

Managing mobility

Tight timescales and awkward site locations mean access to communications technology on site can be patchy. Stent is one company looking to mobile solutions to bridge the gap.

Delays in getting communications and IT services on site can cause a number of problems for construction firms. Site staff are often unable to access urgent changes to drawings and project documentation, which can lead to costly delays and, potentially, expensive mistakes.

However, many businesses, including foundation and piling contractors Stent, are now looking at ways to adapt the latest advances in mobile technology to either bridge that gap, or provide full communications access on shorter projects.

"It can be frustrating not having immediate access to communications services when we first get on site, but staff are currently finding ways to work around the problems," says Lee Deakin, the company's IT manager. "For example, we've had one or two instances of site staff using local Internet cafes in order to send urgent emails to each other. However, this isn't ideal or practical, especially if the project is on a greenfield site and outside a town or city."

To make working on site more practical for its 250 dedicated site staff, Deakin is currently planning a trial of 3G data cards in laptops with a VPN (virtual private network) link to the head office. "We've been doing a lot of work internally, upgrading our infrastructure, to get ready for these on-site trials," he says. "However, the success of the project relies on 3G coverage and available bandwidth. This is improving all the time but we rarely achieve the 384kbps advertised by the major vendors."

The trial will examine the benefits and potential issues involved in using wireless 3G cards in different locations, as well as any security issues involved with implementing a secure network connection to the head office. Deakin will also examine the benefits of

wireless routers which enable several site staff to share a single 3G connection.

On projects where it is more cost effective to wait for standard ADSL links to site, Deakin is examining how to get the most out of the available bandwidth. "At the moment we are evaluating technologies that will allow us to make better use of the bandwidth available, by applying data compression, acceleration and caching on site," Deakin explains.

"In other words, if one of our staff members wants to access a 10Mb CAD drawing from the head office server, it can be compressed, prioritised, copied across the network and

ensure sound piles. The database stores all CFA pile records and provides information for improving and managing the process.

However, Stent found that getting records from the piling rigs into the database was a problem – disks became dirty or damaged on site, most data wasn't entered into the database for a week, and up to 40% of the data never made it there at all.

Stent chose GSM data transfer and SMS text messaging to solve the problem – rig operators send pre-formatted text messages back to the database using their mobile phones. Now, 95% of the data is in the central database the next

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cached on site. If site staff access the same drawing at a later date, only the changes to the original document will need to be copied across the network. This frees up bandwidth for other documents and emails, and will minimise the time wasted waiting for the download."

This innovative approach to mobile technology has been used in other areas of the company, particularly when it needed to solve the problem of how to feed important data from piling equipment back into the central database – quickly and accurately.

The company's SIRIS database (Stent Integrated Rig Instrumentation System) compiles records on CFA (Continuous Flight Auger) piling, a 'blind' process requiring instrumentation to

morning and almost 100% make it into the database within a week. The system has now been extended to gather more extensive information using rugged handheld devices, linked to a local wireless network.

It was this project that introduced Stent to COMIT (Construction Opportunities for Mobile IT). COMIT are particularly interested in resolving issues that construction businesses like Stent have in rapid access to communications and IT services on site.

Although Stent is still in the trial phase of providing access to mobile and wireless technologies, it won't be long before site staff can access communication services the minute they step on site.