

# WHACKING THE

# WEED

Lucy Hamilton describes how TP Knotweed is exploiting a combination of two Trimble GPS solutions to generate fast ‘no-risk’ Japanese Knotweed removal quotes that its clients need to tackle the invasive predator

Aggressive. Destructive. Relentless: Japanese Knotweed is the most invasive plant in the UK and a major problem for the construction industry. It damages concrete and tarmac; it undermines foundations; compromises property sales, and delays building projects. It’s also costing the country millions to remove (clearing it from just 10 acres of park for the London Olympics in 2012 cost more than £70 million). It means that commercial enterprises want a fast, high quality and, above all, guaranteed service that can effect its removal.

Based in Banbury, Oxfordshire, TP Knotweed Solutions (<https://tpknotweed.com>) is the brainchild of founder and managing director, Tom Payne, who started the company in 2011 with his student loan. From day one, his focus was on providing

clients with clear facts, simple solutions, and a fast and efficient service. He quickly realised that a preparedness to invest in greater efficiency through technology – whether that be CRM, van trackers or new apps, etc., – would aid his company’s expansion.

When competition in the industry stepped-up, pushing prices down, he was quick to look at how technology could streamline one of the most challenging aspects of his business, namely the ability to provide clients with fast, accurate, and above all ‘no-risk’ knotweed removal quotes. Tom decided that the best way to tackle the problem would be through the fast turnaround of cm-accurate surveys of infected sites.

### Eliminating risk through accuracy

The removal of Japanese knotweed (*Fallopia japonica*) can be a costly process with rhizomes growing to a depth of 2-3m and a width of up to 7m. Additionally, the plant can regenerate from the smallest pieces of stem or rhizome, so complete removal is imperative. Traditionally, the company’s removal estimates were based on site surveys conducted by an in-house survey team equipped with laser



TP Knotweed surveyors with their new Trimble R10 GNSS

measurers, road wheels etc. The accuracy of these measurements was vital because an estimate that was even marginally incorrect could either cost TP Knotweed thousands of pounds or land clients with unexpected additional costs.

Each site survey, therefore, required a highly accurate recording of boundaries, infected areas, stockpiles, trees, elevations, etc. Although the company’s existing manual methods produced fairly accurate measurements, these could only be achieved through time-consuming checks and by combining different measurement methods. This inevitably carried an element of risk, with the added drawback that extremely large sites simply weren’t feasible.

For this reason, Payne worked closely with the company’s Contracts Manager, Tom Goodman (also a trained surveyor) to find a more efficient method of conducting fast, high-precision surveys on sites large and small, and to have full confidence in the quality of the data collected.

### Matching sites with systems

Following extensive research on available survey solutions and advice from Trimble distributor, KOREC, Goodman felt that an excellent starting point would be Trimble’s pole mounted R10 GNSS with the new TSC7 controller running Access on-board field software.

While the R10 offered proven technology, cm-level accuracy and reliability in the field, the functionality of the TSC7 brought a number of additional benefits that would be key to speeding-up site/office communications and generally improving



Growing at speeds of 10cm a day, Japanese Knotweed is a highly invasive weed that can lead to costly damage to property and infrastructure.

Photo: Ceri Breeze / Shutterstock

data flow with the Banbury office.

The Windows 10 Operating System allowed for easy access to vital office tools such as the company CRM, databases, Dropbox, etc., while the TSC7's seven-inch screen was of sufficient size for the surveyors to produce reports on site as soon as the survey work was completed. The resulting material could then be relayed wirelessly from the field for the fast production of a CAD drawing and quote - all part of the full client remediation package.

Goodman felt that the pole-mounted R10 would be perfect for larger projects that often required two to three days on site and the collection of a wide range of features including invasive plant infestations, site development boundaries, vegetation and ground investigation points along with any stockpiles that would have to be removed. Additionally, by using the R10 alongside the TSC7, TP Knotweed's surveyors could accurately calculate stockpile volumes by creating multiple surface layers and importing them into their CAD systems.

For smaller sites, he considered Trimble's low-cost Catalyst 'GPS-as-a-service' system to be a better option. Catalyst is GPS software that runs on an Android smartphone or tablet. A small, lightweight Trimble antenna is then plugged directly into the phone or tablet and users can select from a range of monthly subscriptions based on accuracy. In this case, cm accuracy was selected for all the knotweed applications and Catalyst was used in conjunction with Samsung smartphones running KOREC's intuitive K-Mobile data capture software. The Catalyst system is quick to set up and easy to use making it ideal for fast turnarounds on smaller sites.

The company therefore purchased two R10 / TSC7 systems and three Catalyst systems from KOREC.

Goodman reports that all the systems are in everyday use and that the quality and quantity of information they are collecting is proving vital for another of the company's aims: to build a UK-wide shareable database of knotweed contamination.

All the TP Knotweed surveys are registered to Ordnance Survey National Grid using the OSTN15 transformation, while standardised codes are used to ensure uniformity across the company. However, the main benefit of the new systems lies in the elimination of risk for both the company and its clients.

**Preparing for the future**

For TP Knotweed, a perceived advantage for the future is a corporate structure that sees a qualified surveyor in the role of Contracts Manager. Goodman and Payne



Above: Using Trimble Catalyst and a UAV on a steep embankment infected with knotweed in Swansea

Left: Airside at Luton Airport using Trimble Catalyst to put together a proposal for the excavation of Japanese knotweed from an active runway

are already working closely with the rest of the workforce to look at how clients can extract further value from the collected data. The company has already purchased a drone for aerial mapping, and is considering further expansion into remediation work and investing in a remediation fleet that features bigger excavators equipped with GPS machine control/guidance systems.

Contracts Manager Goodman concludes: "Accuracy is paramount for our applications. If a measurement is slightly out and, consequently, a site plan and quotation is incorrect, it can cost us tens of thousands of pounds. Having a choice of the R10 or Catalyst systems means that we can obtain cm-accurate measurements on every site. This also puts our work on a par with our clients. If they have an existing topo survey, we can overlay our surveys onto theirs as additional proof of accuracy. It gives a client added peace of mind that our quote will be as accurate as possible. As a company we are always looking forward...new ideas... what's next...what's better? Our investment in the KOREC-supplied Trimble systems is an important extension of this approach."



Pole-mounted Trimble Catalyst (left) and TSC7 (right)

*Many thanks to Tom Goodman for supplying the information and photographs for this case study.*

*Lucy Hamilton is with Huntingdon-based KOREC Group (<https://www.korecgroup.com>), the largest distributor for Trimble positioning solutions and surveying equipment in the UK and Ireland*



## AERIAL SURVEY SERVICES

[www.aerialsurvey.com](http://www.aerialsurvey.com)

- ✓ For all your pre-owned aerial survey equipment requirements worldwide.
- ✓ For selection of equipment and services visit [www.aerialsurvey.com](http://www.aerialsurvey.com)
- ✓ Aeroplanes, cameras, lidar and all associated equipment/ services.
- ✓ Also aerial survey consultancy with network of hire/charter survey modified aeroplanes worldwide.
- ✓ Wherever your project? We can facilitate anything anywhere!

**Trackair Services Ltd**  
(aerialsurvey@aerialsurvey.com)

## TRAINING/GIS COURSES

DISTANCE LEARNING GIS PROGRAMMES

# UNIGIS UK

### MSc/PgDip/PgCert courses in GIS by distance learning

Jointly delivered by Manchester Metropolitan University and the University of Salford

#### New Masters in

- GIS
- Applied GIS
- GI Technologies

Designed to meet the needs of GIS professionals and those new to the industry.

See our website for further details:

[www.unigis.org](http://www.unigis.org)

+44 (0)161 247 1581

[unigis@mmu.ac.uk](mailto:unigis@mmu.ac.uk)

Educating tomorrow's GIS professionals



[as-marketing.com](http://as-marketing.com)

**ADVERTISE HERE FROM ONLY £30 PER MONTH!**

Contact:  
MickiKnight@  
[geoconnexion.com](http://geoconnexion.com)

## ADVERTISER INDEX

COMPANY		PAGE
1Spatial	<a href="http://1Spatial.com">1Spatial.com</a>	19
Cadcorp	<a href="http://cadcorp.com">cadcorp.com</a>	47
Aeromao	<a href="http://aeromao.com">aeromao.com</a>	19
Eos Positioning	<a href="http://eos-gnss.com">eos-gnss.com</a>	5, 19
GeoConnexion	<a href="http://geoconnexion.com">geoconnexion.com</a>	38, 131
Get Kids into Survey	<a href="http://getkidsintosurvey.com">getkidsintosurvey.com</a>	19
Gexcel	<a href="http://gexcel.it">gexcel.it</a>	20
Global Surface Intelligence	<a href="http://surfaceintelligence.com">surfaceintelligence.com</a>	20
Handheld Group AB	<a href="http://handheldgroup/nautiz-x6">handheldgroup/nautiz-x6</a>	20, 31
Hexagon	<a href="mailto:reporter@leica-geosystems.com">reporter@leica-geosystems.com</a>	59 to 130
Intergeo 2019	<a href="http://intergeo.de">intergeo.de</a>	39
KOREC Group	<a href="http://korecgroup.com">korecgroup.com</a>	22, 43
Laser Technology	<a href="http://lasergis.tech">lasergis.tech</a>	20
Opti-cal	<a href="http://surveyequipment.com">surveyequipment.com</a>	21
Phase One	<a href="http://industrial.phaseone.com">industrial.phaseone.com</a>	22, 27
Riegl	<a href="http://riegl.com">riegl.com</a>	7, 22, 55
Silicon Sensing	<a href="http://siliconsensing.com/motionevolution">siliconsensing.com/motionevolution</a>	9
Tallysman GNSS	<a href="http://tallysman.com">tallysman.com</a>	11
Topcon	<a href="http://topconpositioning.com">topconpositioning.com</a>	22
Trimble	<a href="http://trimble.com">trimble.com</a>	132
Ulster University	<a href="http://ulster.ac.uk/ges">ulster.ac.uk/ges</a>	51
Vecxel Imaging	<a href="http://vexcel-imaging.com">vexcel-imaging.com</a>	2

To advertise call: Micki: +44 (0)7801 907666  
or Mai: +44 (0)1223 279 151

# Introducing 'REPORTER'



**HEXAGON**  
GEOSYSTEMS

### We are delighted to include the latest issue of 'Reporter' in the pages that follow.

Published quarterly by Hexagon's Geosystems division, the magazine's correspondents around the world gather stories on how the company's customers and distributors use its hardware, software and services to overcome daily challenges and shape the future of our world. This latest issue, with its focus on the power of visualisation and reality capture to make projects more efficient and productive, is no exception

For some, such as Mary Lackner, Geospatial Technical Lead at Pitkin County in Colorado, USA, acquiring aerial imagery of the entire county through the HxGN Content Program proved an eye-opener, not only in financial savings, but also in providing a new way in which to

conduct business.

For others, such as VConstructions, based in Melbourne, Australia, the Leica iCON robotic total station allowed it to dispense with stringlines, tape measures and spirit levels and switch to a digital workflow for its residential and commercial building projects. The result? Tremendous efficiency gains, not least in preparing as-built plans, as well as reduced labour costs.

With more case studies and user profiles from both sides of the Atlantic and the Middle East; an interview with Rob Daw, CTO at Hexagon's Mining division; an article on combining traditional data collection methods with those made possible by the Leica Aibot CX UAV solution, plus the latest product news, this issue has something for everyone. Enjoy!