

Japanese Knotweed Case Study

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Main Management Objectives:

- Continue with development schedule with minimal disruption
- Have Knotweed eradicated as soon as possible

Job Type: Commercial
Site Size: 2500 m²
Location: East Midlands
Techniques: Excavation
Membrane barrier

BACKGROUND

Knotweed Services (UK LTD) were contacted by the client to organise a site survey of a development site. Another knotweed company had begun works already but the client decided to move company.

The developer aimed to continue with their schedule but with a slightly revised time plan. They plan to build 10 houses on a previous brown site within 2 years. Consequently, we aimed to eradicate the knotweed from the site within 3 months, minimising disruption.

SITE SURVEYS

The first and arguably most important stage of any successful management plan is to assess the extent of the problem. Until this was fully understood we recommended to the clients that site works ceased.

Once we identified the above ground Knotweed we fenced off the infested areas so that other site works could continue. This prevents disruption to tight development schedules. In addition to the fencing all contractors working on site were given a briefing by our staff on Japanese Knotweed. Areas covered included how to prevent it spreading and a health and safety brief.

MAPPING

The mapping stage of our plans is crucial to preventing spreading of the Knotweed. We created detailed maps with clear working routes and areas for stockpiling contaminated and non-contaminated soil (figure 2).

TREATMENT

The next key step was communication with the client. We made sure that we fully comprehended the client's proposals and timelines as this dictated the type of treatments we could undertake.

From this we were able to deduce that a supervised excavation and off-site removal was the most appropriate treatment option. All site operations (e.g. tree felling and excavation) occurring in the fenced zones were supervised by one of our trained operatives.

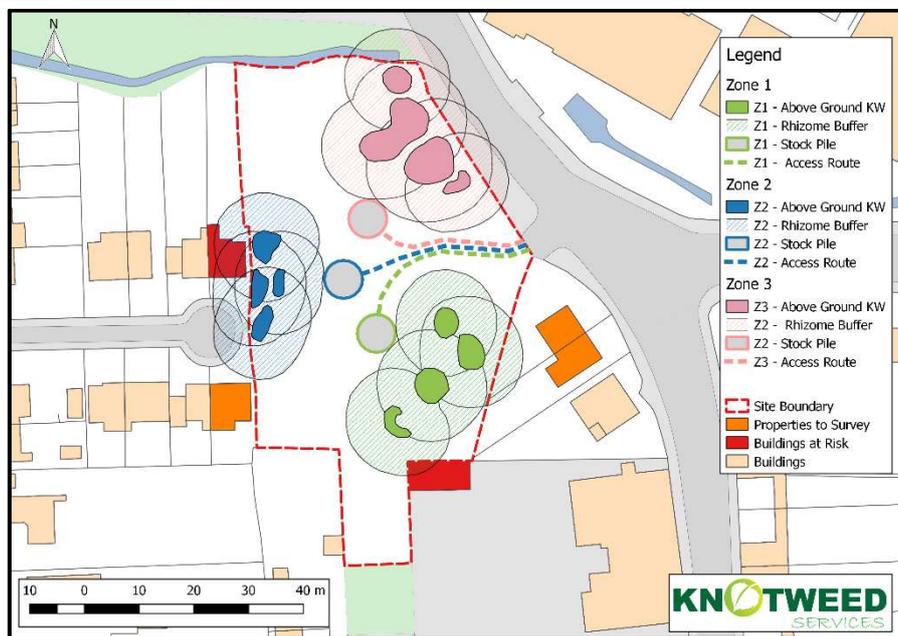


Figure 1: Site map showing knotweed zones, rhizome extent, proposed tipper and stockpile routes. Authors Work.

EXCAVATION

We then proceeded to excavate the infested soil (figure 2). The soil was transferred to the stockpile and then to removal trucks with retractable covers to prevent spreading to clear areas. Before leaving site all trucks tyres were treated with herbicide to create a chemical barrier. The waste was carted to a specialist contaminate waste landfill site. All working areas and plant used for the exaction were also treated after completion. This method provided a quick solution to Knotweed eradication which is why it was the most suitable for the client.

BARRIERS

Specialist membranes were used across the site to protect areas from future Japanese Knotweed growth. We used the Hy-Tex Root Barrier C3 (solar black).

Horizontal Barriers - The membrane barrier was installed 2m under all of the proposed building and road footprints impacted by Japanese Knotweed. This prevents any dormant Knotweed from emerging in the future. The membrane will prevent Knotweed growth in the area for up to 50 years. The environment agency dictates this longevity since rhizome fragments can remain dormant in soil for up to 20 years (Environment Agency, 2013).

Vertical barriers - For some areas (see yellow houses on map) Knotweed was found near the site boundary. Because the client did not have permission to treat this area

full excavation was not possible. In these cases we installed a vertical membrane. This prevents the lateral encroachment of Japanese Knotweed from the neighbouring land.

INSURANCE BACKED GUARANTEES (IBG'S)

Knotweed Services UK offer their insurance backed guarantees through Guarantee Protection Insurance Ltd (GPI). GPIs primary and founding product was IBG's and they are in the industries leaders in Japanese Knotweed insurance. The package we recommended for this project is the is "designed to provide cover in the event that the insured remedial works fail, during the period of insurance, and the contractor has ceased to trade and is unable to honour claims on the written guarantee." (GPI, 2017).

REFERENCES:

Environment Agency, 2013. *The Knotweed Code of Practice*. [Online] Available at: www.naac.co.uk/userfiles/files/Japanese%20Knotweed%20Guidance.pdf [Accessed 07 11 2017].

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Hy-Tex (UK) LTD, 2015. Hy-Tex Root Barrier C3 (Solar Black). [Online] Available at: www.hy-tex.co.uk/docs/geotextiles/Root_Barrier_C3/r_rbc3_03.pdf [Accessed 07 11 2017].

Table 1: Membrane used on site for vertical and horizontal root barriers (Hy-Tex LTD, 2015).

Specifications	Hy-Tex Root Barrier C3 (solar black)
Material	triple coated, twin reinforced, impermeable, polyethylene barrier membrane
Elongation	md 25% cd 20% [EN ISO 10319]
Puncture Resistance	4,500 [EN ISO 12236]
UV Stabilisation	400 kLy
Life Expectancy	> 50 years in natural soils with a pH between 4 and 9

SUPPORTING PHOTOS



Figure 2: Some of the excavated Rhizome.



Figure 3: Knotweed rhizome fragment identified.



Figure 4: Supervised excavation in progress.