MELBOURN & DISTRICT PHOTOGRAPHIC CLUB

SHARPENING DIGITAL IMAGES

Screenshots in the Guidance are from Photoshop Elements, Photoshop CS5 and Adobe Lightroom. Approaches in other software programs will be similar.

General Advice

When taking photos as .jpgs, the images are sharpened 'in-camera' and generally no further sharpening will be necessary. With RAW files however, sharpening will ALWAYS be required as RAW files come out of the camera completely unsharpened. The general advice is also to sharpen an image once you have sized it to the desired size.

For Photoshop and Elements, 2 principal methods of sharpening are described below. For Lightroom, only 1 method is available. In the Authors opinion, the High Pass method in Elements and Photoshop produces the best results.

For RAW files images will not only be less acceptable with no or under-sharpening but will also be less than acceptable if over-sharpened. Screenshots of part of an image:

No sharpening   Good sharpening   Over-sharpening

Halos

Note - with over-sharpening, halos can appear around objects

Photoshop and Elements

2 methods for sharpening files are provided, 1) Using the High Pass Filter and 2) Using the Unsharp Mask. For both Photoshop and Elements, the processes are identical. Screenshots and directions for Elements are given below and are identical in Photoshop (unless specified).
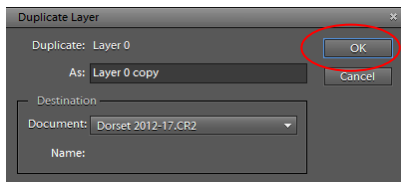
1) High Pass Filter
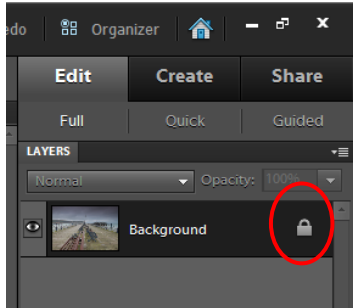
The first thing to do to an Image is to Unlock the Background layer. When an image is opened a small padlock is seen on the Layer.
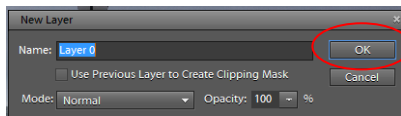

'Double-Click' the Background layer (in the Layers Palette) and this dialogue box will open

Press OK to Unlock the Background (you can name the layer if you wish or just use the suggested Name) - the padlock will disappear

Now, the background layer needs to be duplicated. Go to Layer>Duplicate Layer and a New Layer dialogue box will open asking you to name the layer (or leave it as suggested), Press OK
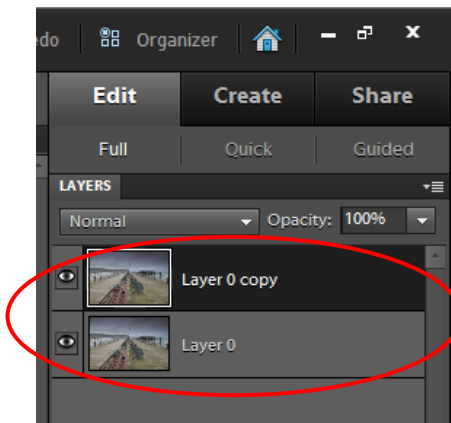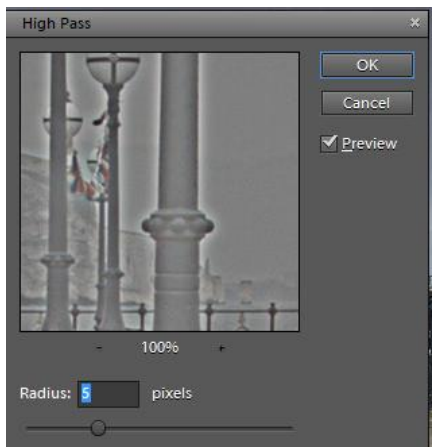

You will now have 2 layers in the Layer Palette which are identical
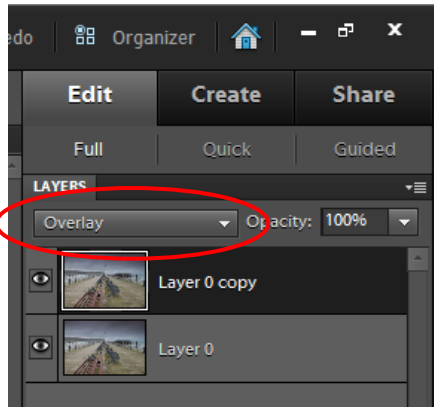
The next thing to do is to Overlay the 2 layers.

Change the Blending Mode from "Normal" to "Overlay"

The final step is to use the High Pass Filter. Got to Filter>Other>High Pass to open this dialogue box

This is where the amount of sharpening you apply will be set.

A rule of thumb is to use about 3 pixels for Projected Images and 6-7 pixels for Prints

In the zoomed view of your image which is opened (which is actually a view of the edges in the background copy image), look for halos around objects and if there are significant halos, reduce the amount of sharpening
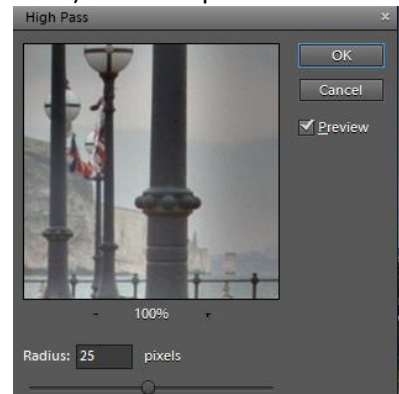
1 pixel (no halos apparent) - under-sharpened
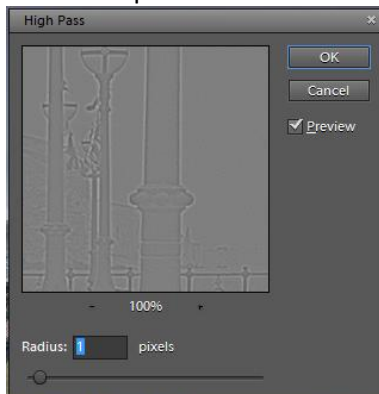
5 pixels (some evidence of halos but probably OK)
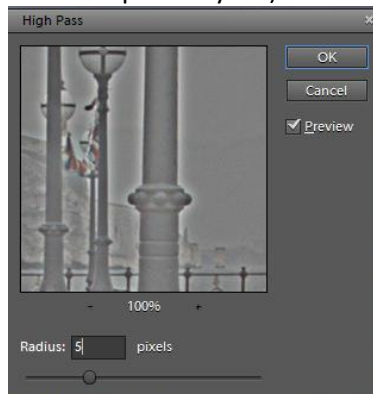
25 pixels (significant evidence of halos)-over sharpened

When you have set the desired amount of sharpening using the Radius Slider, press OK and you are finished
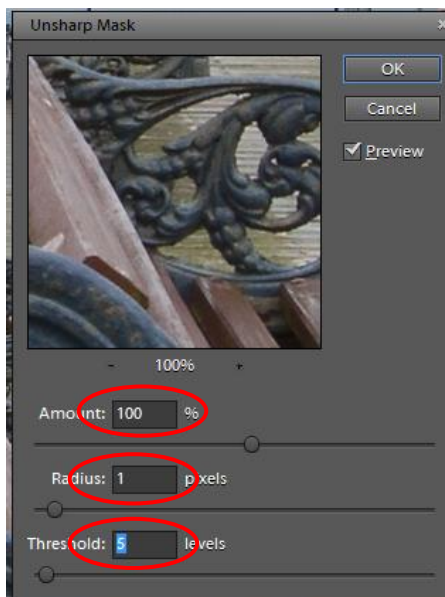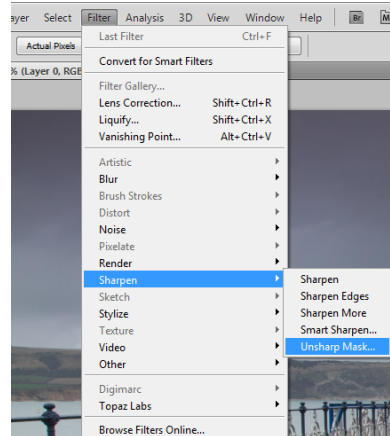
2) Unsharp Mask

There is a simple process using Unsharp Mask which can be used to sharpen images in Elements and Photoshop. This method is not as good as the High Pass method in the Authors opinion.
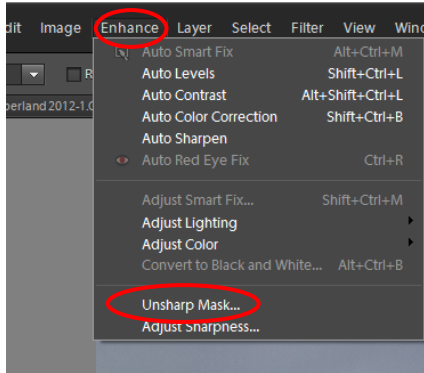
Go to Enhance> Unsharp Mask

In Photoshop, got to Filter>Sharpen>Unsharp Mask:

With this dialogue box now open, adjust the Radius and Amount sliders (generally it's not necessary to adjust the Threshold Slider) to apply the desired amount of sharpening

A starting point might be:
    Amount = 100%
    Radius = 1 pixel
    Threshold = 5 levels

By holding down the left mouse button, the zoomed image view can be dragged to view a part of the image where the amount of sharpening will be most evident (i.e. move the view to a portion of the image to where there's quite a lot of detail)

Watch for not only Halos but also Noise being introduced and back off sliders until the image is as sharp as possible without Halo and Noise artefacts being prevalent

You may choose to Flatten your image once finished (Flattened Images take up less space on your hard drive but you can't then go back in to the image to make adjustments on the adjustment layers you have created)

Lightroom
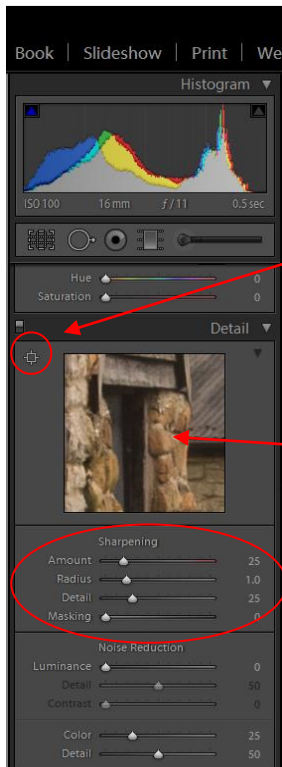
Sharpening in Lightroom is adjusted in the Develop Module in the Detail Panel. When an image opens, default settings for sharpening are applied

By clicking here and then hovering over your image, a portion of your image can be selected which is likely to show whether you have optimal sharpening. Often its handy to select an area with some detail set against sky and then it's possible to see how not only detail increases but also how Noise increases
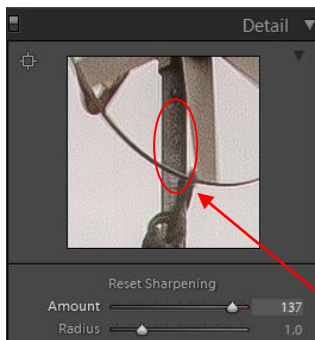
Zoom Window

There are 4 sliders to use and the following are the Default Settings:

Amount = 25
Radius = 1.0
Detail = 25
Masking = 0

Normally the Radius and Detail sliders are not touched

Slider at 137 for Amount, too much Noise:

Holding down the Alt key (on PC) and CMD (on Mac) will show a high contrast view of your image in the Zoom Window as sliders are adjusted. Adjust the Sharpness slider (generally to a higher number until noise is becoming noticeable)
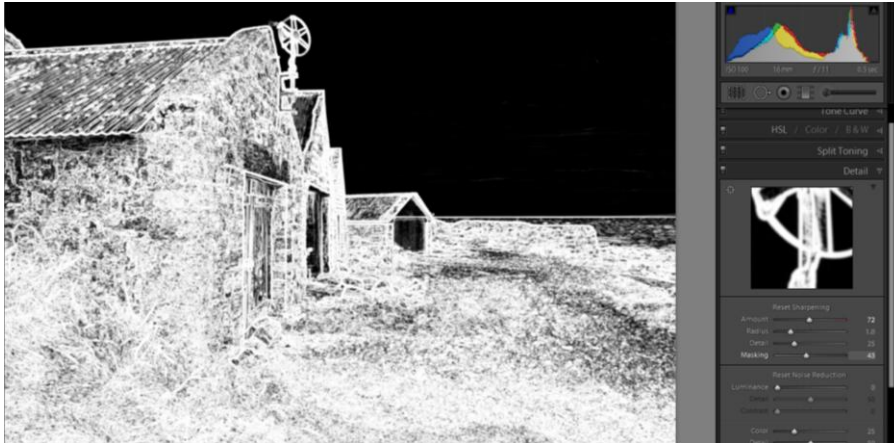
Noise

Slider backed off to 72, noise not evident so image optimally sharpened
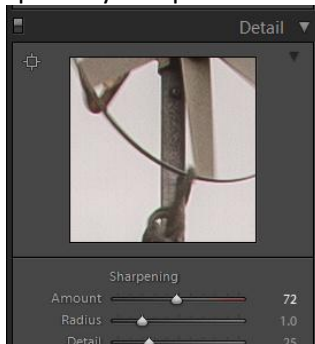
Now, the Masking Slider can be adjusted to apply sharpening to the detail in the image but not to areas like the sky (where you don't want to introduce Noise).

- ➢ When Mask = 0, entire image is sharpened
- ➢ When Mask = 100, none of the image is sharpened

Holding down the Alt key (on PC) and CMD (on Mac) as you move the Masking Slider will show a high contrast view of the image. Adjust the Masking Slider upwards from 0 to a point where no noise appears in the sky. For this image a Masking Value of 43 was optimum.

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