

ADVANCED SOLUTIONS FOR AQUATIC RESTORATION AND VEGETATION MANAGEMENT



PROPOSAL TO MANAGE JAPANESE KNOTWEED (*FALLOPIA JAPONICA*)

BRUNSWICK STREET, THURNSCOE



Client: Keepmoat Homes

Commissioned By: Ahmed Dayel

Specialist: Ebsford Environmental

Date Prepared: 26/09/18

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EBSFORD SUMMARY



There are several key features and benefits to utilising our services which includes free site surveys for repeat clients. Allowing our clients to get an early understanding of the issues they face, that can be effectively budgeted at any stage, from pre-purchase to post development, without the need for any expenditure.

One of the key issues that currently affects the sector is Japanese knotweed and other similar invasive species. Its mismanagement can now potentially become a criminal offence. Additionally, lenders are placing stringent requirements on management strategies to ensure that potential purchasers and investors are protected from future claims, through the use of warranties.

The warranty service we offer is unparalleled. We are the only company in the UK to offer both PCA and INNSA warranties. We can ensure compliance with lender requirements, which can expedite the sale and mortgage process.

We are innovators; our Enviroscreen 20-20 system has been specifically designed to allow rapid eradication of Japanese knotweed whilst both minimising waste and maximising material re-use, all at a fraction of the cost of traditional mechanical techniques.

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JAPANESE KNOTWEED KEY FACTS



DEVELOPMENTS:



- Japanese knotweed will find the route of the least resistance and exploit weaknesses in hardstanding, for example: cracks in concrete or an expansion joint.
- Expense of JK removal before development can commence.
- Covered under planning permission declaration
- Reduce land value

FINANCIALS:



- CML warranties required for mortgage lenders
- Affects conveyance process
- Criminal offence fines up to 70k

ENVIRONMENT:



- Dominates over native species and creates a mono culture.

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EXECUTIVE SUMMARY



PROPOSED END USE:
Housing development

TIMESCALES FOR ERADICATION:
2 weeks

INFESTATION WITHIN DEVELOPMENT
FOOTPRINT:

Yes ☒

No ☐

OPTIONS CONSIDERED:

1. Enviroscreen 20:20 – (see page 14)
2. Off-site disposal – (see page 18)

OPTION RECOMMENDED:
Enviroscreen 20:20

HEADLINE BENEFITS:

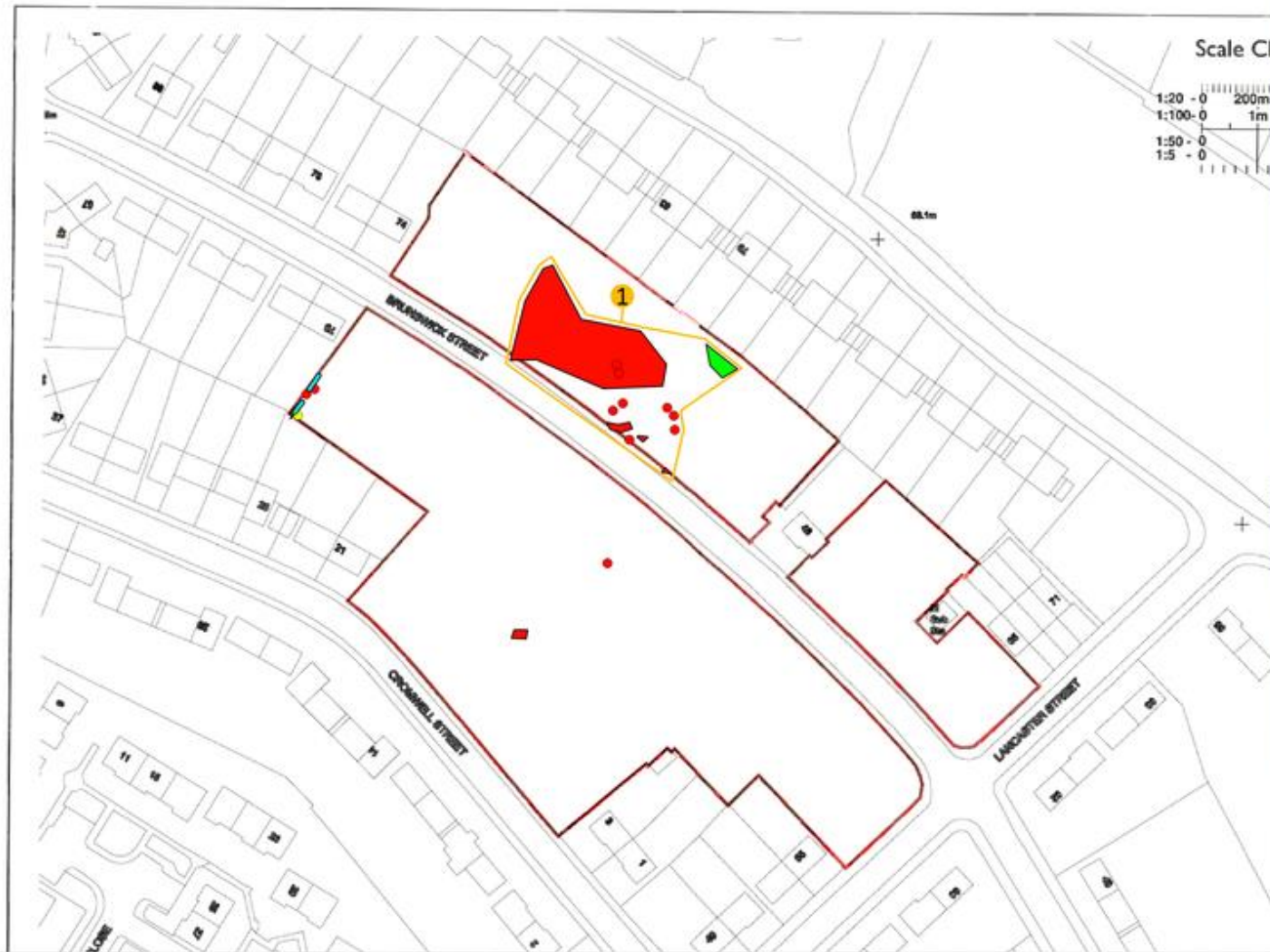


TARGET COSTS:
£

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INVASIVE OVERVIEW PLAN



Project: Brunswick Street Thurnscoe

Legend:

- Yellow box — Treated JK
- Red box — Sporadic JK
- Green box — Mechanically Disturbed JK
- Blue box — Dead Canes

Survey Data:

1 - 1185m²



Prepared For:

Ahmed Dayel, Keepmoat Homes

Prepared By:

Ray Holderness, Senior Consultant

Drawing Ref:

27991

Date: 26/09/18

Scales: NTC

Drawn: MS

Checked: RH

INVASIVE OVERLAY PLAN



Project: Brunswick Street Thurnscoe

Legend:

- Yellow outline — Treated JK
- Red — Sporadic JK
- Green — Mechanically Disturbed JK
- Cyan — Dead Canes

Survey Data:

1 - 1185m²



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SITE OBSERVATIONS

Ebsford Environmental were commissioned by Ahmed Dayel of Keepmoat Homes to undertake a walkover survey at the site at Brunswick Street, Thurnscoe. Ray Holderness, Senior Consultant, conducted the invasive species walkover survey in September 2018.

The site is best described as flat open space, divided by Brunswick Street into two areas, with some long grasses and some shrubs and trees along the site boundaries.

Japanese knotweed (*fallopia Japonica*) was identified in multiple areas of the site. Japanese knotweed is covered under the Wildlife and Countryside Act 1981, rev. 2, meaning that it is an offence to plant or otherwise cause to grow in the wild.

It should be noted that infestations site-wide were not mature; some can be described as sporadic and undeveloped, with the highest only reaching around four to five feet – at this point in the growing season, mature Japanese knotweed can be expected to reach up to eight or nine feet.

On the eastern half of the site, three infestations were identified. One of the infestations was situated directly behind one of the properties of Brunswick Street, and growing into the bordering wall; it was particularly clear that the infestation had been subject to some prior treatment, as the plant appeared stunted to some extent. Weathered canes from previous growing seasons were present in this area. These canes were large in diameter, indicating that a mature infestation has been present for a number of growing seasons. Upon closer inspection, however, the infestation is still viable – fresh growths were visible in and amongst the dead crowns of the infestation area.

A much larger infestation area is present on the western half of the site, with more sporadic incidences of Japanese knotweed over a larger area. Again, these infestations do not present indicators of particular maturity. To the west of this area, some Japanese knotweed in situ appears to have been subject to some mechanical disturbance.

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PHOTOGRAPHIC EVIDENCE



Figure 1: Infestation encroaching onto the Brunswick Street property – dead canes can be seen amongst the viable plant,

PHOTOGRAPHIC EVIDENCE



Figure 2: Immature Japanese knotweed growth.

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PHOTOGRAPHIC EVIDENCE



Figure 3: Immature Japanese knotweed growth in the area to the east of Brunswick Street.

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PHOTOGRAPHIC EVIDENCE



Figure 4: Sporadic Japanese knotweed growth.

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RECOMMENDATIONS

Some exploratory excavations have been conducted at the site, in order to establish the extent of the rhizome network present and ensure that a more accurate estimate is made on the volume of contaminated material to be excavated. These works confirmed the hypothesis that relatively immature sporadic Japanese knotweed infestations are present, as the rhizome network underground did not appear to be connected across all infestations – this was not extensive as would be expected of a mature infestation.

It is recommended that a mechanical solution is implemented, as the site is deemed unsuitable for an herbicidal treatment programme, as it is to be developed in the future – in order for herbicides to be effective, the ground must not be broken and disturbed as this can encourage viable rhizomes to come to the surface and re-create a viable infestation. A mechanical solution provides a clean site, ready for development. The site lends itself well to the screening method, as the large open space can be utilised to create a screening zone – this must be pre-agreed and would be most efficiently placed on the western half of the site where the most Japanese knotweed infestations are present. For this method, all infestations would be excavated in line with best practice and transported to the screening zone. Alternatively, although a more costly option, all excavated material could be disposed of at a licensed landfill. Please see more detailed methodology of these solutions on the following pages.

For the infestation encroaching into the Brunswick Street's property's wall, best practice is to excavate safely without compromising the integrity of the wall, and install a root barrier membrane at a forty-five degree angle in order to protect the site from re-infestation.

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RECOMMENDATIONS— ENVIROSCREEN 20:20

The screening method is the one that Ebsford would most recommend, as this method is cost and time effective, as well as environmentally friendly. Our Enviroscreen 20:20 technology is a revolutionary mechanical solution for the control of Japanese knotweed. The machine took ten years to develop using experience gained from working on some of the most logistically complex construction projects ever undertaken, resulting in a cost-effective and immediate solution that is pragmatic in its capacity to avoid off-site disposal. It significantly reduces the amount of material taken off-site – making it a suitable solution for sites with limited timescales for eradication, and/or where space is at a premium.

Prior to any works being undertaken, a full management plan is prepared, and the area of infestation is meticulously isolated to prevent access and disturbance by site traffic and operatives. A screening zone is also firmly established to avoid subsequent cross-contamination. Excavation should proceed to the extent of the rhizome network, with further material loosened and inspected for knotweed material on completion of each stage of the excavation. Removed material should always be transported to the screening zone in manageable quantities to avoid spillages.

The system processes Japanese knotweed rhizomes through a mechanical soil separation unit. The material passes down conveyers before being passed through the screener and split into three fractions - oversized, mid-sized and fines; it is then manually picked to further remove knotweed. Viable rhizome is then sorted from soil material, which is removed and segregated for disposal at a licensed facility. All separation machinery used for this process is owned and operated by Ebsford Environmental and modified specifically to deal only with Japanese knotweed.

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RECOMMENDATIONS— ENVIROSCREEN 20:20

This system processes Japanese knotweed rhizomes (roots) through a mechanical soil separation unit and is then manually picked to further remove knotweed. Upon completion, only the Japanese knotweed material (typically <1%) is removed from site.

Once the operation begins, the screened material will be split in to three separate stockpiles; the stockpiles will remain on site ready to be re-engineered back into the excavations. This will be the responsibility of the appointed main contractor and should be done under the supervision of Ebsford Environmental to prevent any cross contamination and to ensure the validity of any issued warranty. A day rate for supervision will usually be charged.

The method of re-use is detailed below:

Stockpile 1: Predominantly oversized material such as brick, large stones and concrete blocks. This stockpile may require crushing before reuse on site. Estimated quantity will be 15% - 20% of the total volume screened. Once processed, this material can be reused anywhere on site without restriction.

Stockpile 2: Material varying in size up to 75-90mm (with small amounts of soil) which will have been handpicked to remove 99% of the rhizome material. This processed material will be stockpiled and can be reused on site in any location. Estimated quantity of 40% - 50% of volume screened material.

Stockpile 3: Material which will closely resemble topsoil <20mm in size. There will be small fragments of rhizome, smaller than a biro pen within this material resulting in a requirement for a cap of 600mm; alternatively, the material can be reused on the surface of the site provided that an herbicide regime is carried out during the following growing season. This is to treat any occurrences of regrowth. Estimated quantity of 30%-40% of volume screened.

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RECOMMENDATIONS— ENVIROSCREEN 20:20

- 1.) Screening of Japanese knotweed is covered under the revised Land Remediation Tax Relief (LRTR) rules. In this, any developer who is remediating material on site is able to claim an offset of between 50%-150% of the qualifying expenditure against corporation tax; this would need to be completed by the financial/legal department of the client authorising the works.
- 2.) This recommendation is based on the assumption that all excavated material is suitable for screening; site investigation reports will be required before works commence. Although it is not possible to guarantee the information contained within these reports, should any material *not* referenced within SI reports be found on site that is either contaminated or unsuitable for screening (i.e. heavy clay), alternative solutions for management may be required.
- 3) *The stockpile 3 material can be buried with a 600mm capping layer without the need for encapsulation. Working on a 40% ratio based on the processed volumes of 1000m³, we anticipate that the final volume requiring management will be a maximum of 400m³. Assessing the ground conditions and allowing the required 600mm capping layer, this can safely be buried in numerous POS locations on site without impacting on plot boundaries.*

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RECOMMENDATIONS— OFF-SITE DISPOSAL

Due to several factors mentioned earlier in this report, it is difficult to estimate volumes for removal and timescales for completion. Ebsford have made several assumptions regarding the volume for excavation and arrived at a notional volume of 1,000m³ or the equivalent of 1,800 tonnes.

Excavation, haulage and disposal, or 'dig and dump' to a licensed landfill is the recommended option for infestations within the development footprint. Our trained and experienced supervisors will ensure that all visible knotweed contaminated material from within the footprint is removed, no cross-contamination occurs, and all machinery used during the process will be clean on completion of the works.

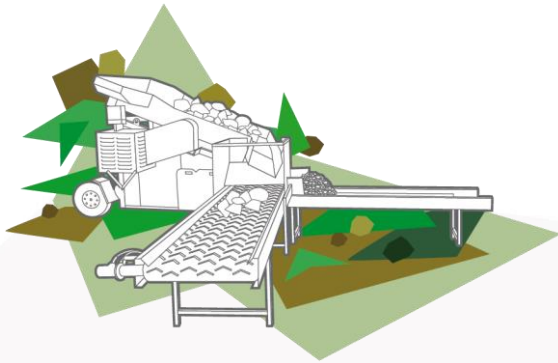
Removal of material to a landfill site registered to accept such material will give immediate access to the proposed development area on completion of excavations. Ebsford will provide excavation plant, haulage and disposal off site; the client will provide site security and welfare facilities. Clean backfill will be required to replace disposed material. Site won material can be used or clean material imported; this aspect of the work is not included in the quotation. Post-works, all documentation such as waste carriers license and waste transfer notes will be issued to the client and a completion report will be submitted shortly after the works are complete.

This offer is subject to the receipt of SI reports or soil tests being completed and the results showing excavated material will be otherwise inert, containing incidental (<5%) vegetation/knotweed rhizomes and being accepted at the receiving landfill site at the inactive/lower rate of taxation. Knotweed is classified as non-hazardous controlled waste; if soil test results prove otherwise or the landfill site imposes taxation at the active/higher rate, delays may be necessary and extra costs may also be incurred.

Based on the above information it is estimated that up to 1,000m³, the equivalent of 1,800 tonnes or 100 lorry loads of material will be taken from site. Again, due to several unknown factors, it is difficult to estimate a timescale for completion but 5 days should be sufficient.



ENVIROSCREEN 20-20



SYSTEM OVERVIEW

The EnviroScreen 20-20 family has been developed by Ebsford Environmental to mechanically remove Japanese knotweed (JK) from contaminated soil, allowing selective re-use of material within development sites.

Any suspected contaminated material is processed through a bespoke screening operation and separated into three grades of material that can be re-engineered within the site.

Any viable JK which is physically removed from the soil (typically <1%) can be buried or removed from site depending on the specific sustainability goals of the project.

Due to mechanical screening being regarded as a remediation operation, this system is also likely to be available for Land Remediation Tax Relief (LRTR) at the organisations prevailing rate.

SYSTEM FEATURES AND CONSTRAINTS

Features

- Immediate solution
- Typically <50% of the cost of off-site disposal
- Offers sustainability benefits through BREEAM and carbon reduction
- No requirement for importation of material

Constraints

- Fines material (typically 30-40%) require burial under a 600mm clean cover
- Requires detail analysis of SI/GI reports, heavy clay and certain contaminants can impact suitability or effectiveness of system

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OFF-SITE DISPOSAL



SYSTEM OVERVIEW

Off-site disposal offers the most robust and immediate system for the total eradication of Japanese knotweed (JK) within development sites.

The JK is excavated under supervision in order to identify the contaminated areas and reduce disposal volumes. Contaminated material is then loaded into covered wagons and disposed of to a licensed facility that can accept JK material under the Ebsford Environmental waste carriers license

(WCN).

As JK rhizome can extend 3m vertically, excavations require making safe, and in most instances material will be required either externally or using suitable site won product in order to backfill the removal areas.

Typically waste produced under this system is classified as controlled non-hazardous with incidental JK, (<5%) however other contaminants and soil types can impact the disposal cost.

SYSTEM FEATURES AND CONSTRAINTS

Features

- Immediate solution
- Removes the issue in its entirety
- Gives full peace of mind to potential purchasers of residential development plots
- Effective project management can reduce quantities up to 50% of EA guideline rates

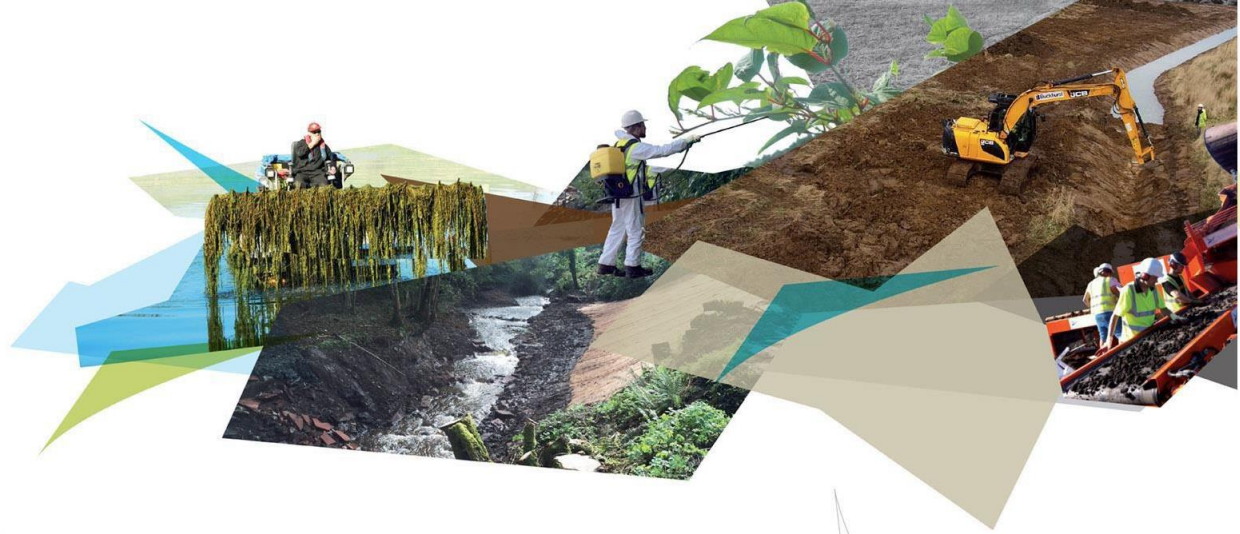
Constraints

- The most expensive solution for JK eradication
- Requires deep excavations and backfill
- Difficult to accurately assess volumes so large contingent sums can be required
- Detailed SI/GI and soil analysis required prior to accurate disposal costs being allocated

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WARRANTY INFORMATION



On completion of Japanese knotweed works, a ten year, £5,000,000 PI backed warranty will be issued and monitoring of the site will take place for the duration of the warranty. The warranty covers hard standings, structures and is fully transferable.

We would strongly recommend that additional warranty protection is sought. It is a legal obligation for any property sellers to note the presence of Japanese knotweed and mortgage lenders are now insisting that any management plan is backed by an external IBG (insurance backed guarantee) which covers the client against regrowth should any company commissioned to carry out eradication works cease trading.

The IBG should be issued by a company who is a member of a recognised trade association such as the PCA or INNSA. Ebsford Environmental were the first UK company able to offer IBGs from both organisations. Having assessed the site, we would suggest that the INNSA backed IBG would be the most appropriate in this situation as this covers the whole site and is based specifically on a like for like basis. Further details of both warranties available can be found on the following page.

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TRADE ASSOCIATIONS AND IBGS – THE PCA



PCA AND WARRANTY INFORMATION

The Property Care Association (PCA) is the trade association representing the Property Care industry, membership of the Invasive Weed part of the PCA has been formed by leading industry specialists with a view of driving standards for those members involved in the identification or eradication of schedule 9 vegetation.

After registration and acceptance, PCA members are able to offer Insurance Backed Guarantees which supplement their own written guarantee. These policies are designed to honour the terms of the written guarantee in the event that the contractor has ceased to trade and is therefore unable to honour their obligations.

The PCA IBG is offered through GPI who are a recognised provider of insurance products within the property service sector.

SYSTEM FEATURES AND CONSTRAINTS

Features

- Low cost simple insurance process
- Ideal for single clients with one plot (ie domestic)
- Simple procedure, policy is issued directly to the client who liaise with GPI in the event of a claim.
- Can be upgraded to include structural damage

Constraints

- Only provides cover 2 years after completion of works
- Remedial works are herbicidal only, regardless of initial solution
- Only provides plot specific cover, multiple plots would require multiple cover
- Claim process requires payment of survey/inspection fee of £250

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TRADE ASSOCIATIONS AND IBGS – INNSA

INNSA AND WARRANTY INFORMATION

The Invasive Non Native Specialists Association (INNSA) is an independently managed trade association specifically set up for the industry. With a steering group made up of some of the largest eradication contractors in the UK the association has an extremely robust membership criteria requiring members to commit to ISO and the BASIA Amenity Assured standard. Recently INNSA have been asked to develop a new code of practise for managing Japanese knotweed which will replace the now withdrawn EA guidance document.

After registration and acceptance, INNSA members are able to offer Insurance Backed Guarantees which supplement their own written guarantee. These policies are designed to honour the terms of the written guarantee in the event that the contractor has ceased to trade and is therefore unable to honour their obligations.

SYSTEM FEATURES AND CONSTRAINTS

Features

- Insurance covers either plots or can cover entire sites, simplifying the responsibility process
- Policy covers like for like remediation based on the contracted solution
- Comes into effect as soon as practical completion of the works is certified
- No requirement to pay survey/inspection fees in the event of a claim

Constraints

- Policy is held with the ultimate client (ie developers)
- Required information prior to policy being issued is more detailed than PCA products
- Like for like policy is 35% more expensive

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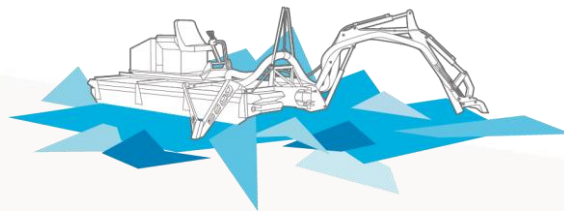


EBSFORD SERVICES



Utilities, Flood Defence & Regeneration Developments

- Public Open Space Regeneration
- Marina & Harbour Developments
- Integrating Removed Silt Onsite
- Efficient Maintenance Solutions
- Civils In/On/Near Water
- Asset De-silting Asset Restoration & Improvements
- River Restoration
- Rock Armour
- Soft/Bio Erosion Control
- Drainage Ditch and Culvert Clearance



Watercourses, Rivers and Canals, Lakes and Ponds

- River Restoration and Realignment
- Dredging and De-silting
- Soft Bio Erosion Control
- Lake & Pond Restoration and Development
- Efficient Maintenance Solutions
- Integrating Removed Silt On-site
- Establishing Native Aquatic Plants
- Groynes & Beach Nourishment
- Canal Restoration
- Accelerated Silt Dewatering



Vegetation Management

- Japanese knotweed Herbicidal Eradication
- Japanese knotweed Mechanical Eradication
- Japanese knotweed Screening
- Japanese knotweed
- Enviroscreen 20-20
- Site Clearance and Tree Work
- Other Non-Native Species
- INNSA

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WHAT OUR CLIENTS SAY

"Ebsford have worked exceptionally well on a number of projects giving professional advice not only to give a better outcome but cost effective too.

There are several key features and benefits to utilising our services which includes free site surveys for repeat clients. Allowing our clients to get an early understanding of the issues they face, that can be effectively budgeted at any stage, from pre-purchase to post development, without the need for any expenditure.

Andrew Willerton
Bovis Homes

"We have used the Ebsford Enviroscreen machine now on a number of projects and must write to say how impressed we are with both the Ebsford approach and the machine itself.

On every occasion we have found that the system has come in cheaper than alternative solutions, in some cases over 50% whilst allowing us to retain material on site for re-use as part of our development. We will continue to specify this solution as our system of choice and have no issue recommending Ebsford to our contacts."

Alan Finchett
Davies and Davies Properties

"From initial contact to completion of works, Nick Hartley and Ray Holderness of Ebsford have provided a simple, effective and professional solution to a problem which was only identified late in the process.

After some research into Japanese knotweed it was refreshing to have the recommendation of a trustworthy contractor who delivered exactly what they claimed. The warranty was provided immediately upon completion and the health and safety of the site teams was without fault. I would have no hesitation in using Ebsford again or in recommending them to other organisations with Japanese knotweed problems".

John Lanagan
Impact Housing

