

JAPANESE KNOTWEED SOLUTIONS LTD

Invasive non-native plant species survey

Waterfold Lane, Heywood
, Bury

PROJECT SURVEYOR	Jonathan Harris
AUTHORISED BY	Mike Clough
REPORT REFERENCE	JK24-9565-SR-240603

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Summary

Client	JHA Pulmann		
Site	Waterfold Lane, Heywood, Bury, BL9 7JY		
Survey Date	28 th May 2024	Survey Time	13:15 pm
Site Conditions	Spring survey, scattered rain showers, with broken clouds. Good visibility.		
Surveyor	Jonathan Harris		
Qualifications	CSJK (certified surveyor in Japanese knotweed, BSc (hons))		
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In summary, during JKSL's survey, two areas containing Japanese knotweed (an invasive non-native plant species as included on schedule 9 of the Wildlife and Countryside Act 1981), eight areas containing Himalayan balsam (an invasive non-native plant species, as included on the European list of Species of Special Concern and covered by the Invasive Alien Species Order 2019) and six areas containing horsetail (a native, but considered to be invasive in certain situations) were recorded within the development boundary. Additional areas containing Himalayan balsam and horsetail were recorded on immediate neighbouring land.

Due to the proposed development directly affecting areas of infestation, an appropriate mechanical remediation strategy is recommended to be implemented whereby the associated impacted materials are excavated/removed. The most economical mechanical remediation strategy option at this stage is likely to be a combined approach, whereby the excavated Japanese knotweed impacted materials are disposed off-site at an appropriate licenced facility, and the excavated Himalayan balsam and horsetail impacted materials are excavated and re-engineered back (i.e. buried) within an appropriate location in the development in accordance with Environment Agency's Regulatory Position Statement (RPS) 178. Due to proximity to the development boundary, burial more than 7m from the neighbouring land is unlikely to be achieved, and therefore additional approvals will likely be required from the Environment Agency to facilitate burial on site. To aid in minimising the risk of Japanese knotweed migrating back into the remediated areas and/or development boundary, a vertical root barrier will be installed alongside a section of the development boundary. As there is likely to be extensive groundworks on site to facilitate the development it would make practical sense for JKSL to initially excavate and remove the recorded Japanese knotweed impacted materials, and for the main groundworker to excavate and re-engineer the Himalayan balsam and horsetail impacted materials back into the development (ideally with us/JKSL in attendance to implement a watching brief).

As an additional belt and brace approach, it is recommended that an appropriate non-porous membrane barrier can be installed beneath proposed pavement and driveways, to minimise the risk of future defects from potential horsetail re-growth.

To reduce the viability and control the spread of infestations situated on immediate neighbouring land (also to aid in minimising the risk of infestations migrating back into the development site), it is recommended that additional ongoing monitoring and treatment programmes are implemented. During all of the proposed works, a clean site policy (includes biosecurity control measures) will be implemented by all site operatives within the active and inactive zones to ensure that no propagules (i.e. a vegetative structure that can become detached from a main plant and give rise to a new plant) being spread around the rest of the site, preventing the infestation problem being exacerbated further.

As JKSL is a full member of trade bodies INNSA (Invasive Non-Native Specialists Association) and the PCA (Property Care Association) for specialists who deal with Japanese knotweed (and other invasive non-native plant species), JKSL can also normally offer an appropriate insurance-backed guarantee/IBG product to cover the completed Japanese knotweed excavation areas (does not include Himalayan balsam or horsetail areas), subject to approvals/review with the insurance provider.

In the meantime it is recommended that the areas of infestation are not disturbed (includes a 3-4m exclusion zone for areas containing Japanese knotweed and Himalayan balsam, and circa 2-3m exclusion zone for the areas containing horsetail).

An alternative mechanical remediation strategy option would be to dispose of all of the excavated impacted materials (includes Himalayan balsam, horsetail and Japanese knotweed) at an appropriate licenced facility. This is likely to be significantly more expensive than to work / re-engineer back the Himalayan balsam and horsetail impacted materials into the development.

Summary of recommended remediation-treatment options	
Remediation methodology	Excavation and off-site disposal (Japanese knotweed)
Duration	Anticipate 3-4 days
Cost	£17,980.00+VAT (*subject to soil analysis, tipping approvals/location/availability)

Remediation methodology	Excavation and re-engineering Himalayan balsam and horsetail impacted materials back into the development.
Duration	TBC (requires discussing with main groundworker).
Cost	£435.00+VAT per JKSL operative per watching brief day (*subject to approvals/discussion with the Environment Agency).
Treatment methodology	Ongoing 5 year treatment programme (potential Japanese knotweed situated beyond the proposed vertical root barrier).
Duration	8 visits over 5 year period.
Cost	£2,240.00+VAT (*should an initial herbicide application be undertaken to all areas of Japanese knotweed, including within the development boundary, prior to the mechanical remediation works commencing, an additional cost of £340.00+VAT per treatment visit will apply).
Treatment methodology	Ongoing 3 year treatment programme (recorded Himalayan balsam situated on immediate neighbouring land)
Duration	6 visits over 3 year period
Cost	£2,880.00+VAT (*should an initial herbicide application be undertaken to all areas of Himalayan balsam, including within the development boundary, prior to the mechanical remediation works commencing, an additional cost of £980.00+VAT per treatment visit will apply)
Treatment methodology	Ongoing 3 year treatment programme (recorded Horsetail situated on immediate neighbouring land)
Duration	6 visits over 3 year period
Cost	£1,860.00+VAT (*should an initial herbicide application be undertaken to all areas of Himalayan balsam, including within the development

	boundary, prior to the mechanical remediation works commencing, an additional cost of £340.00+VAT per treatment visit will apply to treat all areas)	
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Disclaimer

The information in this report is up-to-date and accurate to the best knowledge of the Surveyor, based on a reasonable inspection, taking in to account the site conditions at the time of the visit. Japanese Knotweed Solutions Limited provide no warranty or guarantee that Japanese knotweed (or any other plant) is not present, or was not present at the time of the survey – only that there were no visible signs detected by our Surveyor. It is important to note that Japanese knotweed forms extensive underground rhizome networks, that it does not generally grow from November until around spring time, that it can remain dormant for periods of up to twenty years and that it can re-grow from very small pieces of viable material. In rare instances, knotweed plants can also grow from seed in the UK.

While every effort has been made to identify any and all invasive plants on site, it is possible for the presence of Japanese knotweed to be concealed from even a very experienced surveyor, for new infestations to establish quickly or for knotweed to be overlooked during a survey, particularly where the site is overgrown with other vegetation or otherwise obstructed. Where there were any areas of the site that could not be surveyed or properly inspected, this will be noted in the Survey Results.

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Introduction

Japanese Knotweed Solutions Ltd (JKSL) were instructed by the client (JHA Pulmann) to assess the potential presence and extents of Himalayan balsam and other potential invasive non-native plant species (includes those on the European list of Species of Special Concern / covered by the Invasive Alien Species Order 2019, or on Schedule 9 of the Wildlife and Countryside Act 1981) to facilitate the future development of the site at land situated off Waterfold Lane, Heywood, Bury (nearest postcode BL9 7JY), and to provide appropriate remedial-treatment options.

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.

About Japanese Knotweed Solutions Limited

Japanese Knotweed Solutions Ltd (JKSL) is a full member of trade bodies [INNSA](#) (Invasive Non Native Specialists Association) and the [PCA](#) (Property Care Association) which are for contractors and contractors who specifically deal with Japanese knotweed.

As we are a member of an appropriate trade body, we can normally offer insurance-backed guarantees on projects.

In addition to this, having works completed by a member of one of these organisations is often a precondition of finance in the UK, particularly mortgage lending.

JKSL's robust safety, environmental and quality management systems are approved and registered with UK accrediting bodies. If you want to know more about JKSL, visit our [website](#) and learn [why you should choose us](#) and view our other [accreditations](#).

JKSL use in-house teams, with our three most senior site staff having each worked for the company since its founding in January 2002; we also have numerous other members of site and office-based staff with ten years' or more experience with the company. This ensures that your works will be carried out by some of the most experienced invasive species specialists in the UK. Our teams work year-round on Japanese knotweed and other invasive weed removal projects, so all works will be completed by a knowledgeable specialist – not a general gardener or agency worker.

JKSL has been at the forefront of invasive plant treatment for over twenty years, and we continue to offer the most up-to-date and reliable methods available for remediating these problems – but what we recommend to our clients are the most reliable methods we are aware of, and the most suitable method for the development plans for the site.

Himalayan balsam (General Information)

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 approximately 2m-3m in height with purplish pink, slipper shaped flowers in June – October. When the seed pods are mature they explode when disturbed, scattering the seed up to 5 metres from the parent plant. Waterborne seeds will survive and often flow downstream to create additional infestations along the river bank.

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 5-10m in all directions per annum.

Himalayan balsam is classed an invasive non-native plant species, and is included on the European list of Species of Special Concern and covered by the Invasive Alien Species Order 2019.

Materials being disposed as waste from site containing Himalayan balsam propagules should be appropriately described to the receiving licenced disposal facility to ensure that the correct level of duty of care is being implemented as per the Environmental Protection Act 1990.

Associated impacted materials should not be reused in further construction or landscaping without an appropriate remediation strategy being implemented.

Japanese Knotweed (General information)

Japanese knotweed (*Reynoutria japonica*), a rhizomatous perennial was introduced from Asia to Europe in the mid-nineteenth century as an ornamental and fodder plant. It is an impressive species which grows to a height of 2-3 metres, with bamboo like stems, arching branches and clusters of creamy white flowers appearing late in the season. The orange to brown coloured, woody, dead stems persist erect throughout the winter and new shoots, produced from the extensive rhizome system, grow up amongst these the following spring to form dense thickets. The dead stems and leaf litter decompose very slowly and form a deep organic layer, which prevents native seeds from germinating. Once present at a site, Japanese knotweed increases in area very rapidly and soon forms monoculture stands (a stand of Japanese knotweed is a term normally used to describe a collection of stems/canes arising in a group and which have a continuous foliar canopy when mature). Unless otherwise managed, Japanese knotweed will usually suppress native flora, establishing itself as a dominant feature.

Reproduction is primarily by vegetative regeneration of rhizomes (underground stem system – a regenerative part of the plant) and fresh / viable (above ground) stems; it does not normally spread via seeds in the UK. Generally, in most situations the associated rhizome network (i.e. rhizosphere) from the parent plant will typically spread laterally up to circa 3m and vertically down up to a depth of 1m to 2m (based on latest research and consensus), however extents of the associated rhizosphere can also be more than this in some situations.

Japanese knotweed thrives on disturbance and has been spread by both natural means and by human activity. In riparian areas, high water flows disperse fragments of the plant downstream where new colonies form. In the past, fly tipping and transportation of soil containing rhizome fragments have been a major cause of spread, particularly in the urban environment.

Japanese knotweed is known to have significant impacts on development and infrastructure. While damage to structures, particularly existing buildings, is uncommon (particularly where substantial foundations are present), it is known to occur and is much more likely when the structures are built on top of areas where Japanese knotweed is already present or where soils containing Japanese knotweed are imported during the development process. Damage to hard surfaces, landscaping and retaining walls (where foundations are less significant) is common and growth within buildings and infrastructure damage have all been recorded on sites / properties which JKSL have investigated.

Japanese knotweed is classed an invasive non-native plant species, and is included on Schedule 9 of the Wildlife and Countryside Act 1981

Soil/materials containing Japanese knotweed propagules are regarded as 'controlled' waste and should be disposed of at an appropriate licenced facility if taken off-site. Associated impacted materials should not be reused in further construction or landscaping without an appropriate remediation strategy being implemented.

Horsetail (General Information)

Horsetail is one of the oldest living plants, with a variety of species dating back millions of years. It has continued to spread by both spores and rhizome fragments and can be found all over the world.

It is a perennial plant which begins to grow in April. The plant grows upwards and produces a large cone, whereby spores are produced. The hollow, fir tree-like stems have high silica content with black flecks around the nodes. Later on in the growing season, once the spores have been released, very thin, light green leaves appear.

Horsetail quickly establishes itself into dense stands of foliage, which can suppress the growth of grasses and native British plants, leaving the ground bare of vegetation in late autumn/winter and liable to erosion.

Horsetail is a native plant and is therefore not listed within Schedule 9 of the Wildlife and Countryside Act 1981 (unlike Japanese knotweed) or is included on the European list of Species of Special Concern and covered by the Invasive Alien Species Order 2019 (unlike Himalayan balsam for example); however it is still regarded as an invasive (native) plant and can cause potential defects to hardstanding areas (particularly tarmacadam pavements, driveways, etc) and can be a nuisance in soft landscaped areas, particularly where dense numbers of the plant are present.

Materials being disposed as waste from site containing horsetail propagules should be appropriately described to the receiving licenced disposal facility to ensure that the correct level of duty of care is being implemented as per the Environmental Protection Act 1990.

Associated impacted materials should not be reused in further construction or landscaping without an appropriate remediation strategy being implemented.

Site Information

The development site, a former allotments, is circa 0.23ha in size, and is accessed via a track from Waterfold Lane (to the west).

Surrounding land uses mainly include residential to the north, west (beyond which is Waterfold Lane and River Roch) and east, and agricultural land to the south.

Site Development and Other Plans

It is JKSL's understanding that the development proposals include the five detached residential properties, with associated soft and hard landscaping areas (includes surface upgrades to existing track which connects the site to Waterfold Lane). The proposed development plan is enclosed within Appendix 1.

It is important that JKSL are provided with up-to-date information about site plans, including accurate site drawings and details of any additional planned works, particularly in any contaminated area. New areas of infestations can potentially emerge should disturbance activities cause propagules (i.e. a vegetative structure that can become detached from a main plant and give rise to a new plant) being spread into surrounding areas (and off-site). It is important to implement a Clean Site Policy and Management Plan as soon as practically possible.

Any activity on site which has the potential to cause cross-contamination can significantly increase the remediation costs for Japanese knotweed (and other invasive non-native plant species), and any warranty or guarantee offered may be invalidated if works are undertaken which cause cross-contamination on site.

Site Survey

JKSL originally attended site on 30th April 2024 to undertake a survey, however upon initial inspection it was deemed too early within the growing season to assess, as Himalayan balsam seedlings were just starting to emerge.

JKSL re-attended site on 28th May 2024. The survey was undertaken by Jonathan Harris who is a certified surveyor in Japanese knotweed (CSJK) and has nearly ten years experience in dealing with invasive plant species. The results as summarised below should be read in conjunction to enclosed drawing JK24-9565-01 (invasive weed location plan), included within Appendix 2.

Japanese knotweed

Two main areas containing Japanese knotweed were recorded within the development boundary. The table below summarises the recorded Japanese knotweed during JKSL's survey.

Japanese knotweed Area reference number	Location (includes proximity to boundary)	Area and size of infestation <i>Scales - Very small: 1m² or less Small: 1m² to 4m² Medium: 4m² to 25m² Large: 25m² to 100m² Extensive: greater than 100m²</i>	Height of growth	Description of growth (includes maturity and condition)	Notes
JK1	Situated within northern central area of site, circa 10m from northern boundary.	Considered to be a small area, circa 1sqm in total.	Up to circa 0.3m	Sporadic low lying and viable Japanese knotweed surface growth.	There was evidence of ground disturbance in/around area JK1. This may have caused cross-contamination to occur, which may result in new areas of growth to emerge in the future. It is unclear at this stage, as to whether the Japanese knotweed has been previously chemically treated in-situ, which would likely otherwise suppress the amount of surface growth currently visible. Surrounding dense vegetation restricted viewing/access.
JK2	Situated within the north-eastern area of site, circa 2m from the development boundary.	Considered to be a medium area, circa 5sqm in total.	Up to circa 1.3m	Sporadic and viable (more established) Japanese knotweed surface growth. Some of the plants look less healthy.	There was evidence of ground disturbance in/around area JK2. This may have caused cross-contamination to occur, which may result in new areas of growth to emerge in the future. It is unclear at this stage, as to whether the Japanese knotweed has been previously chemically treated in-situ, which would likely otherwise suppress the amount of surface growth currently visible. Surrounding dense vegetation restricted viewing/access.

Himalayan balsam

Extensive Himalayan balsam was recorded within the development boundary, denoted as HB1-HB8 on drawing JK24-9565-01. Additional Himalayan balsam (HB9) was recorded within surrounding areas on neighbouring land to the north.

Dense vegetation restricted viewing and access during the survey; additional areas containing Himalayan balsam could be present on site.

Due to there being evidence of previous ground disturbance on site, this is likely to have caused cross-contamination to occur, which may potentially result in new areas of Himalayan balsam growth to emerge in the future.

Horsetail

Six areas containing horsetail were recorded within the development boundary, denoted as HT1-HT6 on drawing JK24-9565-01. An additional area containing horsetail (HT7) was recorded on neighbouring land to the south.

Horsetail isn't listed within Schedule 9 of the Wildlife and Countryside Act 1981 (unlike Japanese knotweed for example), or is included on the European list of Species of Special Concern and covered by the Invasive Alien Species Order 2019 (unlike Himalayan balsam for example); however it is still regarded as an invasive (native) plant and can cause potential defects to hardstanding areas (particularly tarmac pavements, driveways, etc) and can be a nuisance in soft landscaped areas, particularly where dense numbers of the plant are present, and thus should ideally be dealt with appropriately.

Dense vegetation restricted viewing and access during the survey; additional areas containing Horsetail could be present on site.

Due to there being evidence of previous ground disturbance on site, this is likely to have caused cross-contamination to occur, which may potentially result in new areas of Horsetail growth to emerge in the future.

General information

The visible extent of an infestation may not accurately indicate the full extent of the area affected; concealed growth below ground level could be more extensive.

Dense vegetation restricted viewing/access during the inspection; additional areas containing underlying infestations could be present on site (and on neighbouring land).

As mentioned above, there was evidence of previous ground disturbance on site which may have caused cross-contamination to occur; this may potentially result in new areas of Japanese knotweed, Himalayan balsam and/or horsetail (i.e. areas of infestation) to emerge in the future.

There was evidence of what appeared to be made ground and imported materials (such as building materials) on site. It is unknown as to whether additional areas containing buried propagules are present within the made ground at this stage, which may result in additional areas of infestations to emerge in the future. Additional areas containing Japanese knotweed and Himalayan balsam were noted to be present west of Waterfold Lane.

Photos

Himalayan balsam (on-site)



Himalayan balsam (off-site)



Japanese knotweed (JK1)



Japanese knotweed (JK2)



Horsetail (on-site)



Horsetail (off-site)



Contamination Pathways

“Contamination Pathways” are routes by which a contaminant can spread into or out of a site – for the recorded invasive non-native plant species - this could include movement of soils or other plant materials. JKSL’s surveyor has identified the following current contamination pathways in the course of the survey.

Pathway	Notes
Disturbance activities	The following activities could potentially cause propagules to be spread into/around site (and potentially off-site), resulting in new areas of infestations to emerge in the future - • Future groundworks associated with the proposed development • Importation of made ground + building materials • ongoing maintenance works
Propagule Spread (outward)	Japanese knotweed, Himalayan balsam and/or horsetail could potentially migrate onto neighbouring land should an appropriate remediation strategy/treatment programme not be implemented.
Propagule Spread (inward)	Himalayan balsam and/or horsetail situated on immediate neighbouring land could potentially migrate into site should an appropriate remediation strategy/treatment programme not be implemented, exacerbating the infestation problem.

Invasive Species Risk Assessment

Based on the survey results, this section of the report outlines the risk factors and level of risk of cross-contamination via the contamination pathways identified. The risk assessment was used in the process of devising the Recommended Remediation Option.

The table below outlines potential negative consequences associated with the recorded invasive plant species, and how they could spread in and out of the site. A “Risk Level” of “Low / Mid / High” has been included to quantify each risk factor’s likelihood of cause damage or cross-contamination on site. A “Low” risk might not cause problems in the short term even if the plant is not treated, a “Mid” risk is likely to cause problems without treatment and a “High” risk is very likely to cause problems. The “Distance” specifies how far the risk factor is from the nearest surface growth. Because of the plant’s extensive root system, anything within 7m could potentially be at risk. Anything that is less than an unobstructed 4m away from mature plants is likely to be inside the root network.

We strongly urge that the recommended treatment is started as soon as possible, as this will minimise the spread of the plant. Implementing an invasive plant species management plan immediately (and communicating it to all contractors on site) will reduce the chance of cross contamination during other works on site.

Risk Factor	Distance	Risk Level	Description
Disturbance activities (existing risk)	0m	Medium-high	Areas where people pass by are a risk because propagules can easily be moved along the route, potentially resulting in new areas of infestation to emerge in the future.

Risk Factor	Distance	Risk Level	Description
Infestations on neighbouring land	0m	Medium - high	The infestations on neighbouring land are at risk of spreading into site if appropriate measures are not in place to control the spread and reduce the viability of the invasive plants. Having a Management Plan in place is an important part of preventing the invasive plants from spreading.
Infestations on site (near boundary)	2m from boundary (Japanese knotweed) 0m from boundary (Himalayan balsam) 2.5m from boundary (horsetail)	High	The infestations within the development site are at risk of spreading onto neighbouring land if appropriate measures are not in place to control the spread and reduce the viability of the invasive plants. Having a Management Plan in place is an important part of preventing the invasive plants from spreading.
Ground disturbance during construction phase associated with the future re-development (future risk)	n/a, 0m	High	Should no appropriate treatment and/or control measures be implemented, future ground disturbance activities during the construction phase of the proposal where operatives, and machineries move in and out of the contaminated areas, are likely to cause propagules to be spread around site (and potentially off-site), thus exacerbating the infestation problem further.

Impacts on Development Plans

As shown on enclosed drawing JK24-9565-02 (included within Appendix 3), all areas of infestation situated within the development boundary (includes Himalayan balsam areas HB1-HB8, Japanese knotweed areas JK1-JK2 and Horsetail areas HT1-HT6) will be directly affected by the proposed five plots and associated hard/soft landscaping areas.

It is important that JKSL are provided with up-to-date information about site plans, including accurate site drawings and details of any additional planned works, particularly in any contaminated area. New areas of infestations can potentially emerge should disturbance activities cause propagules (i.e. a vegetative structure that can become detached from a main plant and give rise to a new plant) being spread into surrounding areas (and off-site). It is important to implement a Clean Site Policy and Management Plan as soon as practically possible.

Any activity on site which has the potential to cause cross-contamination can significantly increase the remediation costs for Japanese knotweed (and other invasive non-native plant species), and any warranty or guarantee offered may be invalidated if works are undertaken which cause cross-contamination on site.

Treatment Options

Based on the site layout and plans for the site, as outlined above, and taking in to account the survey results, contamination pathways and invasive species risk assessment, JKSL's recommended remediation option is outlined below. This is designed to get the best results for the lowest possible cost.

Other options may be feasible, and where alternatives are available, we have listed them below the recommended remediation option. JKSL's Surveyor will be happy to outline the reasons for the recommendation and why the alternatives were not chosen. JKSL will implement an alternative remediation option from those outlined below if this is requested by our client.

Making sure that everyone with a role on site is familiar with the recommendations and ensuring they are actioned from day one will help to minimise the risk of cross-contamination, and increase responsiveness to any undesirable situations, including new or previously undiscovered infestations on site.

While this is no guarantee against infestations recurring on site, while no treatment can be certified as 100% effective and while your site will always be vulnerable to uncontrollable threats, JKSL can offer further protection in the form of ongoing monitoring programmes (based on repeated site inspections) and guarantees (where applicable). The recommended remediation option will outline the level of protection that we think is most appropriate to the works we have laid out.

Formal quotes detailing a full breakdown of costs associated with the various remediation and treatment options as mentioned below are enclosed within Appendix 5.

Recommended treatment option

Due to the proposed development directly affecting areas of infestation, ground disturbance / construction related activities will likely exacerbate the infestation problem further, unless an appropriate mechanical remediation strategy is implemented whereby the impacted materials associated are excavated/removed. It is considered that the most economical mechanical remediation strategy option at this stage is likely to be a combined approach, whereby the excavated Japanese knotweed impacted materials are disposed off-site at an appropriate licenced facility, and the excavated Himalayan balsam and horsetail impacted materials are excavated and engineered back (i.e. buried) into the development in accordance with Environment Agency's Regulatory Position Statement (RPS) 178. Due to proximity to the development boundary, burial

more than 7m from the neighbouring land is unlikely to be achieved, and therefore additional approvals will likely be required from the Environment Agency to facilitate burial.

To aid in minimising the risk of Japanese knotweed migrating back into the remediated areas and/or development boundary, a vertical root barrier will be installed alongside a section of the development boundary.

As there is likely to be extensive groundworks on site to facilitate the development, it would make practical sense for us/JKSL to initially excavate and remove the recorded Japanese knotweed impacted materials, and for the main groundworker to excavate and re-engineer the Himalayan balsam and horsetail impacted materials back into the development (ideally with us/JKSL in attendance to implement a watching brief).

To reduce the viability and control the spread of potential Japanese knotweed situated beyond the vertical root barrier/on neighbouring land embankment area, it is recommended that a 5 year monitoring and treatment programme is implemented. Potential re-growth within the treatment areas will be chemically treated in-situ with a Glyphosate based herbicide. Glyphosate is a broad spectrum and non-selective herbicide, and is likely to affect small shrubs and scorch grass-like species within the treatment area. Due to restricted access, the herbicide will be applied via traditional (long reach) Knapsack spray to achieve the best possible results. Site operatives will do their utmost to prevent chemical drift from occurring, thus minimising the risk of surrounding vegetation being affected. The programme will normally comprise of 8 no. monitoring visits over a 5 year period.

Discussions with and permissions from the relevant landowner(s) will need to be arranged by the client to facilitate access/the treatment works recommended to be undertaken by JKSL.

In accordance with latest industry standards, it is recommended that there are 2 no. consecutive growing seasons that show no evidence of re-growth within the affected area to demonstrate that the programme has been successful. As mentioned above, due to the presence of the watercourse, there is a risk that new infestations could potentially emerge in the future. Upon completion of the 5 year programme, the situation will be re-assessed to determine whether additional monitoring (and treatment) visits are required. Potential previous chemical treatment may affect the long term success of the programme.

Just to re-iterate that there are restrictions as to what can be done within a treatment area (i.e. “maintenance area situated beyond the barrier) which has Japanese Knotweed as the plant thrives on disturbance, even after the completion of a successful herbicide treatment programme.

Rhizome (the underground stem system – most regenerative part of the plant) can stay dormant for 20 years or more, which may result in potential re-growth emerging should any ground material containing viable / dormant rhizome be disturbed. It is recommended that the area of infestation is left undisturbed in-situ (includes a circa 3-4m buffer zone). The appearance of the treatment area(s) can be significantly improved (e.g. by cutting back surface weed plants), however it is important that the ground material is not disturbed and a clean site policy (includes bio-security control measures) is implemented.

To reduce the viability and control the spread of Himalayan balsam surface growth on immediate neighbouring land (to aid in minimising the risk of Himalayan balsam migrating back into the development site) it is recommended that a 3 year monitoring and treatment programme is implemented. Due to the steep topography of the neighbouring land, the most practical approach is to chemically treat the surface growth in-situ (rather than had-pulling/stimming) at this stage. A glyphosate based herbicide will be used during treatment via knapsack sprayer. The programme will normally comprise of 6 no. monitoring visits over a 3 year period. Upon completion of the 3 year period, the situation will be re-assessed to determine whether additional monitoring/treatment is required. Ideally two consecutive growing seasons should pass without re-growth, to demonstrate that treatment has been successful. Discussions with and permissions from the relevant landowner(s) will need to be arranged by the client to facilitate access/the treatment works recommended to be undertaken by JKSL.

To reduce the viability and control the spread of Horsetail surface growth on immediate neighbouring land (to aid in minimising the risk of Horsetail migrating back into the development site) it is recommended that a 3 year monitoring and treatment programme is implemented. During treatment, a selective herbicide (SBK) with a water conditioner/adjuvant (such as KPlus/topfilm) is used; KPlus/topfilm should enable the active ingredient within SBK (triclopyr) to break down the silica outer layer of the horsetail, and increase its efficacy to penetrate into the plant. This type of herbicide can be used in conjunction to grass-like species, however may affect/kill other surrounding plants should it come into contact with them. To minimise chemical drift occurring, the herbicide will be spot treated via a traditional knapsack. 6 visits should be undertaken over a 3 year period. Upon completion of the 3 year period, the situation will be re-assessed to determine whether any additional monitoring/treatment is required. Discussions with and permissions from the relevant landowner(s) will need to be arranged by the client to facilitate access/the treatment works recommended to be undertaken by JKSL.

It is recommended that an initial herbicide application is undertaken to all areas of infestation ASAP (situated both within the development boundary and on immediate neighbouring land), to reduce the viability and control the spread of the associated surface growth. Depending on when the mechanical remediation strategy is implemented, additional treatment visits could be recommended to be implemented to the areas of infestation situated within the development boundary (as well as on immediate neighbouring land).

During all of the proposed works, a clean site policy (includes biosecurity control measures) will be implemented by all site operatives within the active and inactive zones to ensure that no propagules (i.e. a vegetative structure that can become detached from a main plant and give rise to a new plant) being spread around the rest of the site, preventing the infestation problem being exacerbated further.

All of the above proposed works are undertaken in-house by our experienced and qualified operatives.

As JKSL is a full member of trade bodies INNSA (Invasive Non-Native Specialists Association) and the PCA (Property Care Association) for specialists who deal with Japanese knotweed (and other invasive non-native plant species), JKSL can also normally offer an appropriate insurance-backed guarantee/IBG product to cover the completed Japanese knotweed excavation areas (does not include Himalayan balsam or horsetail areas). INNSA is currently in the process of obtaining a new provider for offering an insurance-backed guarantee, JKSL can therefore only offer IBG products via the PCA at this stage (subject to agreement with the insurance provider). An insurance-backed guarantee has not been included within our main formal quotes at this stage, however envisage the cost to be between £1.8K - £2K (incl VAT) per IBG product. Due to three plots being situated within the proposed remediation area associated with the Japanese knotweed only, it is likely that three IBG products will be required.

In the meantime it is recommended that the areas of infestation are not disturbed (includes a 3-4m exclusion zone for areas containing Japanese knotweed and Himalayan balsam, and circa 2-3m exclusion zone for the areas containing horsetail).

Alternative options

An alternative mechanical remediation strategy option would be to dispose of all of the excavated impacted materials (includes Himalayan balsam, horsetail and Japanese knotweed) at an

appropriate licenced facility. This is likely to be significantly more expensive than to work / re-engineer back the Himalayan balsam and horsetail impacted materials into the development.

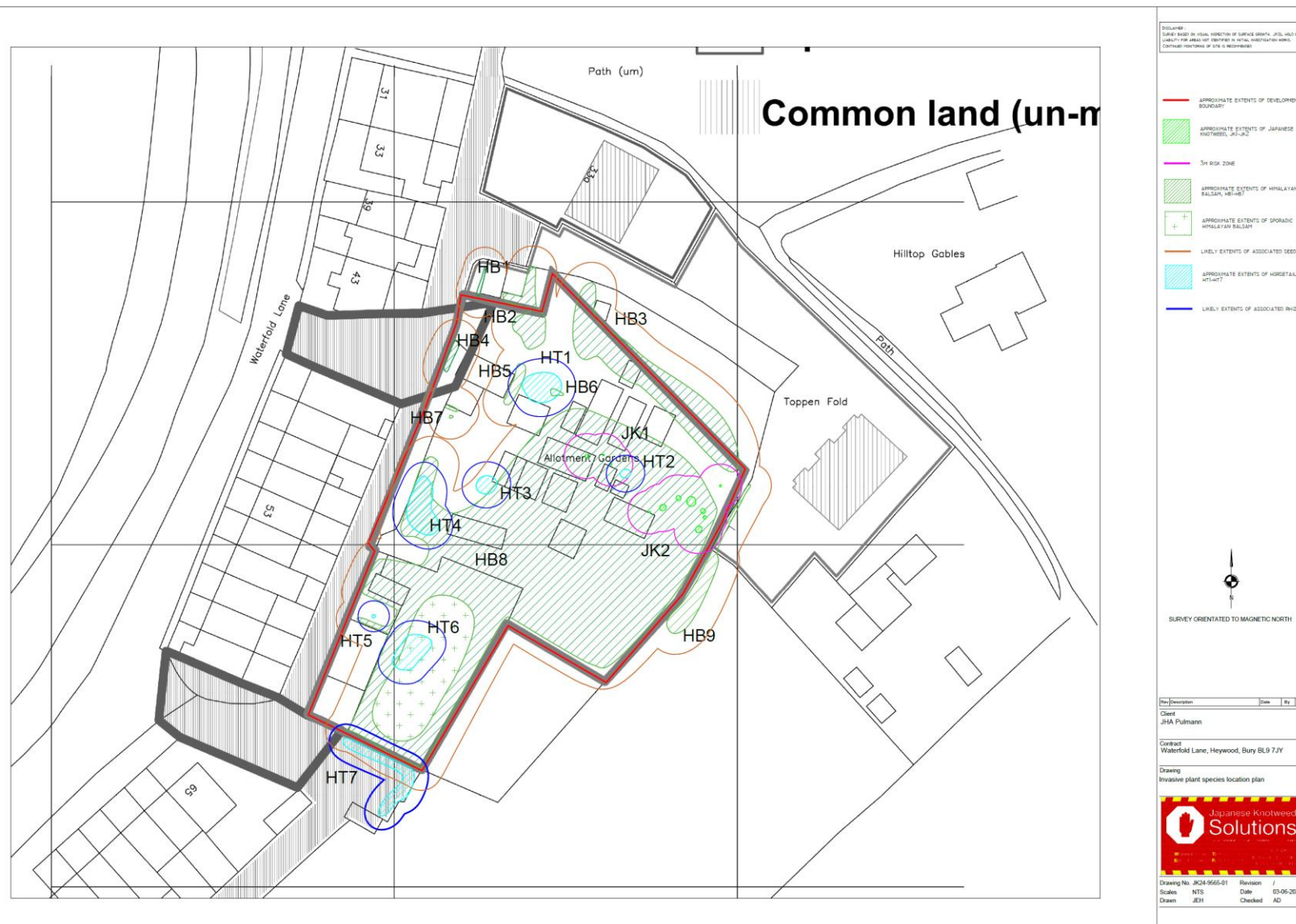
Due to lack of space, burial of the excavated Japanese knotweed impacted materials on site is likely to comprise the future development, and therefore has been discounted at this stage.

Due to lack of space, other mechanical remediation strategies have also been discounted (such as a waste management area or screening).

As an additional belt and brace approach, it is recommended that an appropriate non-porous membrane barrier can be installed beneath proposed pavement and driveways, to minimise the risk of future defects from potential horsetail re-growth.



Appendix 2. Drawing JK24-9565-01



CONTACT US (LINKS):

TEL: 0161 723 2000 WEB: <https://www.jksl.com/contact-jksl/>

(CLICK TO OPEN YOUR DEFAULT EMAIL APP)

EMAIL: jk@sltd.co.uk

[illegible]

Appendix 4. Quotes

Excavation and off-site disposal (Japanese knotweed only)



QUOTE

Japanese Knotweed Solutions Ltd.
Low Wood Commercial Warehouse, Suites
3,4 & 5
574 Manchester Road
Bury
Manchester
BL9 9SW

tel +44 (0)161 723 2000
fax +44 (0)161 723 2001

excavation and off-site disposal (Japanese knotweed only)

DATE	PAGE	VALID DATE	QUOTE NUMBER
10-06-2024	1 / 1	10-07-2024	82751

Product Name	Description	Quantity	Rate	Total
Planning of works	Preparation of Method Statement, Detailed Breakdown of Proposed Works, COSHH, Dealing With Waste Hauliers & Landfill Sites including liaison regarding landfill tax and Preparation of Waste Transfer Documentation.	1.0	£375.00	£375.00
Excavation of Contaminated Materials	Implement a clean site policy Excavation of Japanese knotweed impacted materials, approximate extents as shown on drawing JK24-9565-02. Transfer excavated impacted materials to a loading area. Loading of tipper wagons Preparing ground for vertical root barrier Decontamination of machines, equipment Grade off excavation areas to make safe *subject to access *does not include provision of welfare, securing site (provision of security, if required, during non-operational hours) *subject to ground conditions *client to mark out development footprint/boundaries, where required *assumes no excavation restrictions at this stage *non-acceptable material (if applicable) required to be segregated from excavated impacted material *does not include backfilling at this stage	1.0	£6,980.00	£6,980.00
Haulage and disposal	'Haulage and disposal of materials containing Japanese knotweed propagules at a suitable facility. Material to be moved in covered wagons - all works to be carried out to strict guidelines - see method statement. Please note this is based on a minimum charge for each tipper wagon. *subject to soil analysis, tip approval, tip location, tip availability and lower rate landfill tax being applicable, and waste being non-hazardous Loading times-access to the site being unrestricted. Price per tipper wagon load based on prompt payment, additional costs apply if payment is late (20% increase). Item to be re-measured.	11.0	£835.00	£9,185.00
Vertical Root Barrier	Supply & Install HSP6Geo-Textile membrane as per manufacturers guidelines. Top to protrude 50mm above ground level. Provision/installation of a vertical root barrier, approximate extents as shown on drawing JK24-9565-02. *likely to be a 300-500mm buffer zone between the excavation face/ barrier and fence/adjacent structures, to minimise the risk of fence/adjacent structures being undermined. Appropriate clean material should be backfilled against the barrier within 7-10 days from installation. Further advice can be provided on this. Additional costs will apply, should JKSL undertake this.	1.0	£890.00	£890.00

Sub Total	17,430.00
Tax	3,486.00
Grand Total	20,916.00

Description

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).

JKSL Watching brief during excavation and re-engineering back of Himalayan balsam and horsetail impacted materials



QUOTE

Japanese Knotweed Solutions Ltd.
Low Wood Commercial Warehouse, Suites
3,4 & 5
574 Manchester Road
Bury
Manchester
BL9 9SW

tel +44 (0)161 723 2000
fax +44 (0)161 723 2001

JKSL watching brief during excavation and re-engineering Himalayan balsam and horsetail impacted materials back into the development.

DATE	PAGE	VALID DATE	QUOTE NUMBER
10-06-2024	1 / 1	10-07-2024	82757

Product Name	Description	Quantity	Rate	Total
Watching brief	Implement a clean site policy JKSL to be in attendance to implement a watching brief during the following works - main groundworker to excavate Himalayan balsam and horsetail impacted materials, approximate extents as shown on drawing JK24-9565-02, and re-engineer back in development in accordance with EA's RPS 178. *client's groundworker to provide appropriate machinery, equipment, operatives to undertake the works *client to provide welfare, secure site *location of burial tbc (likely to be in rear gardens of proposed plots) *item is on a re-measure rate is per JKSL operative per day *number of days to be confirmed (requires discussions with groundworker) *subject to proposed levels, groundwater depth *client to ensure RPS 178 conditions are meet, where appropriate. Client to gain approvals with EA, as impacted materials is likely to be required to be buried within 7m from neighbouring land *client's engineer to assess +confirm suitability of impacted materials for burial and also suitability of burial location	1.0	£435.00	£435.00

Sub Total	435.00
Tax	87.00
Grand Total	522.00

Description
*to be read in conjunction with JKSL report and correspondences

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).

Ongoing 5 year programme for potential associated Japanese knotweed situated beyond the vertical root barrier



QUOTE

Japanese Knotweed Solutions Ltd.
Low Wood Commercial Warehouse, Suites
3,4 & 5
574 Manchester Road
Bury
Manchester
BL9 9SW

tel +44 (0)161 723 2000
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Ongoing 5 year treatment programme (potential Japanese knotweed situated beyond the proposed vertical root barrier).

DATE	PAGE	VALID DATE	QUOTE NUMBER
10-06-2024	1 / 1	10-07-2024	82752

Product Name	Description	Quantity	Rate	Total
5 year monitoring and treatment programme	Implementation of clean site policy (includes biosecurity control measures) to aid in minimising cross-contamination occurring Monitor and treat potential associated JK surface growth situated beyond the vertical root barrier, as shown on drawing JK24-9565-02 8 visits to be undertaken over 5 years. *A glyphosate based herbicide will be used during treatment. Glyphosate is a broad spectrum and non-selective herbicide, and is likely to affect small shrubs and scorch grass-like species within the treatment area. The herbicide will be applied via traditional Knapsack spray to achieve the best possible results. Site operatives will do their utmost to prevent chemical drift from occurring, thus minimising the risk of surrounding vegetation being affected. *Upon completion of the 5 year programme, the situation will be re-assessed to determine whether additional monitoring (and treatment) visits are required. *In accordance to the latest industry standards, it is recommended that there are 2 no. consecutive growing seasons that show no evidence of re-growth within the affected area to demonstrate *subject to access *Discussions with and permissions from the relevant landowner(s) will need to be arranged by the client to facilitate access/the treatment works recommended to be undertaken by JKSL. *should an initial herbicide application be undertaken to all areas of Japanese knotweed, including within the development boundary, prior to the mechanical remediation works commencing, an additional cost of £340.00+VAT per treatment visit will apply.	8.0	£310.00	£2,480.00

Sub Total	2,480.00
Tax	496.00
Grand Total	2,976.00

Description
to be read in conjunction with JKSL correspondence

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).

Ongoing 3 year programme for recorded Himalayan balsam on immediate neighbouring land

QUOTE



Japanese Knotweed Solutions Ltd.
Low Wood Commercial Warehouse, Suites
3,4 & 5
574 Manchester Road
Bury
Manchester
BL9 9SW

tel +44 (0)161 723 2000
fax +44 (0)161 723 2001

Ongoing 3 year treatment programme (recorded
Himalayan balsam situated on immediate
neighbouring land)

DATE	PAGE	VALID DATE	QUOTE NUMBER
10-06-2024	1 / 1	10-07-2024	82753

Product Name	Description	Quantity	Rate	Total
3 year monitoring and treatment programme	Implementation of clean site policy (includes biosecurity control measures) to aid in minimising cross-contamination occurring Monitor and treat potential associated Himalayan balsam surface growth situated on neighbouring land, as shown on drawing JK24-9565-02 6 visits to be undertaken over 3 years. *A glyphosate based herbicide will be used during treatment. Glyphosate is a broad spectrum and non-selective herbicide, and is likely to affect small shrubs and scorch grass-like species within the treatment area. The herbicide will be applied via traditional Knapsack spray to achieve the best possible results. Site operatives will do their utmost to prevent chemical drift from occurring, thus minimising the risk of surrounding vegetation being affected. *Upon completion of the 3 year programme, the situation will be re-assessed to determine whether additional monitoring (and treatment) visits are required. *In accordance to the latest industry standards, it is recommended that there are 2 no. consecutive growing seasons that show no evidence of re-growth within the affected area to demonstrate *subject to access *Discussions with and permissions from the relevant landowner(s) will need to be arranged by the client to facilitate access/the treatment works recommended to be undertaken by JKSL. *should an initial herbicide application be undertaken to all areas of Himalayan balsam, including within the development boundary, prior to the mechanical remediation works commencing, an additional cost of £980.00+VAT per treatment visit will apply)	6.0	£480.00	£2,880.00

Sub Total	2,880.00
Tax	576.00
Grand Total	3,456.00

Description
to be read in conjunction with JKSL correspondence

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).

Ongoing 3 year programme for recorded Horsetail on immediate neighbouring land



QUOTE

Japanese Knotweed Solutions Ltd.
Low Wood Commercial Warehouse, Suites
3,4 & 5
574 Manchester Road
Bury
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BL9 9SW

tel +44 (0)161 723 2000
fax +44 (0)161 723 2001

Ongoing 3 year treatment programme (recorded
Horsetail situated on immediate neighbouring
land)

DATE	PAGE	VALID DATE	QUOTE NUMBER
10-06-2024	1 / 1	10-07-2024	82754

Product Name	Description	Quantity	Rate	Total
3 year monitoring and treatment programme	Implementation of clean site policy (includes biosecurity control measures) to aid in minimising cross-contamination occurring Monitor and treat potential associated Horsetail surface growth situated on neighbouring land, as shown on drawing JK24-9565-02 6 visits to be undertaken over 3 years. *A glyphosate based herbicide will be used during treatment. Glyphosate is a broad spectrum and non-selective herbicide, and is likely to affect small shrubs and scorch grass-like species within the treatment area. The herbicide will be applied via traditional Knapsack spray to achieve the best possible results. Site operatives will do their upmost to prevent chemical drift from occurring, thus minimising the risk of surrounding vegetation being affected. *Upon completion of the 3 year programme, the situation will be re-assessed to determine whether additional monitoring (and treatment) visits are required. *In accordance to the latest industry standards, it is recommended that there are 2 no. consecutive growing seasons that show no evidence of re-growth within the affected area to demonstrate *subject to access *Discussions with and permissions from the relevant landowner(s) will need to be arranged by the client to facilitate access/the treatment works recommended to be undertaken by JKSL. *should an initial herbicide application be undertaken to all areas of Himalayan balsam, including within the development boundary, prior to the mechanical remediation works commencing, an additional cost of £340.00+VAT per treatment visit will apply)	6.0	£310.00	£1,860.00

Sub Total	1,860.00
Tax	372.00
Grand Total	2,232.00

Description
to be read in conjunction with JKSL correspondence

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).

Alternative mechanical remediation strategy option – full excavation and off-site disposal (includes Japanese knotweed, Himalayan balsam and horsetail)



QUOTE

Japanese Knotweed Solutions Ltd.
Low Wood Commercial Warehouse, Suites 3,4 & 5
574 Manchester Road
Bury
Manchester
BL9 9SW

tel +44 (0)161 723 2000
fax +44 (0)161 723 2001

240610 - Full excavation and off-site disposal
(JK, Himalayan balsam and horsetail) (82755)

DATE	PAGE	VALID DATE	QUOTE NUMBER
10-06-2024	1 / 1	10-07-2024	82756

Product Name	Description	Quantity	Rate	Total
Planning of works	Preparation of Method Statement, Detailed Breakdown of Proposed Works, COSHH, Dealing With Waste Hauliers & Landfill Sites including liaison regarding landfill tax and Preparation of Waste Transfer Documentation.	1.0	£375.00	£375.00
Excavation of Contaminated Materials	Implement a clean site policy Excavation of Japanese knotweed, Himalayan balsam and Horsetail impacted materials, approximate extents as shown on drawing JK24-9565-02. Transfer excavated impacted materials to a loading area. Loading of tipper wagons Preparing ground for vertical root barrier Decontamination of machines, equipment Grade off excavation areas to make safe *subject to access *does not include provision of welfare, securing site (provision of security, if required, during non-operational hours) *subject to ground conditions *client to mark out development footprint/boundaries, where required *assumes no excavation restrictions at this stage *non-acceptable material (if applicable) required to be segregated from excavated impacted material *does not include backfilling at this stage *requires building materials to be removed to facilitate works (works/costs do not currently allow for this at this stage) *may require removal of existing buildings to facilitate works	1.0	£21,980.00	£21,980.00
Haulage and disposal	'Haulage and disposal of materials containing Japanese knotweed, Himalayan balsam and horsetail propagules at a suitable facility. Material to be moved in covered wagons - all works to be carried out to strict guidelines - see method statement. Please note this is based on a minimum charge for each tipper wagon. *subject to soil analysis, tip approval, tip location, tip availability and lower rate landfill tax being applicable, and waste being non-hazardous Loading times-access to the site being unrestricted. Price per tipper wagon load based on prompt payment, additional costs apply if payment is late (20% increase). Item to be re-measured. *PLEASE NOTE THAT IT IS POSSIBLE THAT THE EXCAVATED HIMALAYAN BALSAM IMPACTED MATERIALS WILL ATTRACT A HIGHER DISPOSAL RATE (RATE TBC) AND HIGH RATE LANDFILL TAX (CURRENTLY AT £103.70+VAT PER TONNE), THEREFORE INCREASING OVERALL HAULAGE AND DISPOSAL COSTS.	55.0	£835.00	£45,925.00
Vertical Root Barrier	Supply & Install HSP6Geo-Textile membrane as per manufacturers guidelines. Top to protrude 50mm above ground level. Provision/installation of a vertical root barrier, approximate extents as shown on drawing JK24-9565-02. *likely to be a 300-500mm buffer zone between the excavation face/ barrier and fence/adjacent structures, to minimise the risk of fence/adjacent structures being undermined. Appropriate clean material should be backfilled against the barrier within 7-10 days from installation. Further advice can be provided on this. Additional costs will apply, should JKSL undertake this.	1.0	£890.00	£890.00

Sub Total	69,170.00
Tax	13,834.00
Grand Total	83,004.00

Description	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).

Appendix 8

Reference Documents

This document is deliberately concise but if you need more information, your Surveyor will be happy to help. JKSL also provide online documents to assist our clients. Below is a selection of links to information on the work we do, our products and services, and what we use to do the job.

More about us – Japanese Knotweed Solutions Limited

- Website – <https://www.jksl.com>
- [Contact us](#)
- [Why choose us?](#)
- [Accreditations](#)

Information about treatment methods

- The [INNSA Standards](#) are minimum requirements for the main Japanese knotweed treatment methods. INNSA is the UK trade body dedicated to invasive species remediation.

Codes of Practice

- The [INNSA Code of Practice – Managing Japanese Knotweed](#) (pdf) gives full guidance for landowners, developers, contractors and others with an interest in Japanese knotweed.
- The Property Care Association have their own [Code of Practice](#) (pdf) for Japanese Knotweed
- RICS (formerly the Royal Institute of Chartered Surveyors) released guidance in 2012 – [Japanese Knotweed and Residential Property](#) (pdf). This guidance is no longer current.
- The Environment Agency gives guidance called [RPS 178](#) which explains what you need to do to get rid of Japanese knotweed material from your site.
- The original [Environment Agency's Code of Practice – Managing Japanese Knotweed on Development Sites](#) was used for almost fifteen years, but was withdrawn in 2016.

Insurance-backed guarantees

- [10 Year INNSA Insurance Backed Guarantee](#)
- [GPI – Knotweed New](#)
- [GPI – Knotweed Express](#)

Herbicide information

- [Safety Data Sheet - Roundup Pro Vantage 480](#)
- [Safety Data Sheet - ICADE](#)
- [Safety Data Sheet - Katana](#)
- [Safety Data Sheet - Mixture B NF](#)
- [Use of Roundup near pets](#)

- [Use of Roundup near livestock](#)