CDR's New Scanning Capabilities

CDR Group has enhanced its data capture service with the purchase of two new A0 wide format scanners. Over the last decade scanning technology has matured and today's scanners offer fast, accurate and economic means to reproduce maps and drawings for use as backdrops in GIS systems or for archive purposes. Gone have the days of waiting for the scanners to warm up, adjusting and calibrating the cameras, plans getting trapped in the rollers, the need for expensive software etc.

After extensive benchmark testing, CDR Group decided to invest in a British Colortrac SmartLF GX42 CCD machine and a Japanese Graphtec CS510_11EN CIS model. Both of these models are capable of scanning an A0 drawing in 8 bit colour at 300dpi in less than 1 minute to an accuracy of +-0.1%.

There is an ongoing debate as to which technology is best CCD or CIS. The CCD (charge couple device) uses an optical reduction method where the document is illuminated by a fluorescent light source, which is reflected by the document surface and then further reflected by a mirror and directed through a lens and received by the CCD. CCD has been the traditional imaging system used in large format scanning. They have the disadvantages of the fluorescent light needs to stabilise and these lights eventually require replacing. The advantages are that they have the capacity to capture a wider colour gamut and hence achieve a smoother graduation of tone and colour and are well suited to scanning photographs.

With CIS (Contact Image Sensor) technology the light from RGB colour LEDs is used as a light source, which is reflected by the document and is then received by the CIS sensor. The LEDs, lens and sensor are integrated into a single module that is close contact with the document. The advantages are that they have less moving parts are more robust and have a very short warm-up time. The disadvantage is that the document has to be in very close contact with the sensors, which may cause problems with laminated or heavily wrinkled drawings and although they produce sharper scans, the LED RGB illumination limits the colour reproduction. This makes CIS technology ideal for CAD and GIS users where capturing a wide range of colours and tones is less likely to be important.

So by having both types of technology in-house CDR Group are well positioned to scan most types of plans, drawings, posters etc. to the highest standard. Nevertheless, CDR Group has maintained its existing high resolution A0 glass backed Kontron digitising tables for those projects that are just not suited to scanning.

Scanning plans is not just like photocopying - there are many issues to consider. Firstly there is the condition of the plan: is it ripped, stapled, creased, have attachments, covered in sellotape or glue. Much of this can be overcome by placing the original in a suitable plastic wallet, otherwise a bit of manual restoration will usually improve the situation.
If the scanning is for archive purposes only, then little post processing is required, but for more complex projects then issues such as despeckle, cropping, deskewing, ortho-rectification, geo-referencing, rubber sheeting, colour balance need to be addressed to produce the final image.

With scanning projects file sizes are critical. Scanning at an unnecessarily high dpi (dots per inch), or high colour depth to a lossless format may result in some extremely large files which not only consume a large amount of memory but often cause transfer and storage issues. In most cases a 300dpi at 8 bit colour stored to a Jpeg format will suffice.

So have you considered freeing up some room, making your data available via intranet or internet, or just archiving all those plans, drawings, photos, land gazetteers, TPO's, Planning Applications, old drawing books, plan chests, tanks etc. - just give us a call to discuss.