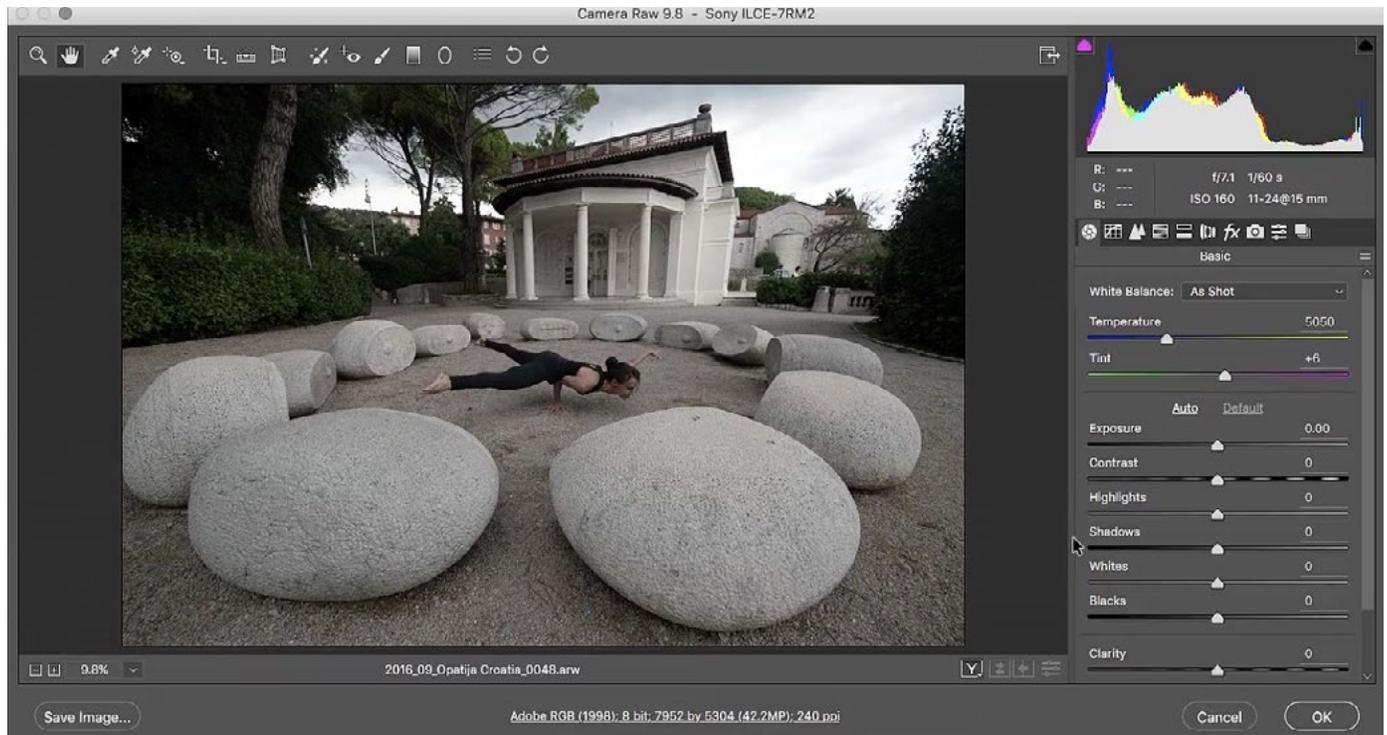




Real-World Image: Architectural Distortion & Retouching

Architectural Distortion & Retouching

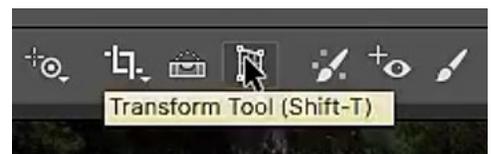
When it comes to architectural photography, it's very common to get distortion where the straight lines of the building appear to be angled. If you look at the “before” version of the example image, you can see the vertical lines of the building moving outward instead of straight up and down. In this video, we'll look at how we can correct for this type of distortion and we'll also cover some retouching techniques.



Here is the “before” version of our example image in Camera Raw. You can see the distortion in the vertical lines of the building in the background.

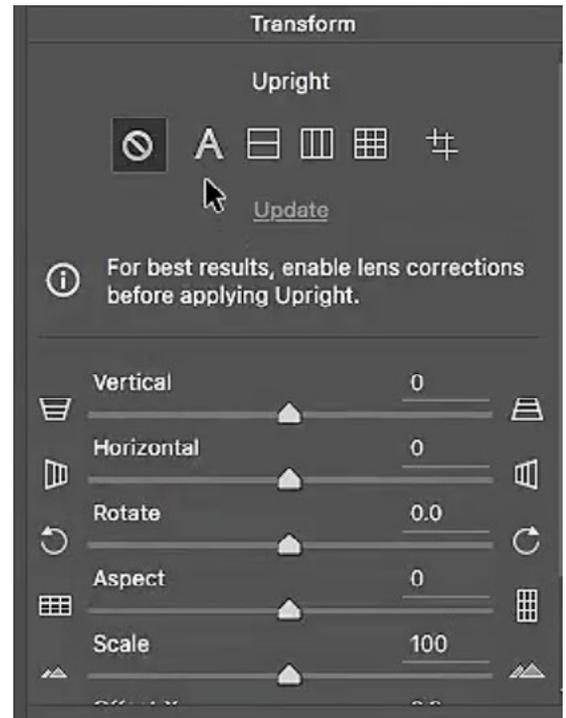
Camera Raw: Transform Tool

In Camera Raw, you can use the Transform Tool to try and correct for any architectural distortion. The Transform Tool can be found in the tool bar at the top of the interface and when you activate it, the Transform settings will appear inside the panel on the right.

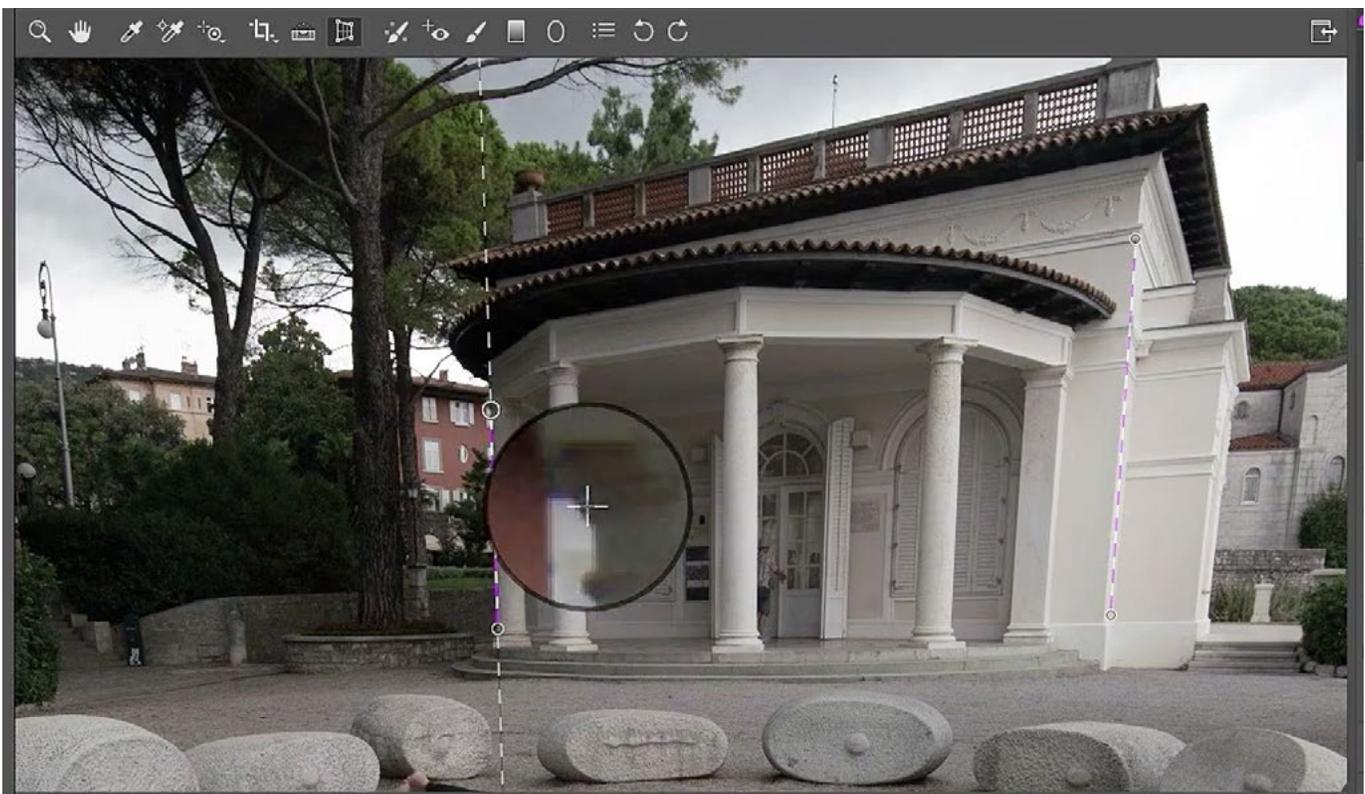


The Transform Tool can be found in the tool bar at the top of the Camera Raw interface.

In the Transform settings, there are a series of icons under the “Upright” category. The first icon (The A) will attempt to automatically correct the distortion. The second icon will attempt to straighten the horizontal lines. The next icon will attempt to straighten the vertical lines. The icon that looks like a grid will attempt to straighten both horizontal and vertical lines. The last icon (Guided Upright) will allow you to manually draw out lines over edges that should be perfectly horizontal or perfectly vertical. To do this, you simply click and drag in your image to position the line. Note that nothing will happen until you’ve dragged out a minimum of two lines. When you’ve done this, Camera Raw will attempt to correct the distortion based on your guides.



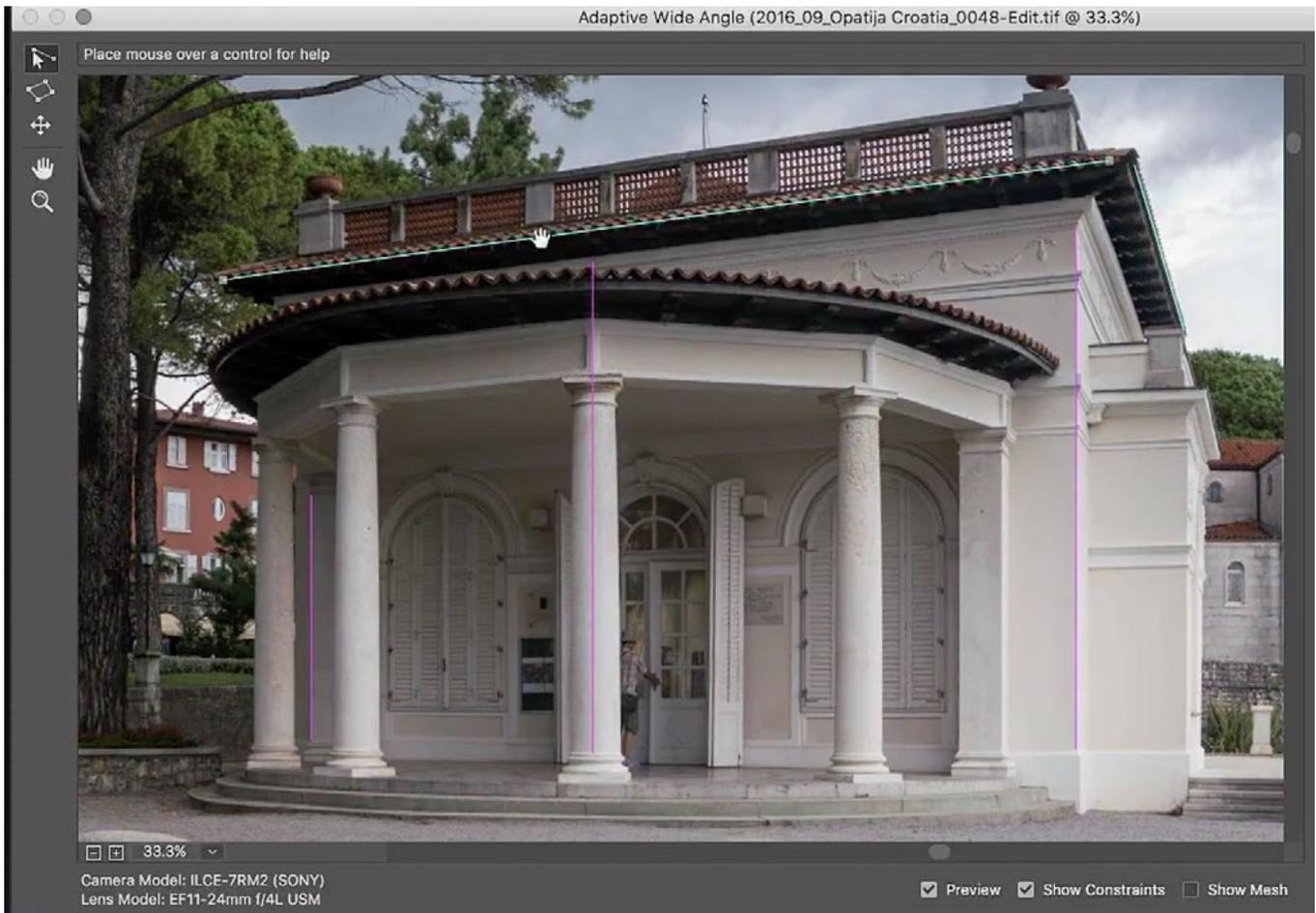
The Transform Tool can be found in the tool bar at the top of the Camera Raw interface.



Here, we are drawing out guides to tell Camera Raw which edges should be vertical.

Photoshop: Adaptive Wide Angle

Now let's look at how we would handle the same task in Photoshop. With the image layer active, we'll go to the main menu and choose Filter > Adaptive Wide Angle. The image will then open in the large Adaptive Wide Angle dialog box. On the left side of the screen, there are a series of tools, the first of which is called the Constraint Tool. When you activate this tool, you can click and drag on the image, to add lines over edges that *should* be perfectly straight. If you want the lines to be perfectly horizontal or perfectly vertical, hold down the Shift key as you drag. When you let go, Photoshop will attempt to straighten the edge.



Lines are placed over the image using the Constraint Tool in the Adaptive Wide Angle filter.

After applying the Adaptive Wide Angle filter, there may be some [or a lot of] empty canvas area around the edge of your image. You can crop out the empty area, but I often find that I'd have to crop too much out of my picture. That's definitely the case in this example, so instead of doing an extreme crop, I'm going to try and fill in some of the empty area. Before I do that, however, I'll decide where the image will ultimately be cropped and create a guide using the Shape Tool (set to create a Shape Layer).



The Adaptive Wide Angle filter bent the image so that there is a lot of empty canvas area.

I will use the Shape Tool to drag out a rectangle in the document in the exact size that I want the finished image to be. By default, everything inside the shape will be filled in, but we want everything outside the shape to be filled in. To achieve this, I will click the second icon at the bottom of the Properties panel, which specifies that we want to “Subtract from Shape.” We can also change the color of the shape within the Properties panel.



A Shape Layer was created to serve as a guide for where the edge of the document will be.

Now that the rectangular Shape Layer has been created, it will serve as a guide for where the edge of the picture will ultimately be. This will make it so that we don't unnecessarily retouch any areas outside the frame.

Photoshop: Retouching

Now that we have corrected for distortion in the building, we need to retouch the image in order to fill in the empty canvas. Looking at this image, the first thing I notice is that the edge of the stone on the left side is cut off a bit. There are a few different ways of re-creating the edge of the stone, and the first thing that came to mind was that I could copy the edge of another stone and use it to fill in the missing piece. In the end, however, I ended up doing something else. Looking through the images I shot there, I found another image that incorporated the edge of that stone and I decided to use a chunk from that image. Before bringing the second image into Photoshop, however, I used Lightroom to sync the develop settings to the main image I was working on. You can copy the develop settings by right-clicking on the image in Lightroom or Bridge and choosing "Copy Develop Settings." Paste the develop settings by right-clicking on the image and choosing "Paste Develop Settings." This will ensure that the exposure, white balance, etc. is consistent between the two images.



In order to retouch the left side of the stone in our original picture, we're going to use a piece from this second image that was shot in the same location.

Once we have placed the other image into the Photoshop document, we'll need to apply the same distortion correction that we applied to the original image. Because the Adaptive Wide Angle command was applied as a Smart Filter, we can easily copy the filter settings from one layer (that is a Smart Object) to another. To do this, hold the Option key (Alt on Win) while dragging the Adaptive Wide Angle Smart Filter thumbnail to the other image thumbnail in the Layers panel. (Holding the Option key will ensure that we *copy* the filter instead of *move* the filter.)

Now we need to line up the two images so that the left rock is in the exact same position in both image layers within our document. One way of doing this is to set the blending mode of the top layer to Difference. In this mode, any areas where both layers are identical will appear black. I want to move the top image layer around until I get as much black as possible, which means that the layers are lined up pretty close. When we're done, we can set the blending mode back to Normal.



The top image layer is set to the Difference blending mode and we are lining up the layers as closely as possible.



The top image layer was masked and we're painting in the area containing the edge of the rock.

Now that we've lined up the layers, we're going to add a layer mask to the overlying layer. We want the mask to be black so that it completely hides the layer, and we can add a black layer mask by holding down the Option key (Alt on Win) while clicking on the Layer Mask icon at the bottom of the Layers panel. We will paint on the mask with white, using a soft-edged brush, just over the small area where part of the stone is missing.

The next empty canvas area I'm going to tackle is the lower left corner. To fill this in, I'm going to use content from the original, undistorted image. I will duplicate the original image layer and remove the smart filter that is correcting the distortion. When I do this, I notice a large area of gravel on the bottom right of the image. Since we want to use this on the left side of the image, I will go to the main menu and choose Edit > Transform > Flip Horizontal. Then I will mask this layer duplicate so that the bottom left corner is the only part visible and so that it's covering the empty area in our main image layer.



We used a duplicate of the original image, flipped horizontally and then masked, to fill in the empty area in the lower left.