The small practice architect's tale

The majority of architects practicing in Europe today are still small 1-to-3 person outfits. How do those smaller architects stay competitive and survive in today's difficult market place? We asked an architect who has been using Allplan FT from Nemetschek.

When I came to Ambleside 24 years ago direct from finishing my studies at Edinburgh University it was to work in a very traditional Architects office right in the centre of the Lake District village of Ambleside. While the Rotring pen had arrived, little else had changed in the work practices and types of projects undertaken for many years. An Architect from a previous century would have had little difficulty in fitting in. This is not a criticism - all practices of the period were similar. Indeed, as the years passed and the second home industry grew, tourist clients seemed to enjoy the rather quaint office environment.

After a while I moved on, eventually setting up my own practice 11 years ago. During this period the only changes I can remember were the replacement of the T-square with the parallel motion and latterly the great excitement caused by the arrival of a fax and telephone answering machine!

By the time I switched to CAD for drawing in the early 1990s, I noticed that client attitudes were changing. The use of computers in the office started to impress them. 'Quaintness' was no longer a virtue. However using CAD was something of a novelty in the area. Most of the buildings I work on are not square - old cottages and barns and the like - and at the time it was unusual to see CAD applied to this type of work.

After seven years of using 2D CAD, I felt it was time to change to a fully 3D object-based system. To cut a long story short, I tried out or read up on, every CAD package I could find (I counted 82 available last week!). For me, it came down to either Allplan FT by Nemetschek or Archicad by Graphisoft. I had an office demonstration of Archicad and thought it pretty to look at, but I was alarmed at its inability to model the sort of unusual buildings I worked with. Thus I went with Allplan, although it had only just been launched in the UK. Now nearly 18 months later, I have never regretted the decision - indeed Allplan has proved to be a greater success than I could ever have imagined, taking over all 2D as well as 3D design and drawing tasks. It also handles scanned-in old drawings brilliantly - a feature I find particularly useful in my type of work.

So, in a tiny rural practice; how do I apply such awesome software to the mundane tasks that are the reality of daily practice?

To begin, here is a little job that encapsulates many aspects of the practical application of 3D CAD for the small practice Architect. (see figure 1)

Recently I received an urgent request from a client for help in designing new stairs for a cottage that was being refurbished. Site survey, modelling a range Qf alternatives and producing drawings for the joiner were all done in just a few hours. We 'wandered' around the model of the building - well the animated section actually - until the client was happy at the view. And then produced some screen dumps from the animation window for his wife to better understand the scheme, and the client went off a very happy (and impressed) man.

More typically I do a lot of alterations and extensions to existing domestic properties - some relatively modem, but many properties are very old and constructed using traditional dry stone walling. An example of the application of 3D CAD to a more modern building is shown here (see figure 2) where a family wanted to convert their loft space into more accommodation, but were anxious to know in advance the impact on the existing rooms.

Please realise in looking at these images that they are not 'rendered' in the traditional presentation sense - they are merely prints made from the monitor screen during a virtual 'tour' around the property with the client - who was often sitting beside me in the office at the time. I tend not to do fully rendered presentation drawings - clients can see the benefits of the 3D model based approach as an aid to understanding and visualising the spaces - on small works you are seldom involved in choice of finishes or even lighting and some clients would not thank you for spending time illustrating it. Allplan strikes a clever balance between power and usability.

Here the clients wanted many alterations to an old house with a complex interaction of levels. We spent many

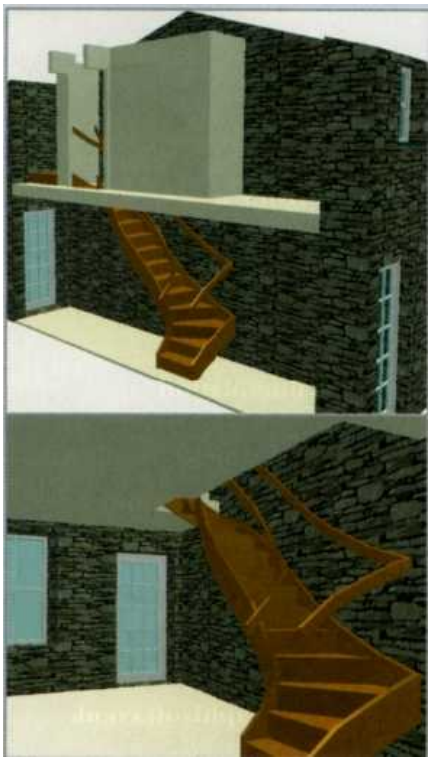

Figure 1: The design of a new stairs for a cottage refurbishment: A job that encapsulates many applications of 3D CAD for the small architect

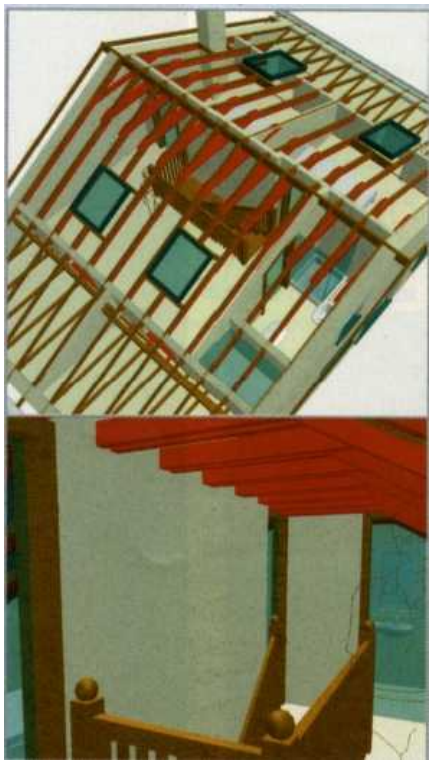

Figure 2: A more modern example of an application of 30 CAD of a conversion of a family house to transform loft space into more accommodation.

Figure 3: For this housing alteration, many custom components were used. For example the roof trusses and the drip moulds over the windows, took minutes to model, and appear automatically in the 2D plans.

Figure 4: an example of Allplan's section tools as seen in the animation window.

sessions together in the office moving doors, windows and building elements around and seeing the results in the real time animation view. Initially astonished at being able to do this - a common client reaction - the clients quickly saw the possibilities available, and were extremely grateful not to have to visualise the project from just plans and elevations (another very common client reaction!). The contractors also seem to appreciate the 3D views - particularly the isometric line drawings of complex roof structures. Also the system 'knows' the name, material, trade and size of every component in the model making quantity take-off a simple exercise. You can even specify and display room interior finishes as an integrated part of the model.

An example of alterations of an older building is also shown in figure 3. For clarity I have not applied the stone texture to the external walls. There are many custom 3D components within this building - for example the roof trusses and the drip moulds over the windows - which take minutes to model and appear in the 2D plans just as if they were drawn. The section tools are very powerful - figure 4 shows a horizontal section as viewed in the animation window.

Many Architects (myself included initially) fail to understand the difference between the modelling approach and the traditional 'draw it up and then do a presentation perspective for the client/planners' approach. In Allplan you build the model, which generates the drawings - not the other way around. Being able to look around your design freely goes down a storm with clients and makes designing in 3D much easier than it used to be, but it is a by-product of the modelling approach and not the only reason to adopt this method (although it is undoubtedly the most eye-catching and fun!)

Last weekend I went round to the Museum of the Jewellery Quarter in Birmingham. Looking at the evocative workbenches, tools and machines in the beautifully preserved workshop made me think of many Architects offices that I know. Ones where the tools and work practices seem as outdated and old as that beautifully preserved workshop. It seems surprising that many Architects have failed to keep up with the changing times and

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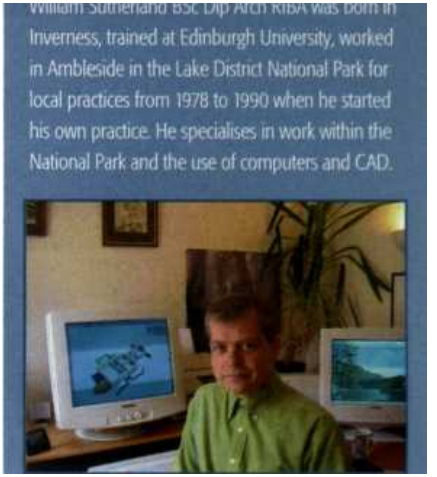

changing technology. Yet, the times are a changing. The single building model is going to become, sooner or later, the way many/most building projects are run, and Architects who do not keep up with the technology are likely to be sidelined.