

# PlanTracer

Convert those scratchy old drawings directly into 3D models in ADT using PlanTracer from Consistent Software. David Chadwick looks at the latest tool that makes plans 'intelligent'.

**M**ost practices will have accumulated a large number of 2D drawings from earlier construction projects, either digitised or in hard copy. As such, their use is strictly limited to normal visual interpretation. They lack visual impact and the lines that represent walls, furniture, doors, windows etc., are just that - a series of lines.

How much better it would be if those lines could be converted into intelligent objects - objects that are accompanied by their properties - and if we could, somehow, use those lines to create solid 3D objects from the drawings. This supposes that we have some software available that can look at a drawing and say - that is a wall, that is a desk, and those are windows, and recreate each of them, accordingly in 3D!

Not conjecture, though - the software exists, and it is called PlanTracer. Consistent Software, a Russian software developer, with an office in Norway to support European sales, and specialists in raster to vector conversion, has developed the tool to enable ADT, AutoCAD and AutoCAD Lt users to convert their 2D drawings into full 3D models. It comes in two versions, one aimed at the AEC professional

working with ADT, and a tool for Facilities Management that works with AutoCAD. And it does exactly what it says on the box - it recognises individual elements within a drawing and converts them to 3D objects.

The transformation can be performed on two levels, either semi-automatically, with the user clicking on individual elements within a drawing, one at a time, or automatically, when he can sit back and watch a complete drawing - of any size - transform itself into a full 3D representation before his eyes!

But first, a small amount of instruction is required for PlanTracer. The software has to be told what it is supposed to be looking for - a search pattern has to be set up. After loading the original drawing (either a scanned raster file, vector files created from automatic raster to vector conversion, or a drawing created in AutoCAD) this can be achieved by loading a Template Library that establishes the link between the intelligent object of a model and one or more drawing patterns from the original drawing.

Once this has been set up, all that the user has to do is to click the 'Recognise' button in the PlanTracer toolbar. With the best will in the world, there are going to be parts of the drawing that PlanTracer can't

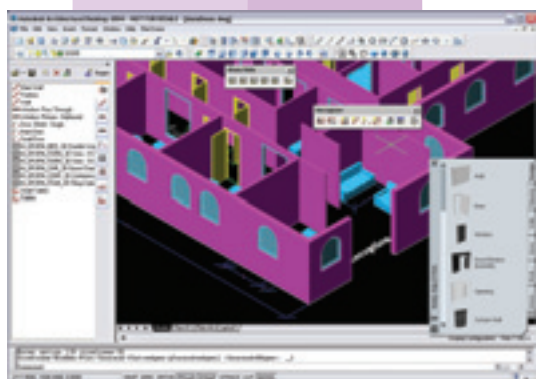
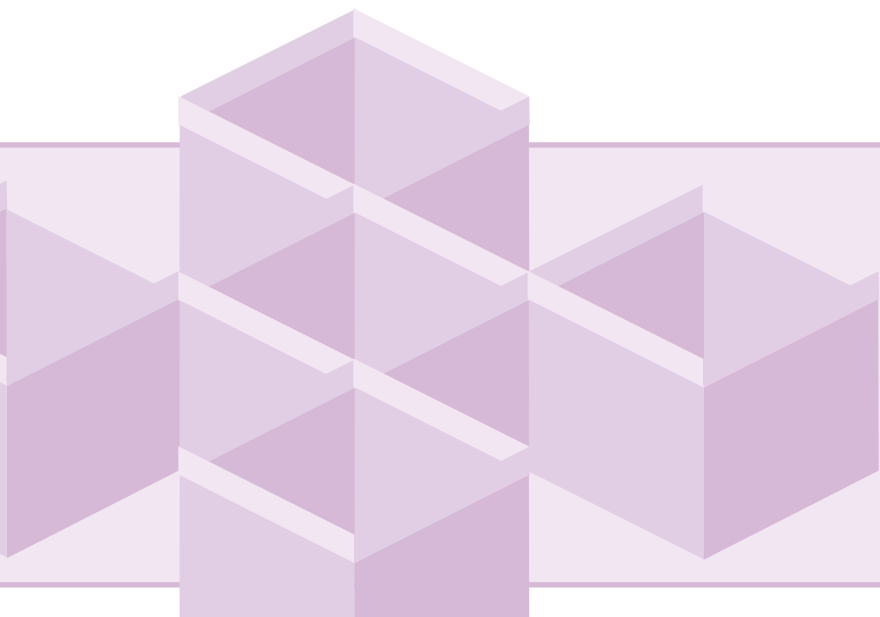
immediately recognise, so PlanTracer has an interactive mode that allows the user to address individual objects.

Different layers of a building can be transformed very easily, as PlanTracer allows users to set up Layer Control using the Options Dialogue. A small toolbar indicates the layer that the user is currently working on, and Show/Hide allows them to switch layers on or off.

The benefits of the software are considerable. After transformation, not only do you have a model you can visualise properly in 3D, but the conversion of your lines into intelligent 3D objects enables you to extract the data that accompanies the objects, to compile external reports on each project - the number, types, dimensions, sources and other information on all, or selected objects within the model - and save them in Excel files.

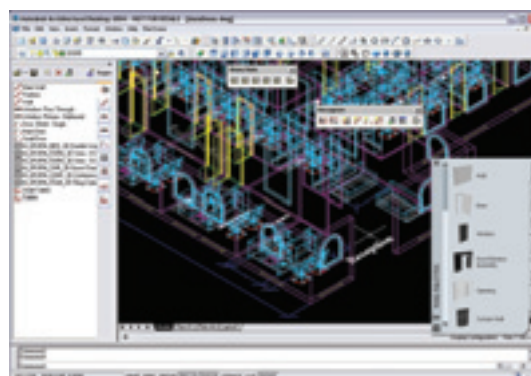
## FROM PAPER TO 3D

PlanTracer is not just a solution for digital drawings. Because of their expertise in raster to vector conversion, the software comes with tools that can 'clean up' original scanned drawings to provide a base for 3D conversion. Image Enabler uses sophisticated filters and editing tools to enhance old and dirty drawings, making it



PlanTracer can transform whole 2D drawings automatically...

..or allows users to transform individual objects



possible to convert some pretty scrappy originals. It uses tools such as Speckle Remover, Hole Remover to get rid of extraneous items (dirt, etc..) that appear after the scanning process. It also provides a Deskew Auto tool that straightens up images on the screen - with a bit of help from the user, using simple dialogue boxes that pop up from time to time.

An important function in this process is to establish the correct scale for the drawing. Using another of the dialogue boxes, users can click on one of the features on the drawing, establish its current dimension, and then input the correct scale and dimension for that element. They can then rescale the entire drawing automatically.

#### INTELLIGENT FM

PlanTracer uses its intelligent analysis of 2D drawings to speed up the collection of data from drawings for Facilities Management. This data is essential for establishing rents, maintenance plans and so on. For most people using 2D floor plans this is a time-consuming task, as the FM database has to be prepared manually. Each item or object, and the areas of rooms, have to be counted and added to the inventory. PlanTracer's capabilities are naturally suited to handling this task for you,

converting 2D drawings into models that contain intelligent objects automatically adds all of the information that FM requires.

It works well for FM on two levels. Creating customised Template Libraries within a company enables them to create reusable standards, with all drawings transformed into 3D models using the same definitions. The software also allows room and flat definitions to be established, for creating individual inventories, and which can also be edited and updated.

To extract a single flat from a single building, all that the user has to do is to click on, and name, each individual room, assigning them to each flat, which can then be extracted and viewed separately from the rest of the building. The details of each flat can then be integrated within an existing FM system, or with other applications such as Excel or Access, via a built-in communications interface.

Obtaining relevant FM information from individual flats or the whole building is accomplished with a single 'click'. Once the flat has been extracted its parameters can be modified, by adding new wall plans within the flat, inserting furniture and other objects, using Object Manager - and the changes can then be exported

back to the original floor plan.

#### CONCLUSION

PlanTracer works with ADT 3.0 or higher, or with AutoCAD and AutoCAD Lt 2000i 2002. It is extremely easy to use, with simple dialogue boxes that guide the user through the process, enabling properties and parameters to be edited where necessary, and performing the transformations rapidly once the process has been initiated. Having had difficulty sourcing suitable software to convert some old drawings I had of my barn, I was somewhat mortified to see it land in my lap after all of the hard work of converting the plans had been completed manually. Where were you when I needed you?!

I only had one set of drawings to convert. No doubt those of you with large libraries of 2D drawings will find the software useful for extracting extra value from the drawings - or might even be tempted to upgrade them to ADT status, mitigating the impact or ramifications of inflicting 3D design practices on your company. PlanTracer is supplied within the UK and Some other European countries by ResterTech.**CU**  
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[www.rastertech.co.uk](http://www.rastertech.co.uk)