

## Construction IT

Construction was one of the sectors that took up IT early on with their adoption of CAD drawing systems to replace the drawing board. IT within the industry has developed from this base. Project planning software is now universally used and the CAD systems have developed to the point where they can provide 3D walk-through models of developments before they have even 'cut first sod'.

However this early lead was soon lost. The titles of reports such as 'Rethinking Construction' from 1998 and 'Accelerating Change' from 2002, although not IT focussed, show that, for a while, the construction industry was having to be pushed into making progress rather than it leading the way.

Construction projects differ from projects in other parts of industry in that they are highly fragmented made up of tens or even hundreds of sub-contracts each dealing with a relatively small part of the whole. This means that communication between participating companies is vital. For example everyone needs to have access to the latest design drawings to ensure they don't put their pipes in front of someone else's door. To this end Internet based collaborative tools are being developed to provide a central reference base to which everyone has access. A contractor can update the elements for which they have responsibility and view information about the area they are working in and anything that might impact their work.

Collaboration can be collaboration between companies in different parts of the world. The construction industry is, like other industries, becoming international. ARUP were the designers of the Los Faros De Panama towers and this involved teams all over the world, in the UK, Spain, USA, Hong Kong and Australia as well as Panama. Importantly collaboration and communication needs to continue when construction begins on site. Sites are typically a collection of Portacabins, albeit very nice Portacabins, in muddy fields or, more often, in the space where the car park will be. In order to continue the collaboration, communication is essential. To handle communication between contractors onsite the flood wiring of the cabins with Ethernet is now a common practice. For communication further afield the internet is essential.

However this is not as simple as it may seem. Whilst broadband access can be achieved easily in existing residential or business areas it is not so easy on green field sites. Even on brown field sites there is often considerable disruption to surrounding underground services making the provision of broadband access challenging and fraught with risks. The mobile phone has largely overcome the urgency for land-line phone communications.

This new need for site connectivity has led to attention being paid to alternate ways to provide site solutions. A wired connection is still preferred but the options for 3G, satellite and combined technologies are under investigation with some construction-site specific solutions becoming available.

The availability of Internet access on site opens up further avenues for the use of IT. The delivery management software, Zone Manager, has traditionally been used on site to manage bookings and resources. With Internet access on site it is now possible to provide external access to Zone Manager giving contractors the ability to view their delivery plans, request delivery slots or even make their own bookings on-line. It also allows project managers, wherever they are based, to inspect the delivery plan and ensure that it is in line with their expectations. This is another way in which they can follow progress to ensure implementation is in line with the designs and the project plans.