

## Tangled up in knotweed

For many property owners, Japanese knotweed is a curse that cannot be broken. So what can be done about it? **Eoin Redahan** asked **Nic Seal**, of knotweed removal specialists **Environet UK**.

It glowed like an ember in the dark – a plot just outside London, with planning permission for a detached house. The price was reasonable too and the neighbourhood looked pleasant.

With plans and calculations swirling in my head, I scanned the legal documents. And there it was: Japanese knotweed on the south and east of the site. The mere mention of it put the kibosh on all daydreams, but it could have been worse; because this site is now a waking nightmare for somebody else.

At its worst, Japanese knotweed is a force to behold. It is a hardy survivor, having originally set root by a Japanese volcano. It can insinuate itself through pavement cracks and splits walls; and when you cut it, it just grows back faster. Tales tell of suicides borne out of the angst it has caused. It is irrepressible. Impossible. Incurable. Unmortgageable.

### Cutting the Gordian knot

The problem lies with the plant's structure, which consists of the crown, the rhizome, and the roots. The canes themselves grow from the woody crown just under the surface; the rhizomes (underground lateral stems) send up shoots, which eventually become crowns; and the roots search deep and wide for water.



Knotweed shoots

According to **Nic Seal**, of Woking-based company **Environet UK**, the rhizomes and roots make Japanese knotweed both prolific and difficult to kill. "The roots and rhizomes are very easily broken, so you can't just pull the plant out," he says. "It has an amazing ability to reproduce from tiny fragments of rhizome. They say a piece the size of your fingernail weighing 0.7g can generate into a new knotweed plant, though it won't happen overnight. And its ability to lie dormant for up to 20 years – an evolutionary

### Did you know?

**Japanese knotweed is classed as a controlled waste that is covered by environmental legislation. It must be transported by a registered waste carrier and disposed in an authorised facility.**

survival mechanism – means it is without doubt the most difficult plant to get rid of."

Despite, the commonly peddled myth, Japanese knotweed cannot actually grow through concrete, but it is more than capable of worming through joints and weak spots. On one occasion, Seal and his colleagues had to deal with knotweed that grew up through the chimney pots



Nic Seal and knotweed

of a two-storey building. Upon closer inspection, they found that the knotweed had completely blocked the chimney flue and found a way through the solid, external wall.

The key to stopping this prolific growth lies in identifying the rhizome system beneath the ground. "Typically, the rhizome extends 3m horizontally from the visible above ground growth, and to a depth of 2m," he says. "However, these figures vary from site to site depending upon the maturity of the plant and ground conditions. I've seen lateral spread in excess of 7m and found rhizome 5m deep in the ground."

To remove it, you can either spray the plant with herbicides or dig it out. A variety of chemicals such as glyphosate apply a fatal dose that is translocated throughout the entire root and rhizome system. The herbicide treatment is cheaper – about £3,000 for a typical residential property with a five-year insurance backed guarantee – though, there are drawbacks to this approach. It can take several years to completely eradicate the plant, as it often lies dormant, and the residual effects of the herbicide can pose a greater risk to non-target plants.

By contrast, the physical removal system takes a matter of days or weeks. Seal explains: "The affected area is excavated using a 360 digger and loaded into the Xtract™ machine.

The fine particles are screened out of the soil to leave oversized stone, rubble etc. containing the knotweed rhizome. The rhizome is then easily visible to the human eye. We are [also] developing a method using infra-red that enables the rhizome to be identified automatically – once we have perfected that we'll look at robotics."

Environet recommends the extraction method for development and construction sites, as ground disturbance triggers re-growth. However, this method isn't for everyone. In many situations, excavation isn't possible as structures are in place above the knotweed, and there is also the issue of cost.

A large development site with one acre of knotweed could cost £1m to clear and consign the material to landfill. Even Environet's Xtract™ method, which would cost about £300,000 to clear the same area, would be too expensive for many developers.

### From herbicide to insecticide

Once removed, it is important to make sure the knotweed doesn't come back and to prevent encroachment from neighbouring properties. For this, Seal and his colleagues use root barriers. "We use a very strong impermeable membrane installed to a depth of approximately 2m," he says. "They are very effective as long as they are installed correctly. We're seeing a number of companies using horizontal root barriers, presumably to save themselves the cost of having to dig deep to remove all viable rhizome. In our view, this is a false economy. It doesn't remove the problem. It's reliant on the membrane containing the rhizome when in fact it's more likely to encourage lateral spread."

### Giant hogweed

**Japanese knotweed isn't the only invasive species that is causing problems in the UK. Giant hogweed, a relative of cow parsley that originally came from Russia and Georgia, has also caused considerable distress. The plant's sap can cause severe skin burns and spreads rapidly by seed.**

**According to Nic Seal, of Environet UK, giant hogweed is easily treated with herbicide, though it takes several applications to stop it coming back. "The aim is to prevent the plant producing seed by either herbicide treating or repeat cutting, thereby eventually depleting the seed bank in the soil," he says.**

**"The alternative is to excavate the affected soil, say to a depth of 300mm and consign to landfill as hogweed infested soil. The difficulty is, of course, that seeds can be blown by the wind, so if the main source of hogweed is in your neighbour's land, and the wind blows in your direction, you might be fighting a losing battle."**



The extraction process

Ideally, there would be a less expensive and work-intensive means of keeping Japanese knotweed at bay. In 2010, the **Centre for Agriculture and Bioscience International** tried an unusual solution. It introduced an insect from the psyllid family that feeds on Japanese knotweed, the *aphalara itadori*, but despite eating the plant, the creature has reportedly struggled to thrive in the UK's less clement climate.

"It could be a very useful tool in controlling knotweed, particularly along

watercourses," Seal says. "The psyllid might provide a level of control but won't actually eradicate it, so I don't think you'll find this is a solution for developers where time is an important consideration and where eradication is the clear goal."

Until these psyllids, or other biological agents, settle, thrive, and devour this invasive species, the problem isn't going anywhere – unless of course the country suddenly falls in love with the sour rhubarb taste of Japanese knotweed and decides to make it the nation's staple dish.

There is at least solace in knowing that a lot of money can be made in getting rid of the stuff; as such, many companies including Environet will continue to plough money into removing it better.

"We are currently researching a number of eco-innovative techniques whereby we expose the rhizome to extreme conditions and hope to be able to report further in 2017 once the results of our field trials are available," Seal says. "If successful, we should be able to cut the costs of treatment even further."

**For more information:**

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