JAPANESE KNOTWEED SOLUTIONS LTD

Invasive plant species management plan

Client	Lidl Great Britain Ltd
Site	440 Hollinwood Avenue, Moston, Manchester, M40 0JH
PROJECT SURVEYOR	Jonathan Harris
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REPORT REFERENCE	JK26-1014-IPSMP-30062026

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Summary

During the survey undertaken by JKSL, the following areas containing invasive plant species wre recorded within the development boundary –

- 7 no. areas containing Montbretia
- 9 no. areas containing Cotoneaster sp
- 10 no. areas containing horsetail

Additional areas containing Montbretia and horsetail were noted/recorded on neighbouring land.

Unlike the recorded areas containing Montbretia and Cotoneaster sp, horsetail is a native plant and is not listed on Schedule 9 of the Wildlife and Countryside Act 1981 as an invasive non-native plant species. However horsetail is still considered to be invasive and can potentially cause defects such as damage to hard standing areas (in particular tarmacadam surfaces) and be a nuisance in soft landscaping areas, thus it is wise to deal with it, particularly in areas where there are a high number of plants.

Where the proposed development directly affects the areas of recorded invasive plant species, a mechanical remediation strategy is recommended to be implemented, whereby the associated impacted materials are excavated-removed. At this stage, the most robust mechanical strategy is to dispose the excavated impacted materials off-site at an appropriate licenced facility. The presence of adjacent existing trees (to be retained) will likely affect the extents of excavation.

As horsetail is very difficult to completely remove (even when mechanically excavated-removed), it is recommended (as a belt and brace approach) that a suitable horizontal membrane barrier is installed within the footprint of affected proposed hardstanding areas where there is a higher risk of future potential defects.

To aid in reducing the viability and controlling the spread of Montbretia, Cotoneaster sp and horsetail potentially left in-situ within the site boundary (where there are potential excavation restrictions) , an ongoing 3yr treatment programme is recommended to be implemented. Upon completion of the 3yr period, the situation will be re-assessed to determine whether additional monitoring+treatment is required.

It is recommended that the neighbouring landowner(s) is made aware of the invasive plant species situated within their ownership, and for them to manage it appropriately (this should also aid in preventing the infestation migrating into the development site).

It is important that biosecurity control measures are implemented on site, to aid in preventing propagules (a vegetative structure that can become detached from the invasives plant species recorded on site and give rise to a new plant) being spread around site (and off-site).

In the meantime, it is recommended that the areas of infestation are not disturbed, includes the following approximate buffer zones around the associated recorded surface growth –

- 2-3m around areas containing Cotoneaster sp and horsetail
- 2m around areas containing Montbretia

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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 Limited (JKSL) were instructed by Lidl Great Britain Ltd to undertake a survey to assess the location and extents of Montbretia and/or other invasive plant species located within the development site at 440 Hollinwood Avenue, Moston, Manchester, M40 0JH, and to develop/update the Invasive Plant Species Management Plan which includes appropriate remedial and treatment options to facilitate the future redevelopment of the site. The Invasive Plant Species Management Plan will also assist in discharging planning condition 15 (relating to application no. 142670/FO/2025) which stated -

> *15) Prior to the commencement of development (excluding demolition) an invasive non-native species protocol shall be submitted to and approved by the City Council as Local Planning Authority, detailing the containment, control and removal of Montbretia identified on site or any other invasive species encountered on site. The measures shall be carried out strictly in accordance with the approved scheme and implemented prior to the commencement of the development hereby approved. Reason - To control the spread of invasive species, pursuant to policy EN15 of the Manchester Core Strategy.*
>
> *Reason - To control the spread of invasive species, pursuant to policy EN15 of the Manchester Core Strategy.*

JKSL has used its understanding of the current legislation and the recommended best practice in developing this management plan document 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 and other invasive plant species

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

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' 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.

JKSL has been at the forefront of invasive plant treatment for 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 / property in question.

Site/Property information

The site, circa 0.8ha, comprises a former commercial premises with associated buildings, an operations yard with some soft landscaped areas.

Access into site is from Hollinwood Avenue to the south.

The site is currently secure with boundary fencing, and a locked entrance gate.

The site is in a suburban location surrounded by a mixture of commercial and residential uses. The site is bounded to the north by residential properties fronting South Crescent. Further north is the M60 motorway, approximately 175 m north of the site boundary. To the east are residential properties fronting onto St Margaret's Road. South of the site is Hollinwood Avenue, beyond which are a mix of commercial and residential properties. To the west are commercial and residential properties fronting onto Hollinwood Avenue and Greengate East.

Figure 1 below, shows the site location plan.

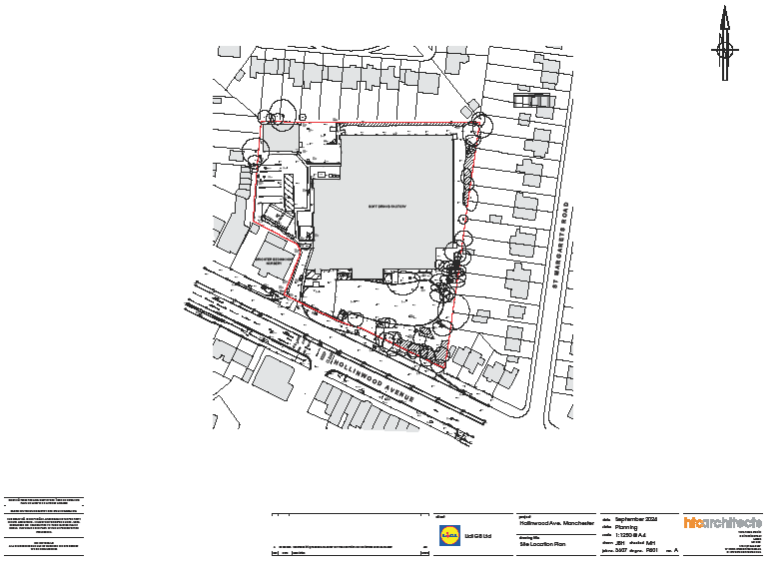


Figure 1. Site location plan.

Site development and other plans

The proposals include the erection of a food store (Use Class E) with associated car parking and landscaping. Figure 2 below shows the proposed development layout plan.

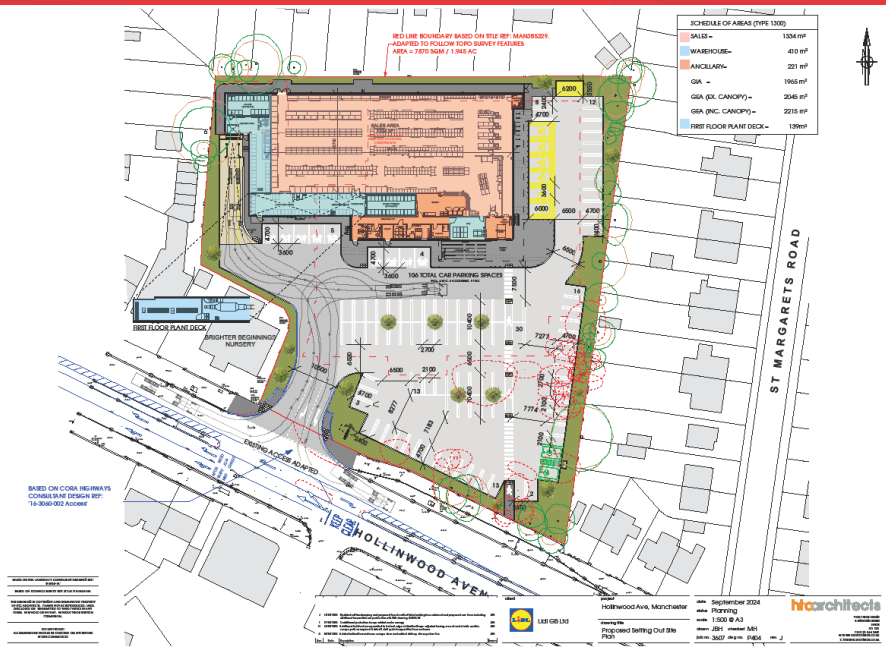


Figure 2. Proposed development layout plan.

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. Invasive plants can easily spread and even tiny fragments can cause new infestations if they are moved out of a contaminated area. It is important to implement a Clean Site Policy (includes biosecurity control measures) 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 invasive plant species and any warranty or guarantee offered may be invalidated if works are undertaken which cause cross-contamination on site.

Survey results

JKSL inspected the site on 3rd June 2026.

Weather conditions during the survey were dry with passing clouds. The survey was undertaken by Jonathan Harris who is a certified surveyor in Japanese knotweed (CSJK) and has over 10 years experience in dealing specifically with invasive plant species.

The results as summarised in tables 1-3 below should be read in conjunction with enclosed drawing JK26-1014-01 (Invasive plant species location plan) which shows the approximate location and extents of recorded Montbretia, Cotoneaster sp and horsetail.

Table 1. Summary of recorded areas of Montbretia

Montbretia area reference number	Location (includes proximity to boundary)	Area of infestation	Description of growth (includes maturity and condition)	Notes
M1	Located in southern area of site, circa 0.5m from boundary	Surface growth amounted to circa 7sqm	Viable and established surface growth	Due to proximity to the boundary associated propagules could be present on neighbouring land.
M2	Located in south-eastern area of site, circa 2.5m from boundary	Surface growth amounted to circa 1sqm	Isolated and viable surface growth	
M3	Located in south-eastern area of site, circa 7.5m from boundary	Surface growth amounted to circa 1sqm	Isolated and viable surface growth	Some surrounding dense vegetation restricted viewing and access during survey
M4	Located in south-eastern area of site, circa 0.5m from boundary	Surface growth amounted to circa 27sqm	Viable and established surface growth	Some surrounding dense vegetation restricted viewing and access during survey. Due to proximity to the boundary associated propagules could be present on neighbouring land.
M5	Located in south-eastern area of site, adjacent to boundary	Surface growth amounted to circa 2.5sqm	Viable Isolated and viable surface growth	Some surrounding dense vegetation restricted viewing and access during survey. Due to proximity to the boundary associated propagules could be present on neighbouring land.
M6	Located in south-eastern area of site, adjacent to boundary	Surface growth amounted to circa 1.5sqm	Isolated and viable surface growth	Some surrounding dense vegetation restricted viewing and access during survey. Due to proximity to the boundary associated propagules could be present on neighbouring land.
M7	Located in site, adjacent to	Surface growth	Viable and established surface growth	Some surrounding dense vegetation restricted viewing and access during survey.

	eastern boundary	amounted to circa 95sqm		Due to proximity to the boundary associated propagules could be present on neighbouring land. Montbretia surface growth noted to be present on neighbouring land to the east.

Table 2. Summary of recorded areas of Cotoneaster sp

Cotoneaster sp area reference number	Location (includes proximity to boundary)	Area of infestation	Description of growth (includes maturity and condition)	Notes
CT1	Located in south eastern area of site, circa 1.8m from boundary	Surface growth amounted to circa 1.8sqm	Viable and established surface growth	Due to proximity to the boundary associated propagules could be present on neighbouring land. Surrounding dense vegetation restricted viewing and access.
CT2	Located in south eastern area of site, circa 4.5m from boundary	Surface growth amounted to circa 4sqm	Viable and established surface growth	Surrounding dense vegetation restricted viewing and access.
CT3	Located in south eastern area of site, adjacent to boundary	Surface growth amounted to circa 1sqm	Viable and established surface growth	Surrounding dense vegetation restricted viewing and access.
CT4	Located in south eastern area of site, adjacent to boundary	Surface growth amounted to circa 1.5sqm	Viable and established surface growth	Surrounding dense vegetation restricted viewing and access.
CT5	Located in southern area of site, circa 20m from boundary	Surface growth amounted to circa 0.5sqm	Isolated and viable surface growth	
CT6	Located in southern area area of site, circa 32m from boundary	Surface growth amounted to circa 1.5sqm	Viable and established surface growth	Surrounding dense vegetation restricted viewing and access.
CT7	Located in southern area of site, circa 17m from boundary	Surface growth amounted to circa 7sqm	Viable and established surface growth	
CT8	Located in site, adjacent to eastern boundary	Surface growth amounted to circa 1.5sqm	Viable and established surface growth	Surrounding dense vegetation restricted viewing and access. Associated propagules could extend onto neighbouring land

CT9	Located in north eastern area of site, circa 2m from boundary	Surface growth amounted to circa 6sqm	Viable and established surface growth	Surrounding dense vegetation restricted viewing and access.

Table 3. Summary of recorded areas of Horsetail

Horsetail sp area reference number	Location (includes proximity to boundary)	Area of infestation	Description of growth (includes maturity and condition)	Notes
HT1	Located in southern area of site, and on immediate neighbouring land (on pavement area)	Surface growth amounted to circa 69sqm	Viable and established surface growth	Associated surface growth growing through pavement on neighbouring land, and also through tarmac hardstanding within site boundary.
HT2	Located in south eastern area of site, and on immediate neighbouring land (on pavement area)	Surface growth amounted to circa 30sqm	Viable and established surface growth	Due to proximity to the boundary associated propagules (on neighbouring land) could be more extensive than indicated by the current amount of surface growth along the pavement area (on neighbouring land). Surrounding dense vegetation restricted access and viewing.
HT3	Located in south eastern area of site, encroaching up to the eastern boundary.	Surface growth amounted to circa 31sqm	Sporadic viable surface growth	Due to proximity to the boundary associated propagules could extend/be present on neighbouring land to the east. Surrounding dense vegetation restricted access and viewing.
HT4	Located in eastern area of site, circa 4.5m from site boundary	Surface growth amounted to circa 1.5sqm	Sporadic viable surface growth	Surrounding dense vegetation restricted access and viewing.
HT5	Located in south-central area of site	Surface growth amounted to circa 7sqm	Established viable surface growth	Associated rhizome could exploit/be present in cracks of adjacent existing building
HT6	Located in eastern area of site, adjacent to boundary	Surface growth amounted to circa 1sqm	Isolated viable surface growth	Due to proximity to the boundary associated propagules could extend/be present on neighbouring land to the east.
HT7	Located in eastern area of site, circa 4m	Surface growth amounted to	Established viable surface growth	Associated rhizome could exploit/be present in cracks of adjacent existing building

	from the boundary	circa 11.5sqm		
HT8	Located in site, adjacent to northern boundary	Surface growth amounted to circa 63sqm	Established viable surface growth	Surrounding dense vegetation restricted access and viewing. Associated rhizome could exploit/be present in cracks of adjacent existing building Due to proximity to the boundary associated propagules could extend/be present on neighbouring land to the north. Some rubble present in the area of infestation.
HT9	Located in site, adjacent to northern boundary	Surface growth amounted to circa 1sqm	Established viable surface growth	Due to proximity to the boundary associated propagules could extend/be present on neighbouring land to the north. On edge of service yard (surface growth growing through concrete surface)
HT10	Located in site, adjacent to western boundary	Surface growth amounted to circa 8sqm	Established viable surface growth	Due to proximity to the boundary associated propagules could extend/be present on neighbouring land to the north. On edge of service yard (surface growth growing through concrete surface)

Additional 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.

As mentioned above, the presence of dense vegetation restricted access and viewing during the survey (along the northern, eastern and southern boundaries). Additional areas of infestation could be present which JKSL are currently unaware of.

Unlike the recorded areas containing Montbretia and Cotoneaster sp, horsetail is a native plant and is not listed on Schedule 9 of the Wildlife and Countryside Act 1981 as an invasive non-native plant species. However horsetail is still considered to be invasive and can potentially cause defects such as damage to hard standing areas (in particular tarmacadam surfaces) and be a nuisance in soft landscaping areas, thus it is wise to deal with it, particularly in areas where there are a high number of plants.

Additional areas containing other Cotoneaster plant species (which are not listed within Schedule 9 within Section 14 of The Wildlife and Countryside Act 1981) were also present within the site boundary. Because these Cotoneaster plant species are not listed within Schedule 9 within Section 14 of The Wildlife and Countryside Act 1981, they have not been recorded.

Appendix 1 includes some additional information about Montbretia, Cotoneaster sp. and horsetail.

Appendix 2 includes some additional information about relevant legislation relating to invasive non-native plant species.

Site photographs

Montbretia	
M1	 
M2	
M3	
M4	
M5	No photo
M6	

Montbretia	
M7	

Cotoneaster sp	
CT1	
CT2	
CT3	 
CT4	

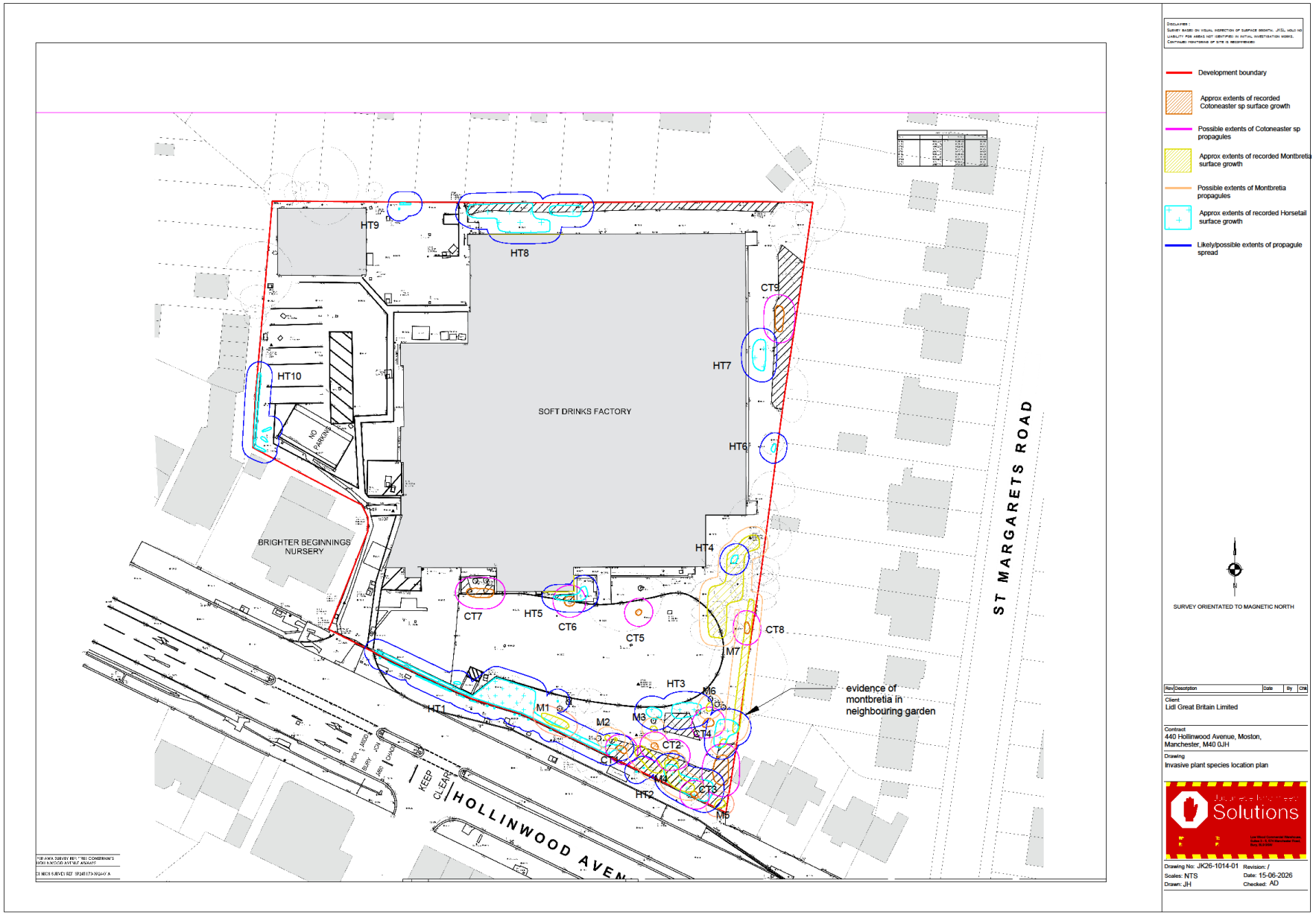
Cotoneaster sp	
CT5	
CT6	
CT7	
CT8	

Horsetail	
HT1	 

Horsetail	
HT2	
HT3	No photo
HT4	
HT5	
HT6	
HT7	

Horsetail	
HT8	 
HT9	
HT10	

Drawing JK26-1014-01 (Invasive plant species location plan)



Contamination Pathways

"Contamination Pathways" are routes by which a contaminant can spread into or out of a site – for the recorded invasive 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.

Table 1. identifies the potential contamination pathways.

Table 1. Current contamination pathways

Pathway	Notes
Propagule Spread (outward)	Due to the location of areas containing infestations situated near the boundaries, associated propagules could potentially migrate onto neighbouring land from the development site should an appropriate remediation strategy not be implemented.
Propagule spread (inwards)	Due to the location of areas containing infestations situated near the boundaries, associated propagules could potentially migrate into the development site from neighbouring land should an appropriate remediation strategy not be implemented.

Invasive plant 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 invasive plant species risk assessment was also used in the process of devising the Recommended Remediation Option.

Table 2 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.

Table 2. Invasive plant species risk assessment.

Risk Factor	Distance	Risk Level	Description
Infestations near site boundary (on site)	0m	High	The infestations on site are at risk of spreading to neighbouring land. Having a Management Plan in place is an important part of preventing the invasive plants from spreading.
Infestations near site boundary (off-site)	Om / on boundary / immediate neighbouring land	High	The site is at risk of being infested from immediate neighbouring land. It is important to take action to prevent your site being infested – you can use this report or ask us for help with what you should say to your neighbour. Unfortunately, we can't contact anyone on your behalf.
Ground disturbance during construction phase associated with the future re-development (future risk)	0m	High	Should no appropriate remediation-treatment strategy and/or control measures be implemented, future ground disturbance activities during the construction phase of the proposal where operatives, and machineries moving 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.
Other/ongoing human activity	0m	High	Ongoing grounds maintenance or other works where people move in and out of the contaminated areas can cause the plant to spread.
Proposed hard standing associated with the re-development of the site	0m	High	Should no appropriate treatment and/or control measures be implemented, future development could be at risk, whereby associated horsetail re-growth could result in future defects in proposed hardstanding areas.

Impacts on the development

The development proposals (includes the erection of a food store with associated car parking and landscaping) will directly affect the recorded areas containing Montbretia, Cotoneaster sp and horsetail. Enclosed drawing JK26-1014-02 shows the impacts on the development.

Construction activities (includes ground disturbance works) will likely exacerbate the infestation problems further, and there is a high risk that this will then cause the spread of propagules around site, and potentially off-site, should an appropriate remediation-treatment strategy not be implemented.

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. It is important to implement a biosecurity control measures and have a Management Plan in place as soon as practically possible.

JKSL should be informed at the earliest opportunity of any planned works carried out in or near the contaminated areas, due to the potential for cross-contamination; we can supply staff on a watching brief to ensure that legislation is not contravened and best practice is implemented, in order to reduce the risk of cross contamination on site, which could potentially cause significant increases in remediation costs.

Remediation-Treatment Options

A specific remediation-treatment strategy has been recommended, based on the site and the survey results. The remediation-treatment strategy is designed to get the best results for the lowest cost and also in accordance with Integrated Weed Management (Appendix 5 provides more information on Integrated Weed Management).

Other options may be possible, and we've listed these alternatives below.

Recommended option(s)

Based on the site layout and proposal plans for the site, and taking in to account the survey results, contamination pathways and invasive species risk assessment, below is a summary of the recommended remediation and treatment option.

Due to the proposed development directly affecting areas of infestation, ground disturbance / construction related activities will likely exacerbate the infestation problems further, unless an appropriate remediation strategy is implemented whereby the associated impacted materials are excavated/removed.

The mechanical remediation strategy should be implemented prior to other ground disturbance works commencing.

Enclosed drawing JK26-1014-02 shows the anticipated extents of excavation. Due to the presence of surrounding existing trees to remain, the associated root protection areas will likely restrict the extents of excavation. Also, to aid in minimising the risk of existing boundary fence/structures being undermined, a circa 300-500mm buffer zone will likely be left in-situ between the excavation face and boundary fencing.

At this stage, in JKSL's professional option, the most robust strategy in terms of being minimal risk to the future development, would be to fully excavate (where practically feasible) the Montbretia, Cotoneaster sp and horsetail impacted materials, and dispose the waste at an appropriate licenced facility.

As part of good working practice, the completed excavation areas should be monitored for a minimum of two consecutive growing seasons (this will be undertaken during the ongoing monitoring and treatment programme as mentioned below).

As horsetail is very difficult to completely remove (even when mechanically excavated-removed), it is recommended (as a belt and brace approach) that suitable horizontal membrane barrier is installed within the footprint of affected proposed hardstanding areas where there is a higher risk of potential future defects.

To aid in reducing the viability and controlling the spread of areas containing Montbretia, Cotoneaster sp and horsetail left in-situ within the site boundary (where excavation extents are restricted) an ongoing 3yr treatment programme is recommended to be implemented. Montbretia and Cotoneaster surface growth will be chemically treated in-situ with a Glyphosate based herbicide. Glyphosate is a broad spectrum and non-selective herbicide so may cause localised damage to surrounding plants. The horsetail will be chemically treated with a more selective herbicide which may also result in localised damage to surrounding plants. Both types of herbicides will be applied via knapsack sprayer; site operatives will spot treat the relevant target invasive plant species (where practically feasible) to aid minimising chemical drift. The programme will comprise of 6 visits over a 3 yr period (visits undertaken around June and August each year during this period). As part of the ongoing 3yr programme, the completed excavation areas will be monitored over two consecutive growing seasons as well.

Upon completion of the 3yr period, the situation will be re-assessed to determine whether additional monitoring+treatment is required. Ideally there should be two consecutive growing seasons without re-growth to demonstrate treatment of horsetail and Cotoneaster sp has been successful in accordance with industry standards / good practice. Ideally there should be three consecutive growing seasons without re-growth to demonstrate treatment of Montbretia has been successful in accordance with industry standards / good practice.

Depending on when the mechanical excavation-removal works are undertaken, an initial treatment visit to all areas of recorded invasive plant species (within the site boundary) will be beneficial, to aid control the spread and reduce the viability of the underlying infestations.

It is recommended that the relevant landowner(s) are made aware of the Horsetail and Montbretia situated within their ownership, and for them to manage the invasive plant species appropriately (this should also aid in preventing off-site invasive plants migrating into the development site).

There are restrictions as to what can be done within the locations where ongoing monitoring and treatment is being undertaken (i.e. where infestations are being left in-situ). Disturbance within an area of infestation could result in the infestation problem being exacerbated further and could also

affect the success of the treatment programme. It is recommended that the treatment area (includes relevant buffer zones around the associated surface growth, where applicable) are not disturbed, unless excavated and removed. The appearance of the treatment areas can be significantly improved (e.g. by cutting back other surface weed plants), however it is important that the ground material / invasive plants are not disturbed and bio-security control measures are implemented.

It is important that biosecurity control measures are implemented on site, to aid in preventing propagules (a vegetative structure that can become detached from the invasives plant species recorded on site and give rise to a new plant) being spread around site (and off-site). Appendix 3 provides more information about the biosecurity control measures to be implemented during the works.

All of the above proposed work should be undertaken by an appropriate invasive weed specialist (who is a member of an appropriate trade body, such as INNSA and/or PCA, for specialists who deal specifically with Japanese knotweed and other invasive plant species) or as a minimum with an appropriate invasive weed specialist in attendance.

In the meantime, it is recommended that the areas of infestation are not disturbed, includes the following approximate buffer zones around the associated recorded surface growth –

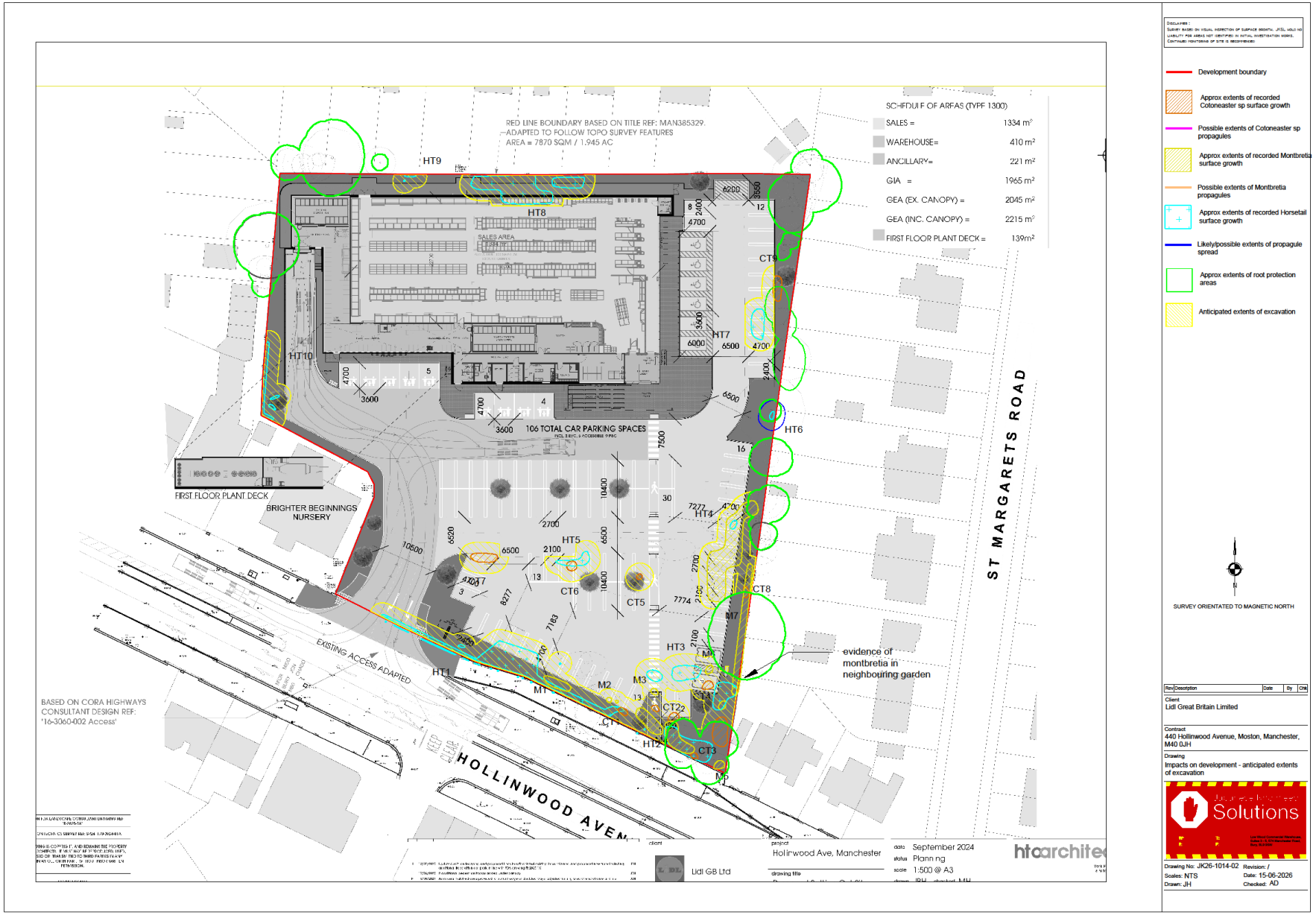
- 2-3m around areas containing Cotoneaster sp and horsetail
- 2m around areas containing Montbretia

Alternative Remediation Options

Due to lack of space on site, other mechanical remediation strategy options (for example, whereby the associated excavated impacted materials are retained on site) have been discounted at this stage.

Appendix 4 provides information on the pros and cons of different remediation-treatment options for comparison.

Drawing JK26-1014-02 (Anticipated extents of excavation)



Evaluating success of control methods

Mechanical remediation works

Upon completion of excavation/removal works, the remediated ground should be inspected by the invasive weed specialist (in attendance during the works) prior to sign off. A completion report should be issued detailing a description of completed mechanical remediation works, photographs of the completed works, copy of the completed excavation drawing, description of products used (includes root barrier) and confirmation of duration and period of works. Waste transfer information will also be provided (includes copies of the waste transfer notes or consignment notes if applicable, permit of the disposal facility and haulier's waste carrier licence) to demonstrate that the waste has been disposed of correctly.

It is recommended that there are 2 no. consecutive growing seasons (normally upon completion of the works and/or upon completion of the development, whichever is latest) that show no evidence of re-growth within a remediated area to demonstrate that the remediation works have been successful.

Ongoing treatment programme

During future monitoring/treatment visits, it is recommended that inspection reports are issued (to include information such as date of the treatment visit, the maturity and density of re-growth recorded on site, weather conditions encountered during the visit, other information such as evidence of cross-contamination, or potential new areas of infestation).

Upon completion of a final visit of the treatment programmes, the situation should be re-assessed to determine whether additional monitoring/treatment is required. Ideally there should be two consecutive growing seasons without re-growth to demonstrate treatment of horsetail and Cotoneaster sp has been successful in accordance with industry standards / good practice.
Ideally there should be three consecutive growing seasons without re-growth to demonstrate treatment of Montbretia has been successful in accordance with industry standards / good practice.

It is important that all relevant landowner(s) are made aware of the off-site infestations in close proximity to the development boundary, and for them to managed the invasive plant species within their ownership appropriately.

Schedule of works

Mechanical remediation works

It is recommended that the proposed excavation-removal works are undertaken prior to any other significant ground disturbance works commencing, to minimise the risk of cross-contamination occurring.

As mentioned above, 2 no. consecutive growing seasons without any evidence of re-growth within a remediated area should pass by to demonstrate that the remediation works have been successful. Monitoring of the completed excavations over 2 no. consecutive growing seasons should therefore be undertaken once the development is complete.

Ongoing monitoring and treatment works

During the in-situ treatment of Montbretia, Cotoneaster and horsetail, 6 no. treatment visits will be undertaken over a 3 year period. Treatment visits will normally be undertaken around June and August each year during this period.

Upon completion of the final visit, the situation will be re-assessed to determine whether additional monitoring/treatment is required.

As mentioned above, depending on when the mechanical excavation-removal works are undertaken, an initial treatment visit to all areas of recorded invasive plant species (within the site boundary) will be beneficial, to aid control the spread and reduce the viability of the underlying infestations.

Appendix 1.

Montbretia (General information)

Montbretia (Crocosmia x crocosmiiflora) is a deciduous perennial with spear shaped bright green leaves and orange-red flowers, and is normally between 0.5-1.0m in height.

It can be spread via fly-tipping of garden waste and through vegetative propagation from underground corms (a short, vertical, swollen underground plant stem that serves as a storage organ that some plants use to survive winter or other adverse conditions) and rhizomes which can be distributed by human activity (e.g. movement of impacted soils).

Once established, it out-competes the local flora and forms large dense stands

Seeds are not known to be viable.

Montbretia is classed an invasive non-native plant species, as listed in Schedule 9 plant under Section 14 of the Wildlife and Countryside Act 1981.

Soil/materials containing montbretia 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.

Cotoneaster (General information)

There are over 100 species of cotoneaster cultivated in the UK, five of which are listed as invasive non-native Schedule 9 plants under Section 14 of the Wildlife and Countryside Act 1981. These include Cotoneaster (*Cotoneaster horizontalis*), Entire-leaved Cotoneaster (*Cotoneaster integrifolius*), Himalayan Cotoneaster (*Cotoneaster simonsii*), Hollyberry Cotoneaster (*Cotoneaster bullatus*) and Small-leaved Cotoneaster (*Cotoneaster microphyllus*).

Cotoneaster species are native to Eastern Asia and were first introduced to the UK in 1824 as ornamental plants. Cotoneaster plants in general tend to spread via seeds, which can be exacerbated further when eaten by birds.

Once established, cotoneaster sp can create dense thickets, outcompeting other native flora.

Cotoneaster sp is an invasive non-native plant species as included in Schedule 9, under Section 14 of the Wildlife and Countryside Act 1981. In England, Wales, and Northern Ireland it is an offence to plant, or otherwise cause to grow in the wild (including allowing to spread) any invasive non-native plant species as listed on Schedule 9 within Section 14 of The Wildlife and Countryside Act 1981. In Scotland, the legislation makes it an offence to plant, or otherwise cause to grow any plant in the wild outside its native range.

Soil/materials containing Cotoneaster (*Cotoneaster sp.*) 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.

eft untreated the plant can rapidly colonised and cause damage to hard-landscaping surfaces.

Horsetail is a native plant and therefore is not listed on Schedule 9, under Section 14 of the Wildlife and Countryside Act 1981 or on the European list of Species of Special Concern (and covered by the Invasive Alien Species Order 2019) as an invasive non-native plant species, however is still considered to be invasive and can potentially cause defects such as damage to hard standing areas (in particular tarmacadam surfaces), thus it is wise to deal with it, particularly in areas where there are a high number of plants.

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

It is recommended that horsetail impacted materials should not be reused in further construction or landscaping without an appropriate remediation-treatment strategy being implemented.

Appendix 2. Legislation

The management of invasive non-native plants should be carried out in accordance with any relevant legislation in that geographic region.

In England, Wales, and Northern Ireland it is an offence to plant, or otherwise cause to grow in the wild (including allowing to spread) any invasive non-native plant species as listed on Schedule 9 within Section 14 of The Wildlife and Countryside Act 1981.

In the UK, it's an offence under the Invasive Alien Species (IAS) Order 2019 (transposing EU regulations) to intentionally import, keep, breed, transport, sell, grow/cultivate or permit to reproduce, or release invasive non-native plant species as included on the list of "Species of Special Concern".

Plant material (including propagules) and soil impacted with invasive non-native plant species (as included on the Wildlife and Countryside Act and/or on the European list of Species of Special Concern / covered by the Invasive Alien Species Order 2019) are defined as controlled waste under the Environmental Protection Act 1990 when removed from a site, placing a legal duty of care on anyone producing, handling, or disposing of the associated impacted materials.

Environment Agency Regulatory Position Statement 178, outlines conditions which should be adhered to when treating (in particular, on-site burial) and disposing of invasive non-native plants and the soils that they are growing in.

For more information about relevant legislation, please visit Key Legislation - Invasive Weeds.

Appendix 3. Biosecurity control measures

The following biosecurity control measures should be implemented on site:

- Brief all operatives on the location(s) of the recorded invasive plant species, as shown on the relevant project drawing. All site users should be able to identify the recorded invasive plant species and are made aware of the requirement in the control and preventing the spread of them. Should any additional areas of infestation be identified, then the client (and JKSL) are notified immediately, and works stopped immediately in that area.
- Relevant buffer zones should be implemented around the associated recorded surface growth (includes circa 2-3m around areas containing Cotoneaster sp and horsetail; and 2m around areas containing Montbretia). Where the risk of disturbance is considered high, signage and/or the installation of a physical barrier to prevent unauthorised entry are recommended.
- All vehicles and machinery arriving at site should be inspected before proceeding to undertaking the relevant works.
- Photographs of the works should be undertaken and saved in the project file to prove that the works have been undertaken correctly if necessary.

Should works be undertaken within an area of infestation, operatives should implement the following procedures (undertaken by / with an invasive plant species specialist in attendance):

- Operatives to clean/decontaminate footwear with dedicated foot wash facilities when leaving an area impacted by an invasive plant species.
- Clean/decontaminate off all hand tools (e.g. shovels) which could into contact with the affected materials before leaving an area impacted by an invasive plant species.
- Clean/decontaminate machinery (includes tracked machinery) when leaving an area impacted by an invasive plant species using a hard brush, spade and water ensuring tyre tracks, buckets etc. are free from soil and plant material.
- Materials being disposed as waste from site containing invasive plant species propagules should be appropriately described to the receiving disposal facility to ensure that the correct level of duty of care is being implemented as per the Environmental Protection Act 1990.

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; additional / more specific biosecurity control measures could be recommended to be implemented.

Appendix 4. Pros and cons of remediation-treatment options

Remediation-treatment options	Advantages	Disadvantages
In-situ herbicide treatment	• Cost effective • Treatment can be carried out in situ, limiting the capacity for the plant to spread further • If applied correctly it can quickly reduce the capacity of the plant to spread on/off site • Quickly reduces the capacity of the plant to impact built structures • Generally considered easier to administer than other methods	• Can take a number of years to achieve acceptable results, especially where stands are mature Herbicide treatment alone should not be recommended on properties or sites with future development plans that involve the soil being dug and disturbed • Disturbance works cannot continue in areas still containing the plant and the risks associated with landscaping treated soils and this should be made clear to the client and mitigated for. There are restrictions as to what can done within the treatment area. It is recommended that the area of infestation is left undisturbed in-situ (includes an appropriate buffer zone). The appearance of the treatment area can be significantly improved (e.g. by cutting back surface weed plants), however it is important that the ground material is not disturbed and bio-security control measures are implemented. • The use of some herbicides is restricted near waterbodies • Some herbicides can persist in the soil • Herbicide remediation may not completely control an invasive non-native plant, for example, due to deep rhizome in the ground or runners and seeds distant from the parent plant that were not killed by the herbicide. For some species this is a control not an eradication method • Effective control requires knowledge and appropriate training in the use of herbicides • If soil containing invasive non-native plant propagules is to be removed from a property, site or project area, it must be classed as controlled waste, even if it has been treated with herbicides. Where there has been a recent persistent herbicide application, the soil may be classified as hazardous waste and further soil testing would be required • Monitoring visit and a management programme will be required at the end of the herbicide treatment programme
Stockpiling (also known was mechanical excavation and transfer to waste management area/WMA)	• Cost effective • Site work can be undertaken while treatment takes place elsewhere on-site • Diverts waste from going to landfill	• Requires an area that can be left undisturbed for several years. • Soil from a stockpile must remain on the site. • The same disadvantages as herbicide treatment apply in the stockpile area/WMA. • Plant material can be accidently spread e.g. after a change in ownership. • The depth of the stockpiled soil must be appropriate for the future use of the soil. • Rhizome buried deeper in a bund is less likely to express itself and may become dormant; as such, bunds should be created a shallow as is practical and should not exceed 0.5m – 1.0m. It is good practice to concentrate the most viable rhizome in the upper layers of the bund/WMA. • If larger bunds are created, it may be necessary to apply for planning permission. • Base of the WMA requires to be lined with an appropriate root barrier.
Mechanical excavation and burial	• Does not require a set-aside area for control • Work can continue immediately after burial	• Restrictions will remain on the site. For example, in some areas, deep excavation would interfere with buried material.

	• Quickly removes the invasive non-native plant from an undesirable area • In some situations, shallow construction such as pathways or car parks can take place on top of the burial site.	• The use of the area above the burial site is limited, for example, no deep piling or deep excavation works. • Typically it requires a large hole to receive material, so it may not be possible if the soil is shallow or the water table is high. • The appropriate Environment Agency specific to the country of works must be notified Propagules can accidently be spread during movement. • Soil type, soil makeup and weather conditions can dictate if burial is appropriate or not • Monitoring visits and a management programme will be required for the excavation area, burial area, stockpile area and haul route upon completion
Root barrier	• Can install a geosynthetic membrane to aid in reducing the horizontal and vertical spread of rhizome • Can be used to protect structures, hard surfaces and services • Work can continue immediately after installation in areas protected by root barriers	• Tears or damage in the membrane or poorly sealed seams between sheets can be exploited by growing rhizome • Can be difficult to install during unfavourable weather conditions • Contaminants in the soil can cause issues to the integrity of the root barrier • Surface drainage and underground water tables can affect installation and ponding can occur, all of which should be taken into consideration • Root barrier installation is a form of control or prevention to be used in conjunction with other methods, and should not be used as a stand along method • A secondary remediation process, for example, herbicide treatment will likely be required • Monitoring visits and a management programme will be required upon completion of the secondary remediation method
Mechanical excavation and off-site disposal	• Quickly removes the invasive plant species from an undesirable area • No restrictions left onsite. • Work can normally continue immediately after removal. • Fast and efficient	• Can be expensive relative to other methods • Requires expertise by the clerk of works as small amounts of missed propagules could cause regrowth • Disposal to landfill reduces valuable landfill capacity • Requires haulage which adds to traffic, damages the environment, increases the risk of the invasive non-native plan spreading, and in the long term is unsustainable. As such, disposal to landfill should only be considered as a last resort when the invasive non-native plant cannot be suitably disposed of on-site • Monitoring visits and a management programme will be required of the excavation area, stockpile area and haul route upon completion

* Property Care Association (PCA), Nov 2023, Code of Practice for the Management of Japanese Knotweed
Property Care Association (PCA), Nov 2024, UK Code of Practice for the Management of Invasive Non-Native Plants

Appendix 5. Integrated Weed Management

Japanese Knotweed Solutions Limited (JKSL) consistently evaluate management strategies that are recommended to clients. Integrated Weed Management (IWM) strategies are mandated under The PPP (Sustainable Use) Regulations 2012, reflecting JKSL's adherence to regulatory standards and industry best practices.

To support sustainable herbicide treatments for invasive non-native plant species, JKSL undertake treatment programmes during the optimal seasonal timeframe and with appropriate active ingredient(s) for effective control of invasive plant species. JKSL always explore various remediation methods, but in accordance with the waste hierarchy outlined in the Waste (England and Wales) Regulations 2011 and Waste (Scotland) Regulations) 2011, JKSL prioritise waste prevention by implementing in-situ treatment where feasible. In some situations, physical clearance of surface growth is considered a more sustainable approach to in-situ herbicide treatment for some invasive non-native plant species (e.g. the hand-pulling and/or strimming of Himalayan balsam).

On projects where a mechanical remediation strategy is required, all mechanical options are assessed including those options which retain the excavated impacted materials on site and diverting waste from landfill (such as on-site burial, waste management and screening – latter option applicable for Japanese knotweed only), as well as other mechanical options which reduce the volume of impacted materials taken off site (such as a reduce level dig, or partial removal).

The above approach not only adheres to best practices but also minimises environmental impact and promotes long-term sustainability.

The management of invasive non-native plant species usually involves either in-situ herbicide treatment, excavation, or a combination of both. When implemented, these management strategies often result in soils within the area(s) of infestation becoming bare. Where practically feasible and appropriate (and not covered as part of a separate re-landscaping proposal scheme), clients should consider undertaking revegetation (such as re-seeding) to assist in preventing recolonisation by other invasive non-native plants, reducing the risk of soil erosion, and enhancing biodiversity. Revegetation is a key component of IWM, thus contributing to achieving sustainable invasive plant management. Please remember that disturbance within an area of infestation (which also includes revegetation) could potentially invalidate guarantees provided by JKSL. For further advice on revegetation, please contact the relevant JKSL project surveyor.

Appendix 6. Reference Documents

This document is deliberately concise but if you need more information, JKSL 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 – Japanese Knotweed Specialists | Knotweed Removal Services
- Contact Us - JKSL
- About JKSL - JKSL
-

Codes of Practice

- Invasive Non-native Specialists Association Code of Practice - Managing Japanese knotweed.pdf
- Property Care Association (PCA), Nov 2023, Code of Practice for the Management of Japanese Knotweed
- Property Care Association (PCA), Nov 2024, UK Code of Practice for the Management of Invasive Non-Native Plants
- Japanese Knotweed - Guidance for Professional Valuers and Surveyors

Herbicide information

- Provantage 480 product label.pdf

Guidance notes

- Key Legislation - Invasive Weeds
- Herbicide Treatments and Japanese knotweed - PCA Guidance Note
- Non-Native Invasive Plant Species Listed in Various UK and EU Acts and Regulations