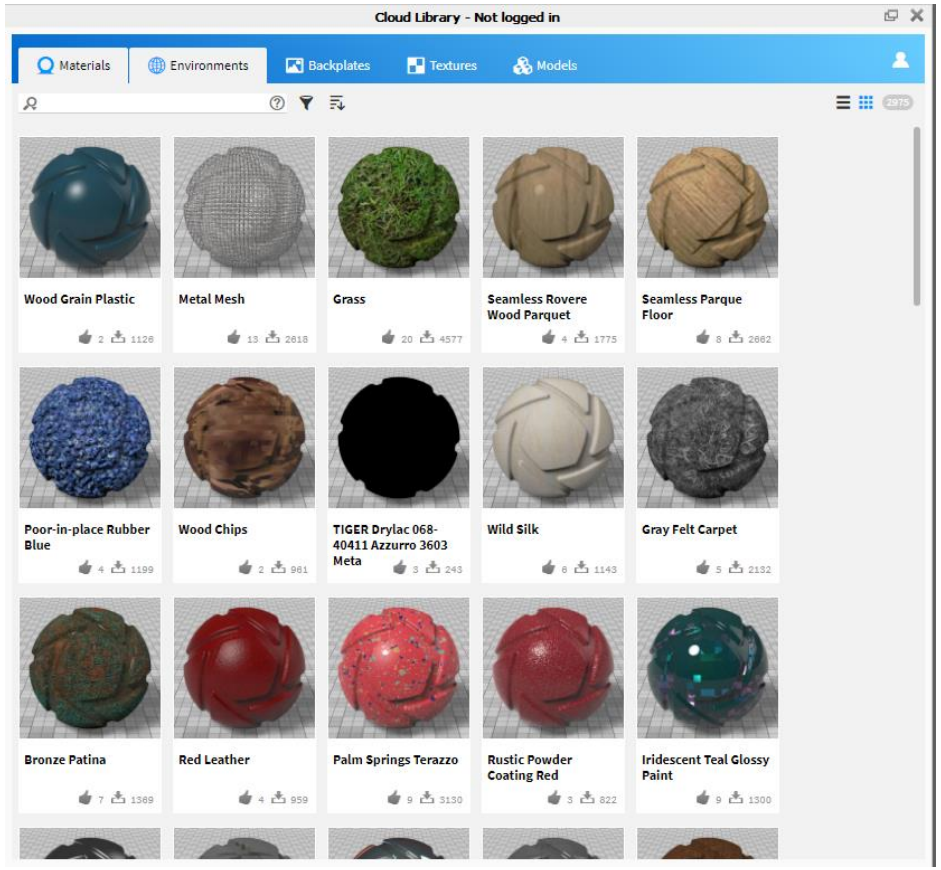



# Rendering

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- If you are looking for a specific material, texture, backplate or environment, you may want to check out what other KeyShot users have created and shared in the Cloud Library.



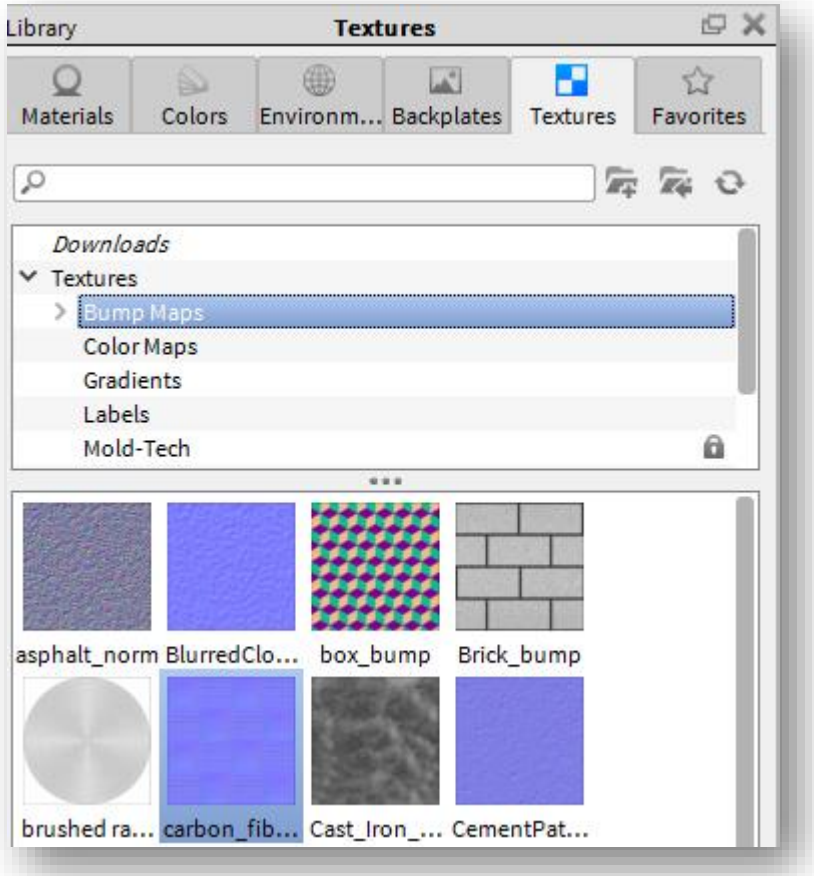



# More Scene Modifications

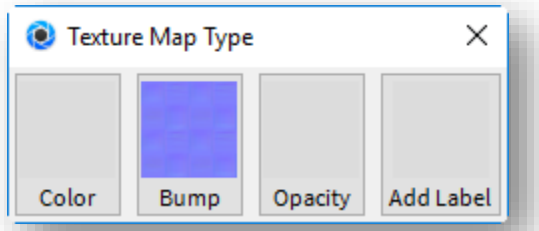
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# Textures

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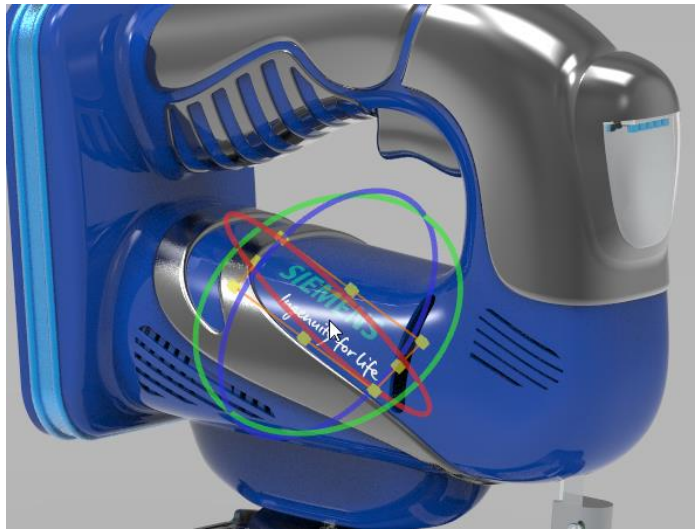

- Textures can also be dropped onto parts to add more realism.
  - Apply as a color map, bump map, opacity map or a label.
  - Change the scale in the Project pane to match the scale of your model.

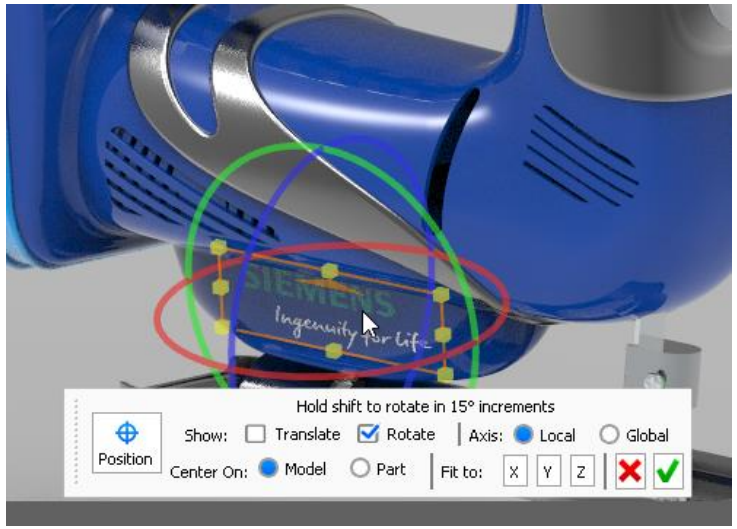


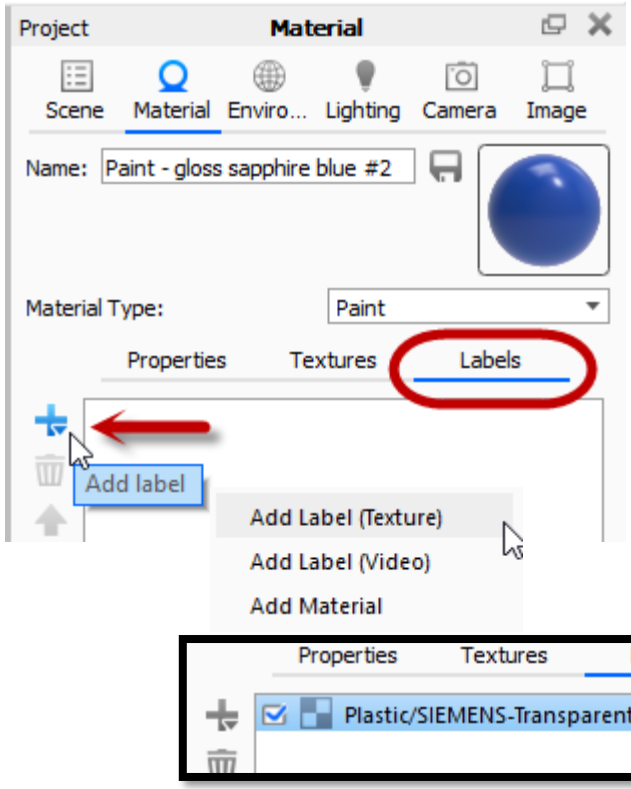



# Lables

- Labels can be added to any material definition.
  - Use the scale, drag and rotation tools to size the label and place it where you want.
  - You may have multiple labels on the same part.



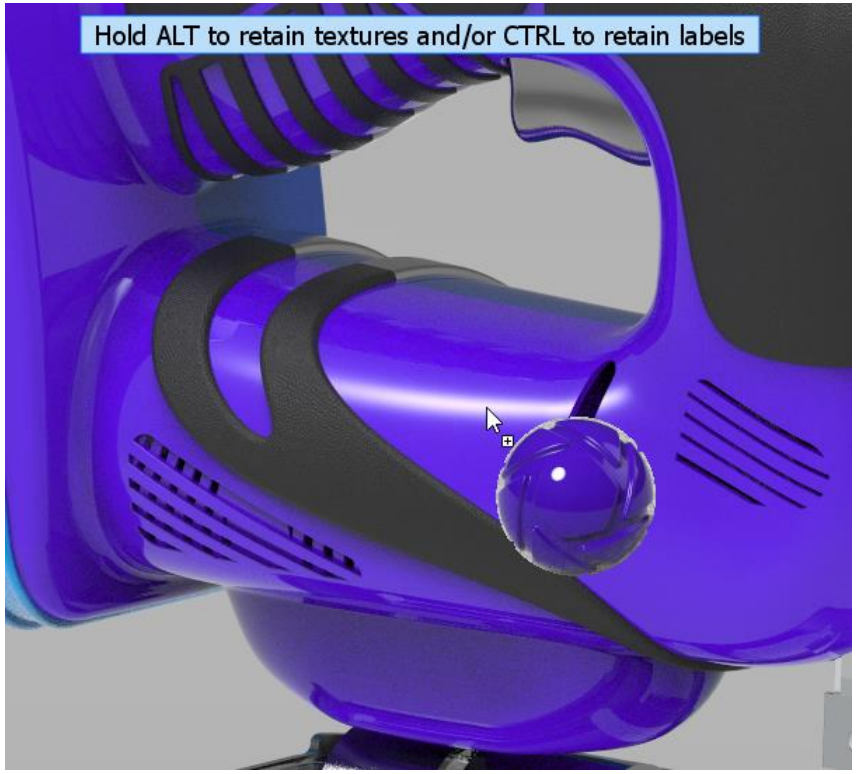


# Rendering

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- If you decide to change materials or colors later, follow the prompt to Hold down the CTRL key as you drop a new material to retain the labels.



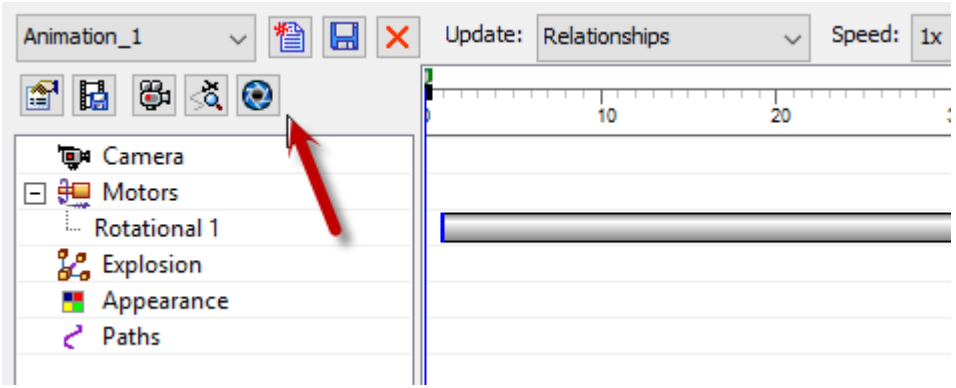


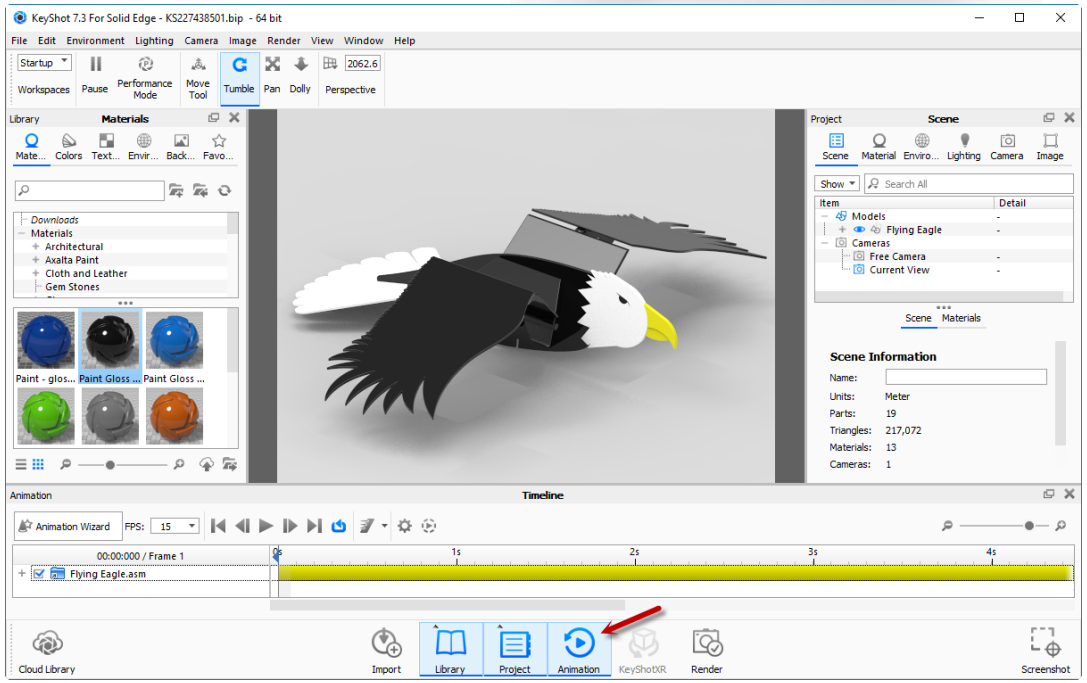

# Animations

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- Animations created in Solid Edge can also be sent to KeyShot and used to created fully Rendered animations.
  - You must click the KeyShot button **from the Solid Edge Animation Editor** to send the animation to KeyShot





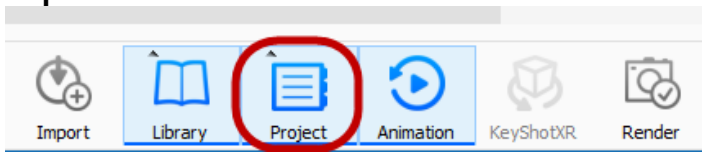



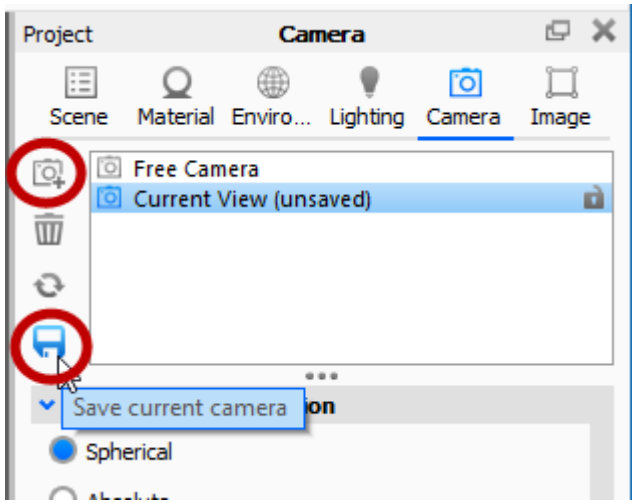
# Animations

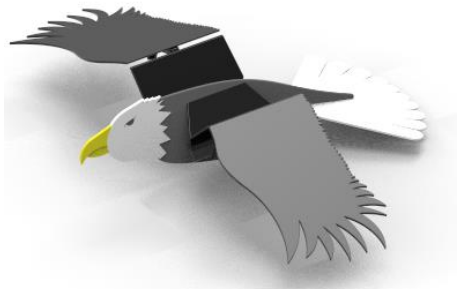
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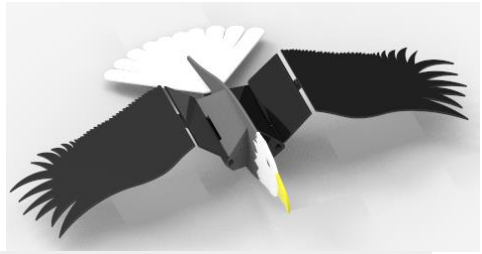
- This is a NEW KeyShot session and **will not** update an existing KeyShot model that was not sent through the Solid Edge animation pathway.

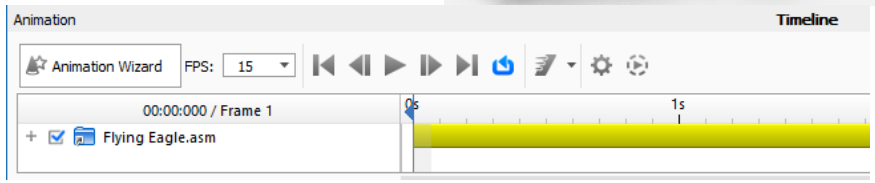
- If you change the orientation of the model in the preview window you MUST save the current camera position or create a NEW camera position on the Camera tab in the Project window.
  - If you do not do this, and click the play button in the animation, it will revert back to the last saved camera position and the new orientation will be lost.









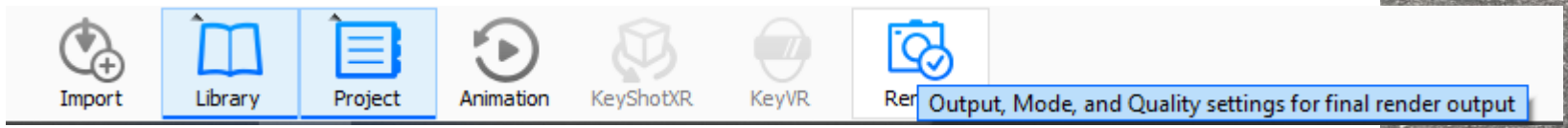

# Creating a Render

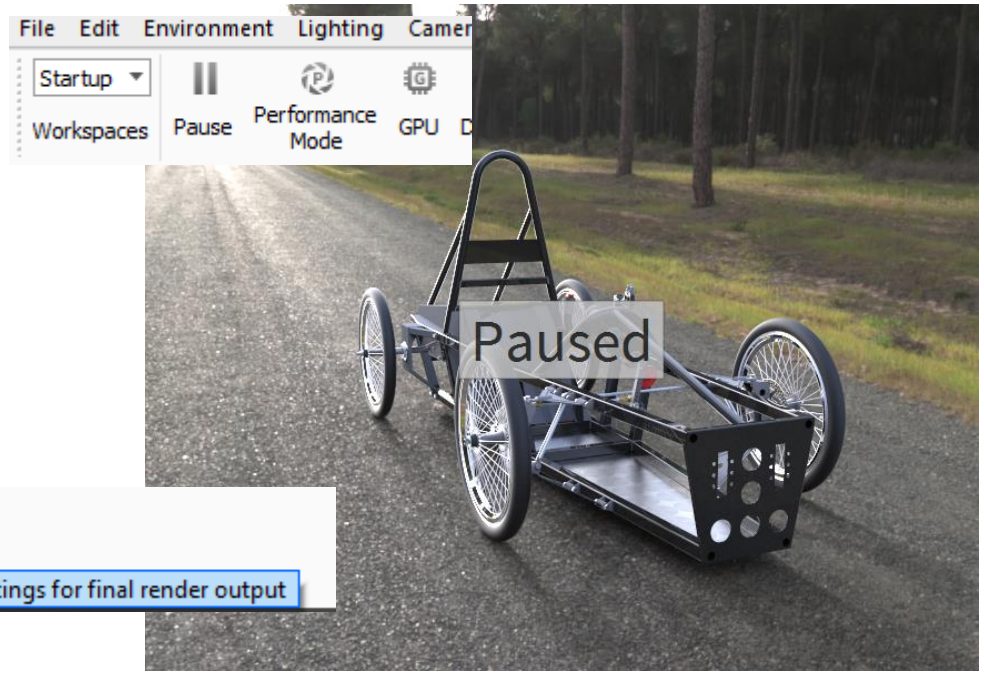
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# Photo Rendering

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- KeyShot CPU to continuously render the project in the graphics window in real time.
  - Unless GPU mode is selected (selected graphic cards)
  - The longer it sits idle without making modifications to materials, lighting or orientation, the better the image will look as it renders on the screen.
  - Because it uses CPU, you may notice a performance drop if attempting to do other tasks while KeyShot is running.
    - You may pause the real-time render to free up the CPU resources for other tasks, and when ready, toggle off Pause to continue rendering.
    - The Render button initiates and saves a specific rendered image.

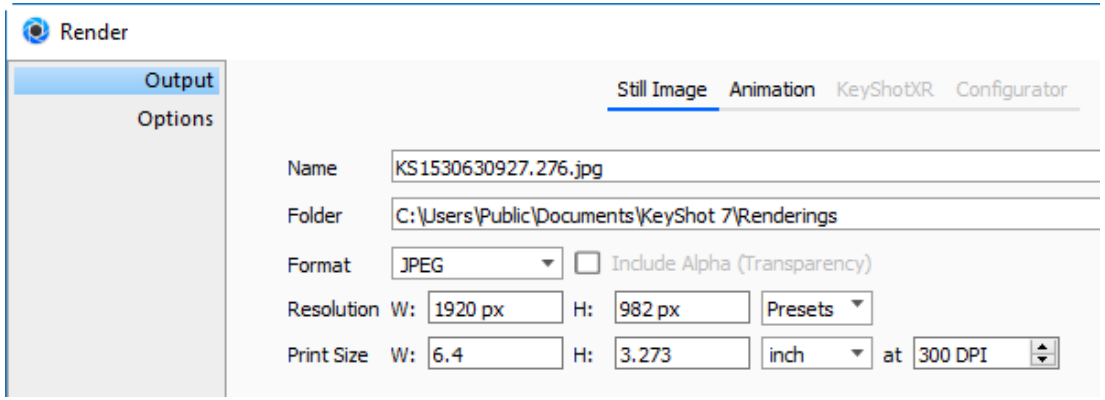


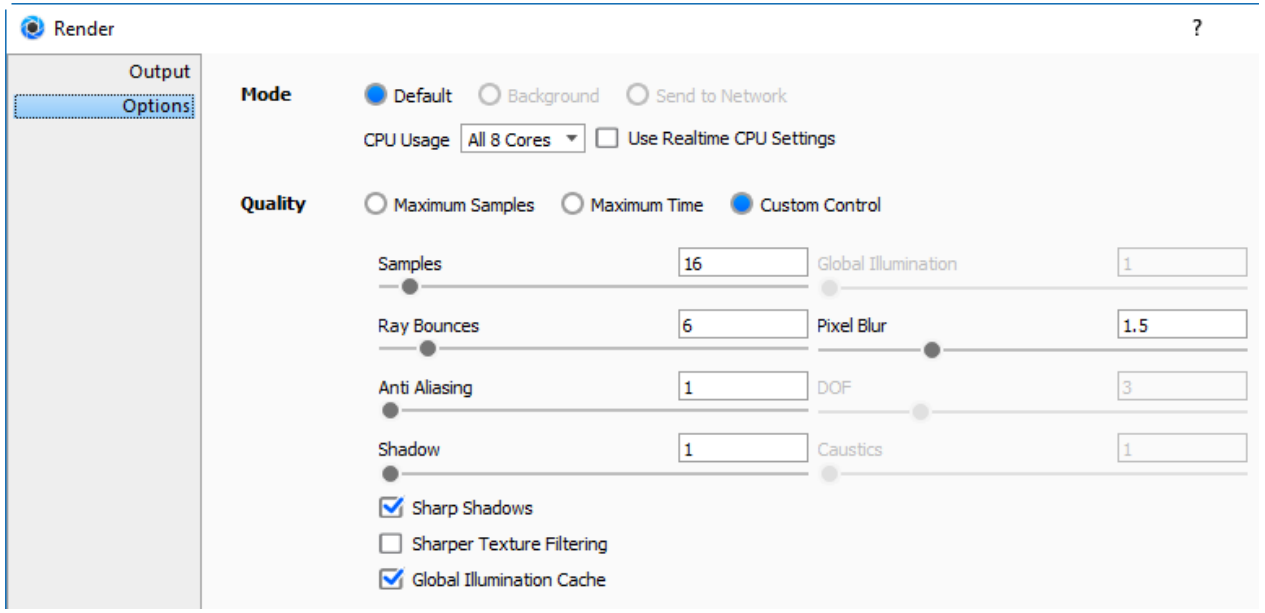



# Photo Rendering

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- The Render dialog  allows you to specify a file name, save location, image format and resolution/physical print size.
  - There are some advanced options, but typically we leave these at their default settings.

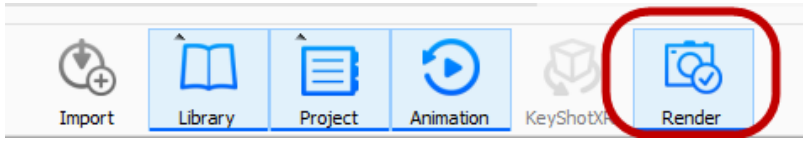


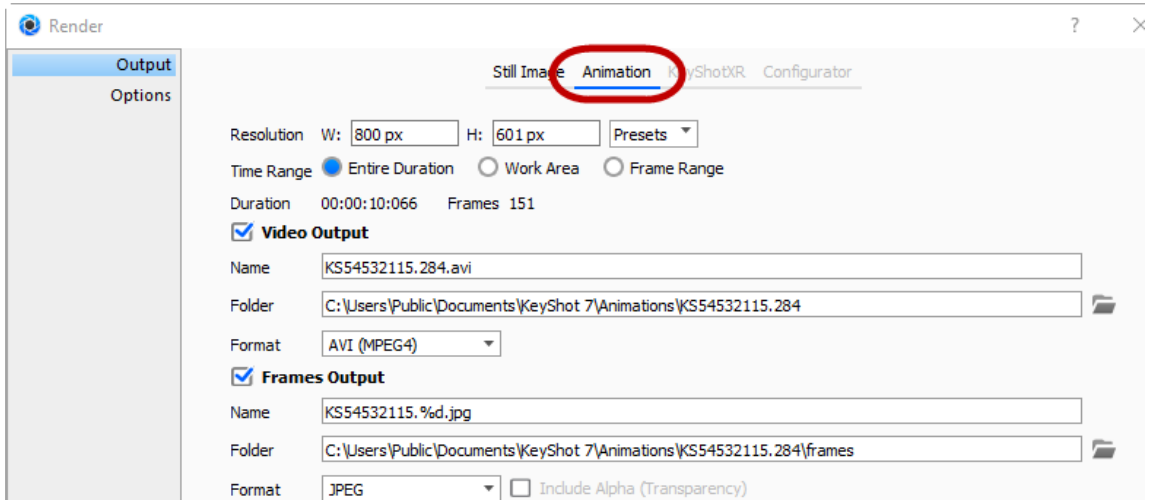
# Animation Rendering

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- To render the animation, click the Animation tab in the Render options.
  - There is an option for frames output, but keep in mind this will save every single frame as a rendered image.
    - uncheck this option, or it will create hundreds of images.




- A typical animation is over 150 frames to be render, so this will take time to get a final output video file.



# Contact

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