

## DEALING WITH CONVERGING VERTICALS

### Introduction

I have recently developed a bit of a passion for shooting buildings and architectural features. This can however be much more challenging than you might first imagine. One of the most significant problems that tends to distinguish the work of amateurs from that of the professional is image alignment.

Professionals spend a great deal of time getting their images square and dealing with something called converging verticals. Amateurs tend not to bother with such details and consequently their work suffers.

In this tutorial I will explain the problem of converging verticals further and provide a few strategies for dealing with the issue.

This tutorial uses Photoshop.

### Understanding the Problem

Here is a “2 dimensional” shot of a 1970’s office block. I shot this hand held and tried hard to align the windows to the viewfinder. Despite this I still have the impression that the windows are not correctly aligned and that the image is somehow tilted. By switching on the grid in Photoshop (select View|Show|Grid from the menu) you should be able to see the problem.



If you look closely at the building horizontal lines against the grid you will see that they slope very slightly to the right. More noticeably the vertical lines appear to close inwards from the bottom of the image, especially the outer verticals. This tutorial is about correcting these problems.

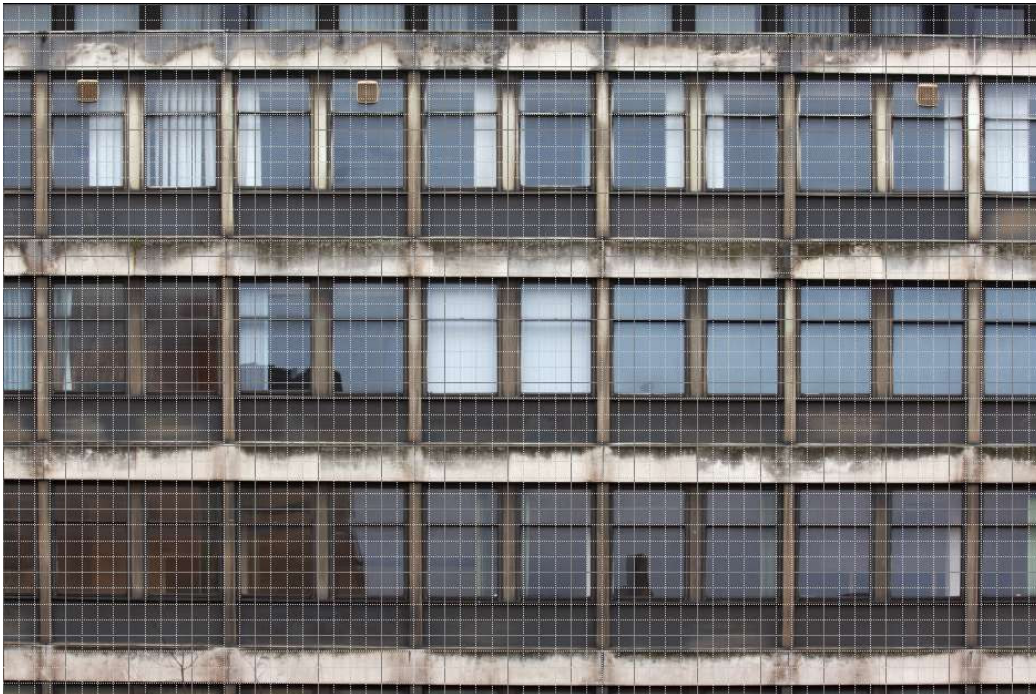
First of all the cause of the converging verticals is not having the camera back vertically aligned with the subject; basically I am tilting the camera upwards. Some

architecture photographers get around the problem by using large format cameras which have a tilt and shift capability or by using special shift lenses on Medium Format, 35mm or Digital cameras.

Another feature of this problem is that the wider the lens angle, the more pronounced this effect it is. If you can shoot with a very long telephoto lens as I have here, you will also be able to reduce the effect quite considerably.

Photoshop also gives us a new effective alternative to correct the converging verticals problem. Here is an example:

1. Open your image and turn on the grid lines if not already visible. Select View|Show|Grid from the menu.
2. Select the whole of the image by pressing Ctrl-A on the keyboard (this is a Windows shortcut, Macs use different keys). You can also use Select|All on the menu.
3. Select Edit|Transform|Perspective from the menu. You will see a set of "handles" appear at the corners of the image.
4. Grab the handle in the top left of the image and pull it out to the left. As you do this you will notice the verticals move outwards from either side of the image. Aim to align a vertical with the vertical grid lines.
5. Once you have the verticals aligned release the handle and click the tick mark in the toolbar to commit the transformation changes.



Having corrected the issue I could use the crop tool to even up the image. Before I do this however I am still not happy with the image as it isn't level. To level up the image I take the following steps:

1. Select the Ruler tool from the tools pallet. If you can't see this immediately it is found under Eyedropper tool and can be selected by right clicking on the eyedropper tool.

2. Click on one end of a line that should be horizontal and drag across to the other end of the horizontal. As you do this the ruler tool will draw a measuring line across the image.
3. From the menu select Image|Rotate Canvas|Arbitrary... and the "Rotate Canvas" dialog will be displayed. This will have been pre-populated with the values required to level the image.
4. Click OK as you should see the image being rotated slightly.

Finally I crop the image to an area that emphasises the regular nature of the architecture.



In practice on your images you may need to reverse the order of this so that you first level the image and then use the Transform tool. You will also notice that there are other transform tools including Distort which can be very helpful. I suggest you take some time to experiment with these.

Follow this advice when shooting architecture and you can make substantial quality improvements in how your work is perceived.