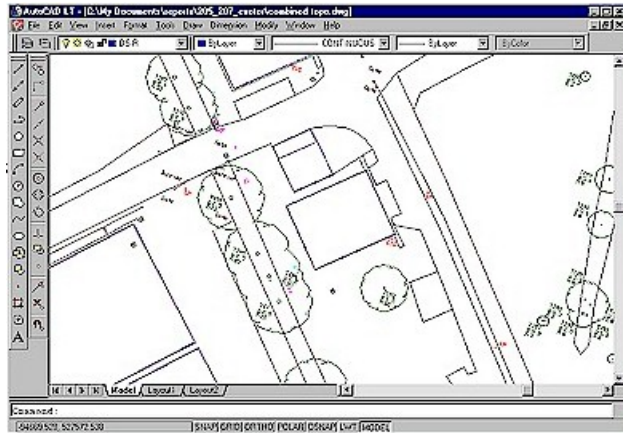


Computer Aided Design (CAD)

By Chris Skellern

Computer Aided Design or CAD is the term used to describe a software program which enables accurate drawings to be constructed and manipulated on a computer. Such a package is essentially just a glorified 'paint/drawing' program with numerous controls and features to support high precision detailed design work to any level of accuracy you require.



In the age of the internet digital plans can be stored to file and then easily transferred (emailed) to clients, architects, within seconds.

As **Arboriculturists** the use of CAD is dependent upon your particular role within the industry. If you are a consultant and need to modify site plans with tree related information or create special drawings such as protective fencing specifications, then a CAD program may be a priority.

Using a CAD program does require the understanding of some basic principles but then like any software program (such as a word processor), once this is mastered it is quite straightforward to use. There are lots of features to a CAD program and you are unlikely to ever use all of them. I have been using CAD for a number of years and still don't fully understand the use of many of its features such as 3D modeling (nor do I ever want to)!. And this is an important point for any contemplating 'CADer' starting out in it use; it may look very complicated with its numerous toolbars, etc. but for your needs (basic site plan modification) you will only ever need to use a few of them. The rest you can explore at a later time, if and when, you have the time to do so!

A number of CAD systems are available but AutoCAD from AutoDesk is considered to be pretty much the industry standard.

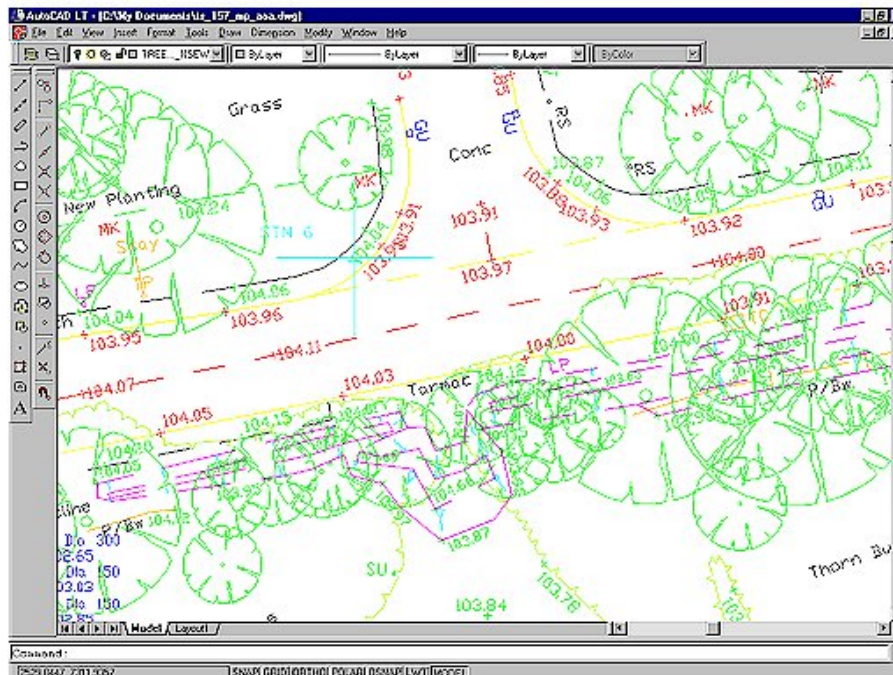
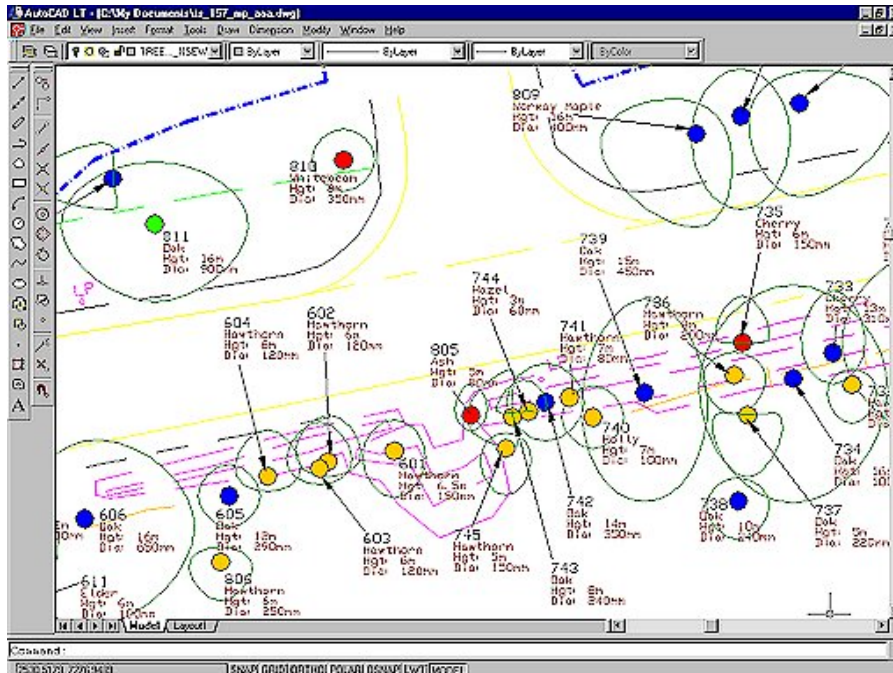
- **Site Plan Modification**

If you are a tree surveyor and have carried out a site survey and produced a schedule for your report you need to show where each tree is located. You could just leave your client to wander around the site reading the tree tags until they find a particular tree! Or preferably, identify the trees on a site plan using the same tree number fixed to the tree and contained within the schedule. Other items can be included such as canopy extents, category colour code, tree name, protective distances.

The following screen shots shows such a site plan modification. The lower image is a typical layout received from the land surveyors. The trees are plotted with a single canopy spread dimension to give a simple circle (and shown using a special canopy 'fringe' block). The plan contains lots of information (such as spot heights, services,

street furniture, descriptive text, etc.) which although important, may be unnecessary for tree location purposes and can be confusing to view.

The top image shows the unnecessary layers switched off (these items still exist and can be switched back on for viewing if required). The original tree canopies are also switched off and a new canopy edge based on north, south, east & west measurements plotted in its place (which gives a much more accurate representation of the canopy shape). The BS5837 (UK standard) category code is shown as a coloured disk. Additionally the calculated protective distance zones are stored on a layer which can be switched on if required.



Plotting these items with AutoCAD is straightforward. To insert a tag number, you would simply select the TEXT drawing tool, click the mouse where you wish it to go, and enter the text. You may be asked to define its size, rotation, font style which you can either ignore by right mouse clicking (if already defined) or set. All other items are just as straightforward. A log is recorded as you work in a lower window allowing for a mixture of mouse and keyboard input.

```
Command:  
Command: _dtext  
Current text style: "Monotxt" Text height: 0.3600  
Specify start point of text or [Justify/Style]:  
Specify height <0.3600>:  
Specify rotation angle of text <0d0'0">:  
Enter text: 604
```

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