

A Whole New Ball Game

A Whole New Ball Game” is how Steve Turner describes the way his daily work program has changed at the Pacific Pines subdivision, in a matter of a few short weeks.

Steve, son of Brian Turner, is supervising the construction by South East Excavations of further additions to this big project. A new suburb of the Gold Coast, is the only way to accurately describe it.

Surveyor Passes the Torch

The torch has been passed to a new generation, said John Kennedy. In many ways this helps to describe the upheaval in roles at South East Excavations over the past twelve months.

When Brian and Bruce Turner bought the first commercial installation of Trimble’s SiteVision for their Casuarina Beach package, they acquired—in addition to the dozer guidance hardware—a GPS rover (Trimble 4700) for use by their surveyor in layouts and spot-checking.

That’s where passing the torch comes in. Oddly enough, the 4700 does look a bit like one. A two metre rod with a GPS antenna on top, it is an extraordinarily powerful instrument that is capable of storing practically the complete design of the job.

The rover is used for marking out positions and levels accurate to an inch or so, or—equally important—for recording them.

Turner’s surveyor, Andrew Cahill, recently bought his own Trimble GPS setup, and passed the original 4700 back to Steve Turner about two weeks ago.

Now Steve is performing a great number of Andrew’s functions on the site.

Typical Applications

When I arrived, Steve was trying to keep ahead of a few people, so I followed him around.

He phoned Andrew Cahill (fifty kilometres away, in his office) about a redesigned water line.

“Andrew, I need the coordinates of that new hydrant, half way up the hill.”

Andrew read them out, and Steve keyed them in to the 4700.

A pointer that looked like a compass needle on the mini-screen then guided him to the position, 105 metres away.

Steve jumped into the trench with his instrument, just ahead of where his people were laying water pipe.

“That’s where the next hydrant goes,” he instructed the foreman. Ten minutes later the hydrant was installed and the pipeline had moved ahead, up the hill.

The next task was a rather minor one of recording the position of a new silt fence.

Steve walked the length of the fence, stopped six or eight times to record spot positions with the 4700, and in a few keystrokes had set up the data as a file to be

transmitted back to Andrew Cahill, who added it to the next progress claim.

‘As-Constructed’ Data Capture

This illustrates the point that amongst the most important benefits, Steve can now do his own in-house ‘as constructed’ data capture.

For instance, he can take a shot at the end of each pipeline and instantaneously confirm that it is in the correct position and at the right level.

That might not sound too dramatic, but when times are busy a surveyor might not get to the site for a day or two. It only takes a little screw up here and there for a lot of sweat to go to waste. Using the rover, that doubt is eliminated.



Space doesn’t allow us to describe the other tasks Steve is doing each day with the 4700. There are literally dozens of them, all of which would have previously required Andrew Cahill’s attendance on site.

Such things as marking out sewerage lines and storm water manholes. Bottom line: the job is progressing rapidly without the need to wait upon the surveyor.

Modest Computer Skills

So what does that make Steve Turner? A genius who can pick up surveying in two weeks? Not at all. Quite surprisingly, Steve previously had only a few basic computer skills to do with e-mail and web browsing.



Left: using data received five minutes earlier over his mobile phone, Steve establishes the position of the next hydrant while the line is being laid. Above: close-up of Trimble GPS rover model 4700 Below: picking up location of a silt fence for inclusion in progress claim.



East Excavations' progress claims were kept literally up to the minute.

Are Surveyors a Threatened Breed?

Hardly! This is all about productivity.

Andrew Cahill is busier than ever, and is doing just as much work for South East Excavations. He's just doing different work, and working on more jobs at once, instead of honing unwanted skills as a peg whacker.

Being able to take over a good many traditional functions of surveyors and keep his machines moving is precisely the sort of outcome that Rod Peachey was looking for when he went in to GPS (see our previous articles at our web site, www.kerville.com/gps). Like the Turners, he's finding that it is paying off.

—Peter Kerville

And he knew only as much about surveying as all supervisors pick up in their day to day contact with that profession. Steve is hardly a new generation computer nerd with a keyboard sticking out of his ear—he's a self-taught supervisor accustomed to getting his hands dirty.

"Frankly, it isn't that difficult," he says. "I've surprised myself how quickly it can be picked up."

What is impressive, however, is that from a standing start only a matter of weeks ago, Steve and Andrew Cahill have nussed out a system of transferring design changes via e-mail from surveyor's office to site.

Instead of regular meetings to transfer Andrew's data on to Steve's laptop, Steve has been calling for particular files as and when he needs them.

Using his laptop and a mobile phone, he logs on to his e-mail from his 4WD, downloads the data, transfers it across into the 4700, and is using it within minutes.

Similarly, while I was with Steve, the details of the silt fence and a number of other files contributing to progress claims were transferred back the other way when he logged on, and South

GPS Machine Guidance: Want to Know the Full Story?

On our web site you can read (or download, if you wish) all the articles written on this topic by Peter Kerville over the past two years.

They are available just as they were published, with pictures.

The articles follow the history, in some detail, of the introduction of this technology in to Australia, from its very first appearance.

We present field reports on actual projects that have used GPS, and Automatic Tracking Systems (ATS). On some jobs, both techniques have been used.

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