

Japanese Knotweed Solutions Ltd

To: BAM Construction

Site: Western Gateway, Wrexham

For:
Works to Commence the Control and
Eradication of Invasive Weeds

RECOMMENDATIONS AND ASSOCIATED COSTS

Prepared by:



Japanese Knotweed Solutions Ltd

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Dated: 21.07.11

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Proposal to BAM Construction

Japanese Knotweed Solutions Ltd

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1 INTRODUCTION & RECOMMENDATIONS

Introduction

This report has been developed to qualify the methods and associated costs for works to assist BAM Construction in the process of control and eventual eradication of invasive weeds from Western Gateway, Wrexham.

JKSL has used its understanding of the current legislation and the recommended best practice in developing this proposal and continue to evolve our methods and recommendations to clients in line with current understanding of the problem.

Recommendations

We would recommend that the eradication methodology utilised for all invasive weeds on this site is a Glyphosate based herbicide to be applied via traditional Knapsack sprayer in-situ.

In order to achieve successful eradication, the Himalayan balsam will need to be treated over a year with a Glyphosate based herbicide. This will ensure that the infestations are unable to re-establish themselves and that timescales are kept to a minimum.

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2 SURVEY RESULTS

JKSL surveyed the site known as Western Gateway. Survey work was carried out by ZachThorp and Hannah Brown in July 2011 to identify and document the extent of invasive weeds on the site. The results of this survey work qualified that infestation is well established.

- The site is enclosed at the present time and is not open to access by the general public.
- JKSL surveyed all areas highlighted within the survey extents on drawing JK11-6123-01.
- No Japanese Knotweed was found on site; however there are large infestations of Himalayan Balsam found in various locations, some within the boundary.
- As the site maybe developed on in the future we would strongly recommend that the plant is eradicated.
- As Himalayan Balsam is now on the wildlife countryside act, Schedule 9. All neighbouring landowners have duty of care to eradicate there Himalayan Balsam off their land to stop it spreading.

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2 HIMALAYAN BALSAM

Himalayan Balsam (*Impatiens glandulifera*) is a large succulent annual introduced by the Victorians in 1839 as an ornamental greenhouse species. It escaped from gardens into the wild and has rapidly colonised our river banks and other areas of bare ground.

It is an annual plant which grows to about 2m in height with purplish pink slipper shaped flowers in June – August. When the seed pods are mature they explode when touched, scattering the seed up to ten metres from the parent plant. Waterborne seeds will survive and often downward stream infestations are caused by migration of seed within the water flow.

Himalayan Balsam forms dense stands which suppress the growth of grasses and native British plants, leaving the banks bare of vegetation in autumn and winter and liable to erosion. Expected spread based on current data would be in the region of 10 to 15m in all directions per annum.

BIOLOGY AND ECOLOGY

The hollow, succulent stems have a purple tinge and are smooth. The serrated, pointed leaves are arranged in pairs, or three to a node: they are mid green and about 12 to 16cm long.

The flowers vary from pale pink to purple and appear from June to October. The shape resembles a Policeman's helmet, leading to one of its common names. They produce copious amounts of nectar and are thought to draw pollinating insects in preference to native plants so reducing pollination of the latter.

The type genus giving its name to the balsam family is home to around 850 species of annuals, perennials and sub-shrubs throughout the world. These are generally soft stemmed plants with simple pointed, lance shaped leaves often with toothed edges. Flowers in many colours appear through the year in mild areas and have five petals, an upper standard and the lower four fused into two pairs, the sepals also slightly fused to form a spur.

A single plant can set about 800 seeds, 12 to 14 weeks after flowering. The seed capsules react to the slightest disturbance causing the five segments to split along their length then curl up and twist explosively, projecting the contents up to 10 metres away. The black spherical seeds are about 2 to 3mm across and remain viable for about 2 years requiring cold stratification for germination which occurs in February or March. They are buoyant and can travel along waterways to infest new areas, even being known to germinate under water.

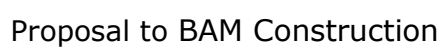


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3 PHOTOGRAPHS



SURVEY DRAWING



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4 QUOTATION

Himalayan Balsam

QUOTE



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DATE	VALID DATE	QUOTE NUMBER
21/07/2011	22/08/2011	10832

Product Name	Description	Qty	Rate	Total
Non Residual Chemical Spray - Minimum Fee	Spray all areas of Himalayan Basam with non- residual herbicide. Maximum total area is 100sqm.	1.0	£595.00	£595.00
3 Year Warranty	First 12 Months: Site monitoring on a quarterly basis over a nine month period - written report issued following site visit. Any additional in- situ chemical treatment works as required to eradicate Himalayan Balsam. No cover is allowed for any costs relating to damage to hard surfaces, structures, or any relocation costs. NB: this warranty covers any additional chemical treatment re- visits necessary due to external factors outside of our control (weather conditions/ growth patterns) timing and number of visits cannot be specified. Remaining 2 Years: Regular Revisits & written report issued each time for an additional 2 Year Period.	1.0	£2,150.00	£2,150.00

Sub Total	£2,745.00
Tax	£549.00
Grand Total	£3,294.00

Description
Japanese Knotweed Solutions - Spray Proposal: This quote is for the chemical treatment of all Himalayan Balsam within the site Boundary. Works followed by a 3 year warranty period to monitor the site and re- apply herbicide to any re- growth which occurs in order to achieve complete eradication.

Terms & Conditions
This quote is valid for 30 days from the date of issue. Standard JKSL terms and conditions apply (Please refer to attached documentation).

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5 OUTLINE OF WORKS

Introduction

From the site survey it has been noted that the site is adjacent to an open watercourse this therefore highlights the need to inform the Environment Agency for chemical permissions near a watercourse. As a matter of courtesy the Environment agency are informed of all of our works.

After clearing of old growth the areas to be treated would be separately marked to identify where the differing herbicide spraying is required as marked on the plan drawing.

Planning

JKSL resource is scheduled to meet the need of the various activities detailed below. Due to the dictates of the growth pattern of the weed and it's subjectivity to weather and ground conditions we cannot be specific about the date for commencement of works or the elapse time to complete each activity. Fortunately the discrete activities can be separated out and each element prioritised and scheduled to ensure JKSL resource can be mobilised at the correct time when conditions are most suitable to optimise success.

Preparation

Site Security

The site has an extensive boundary, which is securely fenced. The spraying works must be fenced from access within the site and the necessary warning signs put in place.

Himalayan Balsam Works

Mechanical control- The plant is easy to cut, either by hand or machine, provided that there is adequate access. However, the plant often grows amongst bushes and brambles and in inaccessible locations on river banks. Unless the plant is cut below the lowest node, it will re-grow and flower later in the season- thus a single cut is only effective if made very close to soil level. Regular mowing will also control this plant even if the cutting level is above the lowest node, provided the frequency is sufficient to prevent the formation of flowers and seeds. Small infestations can be controlled by hand pulling as the plant is shallow rooted. Mechanical control is likely to be effective only in those locations where good access is available to ground smooth enough for close mowing and free of shrubs and trees.

Chemical Control- Himalayan Balsam can be controlled by spraying of foliage with a Glyphosate based herbicide. Plants should be sprayed in spring before flowering but late enough to ensure that germinating seedlings have grown up sufficiently to be adequately covered in spray.

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Small infestations of plants can be controlled using a weed wiper. This has the advantage of being able to preserve native plants and grasses which would otherwise be killed by use of Glyphosate.

There are other strategies which can be used to control broadleaved weeds such as use of residual herbicide within areas of contaminated seed bed- however this is not fully tested. There are a selection of herbicides available which do not actually kill grasses, and therefore may be preferable, especially in situations where the grasses are helping stabilize the banks.

Biological Control- Although no specific control agents are known to manage this species- regular grazing of infested areas by cattle and sheep are likely to prevent the spread of Himalayan Balsam through both grazing on young seedlings and by trampling.

Environmental Control- The only environmental control likely to suppress the invasion of banks by this weed is the maintenance of a dense grass sward. This will help prevent the germination of seedlings. However once established the shading effect of Himalayan Balsam suppresses grasses thus encouraging further seed germination.

The best way to eradicate Himalayan Balsam is chemical treatment with a Glyphosate based herbicide to be applied using a traditional knapsack sprayer over a 3 to 5 year period. This will result in the loss of some surrounding species due to drift e.t.c.