



Yapton Burndell Road: Project Completion Report

Project Overview

Contract Name:	Yapton Burndell Road	
Client Name	Bovis Homes Southern Counties	
Site:	Yapton Burndell Road	
Site Postcode/Grid reference	BN18 0TT	
Ebsford Contract no	2793	
Completion Document Ref.:	CD2793	Pages: 19
Scope of work (Operation to carry out work)	Excavation and disposal of Japanese knotweed contaminated material	
Number of Ebsford Personnel:	1	
Commencement Date	20 th February 2019	
Completion Date	17 th April 2019	
Site Induction complete	Completed upon arrival	

Document Preparation

Prepared by: Ebsford Environmental	Lauren Tomlinson	30/04/2019
Reviewed by: Ebsford Environmental	Sarah King	30/04/2019

Key Personnel, Supervision & Responsibilities

	Name	Company	Contact
Client	James Hammond	Bovis Homes Southern Counties	
Site Contact	James Hammond	Bovis Homes Southern Counties	
Ebsford Health & Safety	Ricky Seres	Ebsford Environmental	
Ebsford Contracts Manager	Ben Thornton	Ebsford Environmental	
Ebsford Commercial	Sarah King	Ebsford Environmental	
Ebsford Site Manager	Dave Worley	Ebsford Environmental	
Site First Aider	Dave Worley	Ebsford Environmental	

1. Project Brief

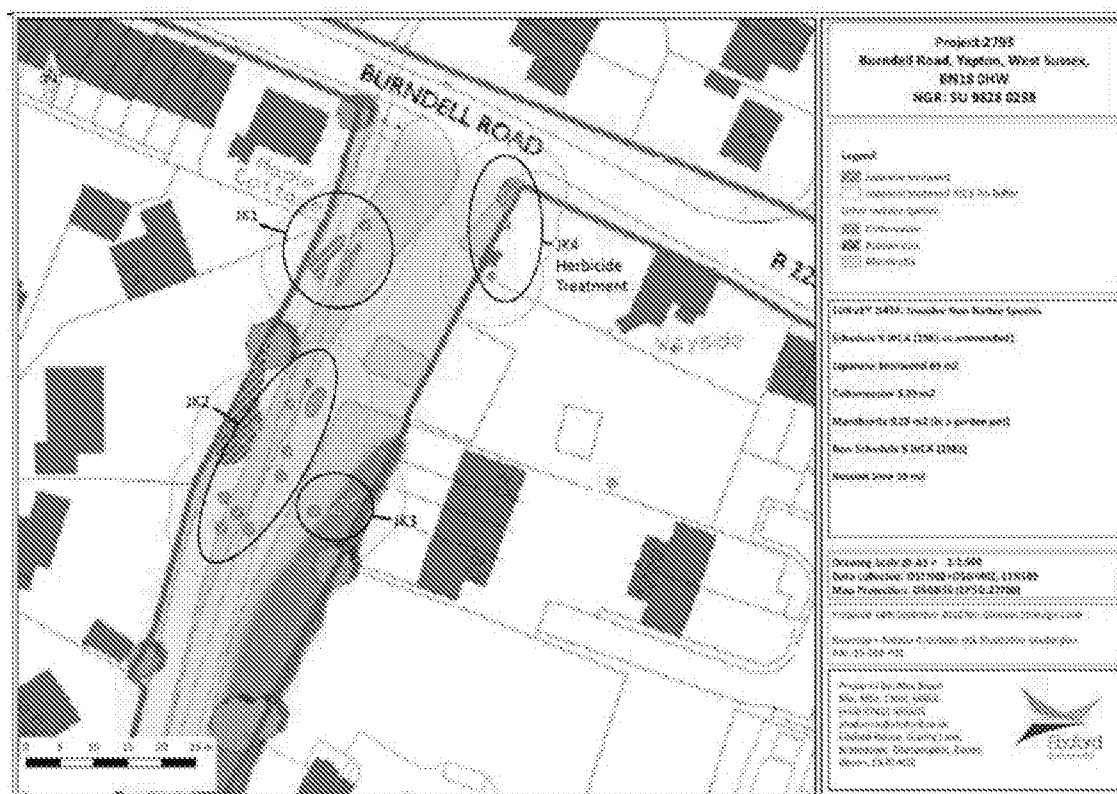
Ebsford Environmental Ltd were commissioned by James Hammond of Bovis Homes Southern Counties, to undertake the excavation and disposal of Japanese knotweed infestations in multiple areas on their newly acquired site, as well as the remediation and controlled removal and disposal of asbestos contaminated ground which was located during site investigations.

The project brief consists of:

- Identification of Japanese knotweed areas
- Excavation and disposal of Japanese knotweed
- Asbestos removal and disposal using a licensed contractor
- Monitoring of excavation areas

Following receipt of the project order and liaison with client, initial works commenced on 20th February 2019 and were completed on 17th April 2019.

Please see the below map depicting the infestations identified on site:



1.1 Compliance with regulations

Ebsford Environmental always ensure works are undertaken to the highest standard by accrediting our work with our association with industry leading governing bodies that endeavour to set a precedent and standards for contractors to adhere to. There are two key governing bodies within the invasive weed industry; INNSA, The Invasive Non-Native Specialists Association, and PCA, The Property Care Association. At Ebsford, we are proud to state that were the first company to hold dual membership for both bodies, ensuring a premium service offering to our clients.

In April 2017, the guidance notes produced by the Environment Agency for the management of Japanese knotweed were replaced by the INNSA Code of Practice. This was produced by experts within the field and demonstrates the current best practice for the management of Japanese knotweed in the industry. As a regulating body within the construction industry, INNSA members subscribe to the Invasive Code of Practice to improve standards within the industry and offer peace of mind to clients.

The Property Care Association similarly plays a role in governance under their Invasive Weed Group, which has formulated strict criteria for all PCA members, such as training courses and examinations to continually improve upon and develop the highest levels of technical knowledge and practical skill.

As stated above, the following works required compliance with waste regulations. Ebsford always adhere to the following procedure: ensuring the landfill accepting the material was licensed to accept such waste; excavated material is transported by a register waste carrier; and waste transfer paperwork is recorded to confirm that material had been managed in the appropriate manner. This is in line with regulation 35 of the Waste (England and Wales) Regulations 2011 that state transfer notes must be completed and signed, giving a written description of the waste.

2.0 Site mobilisation and preliminary guidelines

Before works commenced, Ebsford met with SSE who provided the height of the overhead cables on site; at the lowest point the cables were 5.8m. It was consequently agreed that Ebsford would restrict all machinery working underneath the cables to 2.6m.

- All site personnel including visitors signed in when arriving to site and signed out when leaving site.
- All site personnel were made aware at induction stage of high-risk areas such as services and areas containing asbestos. When intrusive works began, the site manager consulted the service drawings to allow a permit to dig to be issued.
- All site personnel received a full site induction by the site manager before works were carried out. Copies of all relevant training and certification was retained within the site safety file. All site operatives were briefed on the Construction Phase Plan.
- A Daily Engagement Brief (DEB) was carried out every morning before the commencement of works. This highlighted key tasks taking place during that working day, highlighted site risks, key deliveries and visitors. The DEB was then signed by all site personnel to confirm all in the brief was fully understood.

- A conditional survey was carried out with photographs of all working areas and compounds, and then shared with the client.
- The compound was positioned as per the site layout drawing, secured, and the perimeter defined with heras fencing double clipped and positioned in feet. The site manager produced a specific manual handling risk assessment for handling heras fencing.
- A pedestrian access gate was installed within the heras fencing to ensure personnel did not walk out into live traffic.
- The groundhog welfare unit was positioned within the compound along with any materials, and equipment was stored within operator's company vehicles.
- Vehicle parking was defined as per site drawings, all vehicles reverse parked where possible.
- A 1000l static fuel bowser was positioned in close proximity to the work area but far enough away not to affect any land should a leak occur. The static bowser was banded to 110% and kept locked when not in use. A drip tray was provided to ensure leaks were alleviated when refuelling before polluting surrounding areas.
- Signage was positioned around site to highlight site rules, hazards and diversions.
- Spill kits were present, with one placed on each item of plant and also one placed on the bowser.
- On delivery of plant, all were test certification checked and kept on record and photographs taken to show the condition of plant upon arrival.

2.1 Enabling works

Enabling works were necessary in order to facilitate the forthcoming Japanese knotweed removal works; these were as follows:

- The removal of boundary and internal walls/fencing – utilising a 13 tonne excavator within the highlighted compound area, the driver using the ditching bucket pulled the pillars towards the excavator. The area was suitably segregated from public and other unauthorised personnel via heras fencing but this activity was managed by the use of a banksman.
- The tree set within the centre of the compound area was removed using a chainsaw by an external specialist contractor.
- A 13T excavator removed the tree stumps from the north west bank using a narrow trench bucket.
- The area beside the compound was prepared in such a way to make it suitable to stockpile Japanese knotweed without risk of further contamination; these works were completed using the 13T excavator with a ditching bucket, completing a vegetation scrape of 200mm. This area was then an isolated point.
- General tidying of materials and waste debris throughout the car park area - a skip was sourced for general waste, and the waste contractor checked to ensure their legalities i.e. waste carriers license was in place.

The material generated from the enabling works was separated and stockpiled to be removed once the disposal phase began. Exclusion zones were installed, and goal posts erected as per the site plan.

2.2 Excavation works

Excavation works will be dealt with in turn as per the labelled infestations on the invasive overview plan (JK).

JK 1

Works in this area were undertaken initially utilising a vacuum excavation unit to locate the underground cable. Once the location of this was established, the Japanese knotweed was excavated following the Bovis SOP.

Works began by taking a scrape of the infested area to establish the extent of the Japanese knotweed rhizomes. Once the extent of these became apparent, the excavations commenced from the furthest identified rhizome. This was achieved by excavating in 200mm layers with the sides and formation of each layer being visually inspected by the Ebsford site supervisor.

The above process repeated until we became within 500mm of the HV cable. Ebsford utilised a 6T excavator with the boom restricted to 2.6m to excavate the Japanese knotweed to within 500mm of the cable; excavations beyond this were carried out using the vacuum excavation unit for safety. This continued until the Ebsford supervisor became satisfied all contaminated material was removed from the area.

The contaminated material from this area was excavated from its current location and cast behind onto the hard standing where it was then loaded into a dumper and relocated to the stockpile area.

JK2

The infestations were excavated with the 6t restricted excavator as per the methods above; the material was cast behind the machine on to the grassed area where it was then loaded into the 9 tonne dumper and transported to the stockpile area for removal. The raised earth and waste located around the pylon were removed from the area using the height restricted machine under the supervision of SSE to ensure no damage was incurred to the pylon. Fern Contractors, the licenced asbestos consultants, were in attendance for these works as sheet asbestos had been previously identified in the area. The asbestos supervisor created exclusion zones for anyone working in the area and carefully removed any asbestos material before the material was removed from site.

The above process involving a scrape to establish the extent of rhizomes and excavating in 200mm layers was repeated until the Ebsford supervisor was satisfied all contaminated material had been removed. Each pull was loaded into the dumper and transported to the stockpile area.

Any excess clean material from the mounds that did not contain Japanese knotweed or asbestos was removed from site as inert material; the material was not suitable for use as backfill material due to the amount of general waste and vegetation within it.

JK3

The infestations located here did not fall within the 3m exclusion zone, so no restrictions applied - these infestations were excavated following standard techniques.

Works began by taking a scrape of the infested area to establish the extent of the Japanese knotweed rhizomes utilising the 13 tonne excavator and 9 tonne dumper.

Once the extent of the rhizomes became apparent, the excavations began from the furthest identified plant. This was achieved by excavating in 200mm layers with the sides and formation of each layer being visually inspected by the Ebsford site supervisor; each pull was then loaded into the dumper and transported to the stockpile area. The above process repeated until the Ebsford supervisor became satisfied all contaminated material was removed. Operating with an environmental awareness is a key ethos of Ebsford; we endeavor to only remove contaminated material by chasing the extent of the root system rather than assuming large buffer zones, as plants are often unpredictable, varying due to a wide range of factors such as soil type and moisture levels.

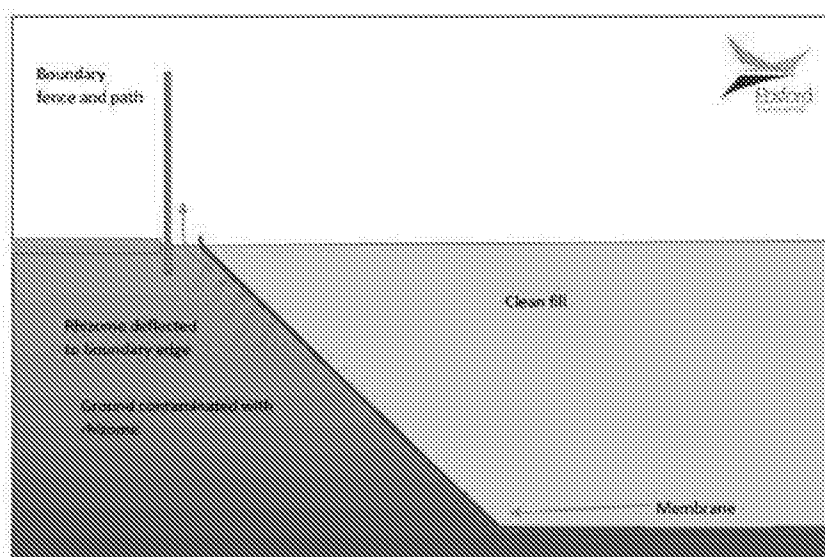
JK4

Any Japanese knotweed located in JK area 4 was excavated as per the JK 3 methodology. Please note the flint wall on the boundary was retained, a buffer zone of 500mm from the wall was implemented and the excavation battered to a 45 degree angle to ensure the integrity of the wall was not damaged. A root barrier membrane was then installed as per the details below.

2.3 Root barrier installation works

The site manager produced a manual handling risk assessment for root barrier membrane works. All operatives involved in these works were provided with cut resistant 5 gloves; where cutting was required, this was undertaken by the site manager only.

The root barrier was installed and secured at one side of the cleared zone, then secured at the other side. To backfill this area, the 6 tonne height restricted excavator utilised site won material.



The diagram above depicts a cross section of how root barrier membrane is installed; the 45 degree angle is to ensure the integrity of the boundary is maintained. The area of contaminated material left in situ should not cause any concern as the root barrier will stop any new growth appearing on site. Any new growth within the contaminated area will naturally grow up to gain sunlight, it will achieve this by chasing the root barrier to the surface. Should any new growth appear it will do so on the site boundary behind the root barrier - any growth found will be treated as part of the warranty conditions.

2.4 Disposal phase

Upon completion of the above works, the final stage of the works was to dispose of the contaminated material stockpiled earlier; Ebsford supervised the loading of the contaminated material onto wagons, A 100mm scrape of the area once the stockpile was removed was completed and the area visibly checked for Japanese knotweed rhizome.

Upon completion of these works, the site manager carried out a final site walkover to ensure no areas had been missed and to ensure no contaminated material was left in situ. All machinery was cleaned down before leaving site; the material generated from this process was also removed from site. Please note, the stockpile was situated outside of the 3m exclusion zone, therefore no restrictions on machinery applied.

The Japanese knotweed material was disposed of in line with best practice; biosecurity measures are followed, for example, when material is transferred to the proposed receptacle, care is always taken to ensure that none is lost during transport - wagons are never overfilled. Contaminated material is then disposed of to a licensed facility that can accept Japanese knotweed material under the Ebsford Environmental Waste Carriers License. All Japanese knotweed material was loaded onto wagons until all was disposed of.

2.5 Further remediation works

Upon completion of Japanese knotweed removal works, Ebsford levelled off the site using site won material and backfilled all excavations to as close to existing site levels as possible. Under the supervision of a specialist asbestos contractor, Ebsford removed the tarmac slab and sub base throughout the site, and any asbestos material was removed as per best practice. All other material was then removed from site by Ebsford. The same restrictions applied throughout; when the remediation works extended underneath the goal posts and pylons, the 6 tonne height restricted machine was used.

A separate report from Fern Contracting will be issued upon completion of all asbestos removal.

2.6 Best practice procedure

The following points were adhered to at all times throughout the works:

The points below were adhered to at all times during the excavation works:

- Always follow the instructions of the Ebsford site manager
- As the excavations deepen it is essential the sides of the excavation are battered to a safe angle of repose or stepped to a 1 in 1 minimum, if this is unachievable then no access is allowed at any time
- Do not track any machinery into contaminated areas
- Only machinery with height restrictions to be used when working within 3m of the overhead cables
- No machinery will be used for excavation within 500mm of the underground cable as per Bovis SOP
- Before the material is cast onto the hardstanding the excavator operator will shake the bucket of the machine to ensure no loose material can spill out during the movement
- Before the material is loaded into the dumper the excavator operator will shake the bucket of the machine to ensure no loose material can spill out during loading
- The dumper will only be loaded $\frac{3}{4}$ full to avoid spillages during transit
- A route for the dumper must be pre-agreed and the area must remain free from obstruction at all times
- When the dumper deposits the material in the stockpile area it must not drive over previously tipped loads, when this becomes unavoidable the excavator will move the material and create a clean area for the dumper to use
- Upon completion, the excavation area and route of the dumper will be checked for spillages, any contaminated material found will be placed in the stockpile area

The points below were adhered to at all times during the off-site disposal works:

- Always follow the instructions of the Ebsford site manager
- Wagons will drive on and off site as instructed by the Ebsford site manager; at no point will traffic be stopped, all vehicle movements will take place on site
- The excavator must not track onto the stockpile, the material will be loaded from clean ground
- The excavator operator will shake the bucket of the machine to ensure no material spills out during loading
- Do not overload the wagons
- After each wagon has been loaded and left site, the area will be checked for any spillages, any contaminated material found will be placed in the next wagon
- Use a banksman at all times to control this

3.0 Completion and on-going monitoring

Upon completion of the works a 10 year warranty will be issued to cover the original infestation. Ebsford will carry out monitoring visits during the growing season for the duration of the warranty to ensure no regrowth occurs. Our customer service department will notify you of these visits and issue a post site visit form with a brief description of the findings on site.

4.0 Project images for reference



Figure 1: Heras fencing and site safety signage is installed

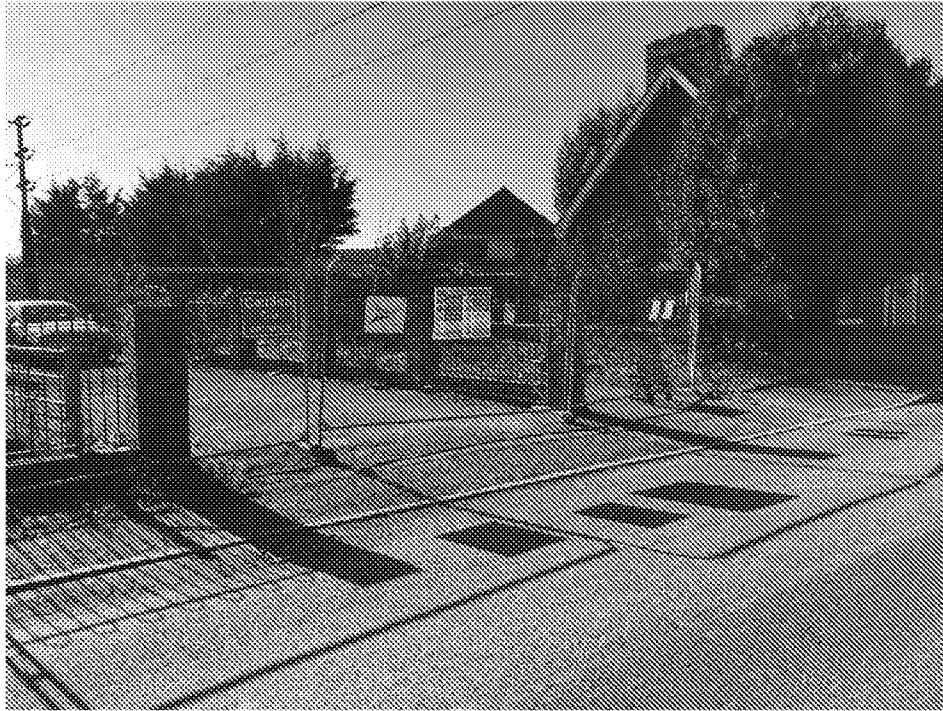


Figure 2: The site entrance is also secured



Figure 3: Excavations commence



Figure 4: Excavations proceed underneath overhead cables



Figure 5: Further excavations



Figure 6: The vacuum excavator is utilised



Figure 7: Height restrictions are adhered to



Figure 8: Soil is broken around the underground cable



Figure 9: The cable is fully exposed



Figure 10: Further excavation works



Figure 11: Root barrier membrane installation works



Figure 12: The root barrier membrane is backfilled with clean site won material



Figure 13: Asbestos removal commences



Figure 14: Example of the contaminated fill being excavated



Figure 15: Asbestos lined tank discovered



Figure 16: Asbestos contractors locate and dispose of materials



Figure 17: Double lined bags containing asbestos materials



Figure 18: Imported clean stone used as backfill following asbestos removal works



Figure 19: The area is fully backfilled