LANGSTONE DEVELOPMENTS

JAPANESE KNOTWEED SURVEY

STATION ROAD, BARGOED

JULY 2026

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decus RESEARCH

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1.0 INTRODUCTION

Langstone Developments own a parcel of land at Station Road, Bargoed. The site lies between Station Road in Bargoed and the Rhymney River

The location of the plot is shown on Figure 1.

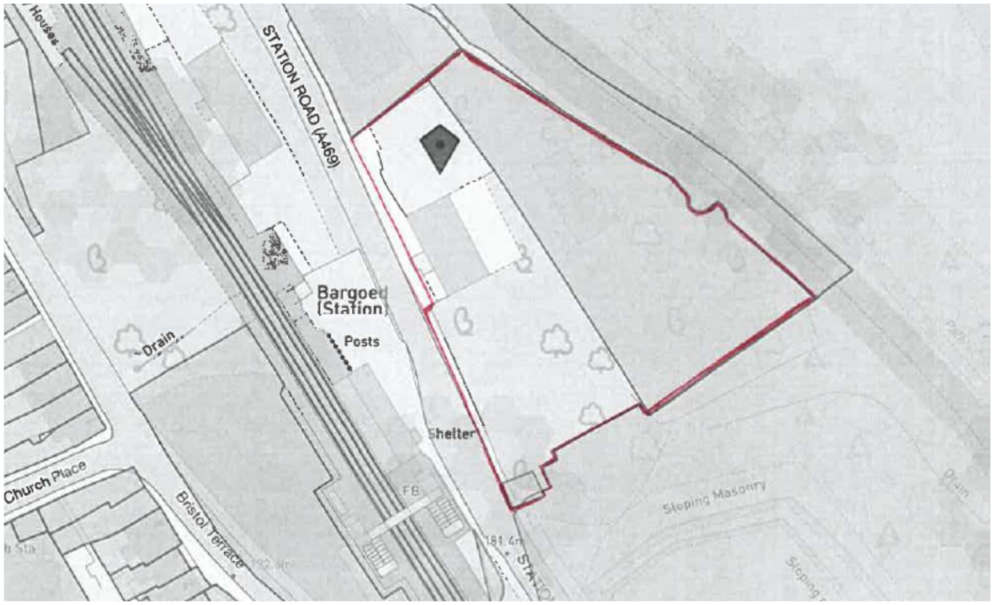

Figure 1 Site Location

Decus Research Limited were engaged to undertake a survey to identify the locations of Japanese Knotweed and to provide advice on management of this non-native invasive plant.

The site topography presented significant challenges to the survey. There is a platform which roughly divides the site into two halves. The western section adjacent to Station Road is at a significantly higher level than the section to the east of it. The difference in elevation is partially supported by a retaining wall, with the rest of the bank being unsupported made ground.

We understand that development plans require construction of a reinforced earth retaining wall which will be designed to extend the development platform adjacent to station road.

2.0 LEGAL FRAMEWORK

Japanese Knotweed is classed as non-native invasive species in the UK and legislation is in place to prevent its spread.

Japanese Knotweed is very fast growing and can cause damage to structures and to the ecology of an area by out competing native plants. It has no natural predators in the UK.

A brief summary of the legislation that is relevant to the control of Japanese Knotweed is provided in Table 1 below.

Legal Area	Key Obligation	Risk if breached
Wildlife & Countryside Act 1981	Do not cause spread into the wild	Criminal offence
Environmental Protection Act 1990	Dispose of knotweed as controlled waste	Prosecution
ASB, Crime & Policing Act 2014	Comply with CPNs	Fines up to £20k
Property Misrepresentation	Truthful TA6 disclosure	Civil damages
RICS Guidance	Accurate identification & reporting	Negligence claims
Mortgage Requirements	Provide management plan & guarantees	Mortgage refusal
Civil Encroachment	Prevent spread to neighbours	Compensation claims

Table 1 Summary of Legislation Relating to the Control of Japanese Knotweed

Whilst it is not illegal to have knotweed on your property, several legal frameworks govern how it must be managed, how it can be disposed of, and what responsibilities owners have to prevent its spread. These laws also influence property transactions, mortgage approvals, and potential civil liability.

2.1 Key Legal Obligations

a. Wildlife and Countryside Act 1981

Japanese knotweed is listed as an invasive species under Schedule 9. You must not allow knotweed to spread into the wild or onto neighbouring land. Improper management or disturbance that causes spread can lead to criminal penalties.

b. Environmental Protection Act 1990

Knotweed material and contaminated soil are classified as **controlled waste**. Any removal must be carried out by licensed contractors and disposed of at authorised facilities. Incorrect disposal can result in prosecution and significant fines.

c. Anti-social Behaviour, Crime and Policing Act 2014

Local authorities can issue **Community Protection Notices (CPNs)** if knotweed is left unmanaged and poses a risk of spread. There is an obligation to comply with treatment or containment requirements set out in the notice. Fines up to £2,500 for individuals and £20,000 for companies can be applied.

d. Property Disclosure & Misrepresentation (TA6 Form)

Sellers must declare whether knotweed is present on the property. In property transactions there is an obligation to provide accurate information during the sale process. False declarations can lead to civil claims for misrepresentation, including compensation for treatment costs and loss of value.

e. RICS Professional Guidance

Surveyors follow RICS standards when assessing knotweed to ensure accurate identification, risk assessment, and appropriate recommendations. Failure to follow guidance may expose surveyors or property professionals to negligence claims.

f. Mortgage Lender Requirements

Many lenders treat knotweed as a material risk and need to provide evidence of a professional management plan, often with an insurance-backed guarantee. Mortgage delays, reduced valuations, or refusal to lend can occur if knotweed is unmanaged.

g. Civil Liability for Encroachment

If knotweed spreads from your land to another property, you may be liable for damages. Landowners must prevent encroachment and manage knotweed responsibly. If this is not done then claims for treatment costs, loss of property value, and legal expenses are likely.

What This Means for Property Owners and Buyers

- Knotweed **must be managed professionally** to avoid legal and financial exposure.
- Accurate disclosure is essential during property sales.
- Mortgage lenders may require a treatment plan before approving finance.
- Failure to act can lead to enforcement notices, civil claims, or criminal penalties.
- A survey report documenting knotweed presence and risk is a key part of compliance and due diligence.

3.0 SURVEY

Three surveys have been undertaken to gather all the data required for this study.

An initial inspection was undertaken on 8th June to gather data that would allow the survey to be planned.

On Tuesday 30th June a Drone Survey was undertaken. The drone survey included very high-resolution images to allow identification of individual plants. The data gathered from the drone survey was analysed using AI tools and then models were created to show the Japanese Knotweed in several formats and overlays.

On 9th July an extensive field validation survey was completed using the data gathered from the drone survey. The validation survey was designed to refine the models generated by the drone survey.

As with any ecological survey, the situation is a dynamic one and the flora is changing daily. Some areas could not be reached due to dense shrubbery and vegetation and consequently this report is provided with this limitation.

4.0 FINDINGS

Extensive stands of Japanese knotweed are present and the dominant locations are shown on Figure 2.

Other smaller zones of invasion may be present that were not identified by the survey due to access to the whole of the site being restricted by topography and dense vegetation.

Figure 2 Dominant Japanese Knotweed Locations

5.0 DISCUSSION

The topography, proximity of the river and the form of the proposed development make this site complex from the perspective of Japanese Knotweed management and eradication.

We understand from the developer that the development programme allows a two-year lead in time, and this will certainly be beneficial in reducing the costs associated with management and eradication of Japanese Knotweed.

Several Phases of Treatment are recommended to ensure effective management of the Japanese Knotweed and or eradication and to minimise cost.

The proposed Japanese Knotweed Management Plan is set in section 6.

6.0 JAPANESE KNOTWEED MANAGEMENT PLAN

The aim of the Japanese Knotweed Management Plan is to record duty of care and to meet the requirements of the Property Care Association Knotweed Code of Practice whilst minimising the cost of Knotweed management.

The management aim is also to reduce the risk of spread of viable Knotweed material and to enable the construction program to be maintained.

It is necessary to provide a permanent documented and photographic record to as part of the duty of care.

6.1 Step 1. Herbicide-Based Treatment (Systemic Chemical Control)

The first step should be to establish barriers around the zones of Japanese Knotweed. These need to be robust enough to last for at least 2 years and could comprise high visibility tape on pins.

The Japanese Knotweed should then be treated using Systemic Chemical Spray by a specialist contractor.

Stem injection will be required in the locations adjacent to the river to avoid contamination of the watercourse. This should be discussed with the specialist contractor appointed to undertake the treatment.

The area to be treated is shown on Drg SYC-DEC-A101-D01 in Annex A and is 1,109.1m^2.

The area of each stand of Japanese Knotweed is shown on Drg SYC-DEC-A101-D01.

Systemic herbicides—primarily glyphosate, aminopyralid, or triclopyr formulations should be applied to foliage or injected into mature canes.

Application of herbicide should take place twice per year, typically late spring to early autumn, with optimal uptake during late summer.

Stem injection is preferred where off-target impact must be minimised or where dense stands reduce foliar coverage. This is recommended adjacent to the River Rhymney.

Treatment should continue twice annually until the summer season in which development is proposed.

Herbicide treatment alone will not eradicate rhizomes and viability may persist for years. In addition, soil disturbance post-treatment is likely to trigger latent rhizome regeneration.

The specialist contractor appointed to apply the herbicide must follow COSHH, product label instructions, and Environment Agency guidance.

Herbicide use near watercourses requires consent under the Environmental Permitting Regulations.

Biomass removal and incineration should take place following die back.

6.2 Step 2. Mechanical Excavation (Full and Targeted Removal)

After herbicide application for the first 2 years of treatment, and after allowing residual growth to show (mid summer), targeted removal should take place. The material should be disposed of to a suitable licenced facility.

Alternatively, excavated soils may be treated using heat via the SoilSaver Steam treatment system, details of which are provided in an Annex B to this report.

The volume to be treated will depend upon the amount of Japanese Knotweed present after herbicide treatment. In order to allow budget estimates to be prepared, we have assumed that a 3m buffer zone around each existing Japanese Knotweed stand is excavated to a depth of around 2m. This activity would need to be supervised by a suitably experienced person to identify the rhizomes and to ensure full removal.

Drawing SYC-DEC-A01-002 (Annex A) shows the area that would need to be excavated assuming a 3m buffer zone. This equates to 3217.8m^2. If a 2m deep excavation is undertaken over this area, a volume of 6,435.6m^3 would need to be excavated and removed.

Excavated material is classified as controlled waste under the Environmental Protection Act 1990.

Transport requires a licensed waste carrier; disposal must be at a permitted landfill.

Screening and segregation may be used to reduce waste volumes, though rhizome fragmentation risk must be managed.

The process will require stringent biosecurity protocols to prevent cross-contamination (e.g., plant hygiene stations, controlled vehicle movements).

6.3 Root Barriers (Vertical or Horizontal Containment)

Japanese Knotweed is present on land adjacent to the site, and particularly to the east adjacent to the river. In order to minimise spread of Japanese Knotweed from the adjacent site back into the treated area, a vertical root barrier should be installed.

This should run along the western site boundary on the lower platform.

High-strength geotextile membranes (e.g., 1 mm HDPE or specialist knotweed barriers) should be installed to prevent rhizome migration back into the treated site area.

The barriers should extend 3 metres deep and must be installed with overlaps and sealed joints to prevent rhizome ingress.

6.4 Monitoring & Verification

It will be necessary to monitor the site for regrowth to confirm efficacy of the treatment and removal for a period of up to 4 years.

Any regrowth should be noted using geo-tagged photographs.

If re-growth is noted then it will be necessary to continue treatment with herbicide twice annually or to remove the material by excavation.

At that stage, the Knotweed Management Plan (KMP) will need to be updated with monitoring results and treatment actions.

ANNEX A

Drawings

NOTES:

Site Boundary
Japanese Knotweed (Accounted for)
Japanese Knotweed

Area of Japanese Knotweed

1	9m2	8	9m2
2	89.5m2	9	9m2
3	236.6m2	10	37.5m2
4	100.8m2	11	4.7m2
5	83.6m2	12	63.4m2
6	9m2	13	297.7m2
7	9m2	14	150.3m2

CLIENT:
LANGSTONE DEVELOPMENT

PROJECT:
BARGOED

TITLE:
JAPANESE KNOTWEED LOCATIONS

DRAWING NO:
SYC-DEC-A101.D01

REVISION NO:

DRAWN BY:
A.Davis

CHECKED BY:
S.Whitehouse

SCALE:
NTS

DATE:
14/07/2026

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NOTES:

- Site Boundary
- Japanese Knotweed (Accounted for)
- Japanese Knotweed
- 3m Buffer Zone

Area of 3m Buffer Zone

1	55.6m2	8	65.1m2
2	266.3m2	9	64.2m2
3	482.6m2	10	203.8m2
4	259.4m2	11	64.6m2
5	227.1m2	12	212.6m2
6	58.8m2	13	634.8m2
7	63.3m2	14	559.6m2

CLIENT: **LANGSTONE DEVELOPMENT**

PROJECT: **BARGOED**

TITLE: **JAPANESE KNOTWEED LOCATIONS WITH 3M BUFFER**

DRAWING NO: **SYC-DEC-A101.D02**

REVISION NO:

DRAWN BY: **A.Davis**

CHECKED BY: **S.Whitehouse**

SCALE: **NTS**

DATE: **14/07/2026**

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ANNEX B

SoilSaver Japanese Knotweed Treatment System

Process Overview Soilsaver – Steam Treatment of Invasive Flora Impacted Soil

Technology Overview: Mobile Ex-Situ Soil Steaming using SoilSaver Technology

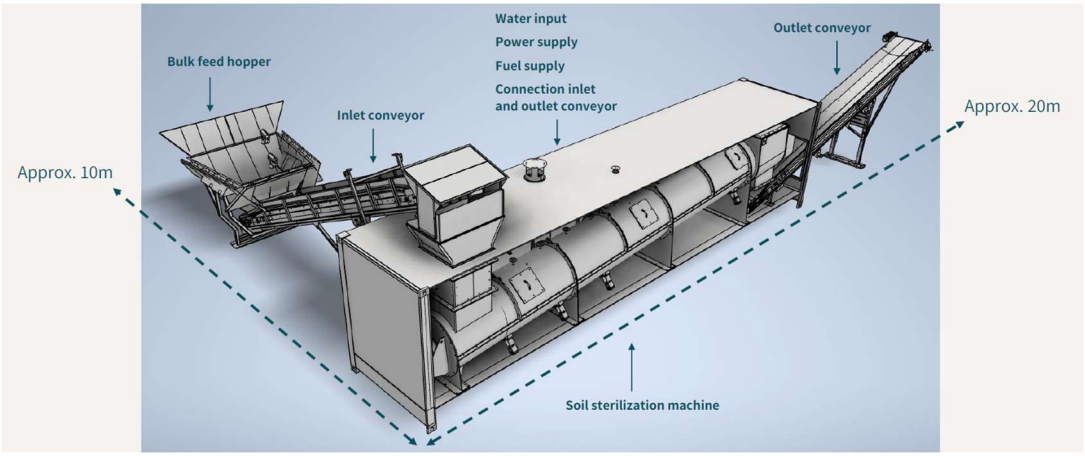
The selected system, the Soilsteam SoilSaver 20™, is a purpose-built mobile soil-steaming plant designed for treatment of excavated soils, substrates and sludges. The process applies controlled steam heat directly to the soil matrix within an enclosed system, raising temperatures sufficiently to denature plant tissues and destroy viable propagules without the use of chemical additives.

Although soil steaming has been used in agriculture since the nineteenth century, the SoilSaver system represents a **modern engineering reinterpretation** of a proven physical principle, specifically adapted for large-scale infrastructure and brownfield use.

Scientific basis; Steam has a uniquely high energy density and heat-transfer capability. When injected into soil, wet steam rapidly transfers thermal energy through pore spaces, raising soil temperature and denaturing plant tissues. Academic research has demonstrated that invasive plant seeds and rhizomes are highly sensitive to short-duration exposure at elevated temperatures, with mortality governed by the interaction between **peak temperature and exposure duration**, rather than prolonged heating alone.

Unlike chemical treatments, steam has **no residual effects**. Once the soil cools, it can be immediately reused, avoiding the long waiting periods often associated with fumigants or herbicide programmes.

Machine design and operation; The SoilSaver system is a **mobile, continuous-feed ex-situ treatment unit**. Excavated soils are introduced via a feed hopper and conveyed into an enclosed rotating treatment chamber. Steam is injected to raise soil temperatures uniformly, while mechanical agitation ensures consistent exposure across all particles. Key technical features include; continuous feed operation, throughput of up to 30 tonnes per hour, enclosed treatment chambers and integration with standard earthmoving plant. Unlike in-situ thermal techniques, ex-situ processing ensures direct thermal exposure of rhizomes embedded within soil aggregates, addressing historical challenges associated with uneven heat distribution. An illustration of the machine is presented below.



Digital quality assurance; A critical differentiator is the system's **cloud-linked digital monitoring**. Temperature and throughput data are continuously logged during operation, creating a robust audit

trail. This provides objective evidence of treatment performance, supporting regulatory confidence, defensible reuse decisions, and alignment with materials management plans.

Independent Pilot Study and Scientific Validation

The deployment of mobile soil steaming in the UK was preceded by an independently designed and executed validation study, commissioned with Advanced Invasives Ltd, led by Dr Daniel Jones. Dr Jones is one of the UK's leading invasive plant specialists, with over a decade of peer-reviewed academic research and long-term field trials informing UK guidance on Japanese knotweed management. The objective of the study was the evaluation of the Soilsteam SoilSaver 20™ system and confirm the lethality of ex-situ soil steaming against viable knotweed rhizomes.

Appendix A – Evidence summary

Evidence	Why it matters for pre-application advice
SoilSaver 20™ product information	Shows the plant is a purpose-built semi-mobile soil-steaming unit with automatic control, online logging/reporting and defined treatment parameters.
Bitarafan et al. peer-reviewed research	Provides scientific basis for soil steaming as a non-chemical method to control invasive plant propagules in soil relocation contexts.
Lindum 2024 Japanese knotweed experiment	Provides Japanese knotweed-specific evidence from SoilSaver treatment, including no shoots from steamed propagules and viable control growth.
Advanced Invasives / Dr Daniel Jones trial	Provides independent UK field evidence, with no growth from treated rhizomes at 23 and 46 days while controls grew strongly.
Trebanos Welsh case study	Provides full-scale operational evidence from a Welsh infrastructure setting, including treatment and reuse of approximately 1,780 m^3.