

CAD: FLEXIBLE FRIEND

As a tool for improving efficiency CAD is invaluable. **Peter Thomas** summarises the benefits it can bring in refining your workflow

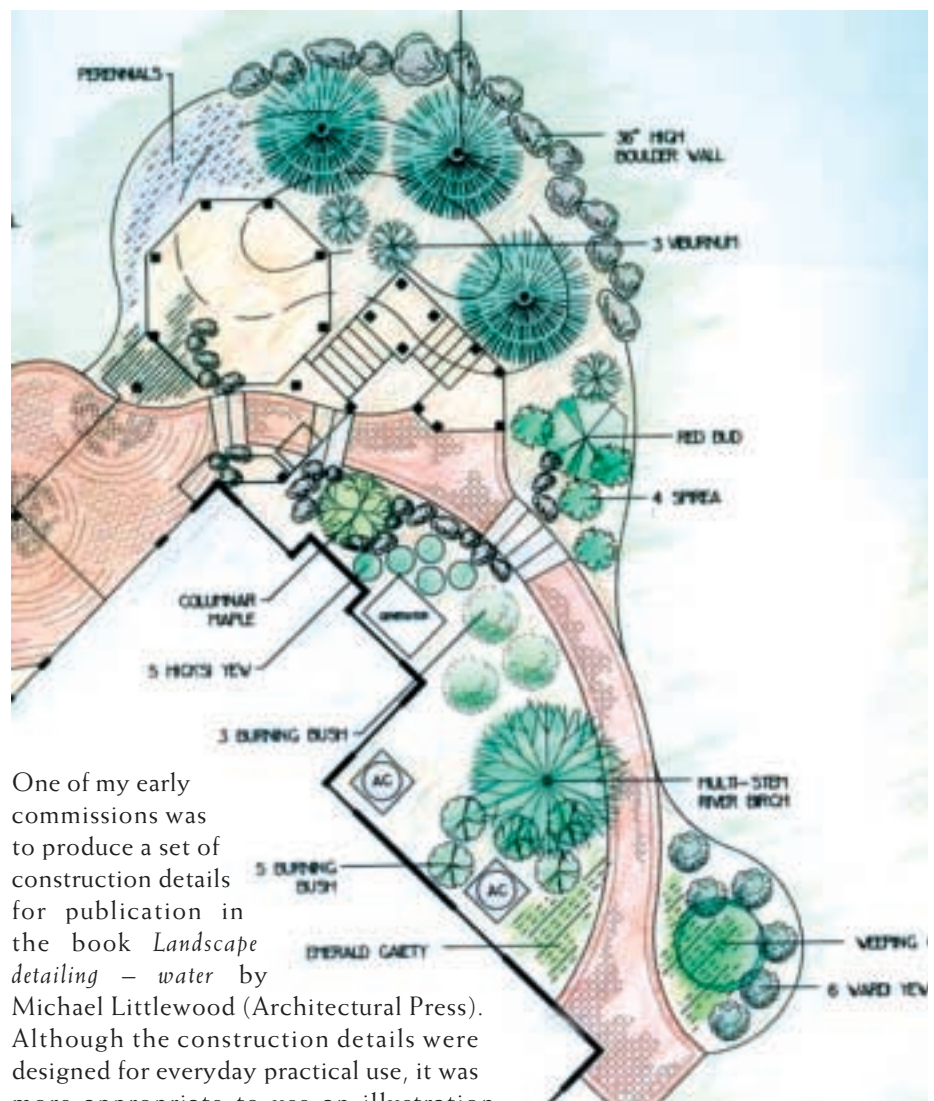
Computer-aided design (CAD) is easily integrated with other resources to produce a time-efficient work environment. Integrating the various office software not only reduces the time spent on each project, but increases your freedom of choice when the (inevitable) time comes to upgrade your CAD software.

This article explores techniques for organising your work with CAD for the production of contract drawings and tendering information. The World Wide Web, for example, has become a powerful tool for sourcing technical information, including drawings, and we can use it as an external library which is constantly replenishing and updating itself. Software with which we are already familiar, such as spreadsheets and word processors, can be used in conjunction with CAD software for a more efficient workflow and with less need to set aside time for learning how to get to grips with yet another program.

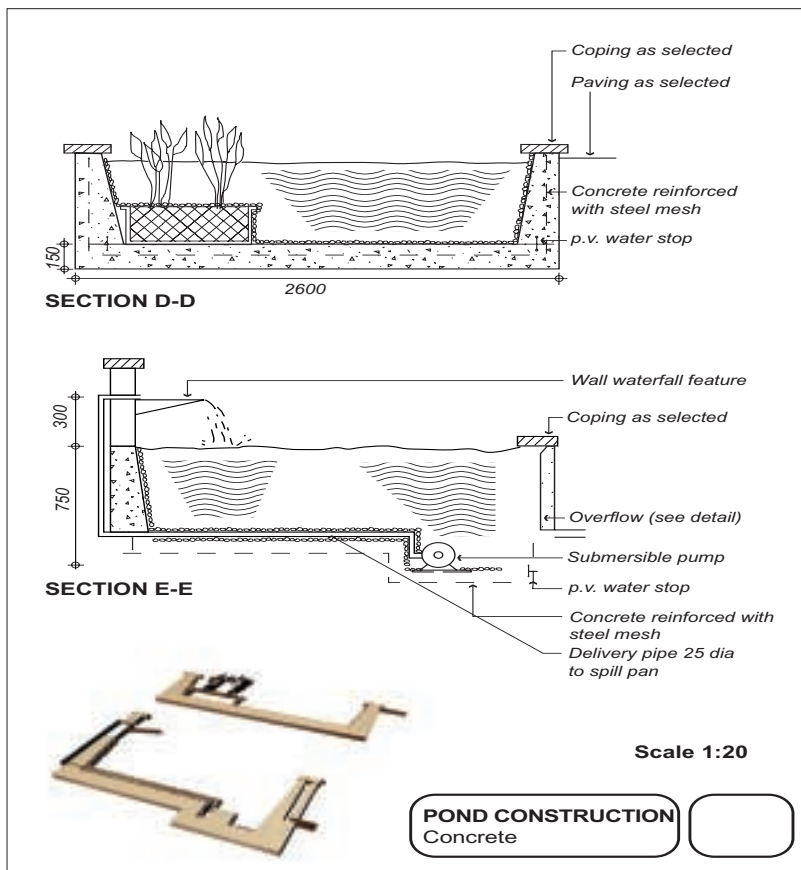
Construction details

Sharing and developing construction details is a key to continued professional development. Some component suppliers like Haddonstone offer CAD files of their materials for direct download (or on CD at a minimal cost) in order to encourage the designer to specify their products. Software developers may also include construction details as a way of adding value to their product. I recall as a student trawling through the files which came with Landcadd. In the end it was quicker to draw from scratch rather than laboriously open each file. The file naming system gave no clue as to its content.

Nowadays, it is a lot faster to search through the internet and download and adapt files directly. I began a quick search starting from Landcadd and soon arrived at a free resource at CAD Details. It is worth keeping in mind that specification information available in another country may not be considered best practice in this country.



One of my early commissions was to produce a set of construction details for publication in the book *Landscape detailing – water* by Michael Littlewood (Architectural Press). Although the construction details were designed for everyday practical use, it was more appropriate to use an illustration program, in this case Illustrator 7 by Adobe, rather than a CAD program such as AutoCAD LT, because the level of presentation needed to be more naturalistic. The approach to drawing efficiently was essentially the same with templates, blocks and symbols of common drawing elements being used in order to minimise repetitive drawing of common elements.



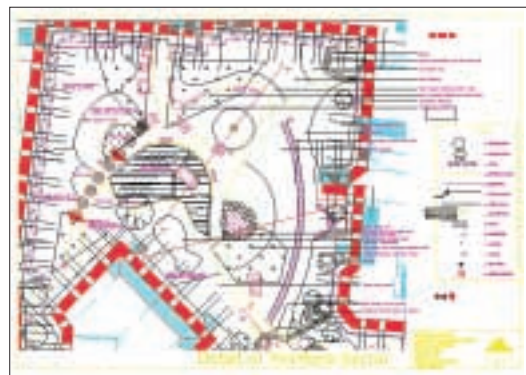
Above: Construction drawings for a raised pond. The 2D cross sections were drawn up in Adobe Illustrator, while the 3D representations of the same were produced using 3D Studio MAX. Both were rendered in Adobe Photoshop.

Bottom: Complex construction drawings which constitute a mass of lines, such as this drawing for a linear residential park, are often easier to develop using CAD.

Plant data and specifications

While roaming around a nursery plant hunting remains one of the more pleasurable tasks of the garden designer, inevitably the time comes when there is little time left for such excursions in the rush to meet deadlines, and working with your personal plant palette in the office needs to be as simple as possible.

A popular approach is to use one of the plant databases shipped with a number of software programs, including VectorWORKS and various bolt-on products for AutoCAD LT. They tend to draw the designer into a workflow pattern in which the plant choices are made at the same time as the symbol insertion. While this may suit the designer who is already accustomed to working through a drawing in this linear way, it can be quite frustrating if your procedure is to work from the general form/structure of the spaces towards the



specific species/variety choices. The great advantage of this use of the integrated plant database is that the information is collated on the fly and can be easily presented in table form on the drawing.

Another good aspect of the integrated plant database is that it can be edited. Favourite local plants may be added. Scrolling time can also be reduced by deleting, for example, all those North American-bred acers and conifers.

An alternative is to use existing knowledge of spreadsheet software like Excel to build your own personal plant palette and save it as a template. A new plant schedule is created from the template which contains only plants you know, hence a lot less scrolling. New additions are added to the template as your plant knowledge grows. The resulting plant schedule can be either pasted into the CAD file or printed separately with pre-defined header and footer information.

More and more plant nurseries are making their stock lists available over the internet. Tendercare make their plant list available as an Adobe Acrobat file for download from their website. Premier Plants in Essex are happy to email their availability list to designers as a spreadsheet in Excel file format, which is easier to integrate into your own plant palette.

Other specification data is usually typed out laboriously using a word processor and from there either printed separately or pasted into a CAD file for printing as with the plant schedule. John Heather has made his own selection of specification writing available in Word format on a CD with his book *Specification writing for garden design* (Packard Publishing).

Sharing work

Architects and property developers like to integrate the garden designer's contribution into a project's development as seamlessly as possible. When different people are contributing to a CAD file, it is important firstly to agree on a common file format in order to get the ball rolling.

When I began to work with a local landscape architect we used to exchange CAD information using the file format .dxf (short for Drawing Exchange Format) because he was using AutoCAD and I was using TurboCAD. Now that we have better CAD translation filters, we are able to import and export files much more easily.

Another aspect that was initially problematic was the file size. His drawing files tended to be over

64mb in size, which meant that he had to put it onto a CD for mailing. By deleting all of the irrelevant information like toilet and basin symbols, and placing my contribution on new layers prefixed with pt, it was possible to bring the file size down to less than 1mb — suitable for attaching to an email message. He could then easily isolate my work for editing and slot it back into the drawing using a common reference point. On large design projects where a group of people are working on different aspects, a collective workflow is achieved by each person using what AutoCAD refers to as an 'xref' (short for eXternal REFerence).

Most CAD software now allows the user to save a copy of a file in a common imaging format such as .jpg. This means that design ideas may be demonstrated rapidly with a client, either by email or by uploading to a website for later viewing. I recently had a client who spent much of the time commuting between Britain and the USA with little time available for meetings, but was nonetheless eager to see how the design was developing. By uploading conceptual development drawings to a website and sending him the address he was able to keep in contact with the project as it developed.

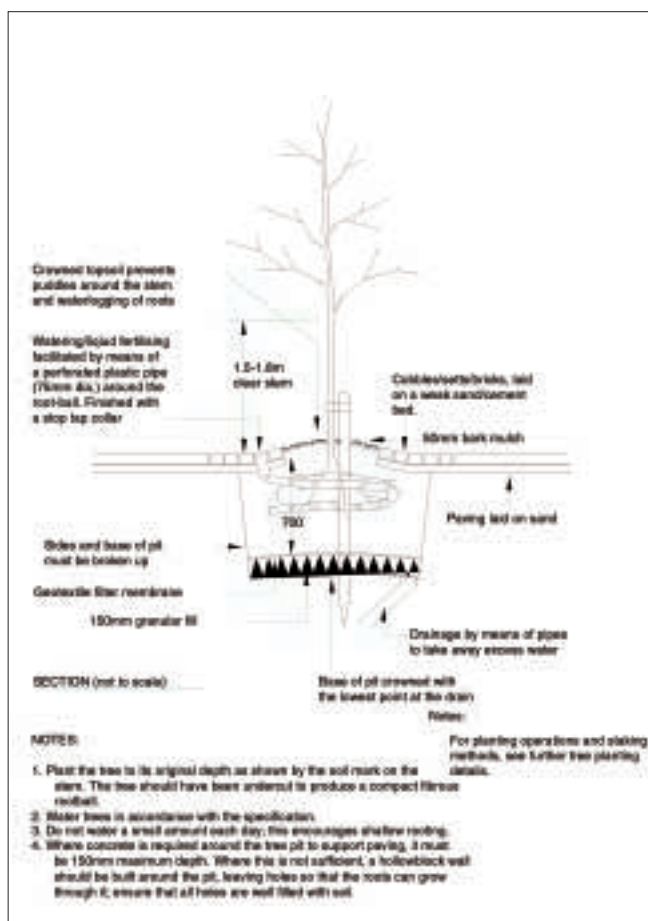
The virtual garden

Virtual environments such as those developed for games consoles are pushing up the quality of graphics available, to the point where it will soon be possible to not just view but interact with a virtual garden that is also aesthetically pleasing. While the idea may seem laughable to those lucky enough to have their own garden, even a simulated garden can offer real benefits to its owner.

One example of the educational opportunities available using a virtual reality version of a garden has been developed by Paul Fernhout and Cynthia Kurtz. They developed The Garden with Insight as an educational simulator that uses weather, soil and plant growth models to simulate a simple garden in an open-ended microworld setting. The student can plant vegetables and grow them to learn more about plants, the soil, the weather, gardening and science.

Around the world people take part in civilisation creation games on the internet, so it is not beyond the realms of possibility that some people in the near future may choose to manage gardens rather than steal cars and play poker in their virtual world.

*Peter Thomas is a garden designer and CAD tutor based in Hertfordshire.
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Further information

- k The Garden with Insight: www.kurtz-fernhout.com/bookprop.htm
- k Landcadd: www.landcadd.com
- k CAD Details: www.caddetails.com
- k Peter Thomas is currently working on a book entitled *CAD for Garden Designers* (Packard Publishing). The book is expected to be published this autumn.

Top: Tree planting specification detail, free with Landcadd software.
Above: This screenshot of the BBC website coverage for the RHS Chelsea Flower Show 2005 depicts an interactive viewer window for a show garden. In the future such interaction with simulated garden settings will become evermore sophisticated.