

Correcting Geometrical Errors

This worksheet shows you how to correct some common issues regarding the geometry of an image, particularly effective on architectural photographs. Care should be taken at the time of taking the image but pointing a camera upwards invariably produces converging verticals on buildings.

- 1** Open the image that you wish to correct. Assess the potential geometrical issues in the image, in particular look for Barrelling / Sloping Horizon / Converging Verticals / Skewed Lines.

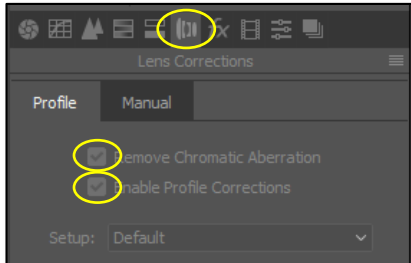


This building shows a horizon that slopes, converging verticals on the building sides and a slight curvature is evident in the steps

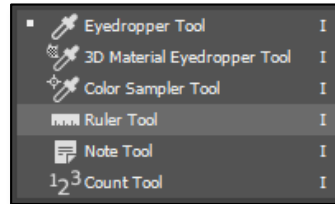
Alternatively, you can use Camera Raw whilst in Photoshop by clicking Filter > Camera Raw Filter. [Ctrl-Shift-A]

- 2** Firstly we will correct any errors introduced by the camera / lens combination. In Adobe Camera Raw, select Lens Corrections in the right hand panel and tick both the Remove CA and Enable Profile Corrections.

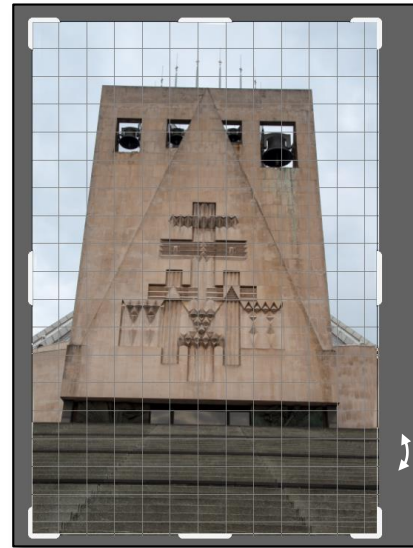
The image will now not show any barrelling effects.



- 3** Next we will correct the sloping horizon in Photoshop. If the *Ruler* is not selected, simply press and hold over the *Eyedropper* tool and select the *Ruler* from the drop-down list. As we are also going to correct the verticals later I suggest selecting a horizontal edge to straighten the image. Draw a line with the Ruler tool then press Enter to apply the straightening.

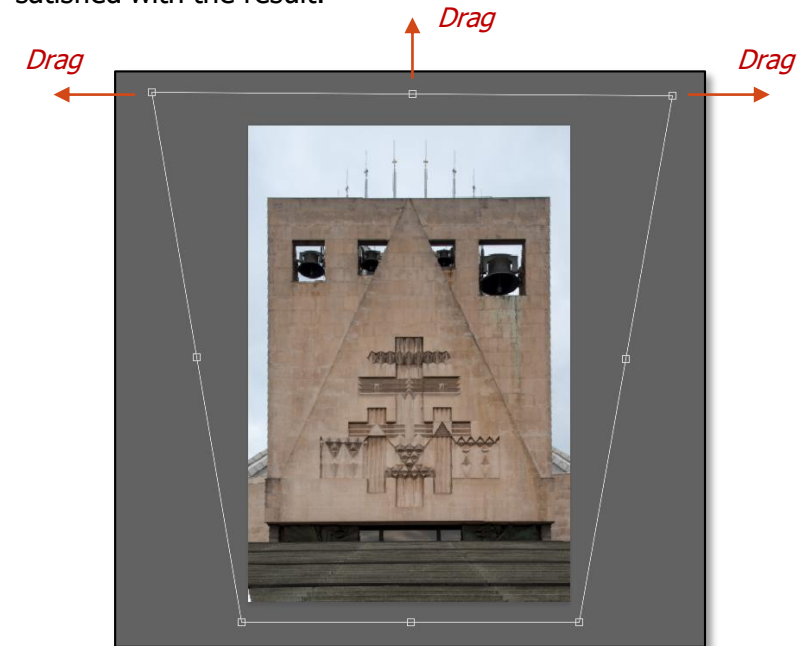


- 3b** Alternatively, the horizon can be straightened using the *Crop* tool with the added advantage that it can 'fill-in' the missing corners / edges caused by straightening – Click the 'Content Aware' option on the menu bar. Move the mouse cursor just outside of the cropped area and the cursor will change to a double-headed curve, use this to rotate the image in line with the grid. Press the Tick to apply



Press Ctrl-@ to switch the Grid on.

- 4** Finally, we will correct the converging verticals. On the Menu bar go to *Edit > Free Transform [Ctrl-T]*. To correct the issues, hold down the Ctrl key and drag out the top left corner until the edges look right or are aligned to the grid. Repeat with the top right corner. Check that the adjustments are correct as the first side will probably move after adjusting the right side. These changes may widen the contents somewhat so it could be necessary to drag the top centre handle upwards a little. Click the *Tick* symbol when satisfied with the result.



Note: there are several other ways of achieving a similar result including a bespoke Camera Lens Correction Filter.