

Ecological

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Expert Management and Monitoring

Invasive Species Survey

North Bierley Phase 2

R-EE-5613-01

July 2021

Report Reference:	Invasive Species Survey North Bierley Phase 2
Report Reference:	R-EE-5613-01
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The information which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report does not constitute legal advice.

Introduction

Ecological Estates Ltd was commissioned by to provide an Invasive Species Survey for land at North Bierley, Phase 2 of the Interchange 26 development site.

The survey boundary is shown in Figure 1 below.

This survey and report are provided so the developer and decision makers can understand the potential costs and constraints associated with the presence of Invasive Non-native Species (INNS) within, or on land adjacent to the Site .

The objectives of this survey are to:

- Confirm the visible baseline location and extent of invasive non-native species (INNS) ;
- Identify risks presented by surveyed INNS in relation to land management responsibilities and potential constraints to development of the site;
- Present recommendation for further action with respect to identified risks and the potential for site development.

Figure 1 Survey boundary (red)



Site Description

The Phase 2 area consists of land parcels of different types, principally made up of the southern extent of the historic sewage works, adjacent pasture farmland, the stream corridor of Hunsworth Beck with surrounding mixed scrub. Ground preparation works are underway for the Phase 1 development to the north, while the majority of the site is in a dormant state following removal of grazing livestock from the fields.

Survey Method

The site was surveyed by walk-over observation of all accessible areas on the 28th June 2021 in order to identify and map non-native invasive species present within the red line boundary.

Survey conditions were dry with good visibility, although steep ground and dense vegetation inhibited access and visibility in a few locations.

Areas of noted infestation were photographed and located using GPS and digital mapping tools .

Results have been compiled in a geographical information system (GIS) in order to produce location and area estimates. Scaled overlays allow identified infestations to be assessed in relation to extant land cover .

Survey Results

Survey identified two species growing on the site that are designated under Schedule 9 of the Wildlife and Countryside Act (1981 - as amended):

- **Japanese knotweed (*Reynoutria japonica*)**
- **Himalayan Balsam (*Impatiens glandulifera*)**

Detailed survey results are presented on the following pages as mapped figures, photographs and descriptions of specific INNS patches identified during survey.

Limitations

This plan has been prepared with due care and attention, in accordance with industry best practice and guidance. The conclusions presented in this plan represent our professional judgement based upon the information available (or provided to us) and conditions existing on the date the site has been surveyed.

The Site was surveyed by a PCA certified surveyor. All accessible external areas were inspected, however some areas of dense vegetation were present which may have reduced the detectability of INNS plant growth in particular locations. The survey made an assessment of these areas by observation from surrounding vantage points.

Whilst every effort has been made to access and inspect the Site as thoroughly as possible, due to limited access, limited sight lines in certain areas, and the evidence of extensive grazing pressure, Ecological Estates cannot guarantee that the full extent of all INNS has been identified. Seasonal updating surveys can provide assurance that the occurrence of INNS on the site is identified at the earliest opportunity and can be effectively controlled as required.

Figure 2

INNS stands identified through current survey in July 2021

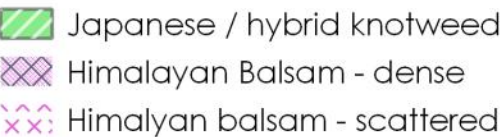


Invasive species

-  Japanese / hybrid knotweed
-  Himalayan Balsam - dense
-  Himalayan balsam - scattered

Species	Ref_Number	Area (sqm)	Easting	Northing
JKW	2	21	418143	427183
JKW	1	98	418178	427142

INNS stands identified in relation to development proposal



Species	Ref_Number	Area (sqm)	Easting	Northing
JKW	2	21	418143	427183
JKW	1	98	418178	427142

Figure 4

INNS stands - focus on areas mapped in relation to aerial photography



- Invasive species
- Japanese / hybrid knotweed
 - Himalayan Balsam - dense
 - Himalyan balsam - scattered

Species	Ref_Number	Area (sqm)	Easting	Northing
JKW	2	21	418143	427183
JKW	1	98	418178	427142

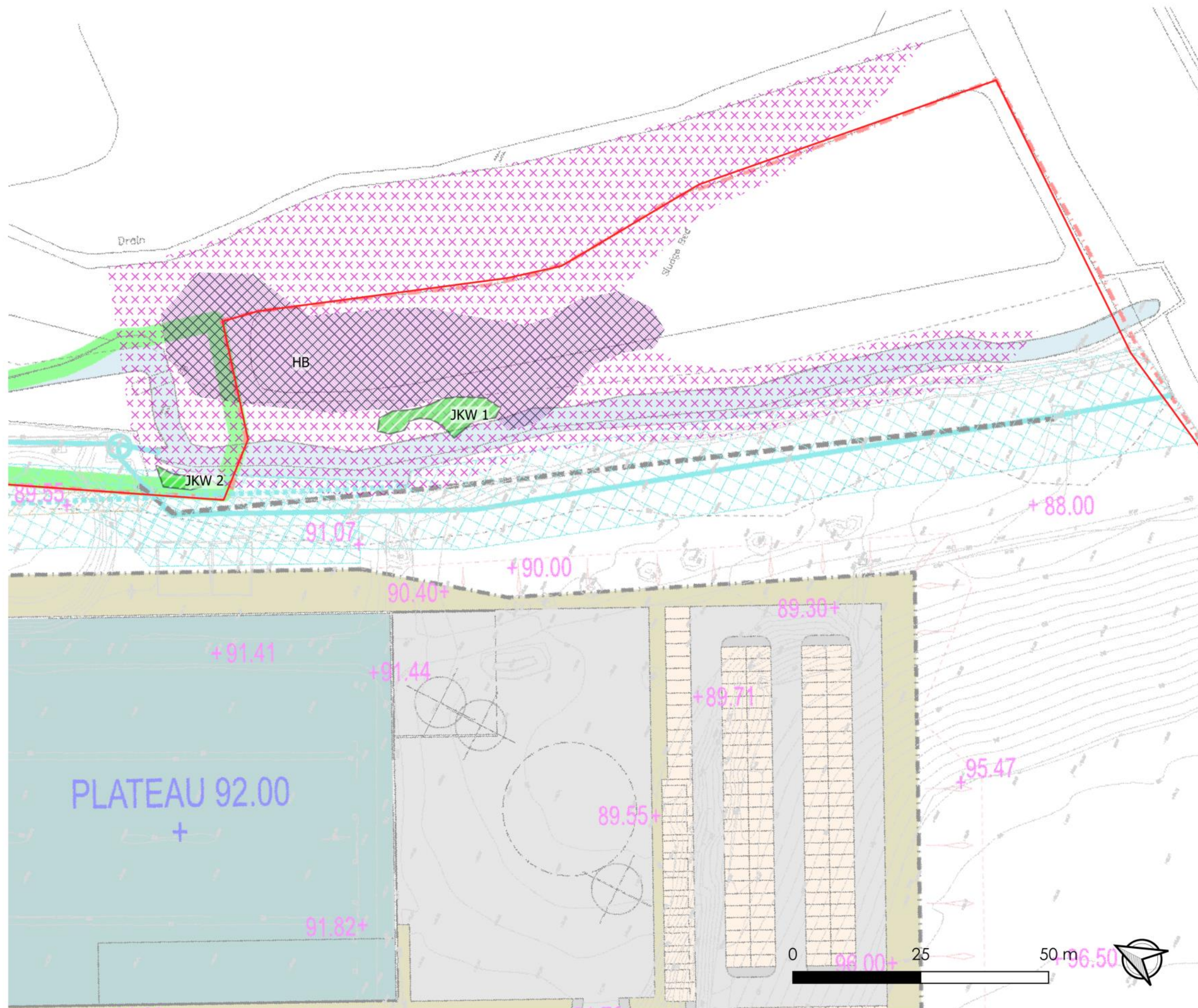


Figure 5

INNS stands - focus on areas mapped in relation to development proposal

Invasive species

- Japanese / hybrid knotweed
- Himalayan Balsam - dense
- Himalayan balsam - scattered

Species	Ref_Number	Area (sqm)	Easting	Northing
JKW	2	21	418143	427183
JKW	1	98	418178	427142

Photographs of INNS

Patch Ref.	Description and condition	
JKW 1	This is a mature dense stand of Japanese knotweed on the north eastern bank of Hunsworth Beck. The stand comprises several crowns of stems which have merged over successive seasons resulting in a continuous dense patch. Current seasonal growth is vigorous and large leaves suggest the species may be a hybrid with the related species of giant knotweed.	
	Close view of above towards showing leaf shape. Note adjacent Himalayan balsam growth below in photo.	

Photographs of INNS

Patch Ref.	Description and condition		
JKW 2	A smaller stand growing adjacent to an outfall pipe that discharges into the stream channel . Comprising around 6 crowns of stems with some juvenile growth as shown right. The stand is positioned exterior to the red line boundary but noted sue to its proximity to development which may need to be accounted for in relation to any planned ground works withing 7 metres of the stand—an area where JWK rhizome may be present.		
			

Photographs of INNS

Patch Ref.	Description and condition	
HB dense	Himalyan balsam is distributed extensively across the open scrub / grassland to the north east of the stream corridor. It dominates open ground with damp soils though appears to be out-competed by other vigorous herbaceous plants indicative of high nutrient conditions—dense nettle and cleavers in parts.	
	Stands are particularly dense on open shaded stream banks in localised patches.	

Photographs of INNS

Patch Ref.	Description and condition	
HB Scatt.	HB is scattered throughout the stream corridor and adjacent unmanaged scrub land as mapped. This is indicative of the presence of this species over many years, which has extensively colonised.	
	HB scattered along the north eastern boundary of the site adjacent to Hanging Wood. Cattle grazing within the woodland and also into pasture land within the red line boundary, has likely prevented further spread of HB into these areas.	

Results and Risk assessment for INNS mapped by survey

General risks from the presence of invasive weeds are detailed in Appendix 1 and form part of this report.



Risks with the site in its present state

Japanese knotweed

Patch JKW1 is within the property and constitutes a RICS category 3 risk. No built structures are at risk. The patch will grow in extent as underground rhizome extends into surrounding soils over subsequent seasons. JKW2 is exterior to the red line, though rhizome has potential to extend into the development area (Figure 6 below).

Himalayan balsam

Himalayan balsam is present throughout the more shaded and damp areas of the site, the mature woodland and stream channel areas in particular. The plant spreads by the casting of hundreds of seed from each plant every year. It can proliferate in areas which are favourable enough—generally damp and shaded. It may also be outcompeted by grasses and other plant species where conditions are less favourable such as open dry grassland within the site.

Both species

In relation to the Wildlife and Countryside Act the site overall presents some ongoing risk of further INNS infestation within and from the boundaries of the site into neighbouring land, much of which could be considered wild natural habitat. The neighbouring land up and downstream of the site also contains both species surveyed so the ongoing risk of infestation is present into, as well as, from the site boundaries. Though Ecological Estates is not in a position to offer legal advice it is anticipated that the risk of enforcement action is likely to be low.

Risks associated with development of the site

Japanese knotweed

Neither JKW patch appears to have direct impact on areas which are likely to require ground works to facilitate development, however any engineering works required within the buffer risk zones (Figure 6) should be planned with the assumption that substrates may contain JKW rhizome and a method for compliant containment or disposal of substrates devised by a competent invasive species specialist.

Himalayan balsam

Himalayan balsam poses no risk to built structures, though there would be a need to manage this species through development in order to ensure legal compliance and environmental responsibility.

Soils containing HB plants and areas up to 6m surrounding must be considered potentially infected by HB seed to a depth of up to 500mm (typically 100-200mm). Excavation or disturbance of infected soils poses a risk of spread within, and from, the Site and if soils are removed as waste would require treatment/disposal as a controlled waste.

Dependent on development plans and where on-site space is available, surface soils may sometimes be relocated within the site and subject to ongoing treatment to control and remove infestation avoiding the need for costly disposal.

Throughout development control measures should be put in place to manage ongoing spread from and into the site along the stream corridor. Invasive weed control should be incorporated into any habitat enhancement works in the area of the stream corridor as part of the development plans.

Survey Conclusions

- There is on-going risk of spreading Himalayan balsam within the Site and into neighbouring third-party land (and *vice versa*), which should be considered in relation to current site management with the aim of mitigating this as an environmental pest and to ensure compliance in relation to avoiding spread into further wild habitat areas within or outside the site.
- Development plans should be reviewed in relation to survey findings in order to identify any potential constraints posed by the presence of either species in the areas identified. As required, a dedicated management plan or specific method statements may be devised to specify control methods that will be adopted to ensure compliant and responsible operations in key areas.
- Early control measures are recommended to minimise the risk of increased cost of any future treatment works should INNS spread into other parts of the Site. Where infected surface soils require excavation to facilitate development, any required disposal to landfill as a controlled waste can be very costly.
- Development presents an opportunity to enhance the habitat value of retained naturally vegetated areas.
- Reasonable aims would be to completely remove the two JKW stands using herbicide injected into growing stems (foliar spraying within the stream channel would require additional Environment Agency permits).
- Complete removal of Himalayan balsam is unlikely to be achievable without a wider landscape strategy in collaboration with neighbouring landowners. Control aims should seek to limit the extent and reproductive capability of existing patches, while enhancing vegetation composition to be less favourable to this species. For instance, seeding with a tussock grass mix may provide beneficial competition to reduce overall cover of HB.

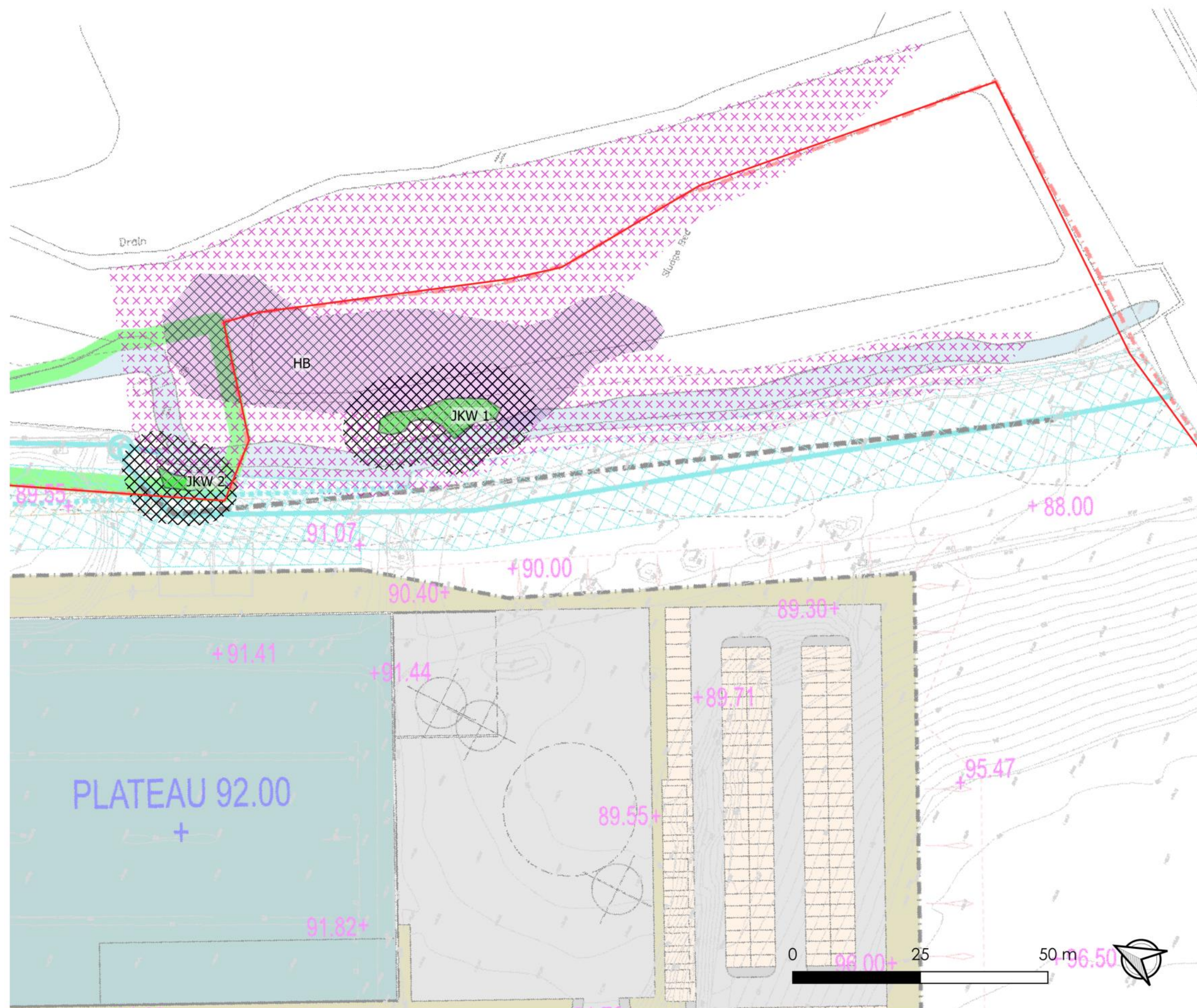


Figure 6

INNS stands - focus on areas mapped in relation to development proposal

7 metre buffer indicates maximum potential JKW rhizome extension into surrounded substrates

Invasive species

- Himalayan Balsam - dense
- Japanese / hybrid knotweed
- Himalyan balsam - scattered
- 7m potential rhizome extension

Species	Ref_Number	Area (sqm)	Easting	Northing
JKW	2	21	418143	427183
JKW	1	98	418178	427142

Appendix 1

General Risks from the presence of INNS

1. The mapped species are listed under Schedule 9 of the Wildlife and Countryside Act (1981) as amended.
2. For Schedule 9 species their presence on the site prior to any proposed development is not in itself a contravention of legislation; however, to inform land management and where development is planned the following legal constraints are relevant and may require action to ensure compliance.

General risks

Risks associated with the presence of invasive non-native species (INNS) fall into the following broad categories:

Offences in relation to wildlife / environmental legislation

Invasive species have long been controlled on the basis of the threat they pose to our native wildlife, reflected through controls provided in the Wildlife and Countryside Act (1981) amended by later Acts such as the Natural Environment and Rural Communities Act (2006) and the Countryside and Right of Way Act (2000). This legislation makes it an offence **“to plant or otherwise cause to grow in the wild”** any plant listed on Schedule 9 of the Act.

The protection of biodiversity from invasive or alien species has been strengthened by EU Regulation 1141/2014. This sets out targets for pre-emptive action, reporting and larger scale actions but also states that you must not **“allow or encourage (listed INNS species) to spread outside your land”**. Where this cannot be guaranteed it is required that the plant in question be controlled or removed.

The costs of enforced action

The Infrastructure Act (2015) allows government agencies to enter into Species Control Agreements (SCA’s) or to enforce Species Control Orders (SCO’s) with / on landowners. These are likely to change significantly the ability of local authorities to negotiate with landowners in reducing issues of invasive species, and may lead to local authorities taking a more directed and prescriptive approach to dealing with problem species in particular cases.

Claims by third parties

The potential of invasive species to cause a private nuisance, or to result in damage to the property of others, is recognised in both the Common Law of Private Nuisance, and the Anti-Social Behaviour, Crime and Policing Act (2014), and can result in court orders or community protection notices requiring action or the payment of damages or fines. Recent case law (Waistell vs Network Rail) has demonstrated the ability of claimants to secure damages and compensation in relation to damage to property (and value of).

The Property Care Association (PCA) and the Royal Institute of Chartered Surveyors (RICS) provide guidance on the potential of JKW and other INNS to result in a private nuisance causing damage to the structure or value of property.



Offences relating to disposal and treatment of invasive species

Disposal of invasive species and soils containing their propagules (seed or rhizome) may be classed as ‘controlled waste’ and subject to relevant clauses of the Duty of Care Regulations (1991) under Part II of the Environmental Protection Act (1990). Only properly licensed organisations may remove this waste from a property, and they must take it to appropriately licensed waste facilities. The removal of contaminated or infected soil can result in the removal of very large amounts of material from a Site at considerable cost.

Damage to property from Japanese knotweed (JKW)

In the UK Japanese knotweed (JKW) spreads through vegetative propagation from the growing rhizome (root system), or stem. It can also grow from small fragments of these present in the soil. Individual plants may live for many decades, and rhizome can survive in a dormant yet viable state within soil for many years. As such JKW can be hard to control and eradicate.

The Royal Institute of Charted Surveyors (RICS) sets out a framework for objectively assessing and reporting the risk posed to a property by the presence of JKW. This assists home-owners, purchasers and lenders in making informed decisions. This widely recognised framework categorises the risks posed to property by JKW as outlined in Table 1 below.

As is apparent from the RICS Risk Categories, JKW can cause damage to property although the risks of this can often be exaggerated and damage to the fabric of houses themselves is very rare. There is a very real risk to drains, walls, outbuildings and conservatories from established JKW and its subsequent spread in to new areas if not adequately managed.

If JKW affects a property it must be notified in purchase documents such as TA6 and can affect mortgage insurance unless treatment plans are in place.

Table 1 RICS Risk Categories

Category	Description
4	<i>Japanese Knotweed is within 7 metres of a habitable space, conservatory and/or garage, either within the boundaries of this property or in a neighbouring property or space;</i> <i>and/or Japanese Knotweed is causing serious damage* to outbuildings, associated structures, drains, paths, boundary walls and fences and so on.</i> Further investigations by an appropriately qualified and/or experienced person are required.
3	<i>Although Japanese Knotweed is present within the boundaries of the property, it is more than 7 metres from a habitable space, conservatory, and/or garage. If there is damage to outbuildings, associated structures, paths and boundary walls and fences, it is minor.</i> Further investigations by an appropriately qualified and/or experienced person are required.
2	<i>Japanese Knotweed was not seen within the boundaries of this property, but it was seen on a neighbouring property or land. Here, it was within 7 metres of the boundary, but more than 7 metres away from habitable spaces, conservatory and/or garage of the subject property.</i>
1	<i>Japanese Knotweed was not seen on this property, but it can be seen on a neighbouring property or land where it was more than 7 metres away from the boundary.</i>