

Japanese Knotweed Solutions Ltd

WORKING ON BEHALF OF
Morris Homes

Invasive Plant Species Management Plan

Prepared by:



Japanese Knotweed Solutions Ltd

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JKSL Ltd unless written approval granted*

CLIENT	Morris Homes
SITE	Former East Lancs Paper Mill, Rectory Lane, Radcliffe, Manchester M26 2PQ
PROJECT SURVEYOR (JKSL)	Jonathan Harris
AUTHORISED BY	Mike Clough
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INTRODUCTION

Japanese Knotweed Solutions Limited (JKSL) were instructed by Morris Homes to undertake a re-survey to assess the location and extents of invasive non-native plant species within the development site situated at the Former East Lancs Paper Mill, Rectory Lane, Radcliffe, Manchester M26 2PQ, 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 and also to discharge planning condition 20 (relating to application no. 70284 Reserved Matters for 400 dwellings at East Lancs Paper Mill) which states:

- 20 No development shall commence until full details of a scheme for the eradication and/or control of for Himalayan balsam, Japanese knotweed, Giant hogweed and Crassula helmsii is submitted to and approved in writing by the Local Planning Authority. The approved management plan shall include a timetable for implementation. If earthworks are delayed beyond 31 March 2019 an updated species invasive survey shall be carried out and the findings submitted to and approved in writing by the Local Planning Authority*
- Reason. The scheme does not provide full details of the actual extents of Japanese knotweed and Himalayan balsam in the interest of UDP Policy EN9 – Landscape and pursuant to National Planning Policy Framework Section 11 – Conserving and enhancing the natural environment.*

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.

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MANAGEMENT PLAN OBJECTIVE

The objective of this Management Plan Ltd is to:

- assist the client (Morris Homes) with controlling and preventing the spread of known areas containing invasive non-native plant species situated within the development boundary, to facilitate proposals for the site (please refer to enclosed illustrative masterplan, included within Appendix 1).
- implement ongoing monitoring pre/during and post development;
- ensure that all works specifically relating to the invasive non-native plant species are carried out in accordance with the relevant laws and statutes.

To ensure the above objective is achieved, the following measures are to be implemented:

- Identify all areas of invasive non-native plant species situated within the development boundary (and in close proximities to the development boundary);
- Determine the areas of invasive non-native plant species which are to be directly/indirectly affected by the proposed development (and also determine the areas of invasive plant species situated within the site boundary which are not to be affected by the proposed development);
- Implement biosecurity control measures for all contractors when working in close proximity of known infestations containing non-native invasive plant species; and
- Implement an appropriate remediation strategy to facilitate the proposed development e.g. excavation and removal of impacted materials that are directly affected by the proposed development, and in-situ monitoring/treatment of impacted materials that are not affected by the proposed development.

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SITE INFORMATION

The site consists of a large area of open land (circa 20.9ha), which can be accessed from various points including off Rectory Lane, via the East Lancs Cricket Club and along the southern boundary.

There are several informal footpaths throughout the site, and is regularly used by the public.

The site comprises of marshy grassland, mature trees, willow scrub, brownfield (includes evidence of demolished buildings), and hardstanding. An area to the north-east of the Site, previously contained reservoirs which have been drained leaving a mosaic of wetland habitat of ephemeral pools marsh and swamp.

The River Irwell flows along the southern boundary. Hutchinson's Goit flows into the site from the north-eastern corner and flows south towards the river (some sections under culvert). A reservoir is also present in the central eastern section of the site.

Background

An extended Phase 1 habitat survey was undertaken at the Site by WYG in November 2016, followed by an INNS survey by The Environment Partnership (TEP) in April 2021. An invasive species evidence pack (completed in June 2022) has been issued to JKSL.

Previous chemical treatments have occurred on site since Oct 2016 until 2021 as referenced within ecology reports provided to JKSL.

Some tree works have taken place along the Southern boundary, off Rectory Lane. JKSL has previously surveyed the site in 2022.

Site development

It is JKSL's understanding that the site is to be re-developed with the construction of residential dwellings, and associated hardstanding, soft-landscaping areas and recreational areas (includes cricket club). The proposed illustrative masterplan is included within Appendix 1.

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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. Japanese knotweed is 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 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 plant species), and any warranty or guarantee offered may be invalidated if works are undertaken which cause cross-contamination on site.

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SURVEY RESULTS

JKSL re-surveyed the site on 7th and 15th Oct 2024.

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 (and over 15 years in environmental consultancy).

The results as summarised below should be read in conjunction with drawing JK21-7712-03 (enclosed within Appendix 2) showing the approximate location and extents of recorded Japanese knotweed, Giant hogweed, Himalayan balsam, Cotoneaster sp., Montbretia and horsetail.

During our latest site survey walkover (undertaken on 7th and 15th Oct '24), 6 no. areas containing Japanese knotweed, 36 no. areas containing Himalayan balsam, 49 no. areas containing Giant hogweed, 6 no. areas containing Cotoneaster sp, 1 no. area containing Montbretia and 23 no. areas containing horsetail were recorded within/on/along the development boundary, denoted as JK1-JK6, HB1-HB36, GH1-GH49, CT1-CT6, M1 and HT1-HT23, respectively, on the attached drawings. Some of the areas of infestation extended onto neighbouring land, as well as there being separate additional off-site areas of infestation recorded in close proximities to the development boundary (includes areas JK7-JK13, HB37, GH50).

Even though horsetail isn't listed on Schedule 9 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 a non-native invasive plant species, we have still included this plant species within the proposed remediation-treatment strategy, as it is considered to be an invasive native plant species in the UK where it can cause potential defects to hardstanding areas (such as tarmacadam driveways, pavements) and can be a nuisance in/take over soft landscaping areas, particularly where present in large plant numbers.

Areas containing dense vegetation restricted viewing and access during the re-survey; additional areas of infestation (also the precise extents of some of the recorded infestations may vary, as they were difficult to record also due to the presence of vegetation).

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There were mounds noted to be present on site; it is unknown as to whether buried propagules from invasive plants (i.e. a vegetative structure that can become detached from the main plant and give rise to a new plant) are present in these mounds at this stage.

There has also been previous ground disturbance on site; propagules could have been spread around site (and off-site); as a result new areas of infestations could emerge in the future.

Areas containing fly-tipped rubbish were noted to be present within the development boundary.

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.

Currently, no *Crassula helmsii* (New Zealand pigmyweed) has been noted on site on our surveys, although was found on previous ecology reports.

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SITE PHOTOGRAPHS

Japanese knotweed



Himalayan balsam



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Giant hogweed



Cotoneaster sp



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Montbretia



Horsetail



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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

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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, as listed in Schedule 9 plant under Section 14 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.

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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 in height with purplish pink, slipper shaped flowers in June – October. When the seed pods are mature they explode when touched, 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 as 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 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 Himalayan balsam impacted materials should not be reused in further construction or landscaping without an appropriate remediation-treatment strategy being implemented.

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GIANT HOGWEED (General information)

Giant hogweed (*Heracleum mantegazzianum*) is a large herbaceous perennial plant (normally lives for 3 – 5 years).

Each plant has a single hollow stem with purple blotches and large coarsely toothed leaves, and can be up to 5m in height.

Plants flower after 2 to 5 years, forming large umbels of densely packed small white flowers. Around 5000 to 100,000 seeds (normally have a life span of around 5 years) can be formed per plant.

Giant hogweed is commonly present along watercourses.

The sap of Giant hogweed contains toxic chemicals which causes photosensitivity in the human skin, leading to severe blistering when exposed to sunlight.

Giant hogweed is classed as 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 Giant hogweed 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 Giant hogweed impacted materials should not be reused in further construction or landscaping without an appropriate remediation-treatment strategy being implemented.

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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 cotoneaster can create dense thickets, outcompeting other native flora.

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.

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MONTBRETIA (General information)

Montbretia (*Crocodymia 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 as an invasive non-native plant species, as listed in Schedule 9 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.

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NEW ZEALAND PYGMYWEED (*General information*)

New Zealand pygmyweed (*Crassula helmsii*) is an aquatic plant that was introduced to Britain from Tasmania in 1911 and was first recorded in the wild in 1956. New Zealand pygmyweed is an extremely invasive plant species which is difficult to control. New Zealand pygmyweed reproduces vegetatively (via its root system). Fragments of this species can easily be spread on clothing or equipment (e.g. boats, fishing equipment, excavators) or by wildlife.

The plant grows throughout the year without a dormant period. It forms dense mats on water bodies that shade out other aquatic vegetation, consequently having a negative impact upon fish and invertebrate communities. These mats of vegetation can impede drainage and lead to flooding, reduce the amenity use of the affected waterbody and out-compete other aquatic vegetation. Severe oxygen depletion can also occur in the water under dense growths of this plant. New Zealand Pygmyweed can also increase the risk of flooding and restrict amenity activities, such as fishing.

New Zealand Pygmyweed 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 New Zealand Pygmyweed 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.

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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.

Left 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 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.

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CONTAMINATION PATHWAYS

“Contamination Pathways” are routes by which a contaminant can spread into or out of a site – for the recorded Cotoneaster, Japanese rose (and horsetail), 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 presence of the informal footpaths could potentially cause propagules to be spread around site (and potentially off-site), resulting in new areas of infestations to emerge in the future. People pass by are a risk because plant material can easily be moved along the route. Machines appear to have been previously working in the northern area of site There was evidence of ground disturbance associated with previous earthworks on site (e.g. machine tracks present on the ground, large mound containing aggregate materials present), which could potentially cause propagules to be spread around site, should control measures not have been implemented. There was evidence of fly tipping affecting the site. Potentially this could lead to further infestations in the future.
Watercourse	Waterbodies and watercourses are situated within the development boundary / in close proximities to the boundary. Floating propagules (e.g. Japanese knotweed debris, Himalayan balsam seeds, Giant hogweed seeds) from upstream areas of infestation could potentially affect embankment areas through this pathway even after the remediation work has been completed, particularly should the canal ever flood in the future.
Propagule Spread (outward)	Due to the location of areas containing infestations situated near the boundaries, associated propagules (such as Japanese knotweed rhizome, Horsetail rhizome/spores) could potentially migrate onto neighbouring land from the development site should an appropriate remediation strategy not be implemented.

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Propagule Spread (inward)	Due to the location of areas containing infestations situated near the boundaries, associated propagules (such as Japanese knotweed rhizome, Horsetail rhizome/spores) could potentially migrate into the development site from neighbouring land should an appropriate remediation strategy not be implemented.
Animal activity	Just like humans, animals can also move pieces of root or plant material around – and this can cause new growth

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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	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. (more applicable for areas containing horsetail, as the areas containing Japanese knotweed are currently cordoned off with orange mesh fencing)
Disturbance activities (previous risk)	0m	High	There was evidence of ground disturbance associated with previous earthworks on site (e.g. machine tracks present on the ground, large mound containing aggregate materials present), which could cause propagules to be spread around site, should control measures not have been implemented.

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Risk Factor	Distance	Risk Level	Description
Surface run-off (from standing water)	0m	Medium-high	Flowing water could act as a potential pathway for floating propagules resulting in new areas of infestation to occur into surrounding areas
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)	0m / on boundary / immediate neighbouring land	High	The site is at risk of being infested with Japanese knotweed, Giant hogweed, Himalayan balsam from immediate neighbouring land. from a site nearby. 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 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.
Fly tipping	0m	High	Areas of fly-tipping have been noted on the survey. Japanese knotweed is commonly fly-tipped because of the high costs of disposal. This means that there is a higher risk of Japanese knotweed spreading to your site.
Level change	0m	High	It is possible for pieces of plant material or soils to fall downhill and to make new growth where they land.
Existing boundary retaining wall	0m	High	Should no appropriate treatment and/or control measures be implemented, the existing boundary retaining wall could be at risk, whereby associated Japanese knotweed rhizome could potentially exploit cracks and weaknesses within the wall.

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Risk Factor	Distance	Risk Level	Description
Animal activity	0m	High	Just like humans, animals can also move pieces of root or plant material around – and this can cause new growth. For example Cotoneaster plants in general tend to spread via seeds, which can be exacerbated further when eaten by birds.

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IMPACTS ON DEVELOPMENT PLANS

Enclosed drawing JK21-7712-04 Rev A (included within Appendix 3) shows the areas of infestation plotted on the proposed development plan/illustrative masterplan. The following areas of infestation will be directly affected by the development proposals:

- Japanese knotweed areas JK1-JK6
- Himalayan balsam areas HB1-HB26, HB29-HB30, HB35, HB36
- Giant hogweed areas GH1-GH13, GH14 (partially), GH15-GH36, GH42 (partially), GH43 – GH49.
- Montbretia area M1
- Cotoneaster sp areas CT1-CT5
- Horsetail areas HT1-HT14, HT16-HT23

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 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 Clean Site Policy and Management Plan as soon as practically possible.

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REMEDIATION-TREATMENT OPTIONS

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

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.

A mechanical remediation strategy whereby the associated impacted materials are excavated/removed is therefore required to be implemented. Where appropriate, a vertical root barrier will be installed along sections of the development boundary, to aid in minimising the risk of off-site Japanese knotweed migrating back into site / into the remediated area.

Enclosed drawing JK21-7712-04 Rev A (included within Appendix 3) shows the anticipated extents of excavation and vertical root barrier.

Mechanical remediation strategy options 1 and/or option 2 as detailed below will be implemented to facilitate the redevelopment of the site –

- **Mechanical remediation strategy option 1. Excavation and on-site burial.** Burial of invasive non-native plant species will be undertaken in accordance to the conditions as set out in Environment Agency's Regulatory Position Statement/RPS 178 <https://www.gov.uk/government/publications/treatment-and-disposal-of-invasive-non-native-plants-rps-178/treatment-and-disposal-of-invasive-non-native-plants-rps-178> (applicable to the Japanese knotweed, Giant hogweed, Montbretia, Himalayan balsam and Cotoneaster sp; although there is no specific guidance in relation to the burial of horsetail, excavated horsetail impacted materials will be buried to similar specifications). The precise location of the burial is to be determined (and agreed with the Environment Agency, if/where applicable). The borrow pit is to be located within a

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proposed landscaping section of the site to ensure the development is not compromised.

- **Mechanical remediation strategy option 2. Excavation and off-site disposal.** Soil/materials containing impacted materials will be disposed of at an appropriate licenced facility. Materials being disposed as waste from site containing invasive plant 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.

The decision either to retain the impacted materials on site (mechanical remediation strategy option 1) or take the impacted material off-site (mechanical remediation strategy option 2) will be determined during the development of the remediation strategy, following completion of the additional Ground Investigation works which is due to commence imminently.

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

It is recommended that all of the above proposed work is undertaken by a suitably qualified and experienced specialist (ideally who is a member of an appropriate trade body, such as the PCA and/or INNSA), or with the specialist in attendance to implement a watching brief (as a minimum).

To minimise the risk of propagules being spread around site and off-site, biosecurity control measures will be implemented by all operatives (includes during the additional Ground Investigation works). These are likely to include –

- Prior to works commencing, all operatives on site should make themselves familiar to the extents of infestations as shown on enclosed drawings JK21-7712-03 and JK21-7712-04 Rev A. Should any additional infestations be identified (e.g. during the initial clearance of vegetation within the development site), works in that area should be immediately stopped and the client / specialist informed; the management plan should then be updated accordingly.

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- Use signage to show everyone on site where the infestations are. Should the risk of disturbance be considered to be high, the area(s) of infestation should ideally be fenced off
- During works, site operatives should install a foot wash and/or an inspection point with a small area of geotextile root barrier on the ground for site personnel and equipment to be checked and decontaminated on leaving the contaminated area.
- Excavator(s) should be positioned at the side of the area to be excavated, if possible, and reach inward to excavate, so that only the bucket needs to be changed or cleaned off before working elsewhere.
- If dumpers are used during the mechanical remediation works, they should be positioned outside of the contaminated area for loading, follow dedicated routes to the tipping location. Dumpers should not drive on contaminated soils, so that only the skip of the dumper gets contaminated.
- Tipper wagons leaving site (where applicable) should not leave site until their cover is secured in place. During loading wagons are to be positioned outside of the contaminated area(s) on a clean / non-contaminated surface before they are loaded by the excavator. Banksman to direct vehicles as appropriate.
- Any machine, equipment or personnel leaving the exclusion zone at any point will need to undergo decontamination. All equipment and tools used within the contaminated area shall be suitably decontaminated prior to each occasion that it leaves the contaminated area. Equipment should be visually checked, and any soils or plant materials removed. Anything which has been used to cut or dig in impacted materials shall be cleaned thoroughly.
- A geotextile-lined waste management area may be created to reduce the risk of cross-contamination while stockpiling the soils on site (and a similar, smaller area can be used for the decontamination of tools and equipment). At this stage, we don't anticipate the geotextile-lined waste management area will be required.
- During and upon completion of the excavations, the haul route should be inspected for spillages of contaminated materials. During the loading of dumpers and wagons, spillage(s) of contaminated material should be cleared up immediately. All contaminated materials will be cleared using a

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combination of brushes, spades and shovels, and then deposited within the area of contamination.

- Vehicles (i.e. dumpers and tipper wagons) used to transfer waste should not be overloaded, to minimise the risk of spillage.
- During the works, the ground will be inspected by JKSL's site foreman to ensure all propagules are fully removed, or up to the development boundary or any other limit laid out as agreed with the client's site engineer.
- Materials being disposed as waste from site containing invasive plant 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.
- Relevant information should be saved within the project folder, such as the description of completed works, photographs of the completed works, completed excavation drawing(s), and copies of the waste transfer information provided (includes individual waste transfer notes, hauliers waste carriers licence, permit of the disposal facility)

To reduce the viability and control the spread of Japanese knotweed areas potentially left in-situ (also includes Japanese knotweed re-growth likely to emerge just beyond sections of vertical root barrier and situated on immediate neighbouring land, where practically feasible), a 5 year programme will be implemented. Associated surface growth within the 'maintenance area' will be chemically treated in-situ with a Glyphosate based herbicide. Glyphosate is a non-selective and broad spectrum herbicide; this type of herbicide will scorch grass-like species and will affect/kill broad-leaved plants should the herbicide come into contact with these types of plants. The herbicide will be applied by a knapsack sprayer; site operatives will do their utmost to minimise the risk of chemical drift occurring (such as using the correct nozzle during spraying, undertaking the works within acceptable weather conditions). The programme should comprise of 8 visits over a 5 year period. 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 that the programme has been successful. Upon completion of the 5 year programme, the situation will be re-assessed to determine whether additional monitoring (and treatment) visits are required.

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An ongoing 3 year programme will be implemented to reduce the viability and control the spread of Himalayan balsam left in-situ, comprising of 6 treatment visits over a 3 year period. The surface growth will either be chemically treated or hand-pulled/strimmed in-situ. It is likely to be more practical to chemically treated in-situ at this stage with a Glyphosate based herbicide via knapsack sprayer. Upon completion of the 3 year period, the situation will be re-assessed to determine whether additional monitoring/treatment is required.

An ongoing 3 year programme will be implemented to reduce the viability and control the spread of the area of Cotoneaster area left in-situ, comprising of 6 treatment visits over a 3 year period. The surface growth will either be chemically treated with a Glyphosate based herbicide via knapsack sprayer. Upon completion of the 3 year period, the situation will be re-assessed to determine whether additional monitoring/treatment is required.

To reduce the viability and control the spread of the area of Cotoneaster sp left in-situ (CT6) a 3 year programme will be implemented. Associated surface growth will be chemically treated in-situ with a Glyphosate based herbicide, comprising of 6 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.

To reduce the viability and control the spread of the Giant hogweed left in-situ, it is recommended that a 5 year programme (comprising of 10 visits over a 5 year period) is implemented. Associated surface growth will be chemically treated in-situ with a Glyphosate based herbicide, via knapsack sprayer. Upon completion of the 5 year period, the situation will be re-assessed to determine whether additional monitoring/treatment is required.

To reduce the viability and control the spread of potential horsetail area HT15 left in-situ, a 3 year programme will be implemented. Associated surface growth will be chemically treated in-situ with SBK (a more selective herbicide) with a water conditioner/adjuvant (such as KPlus/topfilm). 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; site operatives will do

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their upmost to minimise the risk of chemical drift occurring (such as using the correct nozzle during spraying, undertaking the works within acceptable weather conditions). The programme should comprise of 6 visits over a 3 year period.

Where an appropriate herbicide is to be used on/or within 1m of an embankment associated with a watercourse, Aquaherb01 approvals from the Environment Agency will be required to facilitate (prior to) herbicide application.

Just to re-iterate that there are restrictions as to what can done with a treatment area / maintenance area, as 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 areas of infestation are left undisturbed (includes appropriate buffer-exclusion zone around the surface growth – normally 3-4m for Japanese knotweed and Himalayan balsam, 4-5m for Giant hogweed and 2-3m for Montbretia, Cotoneaster sp and horsetail), unless excavated-removed. The appearance of the treatment/maintenance areas 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.

Discussions with and permission from the relevant landowner(s) will be required to facilitate the monitoring/treatment of infestations situated on immediate neighbouring land.

Where the extents of infestation on neighbouring land is more extensive (e.g. on the opposite embankment of the River Irwell), the relevant landowner(s) should be informed of the infestations present on their land, and are advised that an appropriate treatment should be in place to reduce the viability and control the spread of the associated surface growth / propagules.

A clean site policy will also be implemented when works are being undertaken as part of the ongoing 5 and 3 year programmes.

EVALUATING SUCCESS OF CONTROL METHODS

Monitoring will be carried out by the Site Foreman and/or Site Operatives prior to any treatment/remediation works being carried out.

As mentioned above, upon completion of the excavation-removal works the ground will be inspected by JKSL's site foreman.

Upon completion of the excavation-removal works, a completion report will be issued which will outline the summary of works that have been undertaken, photographs of completed works, completed excavation drawing, description of products used (applicable for the vertical root barrier to be installed) and confirmation of duration/period of works. Waste transfer information, if waste is disposed off site at an appropriate licenced facility (includes copies of individual transfer notes, hauliers waste carriers licence and permit of the disposal facility) will be issued upon completion of the excavation-removal works, to demonstrate that the waste has been disposed of correctly.

As part of on-going monitoring and treatment of programmes, inspection reports will be issued upon completion of each monitoring/treatment revisit which will include the following information:

- Date/time of visit
- Name of operative who completed the visit
- Summary of findings, including maturity and density of potential re-growth within the treatment area, as well as other relevant information (e.g. a new feature that might impact on the effectiveness of the management plan or increase the risk of spread or re-infestation)
- Spray record (includes herbicide application and weather condition)

It is recommended that there are 2 no. consecutive growing seasons (applicable for Japanese knotweed, Himalayan balsam, Cotoneaster sp and horsetail) and 3 no. consecutive growing seasons (applicable for Montbretia) pass that show no evidence of re-growth within the affected area to demonstrate that the programme has been successful.

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Due to the presence of the watercourses (and associated floodplains), the control of invasive plant species within/in close proximities to these features will likely be an ongoing maintenance issue (rather than an “eradication” programme) due to the risk of floating propagules exacerbating the infestation problem.

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SCHEDULE OF WORKS

Excavation-removal works

It is recommended that the proposed excavation works are undertaken prior to any other ground disturbance works, to prevent/minimise the risk of cross-contamination. The precise date for commencement of the excavation-removal works is to be confirmed.

Ongoing 5 year programme (Japanese knotweed)

The 5 year programme for the monitoring and treatment of on-site Japanese knotweed left in-situ will comprise of 8 no. visits over a 5 year period, as follows (precise dates normally dictated by variables such as weather conditions, growth patterns, commencement of contract/works, approvals obtained from Environment Agency for use of herbicide near to the watercourse, access):

- May/June 2025
- Aug-Oct 2025
- May/June 2026
- Aug-Oct 2026
- May/June 2027
- Aug-Oct 2027
- Aug-Oct 2028
- Aug-Oct 2029

Ongoing 3 year programme (Himalayan balsam)

The 3 year programme for the monitoring and treatment of Himalayan balsam left in-situ will comprise of 6 no. visits over a 3 year period, as follows (precise dates normally dictated by variables such as weather conditions, growth patterns, commencement of contract/works, approvals obtained from Environment Agency for use of herbicide near to the watercourse, access):

- May/June 2025
- July 2025
- May/June 2026
- July 2026
- May/June 2027

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- July 2027

Ongoing 5 year programme (Giant hogweed)

The 5 year programme for the monitoring and treatment of on-site Japanese knotweed left in-situ will comprise of 10 no. visits over a 5 year period, as follows (precise dates normally dictated by variables such as weather conditions, growth patterns, commencement of contract/works, approvals obtained from Environment Agency for use of herbicide near to the watercourse, access):

- April/May 2025
- July 2025
- April/May 2026
- July 2026
- April/May 2027
- July 2027
- April/May 2028
- July 2028
- April/May 2029
- July 2029

Ongoing 3 year programme (Horsetail)

The 3 year programme for the monitoring and treatment of Horsetail left in-situ will comprise of 6 no. visits over a 3 year period, as follows (precise dates normally dictated by variables such as weather conditions, growth patterns, commencement of contract/works, approvals obtained from Environment Agency for use of herbicide near to the watercourse):

- May/June 2025
- Aug-Oct 2025
- May/June 2026
- Aug-Oct 2026
- May/June 2027
- Aug-Oct 2027

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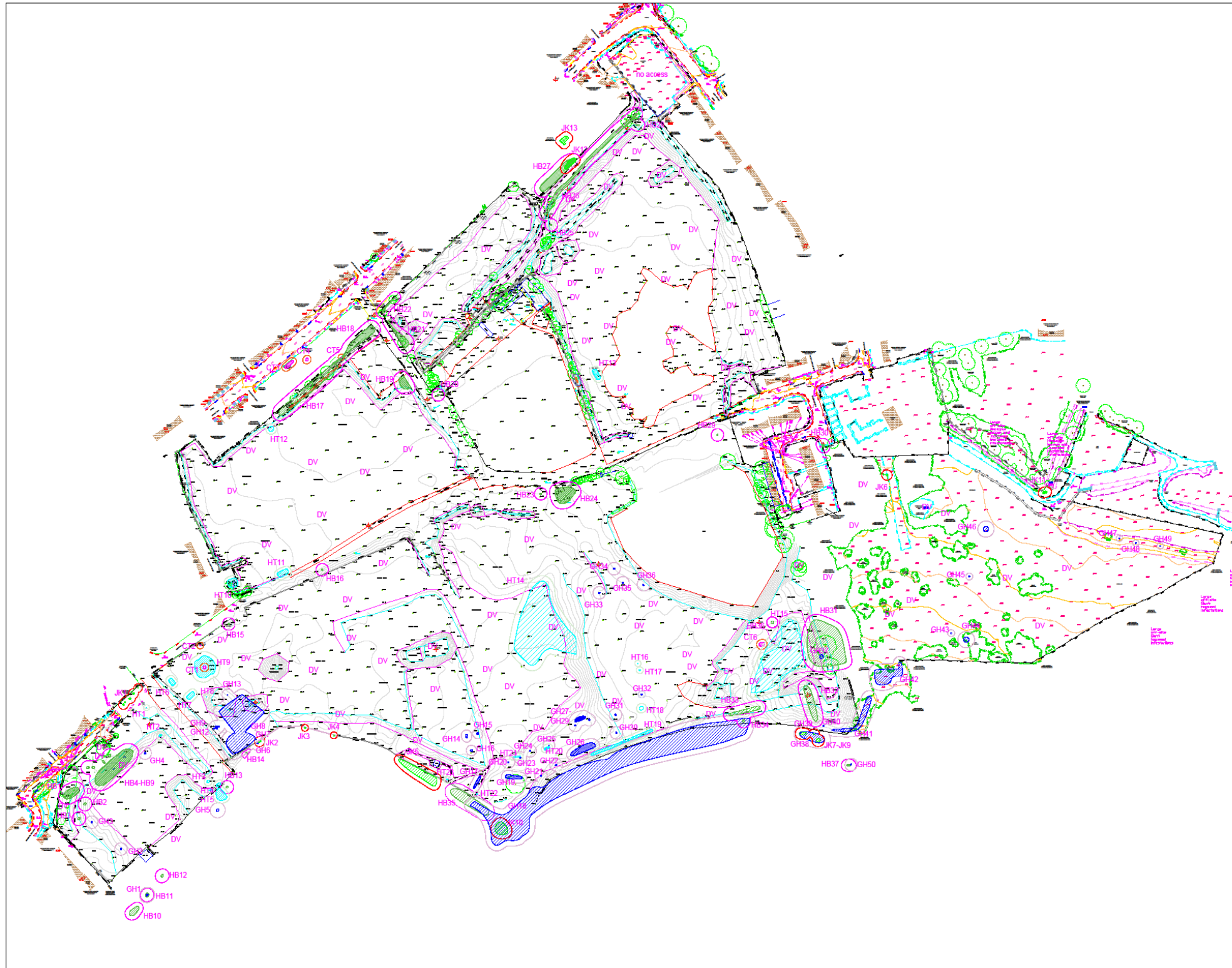
APPENDIX 1

Illustrative masterplan



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Drawing JK21-7712-03



Disclaimer :
Survey based on visual inspection of surface growth. JKSL hold no liability for areas not identified in initial investigation works.
Continued monitoring of site is recommended

 Area of recorded Japanese knotweed

— Residual 3m risk zone

 Area of recorded Himalayan balsam

— Likely extents of associated seedbank

 Area of recorded Giant hogweed

— Likely extents of associated seedbank

 Area of recorded *Cotoneaster* sp

— Likely extents of associated propagules

 Area of recorded Montbretia

— Likely extents of associated propagules (includes corms)

 Area of recorded horsetail

— Likely extents of associated propagules (mainly rhizome)

DV	Dense vegetation
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SURVEY ORIENTATED TO MAGNETIC NORTH

Rev	Description	Date	By	Chk
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Client
Morris Homes

Contract
East Lancs Paper Mill, Church Street East,
Radcliffe, Manchester, M26 2PS

Drawing
Invasive weeds location plan



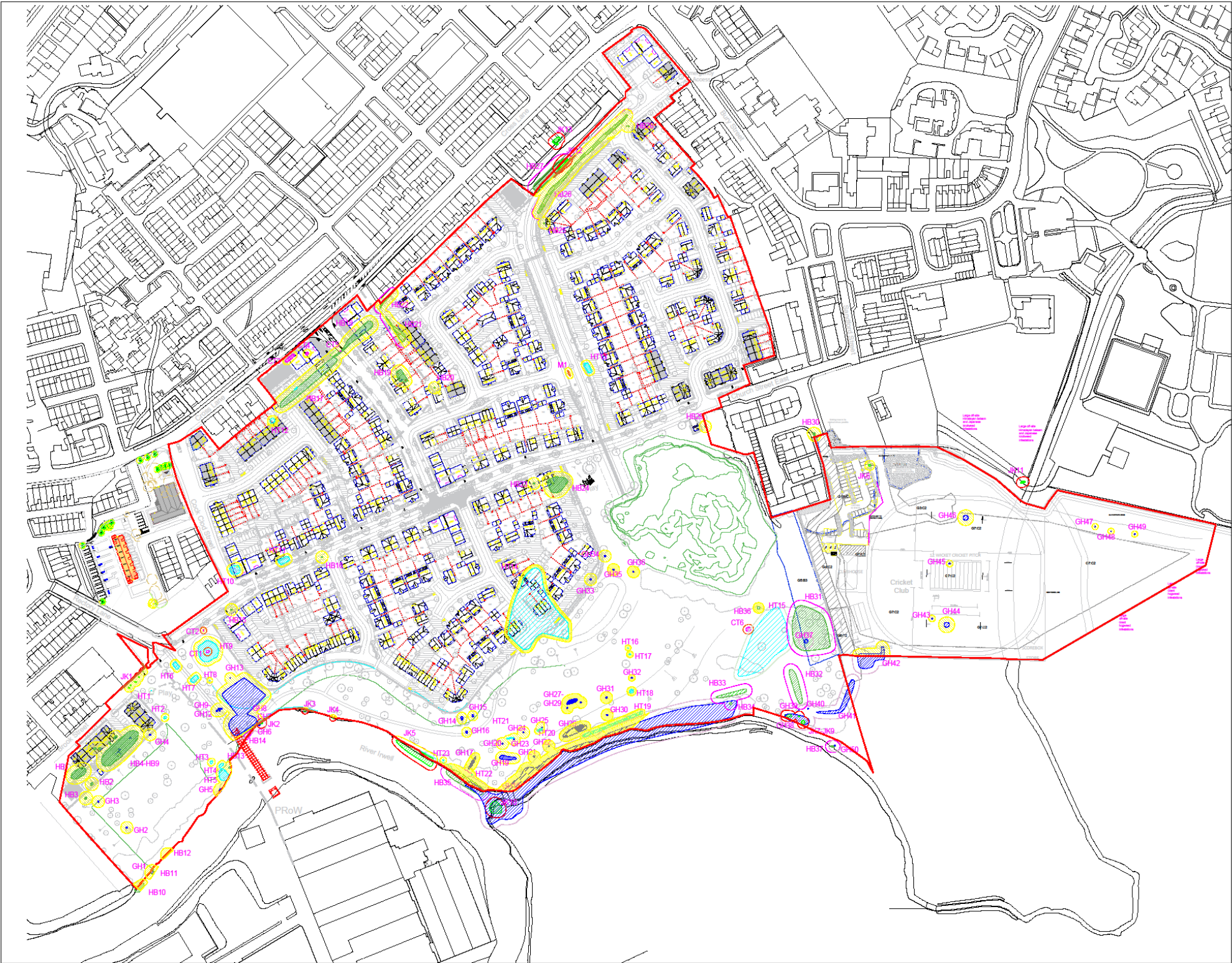
Drawing No.	JK21-7712-03	Revision	/
Scales	NTS	Date	28-10-2024
Drawn	JEH	Checked	AD

Japanese Knotweed Solutions Ltd

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Morris Homes

APPENDIX 3

Drawing JK21-7712-04 Rev A



Disclaimer:
Survey based on visual inspection of surface growth. JKSL hold no liability for areas not identified in initial investigation works.
Continued monitoring of site is recommended

- Area of recorded Japanese knotweed
- Residual 3m risk zone
- Area of recorded Himalayan balsam
- Likely extents of associated seedbank
- Area of recorded Giant hogweed
- Likely extents of associated seedbank
- Area of recorded Cotoneaster sp
- Likely extents of associated propagules
- Area of recorded Montbretia
- Likely extents of associated propagules (includes corns)
- Area of recorded horsetail
- Likely extents of associated propagules (mainly rhizome)
- Anticipated extents of excavation
- Likely extents of vertical root barrier

*precise extents of excavation may vary depending on factors such as boundary structures, precise extents of phases of works.



SURVEY ORIENTATED TO MAGNETIC NORTH

Rev	Description	Date	By	CHK
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Client
Morris Homes

Contract
East Lancs Paper Mill, Church Street East,
Radclyffe, Manchester, M26 2PS

Drawing
Anticipated extents of excavation and
vertical root barrier



Drawing No.	Revision	Rev
JK21-7712-04	28-10-2024	A
Scales	Date	
NTS		
Drawn	Checked	
JEH	AD	