Images

In a website, especially a content-heavy one, images are crucial to convey information and provide an engaging experience for users. However, large images can cause slow page load times, which is not only frustrating for users but can also affect the site's search engine ranking and Google's Page Speed score.

Juicebox addresses these issue in 3 ways:

1. Offload images to a CDN
2. Save images in the correct format and optimised
3. Use the Timber |resize function

Offload Images to CDN

The Juicebox WordPress theme optimizes the site's performance by offloading WordPress media library assets to an AWS S3 bucket using the WP Offload Media plugin. These assets are served quickly through a CloudFront (CDN).

While you can store theme images in the `images/` folder within the theme root directory, it's better for site performance to upload these images to the media library since they will then be available through the CDN.

Image Format and Optimisation

It's important to consider both the image format and its file size. In general, there are four image file formats that are commonly used on the web: PNG, JPEG, WebP, and SVG.

- **PNG (Portable Network Graphics)** is a lossless image format that supports transparency, making it a good choice for images with transparent backgrounds or for graphics with sharp lines and text. However, PNG files can be quite large, so it's important to use them judiciously and optimize them as much as possible.
- **JPEG (Joint Photographic Experts Group)** is a lossy image format that is well-suited for photographs and other images with lots of colours and shading. JPEG files are generally smaller than PNG files, but the compression used to create JPEGs can result in a loss of quality. It's important to find the right balance between file size and image quality when using JPEGs on the web.
- **WebP** is a relatively new image format that was developed by Google. It offers both lossy and lossless compression and can result in significantly smaller file sizes than PNG or JPEG. However, not all web browsers support WebP, so it's important to provide fallback images in other formats for users who are unable to view WebP images.
- **SVG** is a vector format, unlike bitmap image formats like PNG and JPG. SVG images are resolution-independent and they can be scaled up or down without any loss of quality. SVG images can be optimised for web use, just like bitmap images. Optimised SVG images can be smaller in file size than equivalent bitmap images.

In addition to choosing the right image format, it's also important to optimize images for the web to ensure that they load quickly and don't slow down the site. This can involve using tools to compress and optimize images, such as Adobe Photoshop's "Save for Web" feature or online tools like TinyPNG, SVGOMG or ImageOptim.

Timber |resize Function

The Juicebox WordPress theme uses the Timber plugin, which includes functionality to resize images in the Twig template with the `|resize` filter.

When using the `|resize` filter, you can specify the desired dimensions for the image, and the plugin will scale the image to fit those dimensions. In the example provided below, the filter is used to resize the image to 1200 pixels wide and 1200 pixels tall, and then crop it to fit. The resulting image will be smaller in file size and load faster, without sacrificing quality or proportions.

```
<img src="{{ item.src|resize(1200, 1200) }}" />
```

It's important to note that resizing images on the fly can increase server load and slow down page rendering, so Timber stores a copy of the image in the `uploads` folder. It's best to use this technique selectively and on images that are actually too large for their intended display size. It is recommended that the image is optimised and compressed first, and use the `|resize` function to refine the output.