

GNOLL PARK
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

May 2024 - Rev 01

Gnoll Park – Emergency Contacts

Police / Fire / Ambulance	Emergency: **999** non-Emergency: 101
Project Manager (**Responsible Person**)	Andrew James: **07917 182 262**
Project Foreman	Marcus Evans: 07711 376 221
Project Engineer	Rhys Austin: 07841 116 355
Contract Manager	Craig Williams: 07801 926 844
Client Manager	Nick Richards: 07735 098 495
Water	Welsh Water: Water Services - 0800 0520 130 Sewerage - 0800 085 3968
Gas	Wales & West - 0800 111 999
Electricity	National Grid - 01639 862160
A&E	Morriston Hospital: (Open 24 hrs) 01792 703428
Minor Injuries Unit	Neath Port Talbot Hospital: (Open 8am-9pm) 01639 862160
HSE Executive	0345 300 9923
Project Safety	Justin Kingdom: 07775 807 867
NRW (Environmental)	0300 065 3000
Principal Designer	Hiraeth Architecture: 029 2002 5814

Plan Status:	✔	Preconstruction Stage		Construction Stage
Revision No:	01	Revision Details:	Updated to planning comments/queries.	

INTRODUCTION:

This Environmental Management Plan has been prepared to address the potential environmental impacts that may arise from the construction of the above project and to ensure that they are actively managed and minimised. The actions set out in this Environmental Management Plan are intended to act as a guide and a tool for anticipating, recording, and managing any impacts that arise. This also acts as a reference document to relevant Risk Assessments, Method Statements, and other appropriate documentation.

PROJECT DETAILS (Including any specific or important Environmental / Ecological details):

The Gnoll Park project includes work across a wide range of locations set within the Gnoll Estate Country Park grounds. The Gnoll Estate Country Park is set within an environmentally sensitive area, which offers a diverse range of habitats such as woodlands, meadowlands, and ponds to a variety of species of animals, birds, fish, amphibians and insects.

The project encompasses the following:

- Demolition and reconstruction of a new 2-storey Visitors Centre, approximately 45m long x 25m wide. The building will be founded on a ground bearing slab and will be constructed from a steel frame at ground floor, and timber frame at first floor. It will be clad with a mixture of masonry, timber, and curtain walling.
- Restoration of Pond Cottage, to include the demolition of an existing masonry-built extension, which will be replaced by an approximately 8m x 5m extension to be clad in timber.
- Demolition of existing masonry potting sheds/stores and construction of new, built-in-place masonry accommodation units, alongside the installation of a range of architecturally designed, modular, timber, off-site manufactured holiday pods.
- Restoration and enhancement work to the Gnoll House Ruins.
- Additional car parking to the main public car park.
- Construction of a new facilities building.
- Woodland clearance to make way for a new adventure play area.
- Installation of a timber footbridge to link footpaths between Gnoll Park and the Woodland Trust.

In addition to the above, all areas will include landscaping, woodland management, access, sustainable drainage, temporary café facility, and associated infrastructure works. For information relating to the phasing of these works, please refer to **Appendix E** of this document.

The park will remain open to the public throughout the construction period, with the contractor allowing for suitable security and segregation between the works and public.

ENVIRONMENTAL POLICY:

This Project will operate under the principles of the Andrew Scott Environmental Policy which is included in **Appendix A** of this document.

ENVIRONMENTAL MANAGEMENT SYSTEM:

Andrew Scott's Environmental Management System is part of the company's Integrated Management System and adheres to the principles of ISO 14001:2015.
Andrew Scott accepts and acknowledges its obligations and responsibilities under current environmental legislation, regulations, and guidance relevant to the industry sector in which it operates, including any site-specific additional client / contract requirements, codes of practice, or planning conditions that may be applicable.

CONTRACT SPECIFIC ENVIRONMENTAL ASPECTS & IMPACTS:

Prior to commencing work on site, site specific Environmental Risk Assessments are carried out to identify significant aspects and impacts and to identify mitigation requirements to reduce the environmental impacts. Copies of these Environmental Risk Assessments are provided in **Appendix B** of this document:

101	Release of Solid, Liquid & Gaseous Wastes	102	Water Run-Off and Effluent Discharging
103	Waste Generation and Disposal	104	Nuisance
105	Demolition Activities	106	Water Usage
107	Land Use	108	Traffic Movements and Vehicle Usage
109	Energy Usage	110	Visual Appearance of Construction Activities
111	Office Activities (Large Sites / Regional Offices)	112	Purchasing
113	Design Activities	114	Working In or Near Watercourses
115	Testing And Commissioning Activities	116	Use of Dehumidifiers
117	Use of temporary water supplies	118	Control of asbestos waste
119	Excavating contaminated land	120	Archaeology & heritage
121	Connection to existing drainage or sewer systems	122	Invasive Plant Species

SUMMARY OF ENVIRONMENTAL CONTROLS REQUIRED:

1. Pollution Prevention:

Fuel / oil is to be stored at least 10m away from nearest watercourse in suitable lockable bowser and double bunded. All refuelling points will have drip trays and spill kits adjacent. A site-specific emergency spill response plan has been developed – all site personnel to be inducted in its use to ensure any spills are acted upon immediately and correctly. The emergency spill response plan will be tested to ensure its effectiveness. Regular inspections will ensure plant is properly maintained and locked when not in use. Fuel / oil will be located away from access routes, drains and watercourses on flat areas of ground. COSHH data will be available for all Hazardous Substances, which will all be appropriately labelled. All COSHH materials will be stored within a suitable locked chest within the site compound. Site operatives will receive appropriate environmental toolbox talks. Regular Environmental issues are to be monitored as part of weekly inspections and monthly audits. Controls are to be put in place to control construction dust and debris on roads/paths.

2. Water & Effluent Control:

Sequence and method of working will be planned to minimise impact on environmentally sensitive areas. The methods of working will be clearly outlined during specific operational method statement inductions.

- Designated concrete washout area, general waste skip lined with heavy gauge polythene.
- Site Construction Drainage / Control of groundwater.
- Temporary wheel wash area to comprise a concrete hardstanding, laid to falls, with a central gully over a PC chamber sump, for drainage of vehicle washdown water. Silt to be removed from sump as required.
- Foul water from site cabin effluent to be tanked and pumped as required by a licensed a waste receptor.
- Non-return flow valves fitted to any temp water supplies
- All water supplies to be metered – new temporary connection from DCWW for all site water supply.
- Dewatering via silt settlement traps – to be arranged as/when required. A temporary 'lagoon' will be considered where sufficient space is available.

Details of Fresh Water Consumption:

- Non-return flow valves fitted to any temp water supplies.
- All water supplies to be metered; see form FM-SITE-044

Wastewater Management:

- Wastewater/foul drainage from site accommodation to be discharged into a temporary drainage system.

Energy Use:

- Energy usage to be monitored and recorded; see form FM-SITE-044

3. Waste Management:

This project will be registered on the SmartWaste suite - https://www.bresmartsite.com/products/smartwaste/.
Good housekeeping, such as effective material storage will be employed to minimise waste. All waste streams will be identified, and waste will be segregated and deposited in separate skips as necessary to facilitate efficient waste removal and ease of recycling. Dialogue will be maintained with suppliers and subcontractors to minimise surplus material being stored on site. Materials will be ordered on a "just-in-time" basis to keep site clear and to prevent unnecessary damage, theft & wastage of materials. Duty of care and legal requirements will be complied with at all times. Where possible, waste reduction targets will be set, and site personnel informed.

A Resource Management Plan / Site Waste Management Plan will be utilised on our construction site to promote resource efficiency and to prevent illegal waste activities. This plan will adopt the BREEAM (Wst 01) Construction Waste Management benchmarks, aiming to generate ≤3.2 tonnes of waste per 100m^2 gross internal floor area.

The Resource Management Plan / Site Waste Management Plan would also include the following:

1. Procedures and commitments to minimise non-hazardous waste in line with the target benchmark.
2. Procedures to minimise hazardous waste.
3. A waste-minimisation target and details of waste minimisation actions to be undertaken.
4. Procedures to estimate, monitor, measures and report on hazardous and non-hazardous site waste and demolition waste, where relevant, arising from work carried out by the principal contractor and all subcontractors. Waste data obtained from licensed external waste contractors needs to be reliable and verifiable, e.g., using data from EA/SEPA/EA Wales/NIEA waste return forms or from a PAS402 compliant company.
5. Monthly reporting of all construction waste data throughout the project checked against what would be expected based on the stage of the project, invoices, etc., to validate completeness of waste reporting data.
6. Procedures to sort, reuse and recycle construction waste into defined waste groups, either on site or through a licensed external contractor.
7. Procedures to review and update the plan.

Additionally – We will:

- Use a designated, fully licensed waste carrier contractor.
- Ensure waste is transferred to a fully licensed waste transfer station.
- Avoid landfill wherever possible – use carriers that promote high recycling rates.
- Re-use materials on site whenever practicable.
- Retain all waste transfer notes at head office for a minimum of two years (Three years for Hazardous materials).

4. Operational Appearance:

This site will be registered with the Considerate Constructor Scheme and will receive at least two visits from their inspectors. Site signage will be erected in accordance with Andrew Scott requirements. Site offices and compound will be kept clear of wastage and unnecessary clutter to reduce negative environmental impacts, maintain a professional appearance and to reduce the prospect of injuries due to slips, trips and falls. The site layout will be in accordance with agreed site plans and will have clearly marked areas for parking, materials storage and vehicle transport routes.

Andrew Scott Ltd will incorporate:

- Good provision of Andrew Scott corporate signage – 'ASL blue' (RAL 8003) painted hoarding in areas adjacent to public.
- ASL branded debris netting on all Heras fencing.
- Corporate PPE for sub-contract labour – Helmets and Hi-vis Vests are to be ASL branded.
- Clean and tidy site, with unrestricted site access – designated pedestrian access, with signage to direct pedestrians and visitors.
- Cleaner employed to attend site 5hours per day, to keep site in a tidy condition – including site boundaries and areas adjacent to site fencing.

5. Nuisance:

Site working hours will be in line with the planning conditions of the site with no working on Sundays and Bank Holidays (unless of essential nature or Utility, highway related works only). Works will only take place outside of these hours in exceptional circumstances, where they are an absolute necessity, such as during prolonged construction techniques such as power floating of internal slabs for concrete curing.

The timing and sequence of such operations will be shared with local neighbours through newsletter drops and notice boards on the site hoarding in advance of being carried out. The project team will also make the EHO aware of such works ahead of them being carried out.

Deliveries to site will be between **07:30-18:00 Monday to Friday and 07:30-13:00 on Saturdays.**
Construction activities will take place between **08:00-18:00 Monday to Friday and 08:00-13:00 on Saturdays.**

No Nighttime Working is expected and will not take place without the express permission of the Client and NPT Ecologist.

Site location map to be provided to all suppliers, subcontractors and site visitors and communication lines to be kept open between the site and all interested stakeholders at all times. 24 Hour site environmental contact number to be made available and clearly communicated to all interested stakeholders in case of complaints. Andrew Scott understands the benefit of and will maintain good relations with all interested stakeholders.

Control measures will be incorporated to reduce potential nuisance caused by dust. A wheel wash/jet-wash will be used to prevent excessive build-up of debris on roads and paths. In the event that any debris are transferred onto any immediate surrounding roads or paths, a road sweeper will be utilised as soon as possible to remove the mud / spillage / contamination.

Advanced notice for start of works or any new phases of work to be relayed to local residents. Letter drops will take place to local residents at various stages of works. Noise surveys will be conducted prior to the start, and at regular intervals throughout any works.

ASL will endeavour to operate an open-door policy for site neighbours to site management – contact details will be provided on the site hoarding.

6. Transport

Traffic Management

The scheme will comprise two site setups. Site setup A will be the main welfare and compound for the scheme and will be accessed via Fairyland from the North of the park for deliveries and staff. Storage within the compound will serve areas to the North of the site, principally, the Visitors Centre, Car Park & Facilities Building, Woodland Trust Bridge and the Adventure Play Area. Vehicles will be brought onto the site compound through a controlled gate, and into an initial holding area within the site perimeter. From here, delivery owners will bank their deliveries to the approved storage areas for offloading. Site setup B will serve as a satellite compound, providing basic welfare cabins and materials storage for work areas on the Southern side of the site, namely, Pond Cottage, Gnoll Ruins, and the Kitchen Gardens Accommodation. This will be accessed via Cimla Road. Deliveries to this compound will be via prior arrangement only. No vehicles will be permitted to wait on Cimla Road, Gnoll Park Road, Fairyland, or any of the other surrounding roads at any time.

Upon exit of the site from either compound, the gate manager will wash the wheels of each vehicle as and where required to limit the transfer of mud onto the local highway. In particularly bad weather, or during heavy earthworks operations, road sweepers will be provided to clean the highway on a weekly basis. Wheel wash facilities are indicated on the attached logistics plans and will be kept at least 10m from the highway to help prevent vehicles waiting within the highway when the wheel washing facility is being used.

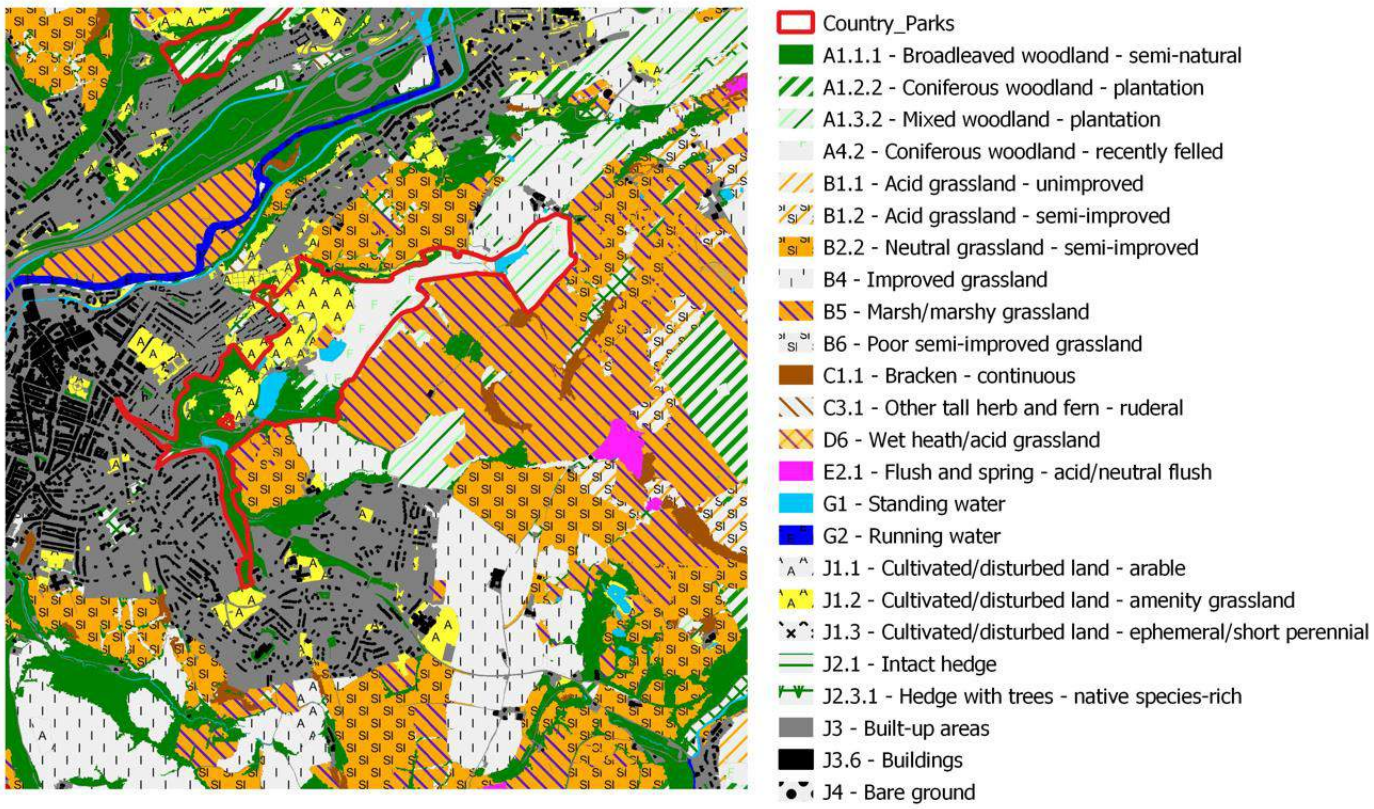
A designated parking area will be provided on Site A for site visitors and construction operatives. This is illustrated on the attached logistics plans and is in close proximity with safe routes to the site entrance and welfare to limit the movement of pedestrians. Clean roads will be provided between the site entrance and the parking areas, to limit the transfer of mud from the site onto the local highway. These arrangements, alongside a traffic management plan are detailed on our logistics plans in **Appendix E.**

Andrew Scott Limited encourages lift sharing to help minimise parking requirements and environmental impact. Furthermore, deliveries will be managed, and where possible, restricted so as not to coincide with peak traffic periods.

7. Ecology & Habitat Sensitivity:

The site is located on the Gnoll Estate Country Park grounds, set within approximately 100 hectares of parkland. The environmentally sensitive area offers a diverse range of habitats such as woodlands, meadowlands, and ponds to a variety of species of animals, birds, fish, amphibians, and insects. The park is located within the town of Neath in South Wales.

The areas of development are largely characterised as buildings/built-up areas, semi-natural woodland, and previously cultivated/disturbed amenity grassland.



Gnoll Country Park is known to provide a habitat for a number of species including, but not limited to:

- Badgers
- Bats
- Birds
- Newts
- Frogs
- Otters

Japanese Knotweed and Himalayan Balsam are known to be present in several areas across the site, see **Appendix G**. As such, all site staff will receive regular toolbox talks on working near these invasive species. Andrew Scott will maintain best practices to ensure invasive species are not spread across site, or removed from site, unless by a licensed contractor.

Andrew Scott can confirm that compliance is monitored against all relevant UK, EU or international legislation relating to the ecology of the site. Negative impacts from site preparation and construction works will be managed according to the mitigation hierarchy and no overall loss of ecological value will occur.

1. Avoidance of negative impacts of habitats and features of ecological value on the site.
2. If it is not possible to avoid negative impacts; protect habitats and features of ecological value from damage in accordance with best practice guidelines during development works.
3. If it is not possible to achieve 1 or 2 above, fully reduce, limit, or control negative impacts as far as possible.
4. Where it is not possible for avoidance, protection, limitation, or control of the negative impacts on features of ecological value on site; compensation will take place to ensure the existing ecological value is maintained during and after the project.

8. Ecological Mitigation Measures:

All site employees will have a full site induction which includes a section on site environmental rules.

Ecological Surveys and checks to be carried out prior to the commencement of site development.

Arboricultural Surveys to be completed prior to the commencement of site development.

SINC (Local Wildlife Sites)

Impacts in Absence of Inherent Mitigation

Disturbance impacts arising from noise and vibration during construction and operation. Continued degradation of retained habitats following occupation.

Inherent Mitigation

Habitat retention, protection, enhancement, and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint.

Additional Mitigation

Habitat creation, enhancement, and management of on-site habitats through Detailed Soft Landscape Design and BMP. maintenance and management where necessary.

Watercourses

Impacts in Absence of Inherent Mitigation

Deterioration in water quality.

Inherent Mitigation

Implementation of a sustainable drainage strategy.

Additional Mitigation

Implementation of pollution prevention measures during construction.

Woodland

Impacts in Absence of Inherent Mitigation

Partial loss to facilitate site access and development. Potential damage of retained features and root protection zones during the construction phase. Continued degradation of habitats following proximity of occupied development.

Inherent Mitigation

Habitat retention & buffering.

Additional Mitigation

Installation of protective fencing and signage along retained trees. Habitat creation, enhancement, and management of onsite habitats through Detailed Landscape Design. Maintenance and management where necessary.

Bats

Impacts in Absence of Inherent Mitigation

Loss of potential foraging habitat. Loss of sections woodland of value for commuting. Loss of known roosts. Disturbance impacts arising from increased lighting and noise during both the construction and operation phase.

Inherent Mitigation

New tree/shrub planting to enhance retained boundary features. Habitat retention, protection, enhancement and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint.

Additional Mitigation

Habitat creation, enhancement, and management of onsite habitats. Maintenance and management where necessary. New planting will use native species preferably of local provenance. Implementation of a sensitive lighting strategy. No works are to be undertaken at Gnoll ruins or pond cottage roof without the Ecologist being present.

Breeding Birds

Impacts in Absence of Inherent Mitigation

Killing/injury during the construction phase. Disturbance during both construction and operation. Disturbance impacts arising from increased lighting and noise during both the construction and operation phase. Loss of foraging and nesting habitat.

Inherent Mitigation

Habitat retention, protection, enhancement, and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint. Creation of a green roof.

Additional Mitigation

Habitat creation (inc. bird boxes to the Ecologists recommendations), enhancement, and management of on-site habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary. Management of unauthorised public access. Site Clearance works must be completed outside of bird nesting season.

Badgers, Common Reptiles & Notable Mammals

Impacts in Absence of Inherent Mitigation

Killing/injury during the construction phase. Disturbance during both construction and operation. Disturbance impacts arising from elevated lighting and noise during both the construction and operation phase. Loss of foraging habitat.

Inherent Mitigation

Habitat retention, protection, enhancement, and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint.

Additional Mitigation

Adoption of precautionary working measures during construction. Management of onsite habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary. No excavations to be left uncovered overnight. The removal/clearance of any long grass or brush must be undertaken incrementally in line with the Ecologist recommendations to allow reptiles or other species to vacate the areas.

Terrestrial Invertebrates

Impacts in Absence of Inherent Mitigation

Loss of habitats of value to an assemblage.

Inherent Mitigation

Habitat retention, protection, enhancement, and long-term management of retained areas specifically for biodiversity. Inclusion of habitat buffers, offsetting retained habitats from development footprint. Creation of a green roof.

Additional Mitigation

Habitat creation, enhancement, and management of on-site habitats through Detailed Soft Landscape Design and BMP. Maintenance and management where necessary.

General Notes:

- No Nighttime Working is expected and will not take place without the express permission of the Client and NPT Ecologist.
- Appropriate seed mixes and plant species are to be approved by NPT Ecologist prior to use on site.

9. Resource Efficiency:

Andrew Scott encourages a “Switch off when not in use” culture and this is included as part of the Andrew Scott site induction which is given to all site personnel. Andrew Scott has commenced monitoring its energy usage in order to identify usage trends and to set targets for reducing energy consumption.

Other measures include:

- Sourcing FSC accredited timber
- Regular reconciliation of materials to take place to prevent over ordering and waste.
- Sourcing Peat-free topsoil (if practicable)
- Re-using excess/stored materials, such as drainage pipes, iron cover/frames, bricks etc.

10. Materials Use:

Materials will be procured in line with the Andrew Scott – Sustainable Procurement Manual (see **Appendix D**). Wherever possible materials used should be purchased from sustainable sources and should be reusable / recyclable at the end of the project’s life. Andrew Scott will, where possible, carry out value engineering exercises to establish whether it will be possible to substitute materials that will have a less detrimental environmental effect without compromising the specification of the building. Care will be taken not to over order raw materials.

11. Other:

The Visitors Centre design aspires towards a Low Carbon design.

The scheme comprises a number of demolitions see **Appendix F**. These will be carried out in accordance with current legislation and best practice guidance to minimise the effects of noise, dust and vibration on local residents, members of the public, flora, and fauna.

Furthermore, for examples of the proposed Site Welfare, Fencing, Hoarding and Surface Water Management, please refer to **Appendix H** of this document.

Toolbox Talks: The following environmental toolbox talks are to be inducted to the workforce as a minimum. Copies of toolbox talks are available in Appendix C of this document			
1	*Spill Control*	2	*Water Pollution Prevention (Fuel & Oil)*
3	*Dust and Air Quality*	4	*Noise and Vibration*
5	*Water Pollution - Silt*	6	*Water Pollution – Cement and Concrete*
7	*Tree Protection*	8	*Waste Management – Reduce / Re-Use / Recycle*
9	*Storage of Waste*	10	*Japanese Knotweed*
11	*Himalayan Balsam*	13	*Storage and Use of Petrol, Diesel, and Oils*
15	*Archaeology*	17	*Pumping and Overpumping*
18	*Washing Down Plant & Machinery*	19	*Bats*
21	*Be a Good Neighbour*	22	*Greater Crested Newts*
23	*Working on Previously Developed Land*	24	*Segregation of Waste*
26	*Breeding Birds*	28	*Interceptor Drip Trays*

PROJECT SPECIFIC ENVIRONMENTAL TARGETS:			
1	Zero Environmental Incidents	2	Zero Environmental Complaints (dust, noise, etc…)
3	All Waste Monitored via SWMP	4	Annual spill control emergency drill to be conducted
5	min. 85% waste diverted from landfill	6	*Carbon capture and footprint measurement of project*

KEY REFERENCE DOCUMENTS (Andrew Scott IMS unless stated Other: Section 4.1 of IMS) see Appendix D			
FM-SITE-014 – Emergency Spill Response Plan		FM-SITE-020 – Site Waste Management Plan	
PR-ENV-01 - Environmental Code of Practice		PR-ENV-02 – Surface and Groundwater Protection Procedure	
PR-ENV-03 - Pollution Control Procedure		PR-ENV-04 - Waste Management Procedure	
PR-ENV-05 - Dust & Air Quality Control Procedure		PR-ENV-06 - Noise & Vibration Management Procedure	
Andrew Scott – Sustainable Procurement Manual			
Other:	EA Guidance: Managing Japanese Knotweed on Development Sites – The Knotweed Code of Practice (2013)	Other:	HSG 213: Asbestos Essentials - Comprehensive Guidance on Working with Asbestos in the Building Maintenance and Allied Trades (2001)
Other:		Other:	

MISCELLANEOUS NOTES:			
CEMP Owner / Responsible Person:			Andrew James – Project Manager
Date:	May-2024	**Signature:**	Andrew James
Distribution:	Contracts Manager / Project Manager / SHEQ Manager / Client / Ecologist / Design Team		

This Environmental Management Plan is to be made available to any persons writing method statements to ensure that all Environmental Controls are taken into consideration.

Appendix A

Environmental Policy Statement

Andrew Scott
Quality and Innovation

SCOTT

Tel: 01639 889 800
The Grange, Margam, Port Talbot SA13 2SP

Environmental Policy Statement

Andrew Scott Ltd considers successful Environmental Management to be of prime importance to its business, and is committed to continual improvement in Environmental standards in line with accreditation to ISO 14001: 2015.

It is the policy of Andrew Scott Ltd to:

- Pursue high standards of Environmental Management as an integral part of efficient management of the business and ensure that decisions take account of environmental requirements while complying with client and contractual agreements;
- Comply with all legislative requirements pertaining to the environment as the minimum standard;
- Develop systems and procedures that deliver the high standards of integration sought, and in particular provide for:
    - Analysis and control of all aspects of our business that impact on the surrounding environment;
    - Well maintained plant and systems of work, that are safe and without risk to the environment;
    - Suitable arrangements for the selection, use, handling, storage and transport of articles and substances;
    - Adequate information, instruction, training and supervision, to enable work to be carried out safely, and without risk to the environment by persons with the necessary competence;
    - Designs which recognise, include and apply safe practice and which consider environmental impact, during preparation, construction and subsequent operational use and maintenance after completion of the project;
    - Prevention of polluting emissions to air, land or water;
    - Protection of the Environment;
    - Management of the use of natural resources;
    - Control of noise, dust, odour, vibration, traffic movement or other nuisance or environmental effects which may cause offence to the local community or environment;
    - Waste minimisation and a commitment to restrict waste to landfill to set company KPI's;
    - Management of waste disposal, including actively promoting re-use and recycling measures wherever possible;
- Develop and review clear environmental performance indicators, which drive continuous improvement including:
    - Promoting high environmental standards and the use of environmental best practise;
    - Annual environmental objectives;
    - Training achievement and requirements;
    - Customer satisfaction.
    - Internal and external audits.
- Review and if necessary, revise this policy on an annual basis.

The Andrew Scott Ltd Board of Directors has the overall responsibility for this policy. Andrew Scott Ltd has appointed a director to be responsible and accountable for environmental matters whose responsibilities are set out in this Policy.

Andrew Scott Ltd will produce and update detailed organisation and arrangements, and all necessary resources will be made available, for the implementation of this policy.

It is the responsibility of management and employees to implement this policy together with their collective and individual responsibilities. Individuals' responsibilities under this policy are set out in job descriptions and project documents.

Andrew Scott Ltd will appoint competent health, safety, quality and environmental managers/advisers whose duties are set out in company documents

Signed: **Revision:** **Rev 4** **Date:** **Reviewed June 2022**



M. Bowen

Managing Director (with Health, Safety and Environmental Responsibilities)
Andrew Scott Limited



Appendix B

Environmental Risk Assessments

Contract Title:	Gnoll Park		
Ref:	**Risk Assessment Name:**	**Ref:**	**Risk Assessment Name:**
101	Release of Solid, Liquid & Gaseous Wastes	102	Water Run-Off and Effluent Discharging
103	Waste Generation and Disposal	104	Nuisance
105	Demolition Activities	106	Water Usage
107	Land Use	108	Traffic Movements and Vehicle Usage
109	Energy Usage	110	Visual Appearance of Construction Activities
111	Office Activities (Large Sites / Regional Offices)	112	Purchasing
113	Design Activities	114	Working In or Near Watercourses
115	Testing And Commissioning Activities	116	Use of Dehumidifiers
117	Use of temporary water supplies	118	Control of asbestos waste
119	Excavating contaminated land	120	Archaeology & heritage
121	Connection to existing drainage or sewer systems	122	Invasive Plant Species

Note to ASL Project Managers, Site Managers, Agents, Foreman, and Supervisors.

These are generic Environmental Risk Assessments (ERA) that are required to be modified and specifically assessed against the environmental conditions present on each Andrew Scott site.

This document and each site-specific ERA shall form part of the **CONTRACT MANAGEMENT PLAN DOCUMENT.**

Where required, a specific ERA may be required to cover an Environmental Aspect not covered in this document – consult with the SHEQ Manager for advice and guidance should this occur.

Contract Name:	Gnoll Park			
Aspect:	Release of Solid, Liquid & Gaseous Wastes	ERA Reference:	101	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Identify below materials which if released into the environment may cause significant impact such as oil, diesel, cement etc.	Site Specific Risk Rating L	M	H
	Contamination of watercourses, drainage systems, soils and groundwater with solvents, hydrocarbons, particulates etc.			
	Contamination of the atmosphere with dust, particulate matter, fumes, odours etc			
	Damage to and loss of natural habitats.			
	Physiological and physical effects on plants and animals, particularly aquatic organisms.			
	Human health effects.			
	Spillage from stored fuels / oils / chemicals / powders.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Fuel is not stored on site in any quantity as the potential risk of pollution is too high
	Fuel storage is required on site and is located after having identified and assessed potential pollution routes in the event of containment breach or failure. Fuel storage is required to be at least 10 m from a watercourse.
	Use of double skinned oil and diesel tanks and / or impermeable bunds capable of holding greater than 110% of total volume of container and associated pipework. Delivery pipework and trigger guns to be contained within the bunded area.
	Protect bunds from filling with rainwater.
	Store drums and other containers within bunded areas and / or over drip trays. 205 litre /45 gallon drums must be 25% bunded.
	Use of drip trays under mobile plant equipment and around refuelling areas.

	Locate storage vessels and equipment away from site access routes, watercourses and drains and on flat areas of ground (hard standing if possible).	
	Keeping storage vessels and equipment (including valves) closed and locked off when not in use.	
	Appointed member of site staff to supervise refuelling activities.	
	Proper maintenance of all plant equipment, pipe work, discharge valves, contents gauges etc.	
	Fitting of pollution abatement equipment such as exhausts.	
	Ensuring all containers are fully labelled with contents, maximum volume and appropriate hazard warnings. (COSHH data is required for all Hazardous substances on site)	
	Undertake practice sessions of spill response procedures.	
	Ensure appropriate pollution spill response and clean up equipment is readily available and ensuring personnel are adequately trained in its use.	
	Monitor suitability of pollution prevention measures as site works progress through regular inspections/audits and practice drills.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:						
	Effects are generally short-term, although may have longer-term implications if habitats are significantly damaged.					
	See Risk Assessment No's 101, 104 and 108 for more information					
Do the Environment Agency need to be contacted for any consents or approvals?		**Yes**			**Yes**	
		No			**No**	
Completed by:			**Date:**			

A COPY OF THIS ENVIRONMENTAL RISK ASSESSMENT MUST BE GIVEN TO ANY PERSONS WRITING METHOD STATEMENTS TO ENSURE THAT ENVIRONMENTAL CONTROLS ARE TAKEN INTO ACCOUNT

Contract Name:	Gnoll Park				
Aspect:	**Water Run-Off And Effluent Discharging**	**ERA Reference:**	**102**		
Check Boxes below if appropriate to Operation:					
✓	**GUIDANCE: Highlight operations in rivers, streams etc. as well as any other pumping operations leading to discharge.**	**Site Specific Risk Rating**	**L**	**M**	**H**
	Contamination of watercourses, drainage systems, soils and groundwater with fuels, oils, chemicals, silt etc.				
	Run off from concrete delivery vehicle washout and vehicle wheel washing activities.				
	Loss of habitat and impact on wildlife, particularly aquatic species				
	Possibly minor localised flooding of watercourses/sewers.				
	Other: (Please describe):				
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register				

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Plan works to minimise impact on, and maximise protection of, sensitive targets. (This may be demonstrated in Method Statements)
	Identify pollution sources and pathways e.g. contaminated land, drainage systems and watercourses. (This may be marked on a site plan)
	Seal off unused site drainage systems, particularly where they can act as a pollution pathway.
	Establish temporary site drainage systems as appropriate and as early as possible.
	Undertaking earthworks in accordance with recognised standards. BSI, DEFRA, (contact Company Environmental Department for further information).
	Minimise areas of open ground.
	Liaise with regulators when in sensitive locations to ensure appropriate controls are in place.
	Locate and construct stockpiles and spoil heaps such that run off is minimised. Any run-off should be captured or directed away from sensitive areas such as rivers and streams.
	Establish appropriate concrete washout facilities in an area where impacts will be minimised.

	Consider seeding long term soil stockpiles.	
	Negotiate with concrete supplier for take-back of washout.	
	Implement suitable wheel washing facilities for vehicles	
	If discharging effluents, ensure that an appropriate consent has been obtained and all consent conditions are adhered to.	
	Establish appropriate settlement lagoons/tanks or other pollution prevention measures to minimise the impact of discharging effluents.	
	Prevent surface water entering excavations as far as possible. Minimise groundwater ingress into excavations as far as possible.	
	If working in particularly sensitive locations it may be necessary to conduct environmental surveys to determine precisely the ecological value of the site.	
	Monitor suitability of measures as site works progress through regular inspections and environmental audits.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:	
	Generally only an issue during heavy or prolonged precipitation (rainfall, snowing etc.) and during discharging operations. Effects are usually only temporary, with minimal impact if correctly controlled. Longer-term effects may occur due to poor discharge controls or bioaccumulation of released contaminants.

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Waste Generation And Disposal	ERA Reference:	103	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Identify waste streams generated, ensure necessary paperwork is correct (Including Site Waste Management Plan) & review recycling / disposal options.	Site Specific Risk Rating L	M	H
	Unnecessary loss of raw materials and natural resources.			
	Water pollution from leaching of waste materials into watercourses and sewers.			
	Impacts associated with the transport of waste from site to disposal facility.			
	Loss of topsoil through inappropriate storage			
	Land take in landfill sites and possible associated generation of methane gas and leachate.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Enforce good housekeeping measures e.g. proper storage of materials to minimise spoilage.
	Use raw materials as per manufacturer's instructions.
	Monitor the generation of waste in order to identify trends and areas for further investigation.
	Identify recyclable and salvageable materials and where feasible find secondary or alternative uses.
	Segregate waste types to facilitate recycling activities
	Work with suppliers / subcontractors to minimise surplus material delivered to site.

	Work with suppliers to ensure only the necessary minimum of packaging is used.	
	Consider using alternative materials with lower wastage levels.	
	Ensure that all Duty Of Care and other legal requirements are complied with during the disposal of wastes.	
	Consult with suppliers to determine correct / appropriate disposal routes for waste products and containers.	
	Assess the project design to identify ways in which waste generation through raw material wastage and from temporary and permanent works activities can be avoided and minimised.	
	Setting waste reduction targets and educating and informing site staff.	
	Regular provision of environmental tool box talks to staff, and instructing correct adherence to waste streams in place	
	Weekly site inspections to include controls of waste, and EHS audits to check on compliance to waste controls implemented (non-contamination of skips, WEEE and Haz storage, transfer notes, etc)	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:						
	Waste generation only occurs during operational work, but the effects are long term.					
	See Risk Assessments No's 101 and 108 for more information					
Do the NRW / EA need to be contacted for any consents or approvals?		**Yes**			**Yes**	
		No			**No**	
Completed by:			**Date:**			

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Contract Name:	Gnoll Park					
Aspect:	**Nuisance**	**ERA Reference:**	**104**			
Check Boxes below if appropriate to Operation:						
✓	**GUIDANCE: Review generation of noise, dust, fumes, vibration etc. on local residents, members of the public & businesses.**			**Site Specific Risk Rating**		
				L	**M**	**H**
	Impact of noise, dust, vibration, odours, smoke, fumes etc. on residents, members of the public, flora, and fauna.					
	Other: (Please describe):					
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register					
Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**					
	Use of super silenced plant, noise bunds and screens, acoustic enclosures, use of alternative piling techniques, conducting environmental noise surveys (assistance available from the Company Environmental Department) prior to and during works.					
	Identify and control site working hours.					
	Establish designated traffic routes around the site to minimise dust generation, damping down of dusty operations, establishment of designated access routes to and from the site.					
	Minimise the length of haul routes and reduce the gradient where possible.					
	Keeping local access roads free from dust and mud through regular sweeping.					

	Establishing good relations with local residents, members of the public, businesses, and local Environment Agency/Environmental Health Officers. Keeping local residents and members of the public informed through newsletters etc. of the progression of site work and of any activities likely to have a significant nuisance impact.
	Nominate a liaison officer/point of contact for residents, members of the public, and regulators and responding positively to comments and/or complaints.
	Liaise with Environmental Health Department of Local Authority.
	If necessary, apply for a Section 61 consent issued under the Control Of Pollution Act 1974 prior to carrying out noisy activities.
	Liaise with local residents' groups, members of the public and businesses about the nature of the works and if possible take their comments into consideration when planning site work.
	Identification of sources of nuisance at bid stage.
	Communication with community through Newsletters
	Communication with community through Meetings
	Communication with community through Letter drop
	Informing and influencing subcontractors and suppliers through effective Supply Chain Management.
	Monitoring & controlling the activities of subcontractors and site operations as the works progress through site inspections and environmental audits.
	Other – Please Describe:
	Other – Please Describe:

Additional Controls Considered Necessary and Further Information:
Generally short term and transient but with possible longer-term implications such as disturbance to bird roosting/breeding areas.

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**				**Yes**	
	No				**No**	
Completed by:			**Date:**			

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Contract Name:	Gnoll Park				
Aspect:	**Demolition Activities**	**ERA Reference:**	**105**		
Check Boxes below if appropriate to Operation:					

✓	GUIDANCE: Review generation of noise, dust, fumes, vibration etc. on local residents, members of the public & businesses.	Site Specific Risk Rating L	M	H
	Impact of noise, dust, vibration, etc. on residents, members of the public, flora, and fauna.			
	Impact of site clearance on local flora and fauna.			
	Impact of site clearance on heritage issues.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Use of noise and dust screens where possible.
	Liaise with Environmental Health Department of Local Authority
	Use of crushing methods rather than ball and chain.
	Ensuring local residents, members of the public and businesses are adequately forewarned before the commencement of demolition work
	Consider carrying out demolition work at times when disruption to birds will be minimised (e.g. not at roosting time).
	Consider ecological survey prior to commencement of works.

	Consider phasing demolition work to reduce the net impacts at any one time.	
	Try to find opportunities for re-use of demolition waste and architectural salvage.	
	Confirm receipt of Section 80 from Demolition contractor	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	Effects are short term, but can be significant, depending upon the particular operations being undertaken.
	See Risk Assessments No's 104 and 113 for more information

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Water Usage	ERA Reference:	106	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Assess water usage and methods of controlling / minimising usage	Site Specific Risk Rating L	M	H
	Use of a natural resource.			
	Placing an additional burden on existing water supplies.			
	If usage is excessive may deplete local water table			
	Usage frequently creates effluents which must be disposed of and treated.			
	Uncontrolled usage can cause pollution of ecosystems, particularly the aquatic environment.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Regularly monitor water meters (if fitted) to provide evidence of leaks or misuse and to help identify ways of reducing consumption.
	Consider use of low water flush toilets and urinals within the existing building (If Applicable)
	Ensure taps etc. are turned off when not in use and are free of leaks
	Re-use water from settlement facilities for activities where a continuous clean water supply is not essential e.g. wheel washing, damping down and concrete wash out.
	Consider use of 'grey water' where appropriate
	Consider use of groundwater for flushing / pressure testing of pipelines and temporary works (NRW / EA consent may be required for this).

	Nominate a member of the site staff responsible for water conservation	
	Plan site works to minimise water use during construction activities	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	Effects are generally short term.
	See Risk Assessments No. 101 for more information

Do the NRW / EA need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park				
Aspect:	**Land Use**	**ERA Reference:**	**107**		
Check Boxes below if appropriate to Operation:					

✓	GUIDANCE: Construction sites can cause irreversible damage to locality, assess methods / controls required to minimise this impact	Site Specific Risk Rating L	M	H
	Temporary and irreversible loss of habitat through change in land use, destruction of ecosystem and short-term occupation of land for site compound.			
	Damage/destruction of flora and/or fauna.			
	Damage/destruction of archaeological features.			
	Spreading/introduction of invasive species i.e. Japanese Knotweed			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	For site activities adjacent to sensitive areas establish a wide buffer zone to reduce impact and/or special demarcated areas within the site works
	Undertake site assessment prior to any on-site works in order to identify potential environmental impact particularly to natural habitat.
	Consider creation of temporary habitat for endangered/protected species
	Undertake ecological assessments and surveys where appropriate
	Identification of RAMSAR sites, Sites of Special Scientific Interest (SSSI), Areas Of Outstanding Natural Beauty, National Nature Reserves etc.
	Areas of archaeological interest must be identified on a site plan and physically delineated on site.

	Consult with national and local interest groups e.g. RSPB, English Nature, County Archaeologist and local residents associations particularly when working on sensitive sites and greenfield land.	
	Identification of invasive species (including, but not limited to, Japanese Knotweed and Himalayan Balsam). A method statement must be produced if Japanese Knotweed and/or Himalayan Balsam is identified on site	
	Amend and review works procedures so as to take flora, fauna and archaeological protection and relevant legislation into account during construction works.	
	In planning phase allow for creation of appropriate new habitat to offset potential losses due to construction activities e.g. replacement tree planting.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Traffic Movements And Vehicle Usage	ERA Reference:	108	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Consider vehicle movements to and from sites including parking, unloading, congestion, nuisance to local community etc.	Site Specific Risk Rating L	M	H
	Direct and indirect contribution towards global warming and acid rain through release of exhaust gases.			
	Consumption of natural non-renewable fossil fuels.			
	Nuisance impacts on neighbourhood and members of the public (noise, dust, odour, vibration, and dirt on roads).			
	Increased localised traffic movements, with possible congestion of access routes.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Implement traffic management schemes with restricted routing of vehicles both on and off site.
	Avoid using vehicles and plant wherever possible.
	Ensure vehicles and plant are turned off when not in use.
	Ensure plant operators are adequately trained so as to maximise fuel efficiency through the use of appropriate power settings.
	Educate drivers to be considerate to their surroundings and equipment and allow sufficient travelling time so as to minimise the temptation to speed, drive aggressively etc.
	Maximise load efficiency of vehicle i.e. full load deliveries and shared deliveries from multiple suppliers.

	Comply with manufacturers recommended maintenance schedules to ensure maximum vehicle efficiency and to repair damaged parts.	
	If necessary implement restricted delivery time conditions on suppliers and for site operations so as to minimise nuisance from vehicle usage and movements. Try to avoid rush hour deliveries and collections	
	Investigate alternatives to road transport particularly for bulk materials and when travelling long distances e.g. by rail, river or sea.	
	Staff use public transport travelling to and from site	
	Staff vehicle share travelling to and from site	
	Monitor fuel usage to gather information on inefficient vehicle usage or a need for maintenance.	
	Initiate damping down of site access routes during dry conditions to minimise dust nuisance.	
	Regularly clean roads that become dirty as a result of site vehicle movements.	
	Ensure sufficient space is available to accept deliveries.	
	Produce a map and directions fact sheet or email for site	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:	
	Effects generally last as long as site operations, but can be significant if effects are concentrated in a small area (e.g. a residential area).

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**		
	No			**No**		

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Energy Usage	ERA Reference:	109	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Identify, control & minimise main areas of energy usage.	Site Specific Risk Rating L	M	H
	Direct and indirect contribution towards global warming and acid rain through release of CO_2, CO, SO_2 and other greenhouse gases during energy production (power stations and on site) and consumption (on site)			
	Consumption of natural non-renewable resources, including oil and coal in order to provide and use energy.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Encourage 'Switch Off When Not In Use' culture through Tool Box Talks.
	Educate staff through use of posters etc.
	Use the appropriate number of site cabins.
	Use only site cabins of an approved type.
	Do not heat or light rooms unnecessarily.
	Do not open doors and windows to regulate room temperature – turn heaters/radiators down/off.

	Switch off electrical equipment when not in use - do not rely on power saving devices.	
	Use point of use water heaters.	
	Ensure equipment and plant is maintained in accordance with manufacturer's specification.	
	Ensure pollution abatement equipment (catalytic converters) are functioning efficiently.	
	Monitor energy usage in order to identify trends and further possibilities for reducing consumption.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	Although usage is generally short term, the effects are permanent due to the consumption of non-renewable resources.

Do the NRW / EA need to be contacted for any consents or approvals?	Yes			Yes	
	No			No	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	**Visual Appearance Of Construction Activities**	**ERA Reference:**	**110**	

Check Boxes below if appropriate to Operation:

✓	**GUIDANCE: Minimise the impact of the site from a neighbours & visitors perspective and maintain a professional, corporate image.**	**Site Specific Risk Rating**		
		L	**M**	**H**
	Visual intrusion and aesthetic impact of site works.			
	Nuisance impact from lighting if working at night.			
	Visual effect of site traffic and delivery vehicles			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Where permitted, establish compound in corporate colours i.e. cabins, fencing etc.
	Where permitted, erect corporate signs.
	Ensure the site offices, site compound and operational work areas are kept as tidy as practicable.
	Keep visitor areas clean and tidy.
	Establish demarcated storage areas for raw materials and wastes and maintain in a tidy fashion.
	Establish designated staff and visitor parking areas.

	Establish visitor reception area with associated signage.	
	Ensure site is free from litter.	
	Ensure skips and waste containers do not become overfull, and cover with netting or tarpaulin when not in use. Consideration should also be given to using enclosed skips (with doors on)	
	If the works programme permit, implement early planting schemes to soften overall visual impact of the project.	
	Ensure site lighting is appropriate to local environment and is only used where necessary. Lighting should only be directed to where it is required, rather than for simply illuminating the site.	
	Ensure that the site is adequately protected and secured against trespass and vandalism.	
	Site security guard employed.	
	Site CCTV system in use.	
	Consider erecting information boards on the site perimeter and replacing/improving hard landscapes changed as part of the construction process.	
	Ensure public safety and adequate direction at perimeter of site. Monitor suitability of measures as site works progress through regular inspections and environmental audits.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:						
	Effects only last as long as the duration of site work, but can be significant if working in a sensitive location e.g. a residential area.					
	See Risk Assessments No's 108 and 113 for more information					
Do the Environment Agency need to be contacted for any consents or approvals?		**Yes**			**Yes**	
		No			**No**	
Completed by:			**Date:**			

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Contract Name:	Gnoll Park				
Aspect:	**Office Activities**	**ERA Reference:**	**111**		
Check Boxes below if appropriate to Operation:					

✓	**GUIDANCE: Larger sites have considerable environmental impacts. Consider methods and controls required to minimise these.**	**Site Specific Risk Rating**		
		L	**M**	**H**
	Energy usage and associated impacts.			
	Use of raw materials from potentially non-sustainable sources, particularly paper and fossil fuels.			
	Disposal of wastes from office			
	Impacts associated with staff travelling to and from the office.			
	Potential impact of office environment upon employees i.e. Sick Building Syndrome.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Minimise energy use through education and the encouragement of the 'Switch-Off When Not In Use' culture.
	Do not heat or light rooms unnecessarily.
	Recycle and use recycled materials whenever possible, particularly paper and printer toner cartridges.
	Use electronic data storage and mailing systems wherever possible e.g. paperless office and filing systems.
	Encourage car sharing schemes and investigate the possibility of providing company buses.
	Investigate the possibility of altering heating, lighting and ventilation systems to optimise the office environment and energy efficiency.

	Consider using alternative cleaning agents to minimise the impact of canteen and cleaning activities.	
	Consider working from home rather than travelling to the office as this would reduce vehicle usage.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:						
	Effects can be short term or prolonged, depending upon the nature of the impact.					
	See Risk Assessments No. 109 for more information					
Do the NRW / EA need to be contacted for any consents or approvals?		**Yes**			**Yes**	
		No			**No**	
Completed by:			**Date:**			

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Contract Name:	Gnoll Park			
Aspect:	Purchasing	ERA Reference:	112	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Consider the use of more environmentally friendly materials, including minimisation of packaging waste.	Site Specific Risk Rating L	M	H
	Purchasing construction materials and associated support materials which have the potential to cause a wide range of environmental impacts.			
	Purchasing of unsustainably produced materials e.g. timber, sustainable or reused topsoil, etc			
	Adding to the consumption of natural resources.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Where possible purchase raw materials which are reusable/recyclable.
	Investigate the potential for purchasing recycled materials.
	Purchase materials which are environmentally benign or have less of an impact than other comparable products.
	Encourage suppliers to provide materials that have less detrimental environmental impacts than comparable products e.g. sustainable produced timber products.
	Investigate purchase of equipment with low energy use / long life span / good “end of life” properties

	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	Effects can be long term if materials are incorporated into the development (rather than being used to facilitate construction).
	See Risk Assessments No. 113 for more information

Do NRW / EA need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Design Activities	ERA Reference:	113	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Where Andrew Scott have some design input, consider sustainability issues, energy usage, recyclable material content etc.	Site Specific Risk Rating L	M	H
	All impacts as detailed in the Andrew Scott Environmental Aspects / Impacts Register			
	Use of non-sustainable/non-renewable resources causes depletion of natural reserves.			
	Visual impact arising from project design.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Design in a considerate manner to minimise impact of materials, site construction activities and the end product upon the environment.
	Design in such a way as to minimise wastage. Use dimensions commensurate with availability and standard product sizes.
	Assess potential impacts at pre-design briefing stage.
	Design to allow for integration of structure into surroundings through use of similar local materials etc.
	Assess materials for eco-labels (or other environmental labelling schemes), embodied energy levels and CO_2 emissions, impact of extraction, pollution associated with manufacture, sustainability of source, recyclability and recycled content and emissions released during use (Life Cycle Assessment).
	Liaise with manufacturers/suppliers to identify appropriate designs/materials.

	Specify less environmentally damaging materials, such as water based paints in place of solvent based products.	
	Consider the use of sustainable materials with lower levels of embodied carbon.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	Effects are generally permanent or long term, and can therefore have a significant impact upon the environment.

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**		
	No			**No**		

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	**Working In Or Near Watercourses**	**ERA Reference:**	**114**	

Check Boxes below if appropriate to Operation:

✓	**GUIDANCE: Consider specific impacts of water pollution & controls required to prevent any incidents**	**Site Specific Risk Rating**		
		L	**M**	**H**
	Contamination of watercourses with fuels, oils, chemicals, silt etc.			
	Loss of habitat and impact on wildlife, particularly aquatic species.			
	Possibly minor localised flooding of watercourses.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Obtain consent from environmental regulator to work in or near a watercourse or flood defence.
	Avoid direct entry into water wherever possible.
	Undertake ecological assessments and surveys where appropriate.
	Ensure plant entering the watercourse is well maintained (no leaks) and scrupulously clean.
	Erect barriers on crossings or around working areas to prevent dust and spray entering the watercourse.
	Where suitable, a cofferdam should be constructed around the works.

	Avoid locating cabins etc on the floodplain of watercourses.	
	Plant should only be refuelled in a designated area at least 10m away from the watercourse.	
	Use of wet cement / concrete in or close to any watercourse must be carefully controlled and a method statement/ works procedure produced.	
	Pollution prevention equipment such as oil booms and silt blankets must be available throughout the duration of the works.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:	
	Effects can be short term or prolonged, depending upon the nature of the impact.
	Refer to Andrew Scott Groundwater Procedure PR-ENV-02, Waste Procedure PR-ENV-04 and Pollution Control Procedure PR-ENV 03

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

A COPY OF THIS ENVIRONMENTAL RISK ASSESSMENT MUST BE GIVEN TO ANY PERSONS WRITING METHOD STATEMENTS TO ENSURE THAT ENVIRONMENTAL CONTROLS ARE TAKEN INTO ACCOUNT

Contract Name:	Gnoll Park			
Aspect:	Testing And Commissioning Activities	ERA Reference:	115	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Identify potential impacts & ensure testing & commissioning methods & controls are effective to minimise impacts on local environment	Site Specific Risk Rating L	M	H
	All impacts as detailed in the Andrew Scott Environmental Aspects / Impacts Register.			
	Release of solid, liquid and gaseous materials and wastes.			
	Loss of habitat and impact on wildlife, particularly aquatic species.			
	Possibly minor localised flooding of watercourses.			
	Possible malfunction of and damage to new/existing facilities, with indirect environmental impacts as detailed in this register.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Consider producing a pre-commissioning checklist to identify all actions to be carried out prior to commissioning.
	Produce test and inspection and commissioning plans.
	Ensure valves are in the correct position prior to commencing testing / commissioning. If necessary, produce a valve schedule.
	Check control panels 'fail safe' in the event of malfunctions etc.
	Ensure adequate provisions are in place for containing/disposing of liquids used to test and sterilise new facilities e.g. chlorinated water. Containers should be checked to make sure they have adequate storage capacity.
	Obtain appropriate prior written consents and permissions for disposal of liquids to sewers and watercourses.

	Check all valves and connections for evidence of leaks, particularly when pressure testing.
	Check that all moving equipment, sluice gates etc. are not obstructed or blocked.
	Inform client, landowner and all site personnel exactly when tests and commissioning activities are to commence, and when they are complete.
	Ensure the client/site operator/subcontractors fully understand the commissioning process and where required, adhere to agreed method statements.
	Other – Please Describe:
	Other – Please Describe:

Additional Controls Considered Necessary and Further Information:	
	Effects are generally short term but can have a significant impact.

Do NRW / EA need to be contacted for any consents or approvals?	Yes			Yes		
	No			No		

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Use of Dehumidifiers	ERA Reference:	116	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Review generation and disposal of condensed water produced from dehumidifiers during drying activities.	Site Specific Risk Rating L	M	H
	Potentials contamination of watercourses, drainage systems, soils and groundwater with solvents, hydrocarbons or particulates.			
	Breach of Environmental Legislation through improper discharge or disposal of contaminated condensed liquids.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Ascertain risk of contaminants within the condensed water produced from drying activities – This may include possible air borne dust contaminants, or traces of solvents or hydrocarbons (solvent based painting or cleaning activities). Liaise with National Resources Wales (NRW) on possible discharge consent.
	If significant contaminants detected and discharge consent not given, liquid to be adequately stored in suitable containers and labelled prior to arrangements for correct removal and disposal from site.
	Where no particulates (eg asbestos, lead) or solvents are present, guidance received from National Resources Wales (NRW) is that condensed water is Low Risk – **Can be disposed of via Foul sewer with no discharge consent required.**
	Allocate and identify designated disposal point for condensate and include in Project Environmental Plan
	Communicate discharge controls and conditions to all relevant operatives, and contents of this ERA.

	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

Do the Environment Agency need to be contacted for any consents or approvals?	Yes			Yes	
	No			No	

Completed by:		Date:	

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Contract Name:	Gnoll Park				
Aspect:	**Use of Temporary water supplies**	**ERA Reference:**	**117**		

Check Boxes below if appropriate to Operation:

✓	**GUIDANCE: Ensure that any possible contaminants from temporary or permanent water supplies cannot in turn contaminate the Mains water supply**	**Site Specific Risk Rating**		
		L	**M**	**H**
	Potential contamination of Mains water from pollution or biological agents through leaks in supply pipes, valves or taps (e.g., leptospirosis), or by build-up of stagnant water in pipes or shower heads over a long period (e.g., legionella).			
	Excessive use of water or damage caused by any potential leaks or insufficient taps / shut off valves – depletion of natural resource.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Communicate requirements of the "Water Supply and Water Fitting Regulations 1999" that al water supplies require a suitable non-return valve to be fitted to prevent contamination to the Mains supply to all Project and Site Managers. *(Note: A water meter can act as a suitable non-return valve)*
	Include requirement of this ERA and legislative requirement in Project Environmental Plan.
	Refer to guidance from Welsh Water Dwr Cymru on installation of new or temporary water supplies.
	All stand pipes to be hired and fitted by the appropriate water supply company for the area.

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	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	
Completed by:			**Date:**		

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Contract Name:	Gnoll Park			
Aspect:	**Control of Asbestos waste**	**ERA Reference:**	**118**	

Check Boxes below if appropriate to Operation:

✓	**GUIDANCE: Review the control and removal of asbestos waste through approved removal methods or accidental discovery.**	Site Specific Risk Rating L	M	H
	Potential contamination of surrounding environment by asbestos fibres and debris			
	Potential contamination of surrounding atmosphere by asbestos fibres emitted by dust			
	Breach of Environmental and H&S Legislation through improper discharge or disposal of asbestos materials (Control of Asbestos Regulations / Hazardous Waste Regulations)			
	Breach of Environmental and H&S Legislation through removal / storage / disposal of asbestos materials by unlicensed or untrained operatives			
	Accidental release of asbestos fibres through uncovering or disturbing unknown materials			
	Release of fibres due to inadequate storage or segregation prior to disposal			
	Cross contamination of tools and equipment (and external environment) during removal or disposal activities or poor clean up precautions			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	A full demolition and refurbishment asbestos survey is available for the site / building prior to any works commencing
	Only small amounts of unlicensed white asbestos (Chrysotile) will ever be removed by ASL employees, fully skill trained in handling of unlicensed materials.
	If confirmed only white asbestos present, are materials in good condition with low risk of fibre emission? Poor condition materials are large quantities to be removed by licensed contractor.
	Andrew Scott employees will not in any way endeavour to perform any licenced works involving Brown asbestos (Amosite) or Blue asbestos (Crocidolite) – **Fully licensed contractor appointed**
	If suspected asbestos materials have been discovered, the area has been isolated, awaiting samples from an UKATA approved licensed asbestos contractor.
	If materials constitute licensed works, has HSE been notified prior to works commencing? (Usually two week notification period)
	Can removal or further disturbance be avoided or can asbestos be encapsulated?

	Positive pressure isolations in place where a risk of dust generation has been identified
	Licensed Hazardous waste contractor appointed for disposal of all asbestos and other contaminated materials
	All operatives dealing with asbestos materials will have adequate protective clothing, be face fitted with appropriate RPE, and all discarded PPE will be disposed of as asbestos waste.
	All operatives will have a dirty area in which to remove all contaminated tools and PPE prior to clean up
	Air monitoring arranged to ascertain possible exposures / contamination
	Air / ground sampling arranged to confirm all materials removed at end of job
	Hazardous waste transfer notes to be retained for 3 years – Copy required of final landfill disposal?

	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	All Andrew Scott Ltd personnel and relevant sub-contractors to have received asbestos awareness training irrelevant of any need for asbestos removal works
	Refer to ANDREW SCOTT Ltd Asbestos Policy and Emergency Procedure PR-POL-07
	Refer to HSE document HSG 213: Asbestos Essentials - Comprehensive guidance on working with asbestos in the building maintenance and allied trades, for further information and guidance.

Do NRW / EA / HSE need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Managing Contaminated Land / Excavated materials	ERA Reference:	119	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Review the control and removal of contaminated waste, and contingency planning should contaminated ground be unexpectedly uncovered.	Site Specific Risk Rating L	M	H
	Potential contamination of surrounding environment by contaminants and pollutants within excavated materials			
	Potential contamination of surrounding atmosphere by contaminants and pollutants emitted by dust, solvent or odour emission			
	Risk of contamination by known pollutants present prior to construction works (residue from previous industrial processes, dumped / buried waste, ashes from fires or previous material storage)			
	Breach of Environmental and H&S Legislation through improper storage or segregation of contaminated materials (Contaminated Land Regulations and Hazardous Waste Regulations) (stockpiling, seepage to ground, rain water run-off, etc)			
	Breach of Environmental and H&S Legislation through improper removal / storage / disposal of polluting materials by unlicensed or untrained operatives			
	Potential accidental release of pollutants through uncovering or disturbing unknown materials not on site survey.			
	Potential cross contamination of site or danger to health through unauthorised access to areas containing contaminants.			
	Spread of contaminants through handling and removal from site by waste carriers			
	Requirement to inform external agencies due to risk level (EA / NRW / Local Environmental Health / Water companies / HSE)			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Full disclosure of project Pre-construction information and planning conditions for site to be made available prior to any works commencing
	Agreement with Client on proposed methods of rectification for any known contaminants, and include in Construction EMP
	If a Contaminated Land Assessment is required, this will be carried out in accordance with a systematic process of investigation, testing and appraisal by certified, trained and competent staff working for an approved laboratory facility.

	Andrew Scott employees will not in any way endeavour to perform any testing or investigation works on known or suspected contaminated land unless trained and competent to do so.
	All contaminated areas of site to be clearly signed and fenced off to avoid unauthorised access and cross contamination of the site.
	The use of mobile plant for remediation of contaminated soils will require an environmental permit, and completion of a site deployment form to detail works conducted and specific risks at each work location.
	Can removal or further disturbance be avoided or can materials be encapsulated?
	Can excavated contaminated materials be legally and safely re-used within the scope of site works? (Will require a further Environmental permit or waste exemption)
	Licensed Hazardous waste contractor appointed for disposal of all contaminated and / or hazardous materials
	All operatives dealing with contaminated or hazardous materials will have adequate protective clothing, as determined by the detailed CoSHH assessment for known or suspected materials.
	If removing contaminated materials, operatives will have a dirty area in which to remove all contaminated tools and PPE prior to clean up
	Can storage of contaminants be avoided and directly removed from site?
	If storage cannot be avoided, materials to be placed on impervious ground as far from any water courses as possible, covered to avoid windblown contamination and bunded to avoid run-off into drainage or water courses.
	All vehicles carrying contaminated materials adequately sheeted and pass through wheel wash to avoid contamination of public highway
	Have provision been made for storage or disposal of contaminated water? (e.g. discharge consents to foul sewer, or disposal by tanker)
	Site induction to cover details of contamination on site and the procedures for working in these areas, as well as Emergency spill procedures.
	Hazardous waste Duty of care transfer notes to be retained for 3 years – Copy required of final waste transfer disposal documentation
	All required Permits for the required works in place

	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:	
	Refer to Andrew Scott Emergency Spill Response Plan – FM-SITE-014
	Refer to ANDREW SCOTT Ltd Pollution Control Procedure PR-ENV-03 and Waste Management Procedure PR-ENV-04
	Refer to the Andrew Scott project Construction Environmental Management Plan (CEMP) & SWMP – contained within project Construction Management Plan

Do NRW / EA / HSE need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	
Completed by:			**Date:**			

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Contract Name:	Gnoll Park				
Aspect:	**Archaeology & heritage works**	**ERA Reference:**	**120**		

Check Boxes below if appropriate to Operation:

✓	**GUIDANCE: Review the disturbance of ground and fabric of any existing buildings as covered in any pre-construction information, survey details, contract or planning requirements and any conservation orders or restraints.**	**Site Specific Risk Rating**		
		L	**M**	**H**
	Potential to disturb buried artefacts, remains or features of archaeological importance or interest.			
	Any existing restraints within Pre-construction, planning or contract requirements?			
	Existence of any known archaeological or heritage features in proximity to the proposed works.			
	Breach of Environmental and heritage Legislation through improper removal, disturbance or disposal of archaeological or heritage features.			
	Watching brief required on excavation works by external specialists or agencies			
	Requirement of any HOLD points during work programme to confirm no presence of archaeological or heritage features			
	Requirement to inform client or any other external agencies should any items be located during works (e.g., English Heritage, CADW, Environment Agency / NRW)			
	If human skeletal remains or evidence of a burial ground, stop work in that area shall cease immediately. Contact the Police immediately.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	**Tick appropriate boxes below to identify the appropriate mitigation measures have been taken**
	Full disclosure of project Pre-construction information and planning conditions for site to be made available prior to any works commencing
	Agreement with Client on proposed methods of construction if archaeological or heritage features present.
	Andrew Scott employees will not in any way endeavour to perform any investigation works on known or suspected archaeological or heritage features. Unless authorised to do so by ASL management and agreement with the client and external agencies.
	Any areas on site of archaeological or heritage interest to be clearly signed and fenced off to avoid unauthorised access and contamination or damage of the area.
	Are any archaeological or heritage permits required for works to proceed?

	Is a watching brief by external specialists required during any excavation or demolition activities?
	Operatives have been briefed on Archaeological RA and relevant TBT and know what to do in event of any unexpected discovery.
	Protection measures been put in place to prevent accidental damage during construction activities (e.g., protection of stonework or architectural features from scaffolding & scaffold erection)

	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

✓	**Refer to Andrew Scott project Construction Management Plan**
	Refer to the Andrew Scott project Construction Environmental Management Plan (CEMP) & SWMP – contained within project Construction Management Plan

Do NRW / EA / HSE need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Connection to existing drainage & sewer systems	ERA Reference:	121	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Highlight plant or liquid storage / handling operations in the vicinity of surface drains or any pumping operations leading to discharge.	Site Specific Risk Rating L	M	H
	Contamination of watercourses, drainage systems, soils and groundwater with fuels, oils, chemicals, silt etc.			
	Ensure control measures are in place to avoid contamination / leakage from existing sewer / drainage system during connection.			
	Use experienced and competent drainage operatives, and ensure work is adequately supervised.			
	Run off from concrete delivery vehicle washout and vehicle wheel washing activities.			
	Loss of habitat and impact on wildlife, particularly aquatic species			
	Possibly minor localised flooding of sewers.			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Plan works to minimise impact on, and maximise protection of, sensitive targets. (This may be demonstrated in Method Statements)
	Identify pollution sources and pathways e.g. contaminated land, drainage systems and watercourses. (This may be marked on a site plan)
	Seal off unused site drainage systems, particularly where they can act as a pollution pathway.
	Establish temporary site drainage systems as appropriate and as early as possible.
	Establish appropriate concrete washout facilities in an area where impacts will be minimised, away from drainage routes
	Liaise with regulators when in sensitive locations to ensure appropriate controls are in place.

	Ensure correct consent has been applied for and accepted by drainage regulator (Local water company) prior to any sewer connection works commencing.	
	Ensure finished connections are leak tested and appropriate QA inspections completed and recorded on completion of works.	
	Confirm if Client or Water authority inspection may be required on completion of specific drainage connection works	
	If discharging any liquids (effluents or contaminated water) to foul drains, ensure that an appropriate consent has been obtained and all consent conditions are adhered to.	
	Establish appropriate settlement lagoons/tanks or other pollution prevention measures to minimise the impact of discharging effluents.	
	Monitor suitability of measures as site works progress through regular inspections and environmental audits.	
	If working in particularly sensitive locations it may be necessary to conduct environmental surveys to precisely determine the ecological value of the site.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:	
	Generally only an issue during heavy or prolonged precipitation (rainfall, snowing etc.) and during discharging operations. Effects are usually only temporary, with minimal impact if correctly controlled.
	Water sampling or monitoring at outfalls

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**	
	No			**No**	

Completed by:		**Date:**	

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Contract Name:	Gnoll Park			
Aspect:	Invasive Plant Species	ERA Reference:	122	

Check Boxes below if appropriate to Operation:

✓	GUIDANCE: Highlight risks of contamination of surrounding environment that could cause spread of invasive species.	Site Specific Risk Rating L	M	H
	Any existing restraints or areas of invasive plants identified within Pre-construction, planning or contract requirements?			
	Is there a requirement to disturb any identified invasive plants?			
	Will there be a requirement for deep excavations within contaminated areas?			
	Will items of mobile plant be operating in areas contaminated with invasive plant species?			
	Will waste generated from excavations or foliage clearance be required to be removed from the site?			
	Will foliage be required to be only cleared or cut back as part of the project requirements?			
	Will there be a requirement to use herbicides or chemical weed killers on any invasive species? (CoSHH aspect to be considered)			
	Are the workforce aware of the potential risk to the environment, and how contamination can be spread?			
	Other: (Please describe):			
	Note: If this section filled in please send copy to SHEQ Manager so that this Aspect can be added to Aspects / Impacts Register			

Mitigation:	Tick appropriate boxes below to identify the appropriate mitigation measures have been taken
	Requirements to control risk of invasive plant contamination detailed in Project Environmental Management Plan
	Installation of plant resistant root barrier membrane over excavated materials or construction site roadways
	Where materials are to be removed from site, fully licenced waste carrier appointed with experience of removal of invasive plant waste – **Waste licences to be checked**
	Removed materials designated as hazardous waste and transported to a controlled waste processing site – **Permits to be checked**
	Requirement for segregation areas where mobile plant does not leave site without thorough washing down by power washer.

	Designated wheel and boot wash area set up for persons and mobile plant leaving work area.	
	Liaise with regulators / clients representatives when in sensitive locations to ensure appropriate controls are in place.	
	CoSHH assessments for any required chemicals communicated to all members of work party as part of detailed task specific RAMS	
	Documented procedure in place for the removal of any contaminated or hazardous materials in place, and communicated to all relevant site ops and sub-contractors / suppliers.	
	Any cutting back of foliage from invasive species to be conducted using hand tools only	
	Tool box talks to be conducted with all site ops to communicate the possible threat and methods of contamination from the specific plants located on this site.	
	Application approved for any required permits, consents or waste exemptions from the EA / NRW for use of specific control chemicals, disposal or waste storage on the site.	
	Suitable exclusion zones with adequate signage set up around areas of known infestation designated as not to be disturbed.	
	If working in particularly sensitive locations it may be necessary to conduct environmental surveys to determine precisely the ecological value of the site. **(please specify)**	
	Monitor suitability of measures as site works progress through regular inspections and environmental audits.	
	Other – Please Describe:	
	Other – Please Describe:	

Additional Controls Considered Necessary and Further Information:

	Japanese Knotweed – Refer to EA Guidance: Managing Japanese Knotweed on development sites Code of Practice (2013).
	ASL Tool box talks: Japanese Knotweed, Himalayan Balsam, Giant Hogweed
	UK Gov website: How to stop invasive non-native plants from spreading: https://www.gov.uk/guidance/prevent-the-spread-of-harmful-invasive-and-non-native-plants
	GB Non-native Species Strategy (2023-2030): https://www.nonnativespecies.org/about/gb-strategy/

Do the Environment Agency need to be contacted for any consents or approvals?	**Yes**			**Yes**		
	No			**No**		

Completed by:		**Date:**	

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Appendix C

Toolbox Talks

TOOLBOX TALK

No 1 SPILL CONTROL

WHAT?

Accidental releases of oils and chemicals from construction sites make up a large number of pollution incidents that occur each year.

Many spillages can be prevented. It is important that everyone on site knows how to control a spill to minimise its impact.

Would you know what to do?



WHY?

- ***Minimise potential harm:*** Spills spread very quickly and lead to environmental harm.
- ***Avoid prosecution:*** Fines and clean up costs can be expensive
- ***Public relations:*** Avoid negative publicity for the company and our clients and maintain our workload.

DO

- ✓ STOP WORK immediately
- ✓ If spillage is flammable, extinguish all possible ignitions.
- ✓ Identify the source of pollution and rectify the problem
- ✓ Contain the spillage – on land use earth/sand to construct a bund around the spill to stop it spreading. Use booms to contain oil spills that have already entered a watercourse
- ✓ Contact your Line Manager
- ✓ Put on appropriate PPE – typically rubber gloves
- ✓ Protect sensitive areas (e.g. watercourses or surface water drains – use drain covers or use earth/sand to construct a bund)
- ✓ Clean up the spill. Use absorbent granules/pads to mop up spills. Large pools of oil or spills which cannot be absorbed should be removed by gulper
- ✓ Dispose of all contaminated materials (soil/absorbent materials) correctly – those containing substances such as oil, diesel or paint will be hazardous waste. Ensure any contaminated water is taken to an appropriately licensed disposal site.
- ✓ Notify your line manager of actions taken

DON'T

- ✗ DON'T ignore it! STOP WORK and ACT immediately.
- ✗ DON'T hide the incident – ensure you report it and implement controls.
- ✗ DON'T ever hose a spill into the drainage system. Always use absorbent materials.



With thanks to members of the CC Environmental Forum *Issue 3 – July 2005*

TOOLBOX TALK

No 2 WATER POLLUTION PREVENTION (FUEL & OIL)

WHAT?

A large number of oil related water pollution incidents occur each year.

Discharging fuel or oil or water containing fuel or oil into drains or watercourses is illegal

Many pollution incidents are from unbunded tanks and can easily be avoided by following simple guidelines.

WHY?

- ***Avoid prosecution***: Your employer or you as an individual can be prosecuted for causing water pollution
- ***Cost***: The costs of clean up far exceed those to put control measures in place
- ***Damage to wildlife:*** Long-term damage to watercourses including fish kills. Oil spreads rapidly - one gallon of oil can completely cover a lake the size of two football pitches

DO

General

- ✓ Store oils away from drains or watercourses
- ✓ Return oil and fuels to storage areas after use
- ✓ Locate oil stores away from areas of high vehicular movement to prevent accidental damage
- ✓ Bund individual 205 litre drums to 25%
- ✓ Supervise all fuel deliveries
- ✓ Lock oil stores when not in use
- ✓ Use drip trays under all static plant and during refuelling from mobile plant.

Bulk Storage

- ✓ Bund tanks and bowsers to 110%
- ✓ Ensure bunds are free from cracks and leaks
- ✓ Regularly empty bunds and drip trays of rainwater, which should be treated as contaminated
- ✓ Keep all hoses and pipe work within bunded area after use
- ✓ Keep a spill kit near to fuel and oil storage areas and refuelling areas
- ✓ Report any irregularities or incidents.

DON'T

- ✗ DON'T refuel or store oil within 10m of watercourses or surface water drains
- ✗ DON'T leave bunds and drip trays to overflow
- ✗ DON'T leave refuelling hoses outside of bunds after use
- ✗ DON'T use high pressure delivery systems when filling small containers
- ✗ DON'T hose down spills
- ✗ DON'T ignore spillages.



See also: Toolbox Talk No 1 – Spill control

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TOOLBOX TALK

No 3 DUST & AIR QUALITY

WHAT?

Dust, emissions and odours can annoy neighbours and may cause health risks at very high concentrations

WHY?

- ❑ ***Avoid nuisance to neighbours***: Dust can settle on neighbours' properties and give rise to local dispute. Poorly controlled emissions and odours from plant or works may give rise to valid complaints.
- ❑ ***Avoid programme delays***: The Local Authority has the power to stop works if dust is causing a nuisance. Emission of dark smoke from plant and fires is illegal.
- ❑ ***Avoid health problems***: Dust may cause eye irritation or make asthma worse
- ❑ ***Avoid impact on ecology***: Dust can damage the ecology of a watercourse and affect plant growth, including crops

DO

- ✓ Keep surfaces swept and damp down with water at regular intervals
- ✓ Minimise drop heights into haulage vehicles and into conveyors
- ✓ Ensure cutting and grinding operations are adequately shielded or wetted
- ✓ Sheet lorries carrying dry materials off site
- ✓ Keep to site speed limits to minimise dust generation
- ✓ Use the wheelwash, for appropriate vehicles, if one is provided on site
- ✓ Store fine, dry materials within buildings or provide adequate protection from the wind.
- ✓ Store bulk cement and bentonite in silos
- ✓ Position silos and stockpiles away from residential areas or watercourses.
- ✓ Clean up or damp down any spillage of dry dusty materials
- ✓ Notify your Line Manager if work activities are causing poor air quality.

DON'T

- ✗ DON'T burn materials on site without approval from your Project Manager. Permission is required first from the Environment Agency
- ✗ DON'T use poorly maintained plant. Black smoke may give rise to poor health and can cause a nuisance
- ✗ DON'T leave plant running if not in use
- ✗ DON'T ignore sources of poor air quality, notify your line manager
- ✗ DON'T ignore complaints



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TOOLBOX TALK

No 4 NOISE AND VIBRATION

WHAT?

The Construction Industry is one of the leading sources of noise complaints made to Local Authorities.

Something is considered 'noisy' when the sound is unwanted by the listener. Noise and vibration emissions can disturb local residents and give rise to complaints and delays.

Noisy activities include: excavation, tunnelling, concrete cutting, piling, using un-silenced generators and concrete pours.

WHY?

- ***To act as a good neighbour***: avoid complaints and maintain good relations with the local community
- ***To avoid programme delay***: The Local Authority have the power to stop works if noise from the site is causing a nuisance
- ***To avoid fines***: Failing to meet noise constraints can result in fines.
- ***To avoid structural damage***: vibration may cause structural damage
- ***To comply with contractual requirements***
- ***To prevent harm to wildlife***: Noise can disturb wildlife as well as humans

DO

- ✓ If possible, restrict noisy activities to certain times of the day
- ✓ Adhere to working hours. Some sites are only consented to work at certain times
- ✓ Plan deliveries. Arrange routes and times to minimise potential nuisance to the local community
- ✓ If possible, keep noisy plant away from public areas
- ✓ Minimise drop heights into hoppers, lorries and other plant
- ✓ Use local screening where necessary.
  Noise can be reduced if a screen is placed between plant and nearby sensitive locations eg. houses.
  Screens can be straw bales or ply board
- ✓ Use silenced generators and tower lights where necessary
- ✓ Keep acoustic doors and hoods on plant closed – it does make a difference!
- ✓ Contact your Line Manager if you are in doubt about noisy activities.

DON'T

- ✗ DON'T undertake noisy works during the evening, at night or very early in the morning if it can be avoided!
- ✗ DON'T leave doors and hoods open on plant
- ✗ DON'T leave plant running unnecessarily
- ✗ DON'T use poorly maintained plant
- ✗ DON'T ignore complaints from the local community
- ✗ DON'T undertake activities that could cause damage to nearby structures through vibration unless approved by your line manager.

With thanks to members of the CC Environmental Forum

Issue 3 – July 2005

TOOLBOX TALK

No 5 WATER POLLUTION - SILT

WHAT?

Silt is the term used for very fine particles of soil.

Silt mixed with water in the form of mud, can be washed off construction sites into nearby watercourses and drains.

Pollution by silt can be caused by:
rainwater run off from uncovered areas of the site,
pumping out and dewatering of excavations,
tunnelling operations and cleaning of ditches and drains.

Proper planning will prevent these pollution incidents.



WHY?

- ***Avoid environmental harm*:** High levels of silt suspended in water can suffocate fish by blocking their gills, can remove essential oxygen from the water and can kill plants, animals and insects living in the water by stopping sunlight reaching them.
- ***Avoid environmental harm*:** Silt often combines with other contaminants such as oils and chemicals potentially causing greater pollution than silt alone.
- ***Avoid prosecution:*** Because of the potential for harm, it is illegal to allow silt to enter a watercourse or drain. Silt pollution spoils the appearance of watercourses, is easily traceable to the site from where it originated and, in the past, has been a major cause of prosecution.

DO

- ✓ Only discharge silty water into designated settlement systems
- ✓ Check that site drainage and settlement systems are working - discolouration may indicate high pollutant loading
- ✓ Stop pumping and contact your manager if you think a problem is arising
- ✓ Ensure that all hardstandings are kept clean – notify your manager if an area is silty or is covered in mud
- ✓ Notify your manager immediately if you see silty water entering a watercourse or drain and do try to stop it or divert it away by, for example, using sand bags.

DON'T

- ✗ DON'T dewater any excavation without getting permission from your manager
- ✗ DON'T pump silty water directly into rivers, ditches or surface water drains
- ✗ DON'T strip land of vegetation unless it is absolutely necessary – vegetation reduces silt run-off
- ✗ DON'T store soil, stone or similar materials within 10 metres of watercourses or drains
- ✗ DON'T dig a grip to release ponded water to a watercourse or drain.



With thanks to members of the CC Environmental Forum *Issue 2 – July 2005*

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TOOLBOX TALK

No 6 WATER POLLUTION – CEMENT and CONCRETE

WHAT?

Cement and concrete are probably the most common materials used in construction.

Cement is a highly alkaline material and is corrosive.

If cement or concrete is allowed to enter a watercourse in an uncontrolled manner it can have a devastating impact on wildlife.



WHY?

- ***Avoid environmental harm:*** Water contaminated with cement is highly alkaline and can be toxic to fish, plants and animals living in watercourses. Cement particles entering a watercourse can clog fishes' gills and also destroy their spawning grounds.
- ***Avoid prosecution***: It is illegal to allow cement, unset concrete or washout water containing cement to enter a watercourse or drain.
  (Special permission is needed before construction work can take place in a watercourse).

DO

- ✓ Identify all watercourses, gullies and drains prior to commencing work
- ✓ Store bulk and bagged cement and concrete additives at least 10 metres away from watercourses, gullies and drains
- ✓ Undertake mixing/batching works well away from watercourses and drains.
- ✓ Use only designated areas for concrete washout
- ✓ Where necessary protect nearby drains against washout water running into them.
- ✓ NOTIFY your manager IMMEDIATELY if you see any concrete spillages or concrete washout likely to cause pollution.

DON'T

- ✗ DON'T hose down spills of concrete or cement into surface water drains.
- ✗ DON'T allow washout water to flow into any watercourse or drain.
- ✗ DON'T allow ready-mix trucks to washout anywhere other than in areas designated for the purpose.
- ✗ DON'T wash off any tools or plant in watercourses

With thanks to members of the CC Environmental Forum

Issue 2 – July 2005

TOOLBOX TALK

No 7 TREE PROTECTION

WHAT?

Trees and hedgerows are an important part of the environment and the countryside.

They provide a vitally important habitat for wildlife and many trees and hedgerows are protected by law.



WHY?

- ***Avoid prosecution:*** It is illegal to cut down trees protected by law under a Tree Preservation Order or to grub up certain countryside hedges.
- ***Avoid environmental harm and prosecution:*** During certain times of the year trees and hedgerows may contain nesting birds. Nesting birds are protected by law against disturbance under the Wildlife and Countryside Act.
- ***Ensure safety is maintained:*** Damaged trees may become unstable and potential hazards.

DO

- ✓ Check with your manager before felling any trees or removing any hedgerows
- ✓ Clear only vegetation as instructed by your manager
- ✓ Check for nesting birds and if any are found contact your manager immediately
- ✓ Ask your manager what protection is required to trees and hedgerows
- ✓ Check with your manager before excavating near to trees and hedgerows.

DON'T

- ✗ DON'T undertake tree felling or hedgerow clearance during the bird nesting season
- ✗ DON'T undertake any works to, or near to, trees without authorisation from your manager
- ✗ DON'T track vehicles or plant over tree protection areas
- ✗ DON'T store materials, especially fuels and oils under or near trees.



image: www.freeimages.co.uk

TOOLBOX TALK

No 8 WASTE MANAGEMENT – REDUCE / RE-USE / RECYCLE

WHAT?

The construction industry generates over 70 million tonnes of waste per year and it is estimated that this total includes 13 million tonnes of construction materials thrown away unused

To minimise waste we must

Firstly **Eliminate** the waste if we can
secondly **Reduce** the waste we create
then **Reuse** materials until we can't use them again and
only then **Recycle** the waste. Only if we can't recycle can we
finally **Dispose** of the waste to landfill.



WHY?

- ***Avoid environmental harm***: Reduction, reuse and re-cycling of waste minimises the environmental impacts of disposal of waste to landfill.
- ***Reduce costs***: The true cost of waste is more than just the disposal cost and is made up of
  - the original purchase price of the material
  - the cost of unloading, handling, storage and transporting the material around site
  - the cost of collecting the waste or damaged material, reloading, moving and storing waste on site
  - the cost of transporting waste to a tip, the tipping charges and landfill taxes
  - the purchase price of replacing damaged and wasted materials.

DO

- ✓ **Eliminate** unnecessary wastage by storing materials neatly on flat solid ground to avoid damage and loss
- ✓ **Reduce** the amount of waste you create on site
- ✓ Keep materials in their packaging for as long as possible to protect them from damage
- ✓ Keep significant offcuts for use elsewhere
- ✓ **Reuse** materials until no longer fit for purpose, for example, shuttering, fencing
- ✓ Then reuse materials for alternative purposes for example, use old shuttering ply for hoardings
- ✓ **Recycle** materials whenever possible
- ✓ Segregate waste on site into different types
- ✓ Store waste in the appropriate skip or container until removed from site

DON'T

- ✗ DON'T put waste materials into the wrong waste container
- ✗ DON'T open new cans or pallets before the ones in use are empty
- ✗ DON'T leave materials unprotected and where they are likely to be damaged by, for example, rain or mud.



- ✗ DON'T burn or bury waste – it's illegal
- ✗ DON'T mix different types of waste – it prevents recycling

With thanks to members of the CC Environmental Forum

Issue 2 - July 2005

TOOLBOX TALK

No 9 STORAGE OF WASTE

WHAT?

Allowing waste to escape into the environment not only causes nuisance to neighbours and generates a poor public image it is illegal

WHY?

- ***Avoid prosecution*:** It is the duty of all waste producers to prevent their waste escaping into the environment.
- ***Reduce costs:*** The segregation of waste into separate containers or skips can lead to lower costs by
  - reducing disposal costs and landfill tax payments through preventing the contamination of inactive wastes by active wastes
  - maximising the potential for reusing and recycling materials
  - making it easier to see how much of each type of waste is being produced and hence where efforts to reduce waste need to be targeted

DO

- ✓ Keep sites tidy and collect up any waste regularly
- ✓ Use waste containers or skips suitable for the type of waste being stored
- ✓ Use skips with lids or cover them with sheets or nets to prevent dust and litter being blown out
- ✓ Check that containers and skips are not corroded or worn out to minimize the risk of accidental spillages or leaks
- ✓ Mark waste containers clearly with their intended contents and ensure labels on containers are kept in good order
- ✓ Segregate waste before putting it into the designated containers
- ✓



DON'T

- ✗ DON'T throw materials into the wrong container
- ✗ DON'T contaminate one waste type with another
- ✗ DON'T mix hazardous with non-hazardous waste – it's illegal
- ✗ DON'T give waste away, all waste taken off site needs to be accompanied by paperwork
- ✗ DON'T damage covers over or bunds around any skips or containers
- ✗ DON'T burn or bury waste – it's illegal
- ✗



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TOOLBOX TALK

No 10 JAPANESE KNOTWEED

WHAT?

Japanese Knotweed (*Polygonum cuspidatum*) was originally introduced to the UK as an ornamental plant but has spread extensively in the wild. With its rapid growth of more that 20mm a day, it forms dense clumps over 3m high which crowd out and prevent the growth of native plants.

The rhizome root system, from which new plants grow, can extend several metres away from the original plant and be up to 2m deep. The plant spreads so rapidly not only through progression of its root system but because any fragments of its stem or root will grow to form a new plant (a piece as small as 0.8 grams can regenerate). This makes it a very difficult plant to eradicate.

Japanese Knotweed will grow in any type of soil no matter how poor and is often found along railways, riverbanks, roads and particularly on derelict sites.



Identification

- Japanese Knotweed forms dense clumps and grows up to 3 metres tall
- The stem is hollow with distinct nodes like bamboo and breaks easily. In Spring it is fleshy and red tinged and in Summer it is green with purple speckles.
- Leaves in Spring are pinky red and uncurl as the stem grows. In Summer they become large oval or heart shaped mid-green.
- Flowers are cream coloured and appear in drooping clusters towards the end of August.
- The plant dies before November often leaving behind the upright brown, hollow, woody stalks.

WHY?

- **Avoid environmental harm**: Japanese Knotweed shades out native plants by producing a dense canopy of leaves early in the growing season. Although Japanese Knotweed is not toxic to humans or animals, it offers a poor habitat for insects, birds and mammals.
- **Avoid prosecution**: It is illegal "to plant or otherwise encourage" the growth of Japanese Knotweed. This could include cutting the plant or roots and disturbing or moving surrounding soil which may contain root material unless as part of an eradication process.
- **Prevent damage to structures**: The plant is strong enough to penetrate foundations, walls, roads and drainage pipework.

DO

✓ IMMEDIATELY stop all work within 7 metres of the suspect plant and contact your line manager for instructions if you think you have identified Japanese Knotweed on your site.

DON'T

✗ DON'T excavate or move any soil from within 7 metres of a Japanese Knotweed plant without instruction

✗ DON'T track plant or vehicles over the area

✗ DON'T stockpile potentially contaminated material within 10 metres of a watercourse or drain.

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TOOLBOX TALK

No 11 HIMALAYAN BALSAM

WHAT?

The tallest annual plant now growing in the British Isles, Himalayan Balsam (*Impatiens glandulifera*) was introduced to the UK 150 years ago as an ornamental plant but quickly spread into the wild.

Himalayan Balsam thrives because each plant produces more than 500 seeds before it dies in the Autumn. When the seed pods are ripe, the slightest touch causes them to burst open catapulting and dispersing the seeds up to 7m away.

They are often found growing along rivers, disused railway lines or in similar linear corridors.



Identification

- Himalayan Balsam grows up to 2.5m tall.
- The stem is pinky red, hollow, sappy and brittle.
- Leaves occur in two's or three's from the same point on the stem, are spear shaped with serrated edges, shiny and dark green with a reddish mid-rib.
- Flowers, which are similar to a Foxglove, are purplish pink, carried on long stalks and appear from June to October.
- Seed pods, which are brown / black are produced from August to October.

WHY?

- ***Avoid environmental harm*:** As one of the most invasive species in the British Isles, Himalayan Balsam dominates habitats, grows densely and shades out native plants. Biodiversity is affected as the consequent loss in plant diversity leads to a reduction in the population of insects and birds.
- ***Avoid environmental harm*:** Dead stems washed into and clogging up watercourses cause an increased risk of flooding.

DO

✓ Stop work in the immediate area and contact your manager for instruction if you think you have identified Himalayan Balsam on your site.

DON'T

✗ DON'T disturb the seedpods.

✗ DON'T move soil that may contain seeds or other plant material without specific instructions.

With thanks to members of the CC Environmental Forum *Issue 2 – July 2005*

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TOOLBOX TALK

No. 13 STORAGE and USE OF PETROL, DIESEL and OILS

WHAT?

Petrol, diesel and oils inappropriately used, stored or disposed of can give rise to pollution of the environment.

Generally these substances are released into the environment through spillages during delivery or use or through waste materials being poured directly to drains or gullies or being burned.



WHY?

- ***Avoid prosecution***: If pollution is caused then prosecution may follow.
- ***Avoid environmental harm***: Petrol, diesel and oil are all highly harmful to plants, animals and humans
- ***Cost***: The cost of clean up and legal proceedings following a spillage incident far exceeds the cost of putting proper control measures in place.

DO

Storage

- ✓ Store bulk petrol, diesel and oil in bunded tanks and store smaller containers on drip trays that have 110 % capacity of the largest container
- ✓ Keep a spill kit near to fuel and oil storage areas
- ✓ Store petrol, diesel and oil away from drains or surface watercourses.
- ✓ Always put lids on any containers after use.
- ✓ Ensure that all containers are undamaged.

Use

- ✓ Use the automatic shut off “pistol grip” delivery systems when refuelling from tanks or mobile bowser – do not tamper with the shut off system at any time.
- ✓ Return spare fuels and oils to proper storage areas
- ✓ Ensure that all refuelling is constantly attended and only undertaken at least 10m away from watercourses and drains.
- ✓ Lock the mobile bowser or storage tank after use.
- ✓ Use drip trays under all static plant and during refuelling from mobile plant.
- ✓ Clean up any minor spillages
- ✓ Use funnels when refuelling small plant and equipment to avoid spillages.

Disposal

- ✓ Ask your manager what to do with waste oil, petrol and diesel prior to any disposal.

DON’T

Storage



- ✗ DON’T refuel or store oil tanks within 10m of watercourses or surface water drains
- ✗ DON’T leave bunds and drip trays to overflow
- ✗ DON’T leave refuelling hoses outside bunds after use
- ✗ DON’T use high pressure delivery systems when filling small containers

Use

- ✗ DON’T leave refuelling operations unattended at any time
- ✗ DON’T leave containers open when unused
- ✗ DON’T leave containers in an area where they can be damaged
- ✗ DON’T ignore spillages

Disposal

- ✗ DON’T pour petrol, diesel or waste oil down drains or gullies
- ✗ DON’T try to dispose of petrol, diesel or waste oils by setting fire to them.

With thanks to members of the CC Environmental Forum

Issue 2 – July 2005

TOOLBOX TALK

No 15 ARCHAEOLOGY

WHAT?

Archaeology is the study of human history through the excavation of sites and the analysis of physical remains.

Where no other records exist, it is often the only source of information about our previous occupation of an area from the earliest inhabitants many thousands of years ago to more recent times of just a hundred years or so.

It is not only buildings and their foundations but also artefacts such as jewellery, pottery, coins, bones and skeletons that need expert examination before removal and preservation.



WHY?

- ***Avoid prosecution***: It is illegal to damage some monuments and archaeological structures.
- ***Avoid environmental harm***: Archaeology is an important part of our heritage and valuable and irreplaceable remains can easily be damaged on construction sites.

DO

- ✓ Stop work if you find any archaeological features and immediately contact your manager for instructions
- ✓ Obey the advice provided by any appointed archaeologist.



DON'T

- ✗ DON'T assume that any artefacts or features discovered are unimportant
- ✗ DON'T remove any 'finds' such as coins, pottery, or bones from the site. It is illegal
- ✗ DONT undertake work adjacent areas of archaeological importance without considering if any damage may be caused
  - vibration may cause cracking
  - dewatering may cause a preserved feature to settle and crack.
- ✗ DON'T drive vehicle through protected sites

With thanks to members of the CC Environmental Forum

Issue 2 – July 2005

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TOOLBOX TALK

No 17 PUMPING AND OVERPUMPING

WHAT?

Excavations often require prior dewatering of the ground and / or the pumping out of any rainwater or groundwater collected in them. Both processes require the disposal of water pumped out, which can find its way into a watercourse, or, if contaminated and with prior consent of the Statutory Sewerage Undertaker, it can be discharged to a sewer.

Sections of existing sewers and pipelines are sometimes taken out of service to allow repair or alterations and flows can be maintained by installing temporary pumps and 'overpumping' those sections.



WHY?

- ***Avoid harm to the environment:*** Water pumped from excavations can be muddy (silty) and, when the excavations are in previously developed or 'brownfield' land, it can be contaminated. The improper discharge of water polluted by mud or contaminants can cause serious damage to watercourses.
- ***Avoid harm to the environment:*** Overpumping is often required in maintaining the flows of foul sewage, which, if it is allowed to escape to find its way into a watercourse, can have a devastating effect on wildlife.
- ***Avoid prosecution:*** It is illegal to allow polluted water to enter a watercourse or surface drain
- ***Avoid flooding:*** If water is discharged into a sewer or gulley of insufficient capacity then flooding will occur, potentially causing pollutants to enter watercourses or creating nuisance to site operations.

DO

- ✓ Check with your line manager, prior to pumping, whether any treatment systems are required before final discharge of pumped out water. Typical systems include: settlement tanks or lagoons, discharge over grassed areas, through silt socks or hay bales.
- ✓ Check that the point of discharge is to the correct location, that is to the sewer, manhole or gulley as set out by your line manager.
- ✓ Check that all couplings and other pipework fittings are secure.
- ✓ Periodically check that any treatment systems are working and that water being finally discharged is clear of silt or solids that may give rise to pollution and is not causing damage to the bed or banks of any watercourse
- ✓ **NOTIFY** your line manager immediately if you notice:
  - pollution (muddy water, oils etc) occurring;
  - the discharge causing flooding; or
  - any pipework is damaged or connections have broken or are leaking.

DON'T

- ✗ DON'T leave pumping operations unattended for long periods unless authorised to do so by your line manager.
- ✗ DON'T continue with overpumping if the receiving sewer or pipeline cannot cope with the capacity.
- ✗ DON'T ignore signs that pollution is occurring, for example muddy water entering watercourses or gullies.
- ✗ DON'T tamper with pipework or discharge points without the authorisation of your line manager.

With thanks to members of the CC Environmental Forum

Issue 2 –July 2005

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TOOLBOX TALK

No 18 WASHING DOWN PLANT & MACHINERY

WHAT?

Washing down plant and machinery, hosing down concrete truck mixers or degreasing engines can all lead to serious pollution incidents if it is not properly carried out.

The resulting dirty water should not be allowed to enter surface water drains or road gullies, which generally discharge directly into local streams, rivers or soakaways.

Careful consideration must be given to where washing down is carried out.



WHY?

- ***Avoid environmental harm***: Dirty washing and rinsing water may contain dislodged mud, grease, oils, detergents, cleaning agents or toxic chemicals and materials that can kill fish and other aquatic life and which may also seriously affect the surrounding environment.
- ***Avoid prosecution***: It is an offence to allow polluting matter such as silt, cement, concrete, fuel, oils, cleaning chemicals and detergents to enter a watercourse or a drain.
- ***Cost***: The cost of cleaning up a pollution incident far exceeds the cost of putting proper control measures in place.

DO

- ✓ Ask your manager if there is a place specially designated for washing down plant and machinery
- ✓ Use only these designated wash down areas whenever they are provided
- ✓ Ensure that any wash down slurry or residue is contained and cannot enter drains or watercourses
- ✓ Check with your manager before using degreasing or cleansing solutions– don't just assume they can be used
- ✓ Report to your manager any washing down that may cause a pollution incident.

DON'T

- ✗ DON'T wash down before finding out the proper place in which to do it
- ✗ DON'T wash down directly into watercourses or surface water drains
- ✗ DON'T allow dirty wash down water to go down roadside gullies
- ✗ DON'T wash down near material or storage areas or immediately next to working areas
- ✗ DON'T use any more water than is necessary – reduce waste.

With thanks to members of the CC Environmental Forum

Issue 2 – July 2005

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TOOLBOX TALK

No 19 BATS

WHAT?

There are 16 species of bat in the UK and of these 6 are endangered or rare and 6 other species are classed as vulnerable.

Because so many bats are endangered, both UK and European legislation gives them complete protection. Since they tend to return to the same roosts each year, these sites are also protected whether the bats are present or not.

The most common UK bat is the Pipistrelle. It is only 40 mm long and weighs about 5 grams.



IDENTIFICATION

- Places where you might find bats include holes and cracks in trees, roofs and walls of houses and buildings, under bridges, underground in caves and old railway tunnels.
- Every building and mature tree is a potential bat roost.
- Look out for bat droppings – dark brown or black, about 4 to 8mm in length. They look like mouse droppings but crumble easily, as they are made up of insect fragments. In well-established roosts, droppings may be several centimetres deep.
- Other signs include a characteristic odour and large numbers of moth wings discarded by feeding bats.

WHY?

❑ ***Avoid prosecution:*** It is a criminal offence for anyone to

- intentionally kill, injure or handle a bat
- possess a bat (whether live or dead)
- disturb a roosting bat
- damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

Breaking the law can lead to fines of up to £2000 per bat and/or up to 6 months in prison.

DO

✓ If you think you have found a bat or a bat roost on site, IMMEDIATELY stop all works in the area and inform your line manager.



DON'T

✗ DON'T try to touch or handle a bat. They are very delicate and you are very likely to cause them serious harm – it is also breaking the law.

With thanks to members of the CC Environmental Forum *Issue 2 – July 2005*

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TOOLBOX TALK

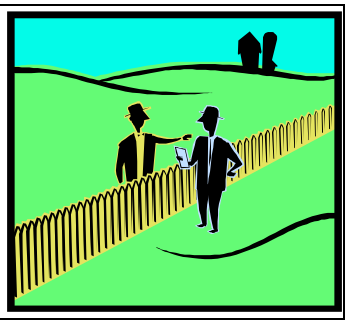
No 21 BE A GOOD NEIGHBOUR

WHAT?

Many in the local community will regard the start of construction work in their neighbourhood with great concern.

The public are often afraid that construction work will bring noise, dust, road closures, increased heavy road traffic and disruption to normal life.

Being a good neighbour means all those involved in a construction project acting with consideration for all those who live and work in the area surrounding the construction site to minimise their inconvenience.



WHY?

- ❑ ***Public image*** Being a good neighbour creates a positive image of the industry
- ❑ ***Avoid programme delays*** If neighbours complain to their Local Authorities about dust or noise nuisance caused, the Local Authority can impose conditions and restrictions on working, which can lead to delays.
- ❑ ***Avoid prosecution*** If any problems being caused by dust or noise are not satisfactorily resolved the Local Authority can prosecute those responsible.
- ❑ ***Reduce costs*** If good relations can be established with neighbours, many issues such as access to site, material deliveries and working hours can be improved through friendly negotiation.

DO

- ✓ Be polite and considerate to members of the public at all times
- ✓ Take accurate notice of any complaint made by a neighbour and pass it on to your line manager
- ✓ Only use approved routes to access the site
- ✓ Use only designated parking areas, if they are provided, otherwise always park vehicles with consideration for the needs of others
- ✓ Keep dust and noise to a minimum
- ✓ Always close any noise reducing engine covers while plant is in use
- ✓ Direct site lighting and task lighting away from neighbouring properties
- ✓ Tell your line manager if rubbish bins or skips are full or nearly full
- ✓ Notify your line manager immediately if you find any flytipped waste in the area

DON'T

- ✗ DON'T obstruct vehicle accesses or driveways to neighbouring properties
- ✗ DON'T obstruct public rights of way such as pavements, footpaths, bridleways
- ✗ DON'T drag mud onto the roads outside the site - make sure vehicle wheels are clean before leaving
- ✗ DON'T trespass on neighbour's land
- ✗ DON'T leave engines running unnecessarily
- ✗ DON'T shout on site or have noisy radios on



- ✗ DON'T shout or whistle at passers-by
- ✗ DON'T drop litter or leave sites untidy
- ✗ DON'T leave gates to the site open.

With thanks to members of the CC Environmental Forum *Issue 2 – July 2005*

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TOOLBOX TALK

No 22 GREAT CRESTED NEWTS

WHAT?

The Great Crested Newt (*Triturus cristatus*) is the largest and the rarest of the 3 species of newts found in the UK. There are now thought to be only 360,000 left and, despite conservation programmes, its numbers have been declining rapidly over the past thirty years due to loss of habitat.

Great Crested Newts and their habitats are protected by law.



Identification

- Grows to around 170mm (almost 7 inches) in length with a rough, granular skin
- Back and flanks are brownish black with darker spots.
- Vivid orange or yellow belly has an irregular pattern of black spots or blotches

Male

- Jagged crest on the back with a smoother edged crest above and below the tail.
- White, silver or grey stripe running from the tail tip, fading as it reaches the abdomen

Female:

- Does NOT have a crest
- Yellow-orange stripe running along the lower edge of the tail.

Suitable Habitat:

- Ponds and very slow moving watercourses.
- Woodland, scrub, hedgerows, rough grass land and derelict sites surrounding ponds and watercourses.

WHY?

❑ ***Avoid prosecution***: It is an offence to

- intentionally or recklessly kill, injure, capture, trade or even to disturb a Great Crested Newt.
- damage, destroy or obstruct habitats where Great Crested Newts live or breed.

Prosecution could lead to a fine of up to £5000 per newt affected and in some cases up to 6 months imprisonment.

DO

✓ Stop work in the immediate area and contact your manager for instruction if you think you have identified Great Crested Newts on your site

✓ Watch out when moving logs, stones or rubble or clearing the site near to ponds. These are favourite habitats for Great Crested Newts

DON'T

✗ DON'T try to touch or otherwise disturb any Great Crested Newt

With thanks to members of the CC Environmental Forum *Issue 1 – July 2005*

TOOLBOX TALK

No 23 WORKING ON PREVIOUSLY DEVELOPED LAND

WHAT?

Land which has previously been built on or used by industrial processes ("brownfield land") or which has in the past had imported material placed upon it ("made ground") may be contaminated with substances which are harmful to humans, wildlife and /or the surrounding environment.

Contaminants could be present in solid form such as asbestos or tar residues, in liquid form such as oils or solvents or even as a gas such as methane.

Since potentially contaminated material can sometimes be discovered where it is not expected it is always wise to remain observant during digging operations.

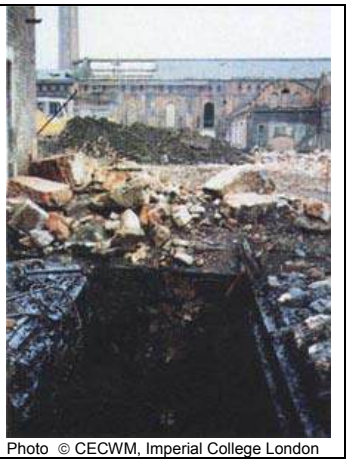


Photo © CECWM, Imperial College London

WHY?

- ❑ ***Health hazard:*** Exposure to certain contaminants may cause skin and/or respiratory irritation, cancer or birth defects. Wearing the correct Personal Protective Equipment (PPE) can prevent ill health.
- ❑ ***Avoid environmental harm:*** Working in contaminated soils without the proper precautions and controls may result in pollution and / or harm spreading into the surrounding land, adjacent watercourses or into the atmosphere.
- ❑ ***Avoid prosecution:*** Any pollution escaping from the site may lead to prosecution.
- ❑ ***Public relations:*** The bad publicity arising from pollution incidents damages the reputation of the company.

DO

- ✓ Always wear the correct protective clothing
- ✓ Wash your hands and all areas of exposed skin after working in made ground or brownfield land.
- ✓ Look out for changes to the types of material being worked in which may show up as
  - Differences in colour or texture
  - The presence of refuse (rubbish) or other foreign objects.
  - Differences in smell - common contaminants such as oils, landfill gases and degrading waste have distinctive odours

  If you see changes like these
  STOP WORK
  make the area safe and notify your Line Manager.
- ✓ Prevent the spread of contaminated dust – either cover the source or damp it down

DON'T

- ✗ DON'T take off PPE.
- ✗ DON'T smoke or eat whilst working in made ground.
- ✗ DON'T permit colleagues or other operatives to enter the contaminated land until your line manager instructs you to do so.



With thanks to members of the CC Environmental Forum *Issue 1 – July 2005*

TOOLBOX TALK

No 24 SEGREGATION OF WASTE

WHAT?

Segregating wastes into hazardous, non-hazardous and inert waste types for disposal can help minimise costs and maximise the opportunities for recovery and recycling of wastes. Look out on waste containers for these standard signs, which are being introduced across the UK to encourage and improve the segregation of waste.



WHY?

- ***Avoid prosecution:*** It is illegal to mix hazardous waste with other waste types which are to be sent directly to landfill. You could be fined up to £20,000 and imprisoned for up to 2 years.
- ***Avoid environmental harm****:* Incorrectly disposing of hazardous waste could cause water pollution and damage habitats. Landfills and waste treatment centres are specially designed to be able to handle specific wastes without causing environmental harm.
- ***Reduce Costs:*** Segregating wastes can minimise landfill tax and can also allow certain types of waste to be recycled and reused on site.

DO

- ✓ Look out for the standard signs shown here and whenever possible segregate wastes into the different types
- ✓ Use enclosed or covered skips
- ✓ Ask your line manager for advice if you are unsure about correct waste segregation on site

DON'T

- ✗ DON'T overfill skips
- ✗ DON'T mix different types of waste
- ✗ DON'T put liquids and flammable wastes into skips















With thanks to members of the CC Environmental Forum

Issue 1 – July 2005

TOOLBOX TALK

No 26 BREEDING BIRDS

WHAT?

The Bird Nesting season is from 1st March until 31st July

WHY?

Legal Protection

All wild birds(1) are protected under the Wildlife and Countryside Act 1981 (as amended), whilst they are actively nesting or roosting. Section 1 of this Act, makes it an offence to kill, injure or take any wild bird, and to intentionally(2) take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

In addition, bird species listed under Schedule 1 of the Act receive extra protection. The Act states that 'it is an offence to intentionally or recklessly(3)disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird'.



The maximum penalty for each offence in the Magistrates' Court is a £5000 fine and/or six months imprisonment and a £5000 fine and two years imprisonment in the Crown Court.

NOTES:

Vegetation or site clearance should be done outside of the nesting season (1st March – 31st July inclusive), although the nesting period may start before this and extend beyond it, in many cases (e.g. barn owls can breed at any month of the year in the UK). This is to avoid impact to nesting birds and infringement of the Wildlife and Countryside Act 1981.

- If clearance work has to be undertaken during the nesting season, a breeding bird survey needs to be carried out by a suitably qualified person. As a general rule, it should be assumed that birds will be nesting in trees, scrub, reeds or substantial ditch side vegetation during the core breeding period, unless a survey had shown this not to be the case. In addition, some species are ground nesting, such as the skylark and lapwing, both of which can occur on grassland areas and cleared sites where there is a time lapse between demolition and development.
- Any active nests identified should be protected until the young have fledged. Where a Schedule 1(3) species is involved, mitigation for impacts, e.g. loss of nesting site, should be devised and implemented.
- Particular attention should be paid to any site clearance/development work affecting buildings, as this is where swifts, swallows, house martins and barn owls preferentially choose to nest.

Definitions:

(1) A wild bird is defined as 'any bird which is resident in, or a visitor to Great Britain in a wild state'. (Game birds are not included in this definition. They are covered under the Games Acts, which fully protect them during the closed season)

(2) It will be an intentional act if, for example, a contractor continues to reduce or remove a hedgerow, tree or shrub, after he/she discovers, or is told that birds are nesting there. The discovery of a nest during the process of work will also prohibit further cutting work within an area or buffer zone around the nest.

(3) 'It will be a 'reckless' act if there is an obvious risk and a person recognised the risk and took it anyway, or did not consider whether there was a risk and as a result disturbance or destruction occurred'

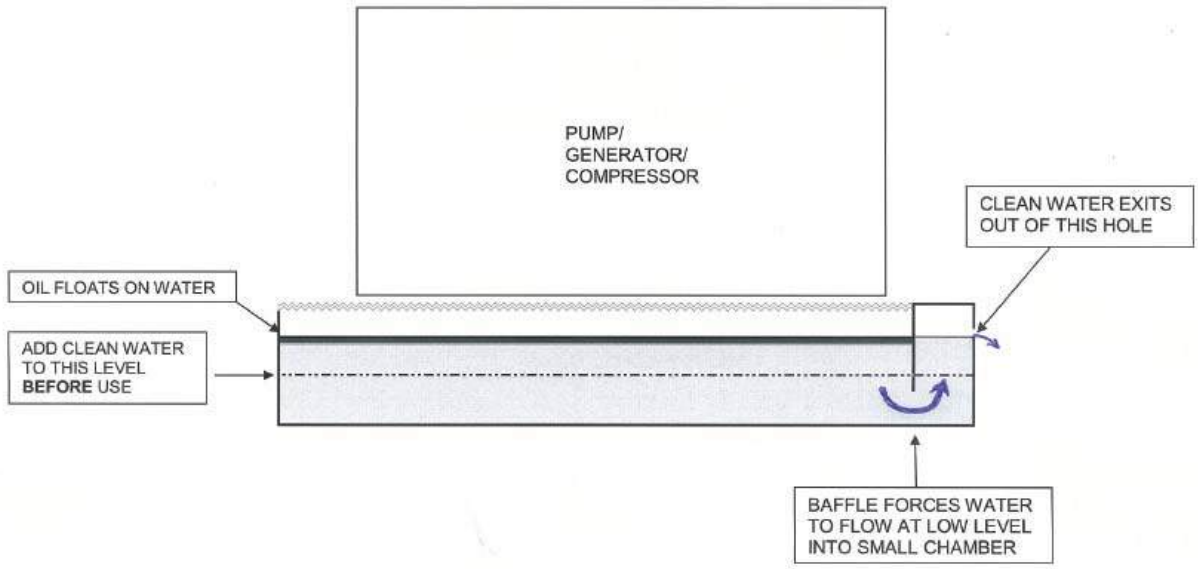
DO	DON'T	
✔ If you find evidence of Bird Nesting activity, stop work immediately and inform your line manager or the Site Manager	✘ Destroy or disturb and birds or nesting places, it is against the law.	

TOOLBOX TALK

28 Interceptor Drip Trays

Interceptor drip trays are used to prevent leaks of oil from pumps, generators and compressors from causing ground contamination. Unlike traditional drip trays, they don't fill up with water when it rains. However, it's important that they are set up and operated properly.

How do they work?



Interceptor drip trays work because oil floats on water.

- Any oil that leaks from the plant, drips through the slatted top of the drip tray and into the main chamber.
- There is an outlet from the small chamber at the end of the drip tray to allow water to escape.
- A baffle across the full width of the drip tray forces water to flow from the large chamber to the small chamber, through the gap at the bottom.
- Oil can't get into the small chamber because it's floating on top of the water in the large chamber.
- Any rain water dripping through the slatted top mixes with the water already in the drip tray. This forces water under the baffle and out through the outlet at the end.
- Interceptor drip trays collect oil. **Never** tip them up to get rid of the water inside. This would cause oil contamination of the ground which is a criminal offence.

? Why doesn't oil leak out of an interceptor drip tray?

Set up

- Visually check the drip tray for signs of damage. *If it leaks, it won't work*.
- Site the interceptor drip tray on level ground. *If the ground is sloping, oily water could overflow out the top, causing oil contamination of the ground.*

TOOLBOX TALK

- Fill the drip tray initially with clean water to just below overflowing. This shows you if the drip tray is level. Water should only escape from the outlet and not over the side. Allow the water to drain away to its working level.



? Why is it important to fill the drip tray with clean water?

Operation

- Check the drip tray the day after you set it up to make sure it's holding water.
- Check the drip tray at least weekly and after each refuelling event, to make sure oil is not seeping out of the outlet and that the water is at the correct level – below the outlet level means it needs topping up; above the outlet level means the outlet is blocked. *If either of these situations is allowed to continue, the ground will be contaminated with oil.*
- Check the drip tray immediately if there's been a large leak or spillage during refuelling.

? What must you do if you see oil seeping out of the outlet?

Moving the drip tray

- Visually check the drip tray for oil on the surface of the water. If there's just a sheen on the surface, use a small petrol pump to empty the clean water by pushing the suction hose through the slatted top, to the bottom of the tray. Pump the water out onto unmade ground, continuously checking that it is clean. Be careful not to pump any water contaminated with oil onto the ground.
- Once the clean water has been removed, pump out the oil contaminated residue into a container to hold it temporarily. Add oil absorbent pads to the surface and sweep them to soak up any oil.
- Move the empty drip tray to next location and set it up as before.
- Dispose of the contaminated pads as hazardous waste. Pour the clean water out of the container and allow to soak away on unmade ground.
- If there's a lot of oil in the drip tray because of eg: a spillage of fuel, pump the residual oily water into a container (e.g.: Intermediate Bulk Containers (IBCs) – labelled and bunded) and store on site until it can be removed by a licensed contractor as hazardous waste.

? Why must you remove the oil absorbent pads and surface oil before moving the drip tray?

QUESTIONS

1. **Where do we use interceptor drip trays on this site?**
2. **Have we set them up and maintained them in line with this talk?**
3. **How are we going to make sure we use these interceptors properly in future?**

Appendix D

Key Reference Documents

Key Reference Documents

Emergency Spill Response Plan

ALL SPILLS

1	STOP	Further Spillage (Only if safe to do so)
2	CONTAIN	Spill (If not possible go to stage 5)
3	NOTIFY	Your Supervisor of the Spill

	Site Emergency Contact Numbers:	1. TBC
		2. TBC

4	CLEAN UP	Spill (If not possible go to stage 5)

	SPILL KIT LOCATIONS	1. TBC	2.
		3.	4.
		5.	6.

MAJOR SPILLS

Major Spills are those which cannot be dealt with using equipment available on site, or Spills which have, or are likely to enter a Watercourse / Drain. ***Relay the nature of the spill (liquid or powder), approx. quantity / volume and substance if known.***

5	CONTACT	Supervisor to contact Spill Response Company

	Spill Response Company Name:	TBC	
	Contact Number:	TBC	

6	NOTIFY	The Following:

	In All Cases:	Client / Landowner/ Operations & Project Managers / SHEQ Manager
	Spills into Watercourses / Surface Water Drains/ Onto Land	National Resource Wales (NRW) - 0800 807060 Environment Agency (England) – 0800 807060 (Freephone 24 hour services)
	Spills into Sewer	Local Water Company / Water Authority

- COSHH warnings must be followed for hazardous chemicals
- **NO SMOKING, EATING** or **DRINKING** in the vicinity of a spill
- Contaminated spill kit materials must be collected up and correctly disposed of.
- Display this plan on all notice boards & ensure all site personnel are informed & inducted

Spill Plan Issue Date:	Spill Plan Revisions:			
Date Spill Plan Tested (Mandatory) Every 3 months				
Initials:				

SPILL RESPONSE COMPANY DETAILS: (Spill Removal, Waste Removal & Advice)				
REGION:	**NAME:**	**ADDRESS:**	**TEL:**	**e-mail:**
Wales & West	**GD Environmental Services Ltd (waste removal)**	**Nash Road Newport NP18 2BS**	**01633 277755**	
	GPT Environmental Management Services	**4 Village Court Village Farm Industrial Estate Pyle Bridgend CF33 6NBX**	**01656 741799**	sales@GPTenvironmental.co.uk
	Spill Response Wales Ltd	**Sustainable Technology Centre Maes y Fforch Babel Llandovery SA20 0AJ**	**01550 721301 07971 694809**	
Mainland UK	**RSK Raw Bridgend**	**Units 1-3, Block 6, Newlands Avenue Brackla Industrial Estate Bridgend CF31 *2DA***	**01792 359321**	Raw.enquiries@raw-group.com

Key Reference Documents

Site Waste Management Plan

This Site Waste Management Plan Template is to be used on all projects			
Project Title:	Gnoll Park	Location:	Neath
Plan Created By:	Luke Rees	Position:	Design Manager
Date Created:	August 2023	Revision:	00

1. Nature of Project:

The Gnoll Park project includes work across a wide range of locations set within the Gnoll Estate Country Park grounds.

The project encompasses the following:

- Demolition and reconstruction of a new 2-storey Visitors Centre, approximately 45m long x 25m wide. The building will be founded on a ground bearing slab and will be constructed from a steel frame at ground floor, and timber frame at first floor. It will be clad with a mixture of masonry, timber, and curtain walling.
- Restoration of Pond Cottage, to include the demolition of an existing masonry-built extension, which will be replaced by an approximately 8m x 5m extension to be clad in timber.
- Demolition of existing masonry potting sheds/stores and construction of new, built-in-place masonry accommodation units, alongside the installation of a range of architecturally designed, modular, timber, off-site manufactured holiday pods.
- Restoration and enhancement work to the Gnoll House Ruins.
- Additional car parking to the main public car park.
- Woodland clearance to make way for a new adventure play area.

In addition to the above, all areas will include landscaping, woodland management, access, sustainable drainage, temporary café facility, and associated infrastructure works.

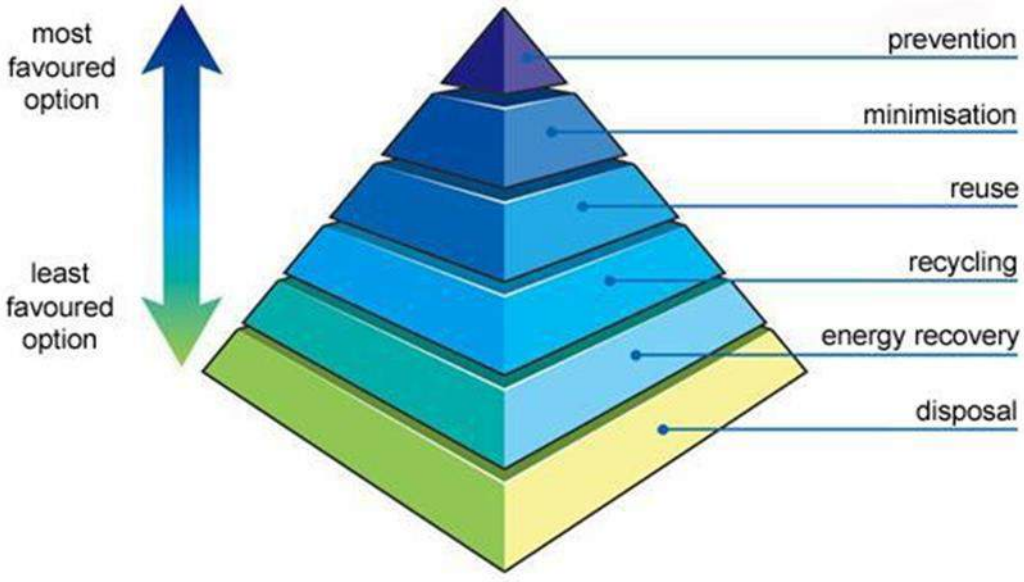
2. Management of Plan:

Project Manager	TBD
Site Foreman	TBD
SHEQ Manager	TBD

The Project Manager is the Coordinator of the Site Waste Management Plan (SWMP) for this contract and is responsible for ensuring implementing the plan and that all employees are aware of this plan. The Site Manager will ensure the effectiveness of the SWMP on site and will update the plan with waste movements, manage site waste transfer notes and copy the data to the Head Office Document Controller. The Technical Manager collates all the data received to monitor waste movements against waste reduction targets for the company and contract specific targets.

3. Distribution:

Position:	**Name:**	**Contact Details:**
Project Manager:	TBD	
Contract Manager:	TBD	
SHEQ Manager:	TBD	
Document Controller:	TBD	
Client:	NPT Council	TBC

4. Instruction, Training, and Implementation:	The Project Manager will carry out a site induction of all employees including method of handling, segregation, re-use, recycling, and disposal of waste. Induction will also include details of checking waste transfer notes, spill response plan and maintenance of records. Toolbox talks on waste management will be held at regular intervals on site to update and ensure all employees are aware of waste management issues and waste targets.
5. Waste Management on Site:	Surplus or Waste Materials arise from: • Materials delivered to site. ○ Those generally intended for inclusion into the permanent or temporary works. • Those generated on site. ○ Those which exist on the site such as topsoil, subsoil, trees, demolition arising's etc. Other considerations in relation to waste management on this site include: • Reduction of waste where possible (see waste hierarchy information in Section 6 of this document • Segregation of waste • Waste disposal • Monitoring and recoding of waste movements • Legal compliance • Informing the workforce This Site Waste Management Plan outlines how the above processes will be put in place in an effective and sustainable manner.
6. Waste Hierarchy	The Waste (England & Wales) Regulations requires companies to manage their waste following the sequence in the diagram below with prevention (designing out) the most favoured option with disposal to landfill the least favoured. 

7. Waste Transfer Notes	A waste transfer note is a legal document that must be signed by both parties between whom the waste is being transferred. It must include the following: • *A brief written description of the waste being transferred.* • *The correct EWC code for the waste.* • *An indication of how the waste is contained. E.g., is it loose, in a sack, skip or drum?* • ***A SIC 2007 code* (For most Andrew Scott Ltd sites use 42990)** • *A tick box to state that the waste hierarchy has been used.* • *Identify the amount of waste being passed on, for example the number of sacks or other containers, the volume of waste or its weight.* • *List your name and identify that you are the producer of the waste.* • *List the name of the person you are passing the waste to and their status, for example a registered waste carrier, including their registration number.* • *Give the address where you passed the waste to the other person as well as the date and time that you gave him the waste.* • *Be signed by both parties and be kept for at least two years.*

8. Typical Project Waste Streams

Waste Stream:	EWC (European Waste Classification)	Waste Origins:	Notes:
Not an extensive list – delete or add as required specific to each project			
Concrete	17 01 06		
Tarmac	17 03 01		
Brick/Block	17 01 06		
Timber	17 02 01		
Subsoils	17 05 04		
Subsoils	17 05 03		
Metals	17 04 07		
Asbestos	17 06 05		
Plasterboard	17 08 02		
Packaging	15 01 01		
Packaging	15 01 02		
Packaging	15 01 03		
Mixed	17 09 04		

9. Waste Minimisation	On this project we have, from a very early stage, looked at how we can minimise the waste produced, thereby reducing the amount of waste to be removed from the project. Trade Contractors, Design Team and Suppliers are all being encouraged to look at ways to minimize the amount of waste produced at the work face.		
Waste Reduction Action:	**Action Taken:**	**Responsibility**	**Notes:**
Waste Reduction Action	Reuse arisings from demolitions as hardcore / fill	Andrew Scott Ltd.	
Waste Reduction Action	Standard Room dimensions linked to plasterboard and other product dimensions	Andrew Scott Ltd.	
Waste Management and Recovery Action	Agree Takeback with Suppliers for any unused products	Andrew Scott Ltd.	
Waste Management and Recovery Action	Negotiate Reduced Wastage Rates with Subcontractors	Andrew Scott Ltd.	
Waste Management and Recovery Action	Utilise BREMap Facility to source companies looking for recycled materials	Andrew Scott Ltd.	
Waste Reduction Action	Reuse any overordered materials to prevent re-ordering.	Andrew Scott Ltd.	
All of the above act to reduce the amount of waste and surplus materials, which traditionally would be skipped and sent to landfill. We are continually identifying waste minimisation actions, and these will be updated in the above table.			
10. Segregation:	A specific area shall be laid out and labelled to facilitate the separation of materials for potential recycling, salvage, reuse and return. Recycling and waste bins are to be kept clean and clearly marked in order to avoid contamination of materials. We will look at adopting a Waste Colour Coding Scheme. If the skips are clearly identified the bulk of the workforce will deposit the correct materials into the correct skip. Skips for segregation of waste identified currently are: • Wood • Metal • Brick/rubble • Canteen waste A specific Waste Management Toolbox Talk will be held on this issue to ensure the workforce are aware of the waste management requirements on this project. As works progress and other trades come to site other skips will be placed to enable certain wastes to be removed from site. This is likely to include: • Plasterboard • Paper and cardboard (bagged up)		
11. Management:	Waste materials fall into three categories for management, these are: • Re-use • Recycle • Landfill		

Re-used
If surplus materials can be used in the permanent works they are classified as materials, which have been re-used. If they are surplus to requirements and need to be removed from site and they can be removed and used in their present form, they can be removed from site for reuse.

Recycling
If the surplus material cannot be re-used in its present form but could be used in a different form, it is sent for recycling such as 50x50 timber to make chipboard.

Landfill
If either of the above cannot be satisfied, then the only option left is to send the surplus materials to landfill.

On this project, **landfill is always a last resort.**

12. Waste Guidance:

Waste Types	**Waste Stream**
Enabling Works (including Demolition)	
Concrete	Re-use onsite
Tarmac	Re-use onsite/dry
Bricks/blocks	Re-use onsite
Timber	Recycle
Subsoils	Re-use onsite/recycle
Metals	Scrap Value
Asbestos (Hazardous)	No usage/Landfill
Plasterboard (**Must** be segregated from other waste)	Return/recycle/Landfill
Construction Works	
Plasterboard	Return/recycle
Bricks/blocks	Recycle
Timber	Recycle
Cardboard	Recycle
Mortar	No usage/dry to skip
Metals	Recycle
Paints (Hazardous)	Recycle
Soils	Re-use (cut & fill) /sell
Use spill kit materials (Hazardous)	Dispose through specialist Haz waste contractor

	The skips need to be monitored to ensure that contamination of segregated skips does not occur. Therefore, we will advise regularly on how the waste management system is working and point out that an uncontaminated skip for recycling costs typically £150 (e.g. wood), and £170 for general construction waste. However, should it get contaminated then it has to go direct to landfill at a cost of typically £230 per skip (e.g., plasterboard skip) or even more if it is Hazardous waste, and this price is continually increasing. **This would also warrant a breach in current environmental legislation and a failure of our systems in line with ISO 14001.** We will continually review the type of surplus materials being produced and where we can change the site set up to maximise on re-use or recycling and the use of landfill will be the last resort. The plan will be communicated to the whole project team (including the client) at the regularly. Business wide updates including the KPIs will be communicated and discussed at IMS and Management meetings. The plan will also be analysed by the SHEQ Manager to produce KPIs and will be responsible for transferring and advising any best practice and solutions throughout the company.

13. SWMP Implementation Checklist:	Checks – Please mark "x" Yes or No.	Yes	No
	Have terms and commercial rates been agreed with contractor(s)?		
	For offsite or disposal are all the waste destination details verified?		
	Has a waste segregation / collection area been prepared?		
	Has the waste area been adequately sign posted?		
	Has the SWMP document control / filing system been set up (site safety pack)?		
	Have all necessary staff and contractors had the SWMP transmitted?		
	Have all the SWMP training / induction procedures for staff been met?		
	Have all the SWMP training / induction procedures for contractor/s been met?		
	Has the SWMP been approved by the Project Manager?		

14. Signatures:				
	Project Manager:	TBD		
	SHEQ manager:	TBD		

WASTE MOVEMENTS – ACTUAL (utilise on waste transfer form ENV SITE REG 01 - WMP Waste Movement Record)

Waste Description:	Inert (I) Non-Hazardous (NH) Hazardous (H)	Re used on site	Re-used offsite	Recycled for use onsite	Sent to recycling facility	Sent to WML exempt site	Sent to landfill	WTN No:

Key Reference Documents

Environmental Code of Practice

Scope & Purpose

This Environmental Code of Practice has been created to develop, maintain and implement environmental control procedures for all Andrew Scott Limited (ASL) projects, the Plant Yard at Rutherglen and the Head Office at The Grange, in accordance with all relevant legal requirements, the contract specification and BS EN ISO 14001.

The Environmental Code of Practice forms part of each site specific Contract Management Plan (CMP), completed for every project conducted by ASL.

Index

1 INTRODUCTION
1.1 Scope
1.2 Environmental Policy
1.3 Environmental Aspects
1.4 Communication with Internal & External Interested Parties
2 PLANNING AND IMPLEMENTATION
2.1 The Environmental Management Code of Practice (ECoP)
2.2 List of Environmental Standards and Legislation
3 MANAGEMENT STRUCTURE
3.1 Roles and Responsibilities of Environmental Staff
3.1.1 ASL Managing Director
3.1.2 Operations Manager
3.1.3 Project Manager
3.1.4 SHE Manager
3.1.5 Site Manager
3.1.6 Environmental Representatives (ERs)
3.1.7 Environmental Specialists (ESs)
3.2 Site Environmental Forum Meeting
3.3 Implementation
4 CONTROL PROCEDURES AND REVIEW
4.1 Compliance with the Contract and Relevant Legislation
4.1.2 Specialist Environmental Procedures
4.1.3 Environmental Risk Assessment
4.1.3 Evaluation of Compliance
4.1.4 Monitoring Non-Conformance
4.1.5 Records and Reporting
4.1.6 ECoP Review
5 AUDITING
5.1 Internal Audit Schedule
6 TRAINING
6.1 General
6.2 Specific Training

APPENDIX A - LIST OF ENVIRONMENTAL LEGISLATION AND STANDARDS
APPENDIX B - LEGISLATION LINK FLOWCHART
APPENDIX C - WEEKLY ENVIRONMENTAL INSPECTION PROFORMA (example)

1.0 - Introduction

1.1 Scope

The Environmental Code of Practice (EcoP) forms the "core" document to the ASL Environmental Management System (EMS). The EcoP includes a set of specialist procedures, which identify the environmental impacts and detail environmental management requirements in order to mitigate impacts.

ASL has adopted an Integrated Management System (IMS) for Health, Safety, Quality and Environment. The EcoP is part of the IMS and is designed to ensure environmental issues are properly addressed and also to satisfy the requirements of a BS EN ISO 14001 Environmental Management System.

The aim of the EcoP is to provide an effective system for environmental management. The EcoP will ensure:

- That ASL's environmental policy is being implemented on site;
- That construction works are complying with environmental legislation;
- A framework is provided for monitoring environmental performance ,whilst establishing a mechanism for continuous improvement via the System Defect Report, recording and reporting procedure for identifying non-conformance;
- Any specific environmental requirements required by legislation and the contract are detailed; and that the construction teams are assisted in preparing method statements for specific construction activities where there is environmental impact.

The information contained in the EcoP applies to all personnel on all our projects. This includes the main contractors, sub-contractors, and any persons under direct or indirect control of ASL. The EcoP also defines roles and responsibilities of site staff with roles in environmental management. All site personnel shall be made aware of the EcoP during site inductions, its contents and their specific individual responsibilities, where appropriate.

The EcoP comprises a number of sections, including an introductory section describing the operation and implementation of the system and appendices, which include definitions of roles and responsibilities and, specific control procedures for specialist areas of environmental works. The specialist procedures in the appendices to the EcoP detail the minimum standards to be attained for all environmental aspects.

This ECoP is specific to ASL. The standard ECoP requirements for identifying policy, project, and reporting requirements are included in a more detailed format within this document and its appendices. These requirements are as follows:

Policy Requirement: Details ASL.'s policy on specific environmental issues.

Project Requirement: Details the specific objectives to be achieved by the individual project, who will be responsible on a site level, what paper work is required to demonstrate the objective has been achieved, and reference columns to point the user to appropriate guidance, or relevant legislation.

Reporting Requirement: Details which actions must be recorded and communicated to ASL SHEQ Department.

1.2 Environmental Policy

ASL has adopted a company integrated Policy Statement, which meets the requirements of ISO 14001 - clause 4.2, Environmental Policy. The policy will be displayed on all notice boards located at the project site offices, our Head Office, The Grange and the Plant Yard at Rutherglen. (*Where required by certain*

clients, a separate environmental policy compliant to ISO 14001 has been prepared and is available on the company IMS).

ASL recognises and respects the physical, economic, and social environments of all of the communities in which it operates. Environmental impacts will be assessed at every stage of the construction process in consultation with the client, designers, employees suppliers and subcontractors, to develop progressive improvements in environmental performance.

Compliance with legal requirements in any operational location will be regarded as a minimum standard, the objective of operational control being the minimisation, control and management of pollution risk.

ASL will produce an environmental risk register as part of the contract risk register, which will set out specific intentions and objectives in pursuit of progressive improvements in environmental performance and management. The register will be monitored, reviewed and updated on a continual basis.

1.3 Environmental Aspects

Aspect	**Control Procedure(s)**
Waste storage	Waste Management
Leakage/ spillage of fuel, oil, etc.	Pollution Incident Control
Silt run off	Surface Water Management
Release of concrete washout water	Surface Water Management
Aspect	**Control**
Works to watercourses	Surface Water Management
Earthworks, excavations, access construction	Noise and Vibration
Structures plant and equipment	Noise and Vibration
Earthworks, permanent drainage construction	Surface Water Management Noise and Vibration
Exhaust emissions from plant and equipment	Dust and Air Quality
Dust from access and haul roads and exposed areas	Dust and Air Quality
Leaching of contaminated land	Contaminated Land, Waste Management
Mud on vehicles leaving site	Traffic Works

1.4 Communication with Internal & External Interested Parties

Openly communicating our progress in reducing environmental impact to interested internal and external parties, and responding appropriately to reasonable requests for information. Initial point of contact via the relevant project manager and the Considerate Contractor Scheme. HQ enquiries via SHEQ Manager who reports back to Board of Directors.

In the event of a complaint being received from an interested party such as a member of the public, local resident, or regulating body via the switchboard or reception at 'The Grange,' a complaints register with instruction on its use and action required is available at reception for recording and acting on such complaints.

Aspect	Control Procedure(s)
Contract Management Plan Environmental Management Plan Site Waste Management Plan Environmental Risk Assessments	Describes core elements of the IMS. Outlines structure, broad responsibilities. Identifies objectives, targets and programme.
ECop	Describes the specific environmental requirements to be met on the contract.
Method Statements (including environmental procedures)	Identify the activities to be carried out and the responsibilities for carrying out those actions. Based on Risk Assessment.
Work Instructions (SWI's)	Describes how to carryout particular activities on site and details of mitigation required.
Weekly Inspections. Record of Briefing Book (RBB)	Site surveillance to ensure compliance with controls put in place.
Record Documents	Reports, monitoring results, minutes RBB etc.

2.0 - Planning and Implementation

2.1 The Environmental Management Code of Practice (EcoP)

The principal requirement of the EcoP is that it provides a management system to cover all environmental aspects, which are to be supported by Specialist Environmental Procedures and control measures for use in the preparation of method statements for site specific activities.

This EcoP incorporates ISO 14001 procedures and describes project specific arrangements, which in turn form an integral part of the site Contract Management Plan.

2.2 List of Environmental Standards and Legislation

A list of the legislative, regulatory requirements and other codes applicable to the environmental aspects of the activities and operations during construction of the contracts is included as Appendix A. This appendix will be under continuous review. Changes and amendments to legislation will be tracked with the aid of Technical Indexes to which the company subscribes. A flowchart is provided at Appendix B to provide links to the legislation list, identified aspects and control measures for environmental protection.

3.0 – Management Structure

3.1 Roles and Responsibilities of Environmental Staff

The roles and responsibilities of environmental staff working on ASL projects are detailed in the following sections. Certain site staff will be allocated specific roles in relation to environmental issues. The project manager will be responsible for all environmental issues and will report to the SHEQ Manager and the Operations Director.
When necessary an environmental representative will be identified within each construction team, reporting to the project manager.

Environmental specialists (generally external consultants) will be brought in to assist with specialist issues as required by the project manager. ASL's environmental team structure is shown at appendix A2 of specific Contract Management Plans.

In addition, environmental representatives may be appointed by subcontractors. Their roles and responsibilities are further defined in the following sections.

In addition to the roles defined in the EMS, work supervisors and engineers will ensure best practice initiatives are employed through tool-box. talks communicated to the workforce.

3.1.1 Managing Director The Managing Director will sign the Policy Statement to ensure that environmental aspects are managed in compliance with the relevant legislation, client requirements and in accordance. with the, Contract Management Plan.

3.1.2 Contract Directors The Contracts Directors will ensure that the construction teams comply with the requirements of the SHE procedures and ECoP.

3.1.3 Project Manager The Project Manager is ultimately responsible for the effective resourcing of staff to ensure the environmental requirements identified in the ECoP, are undertaken and for ensuring that construction activities comply with the requirements of the ECoP.

The project manager will obtain the authority to sign off Section 61 Applications (under the Control of Pollution Act 1989) on behalf of ASL for issue to the Environmental Health Departments of the local councils.

3.1.4 SHE Manager & Officers The Safety, Health, Environmental Manager is responsible for co-ordinating the programme of environmental audits with the Project manager, training of management and engineering staff in respect of the SHE system and for review of the ECoP and specialist environmental procedures. The SHE officers have the responsibility of implementing and ensuring that all environmental legislation is upheld through site activities by way of audits and inspections. Any environmental events are to be investigated fully. All reports are to be issued to department head.

3.1.5 Site Manager The site manager is responsible for all environmental activities on the project and will report to the project manager. The site manager will be part of the project senior management team and will be responsible for the following:

- overall management of the environmental component of the project.
- manage day to day activities to ensure significant environmental effects are avoided.
- to act as the main point of contact between the regulatory authorities (Natural resources Wales, Environment Agency, English Nature, Local Authorities) and other third party consultees for the project on environmental issues.
- liaison with the appropriate parties for Land Drainage Consents (Land Drainage Act 1991) and Discharge Consents (Water Resources Act, 1991); identify environmental training needs for site personnel; liaison with head office Training Department to ensure training is sourced and carried out.
- co-ordination of the preparation of consents required, by current legislation (including discharge consents, abstraction licences, exemptions to waste management licensing, prescribed processes and other environmental consents required for the construction works to be undertaken in accordance with current legislation);
- interface with the designer's environmental team.

- assisting with the development of emergency and safety procedures and training of staff in the use and disposal of spillage control equipment.
- preparation and submission of Section 61 Consents (when required) in conjunction with the construction teams.
- review of the Environmental Risk Registers; overseeing the monitoring programmes, including noise, dust and water quality,.
- collate environmental reports from the construction teams on a weekly basis and environmental incident and non-compliance monitoring and reporting.

3.1.6 Environmental Representatives Environmental Representatives (ERs) will be appointed within each construction team when the environmental impact of the project dictates such. The ERs will undertake weekly environmental inspections within their geographical areas and will complete weekly environmental inspection proforma (example included as Appendix C).

The ERs will manage environmental issues within the construction teams and will be responsible for adding environmental input to method statements and ensuring that where required, mitigating measures are included in method statements, and that these are communicated to site staff via MS/RA briefings or COPs prepared for each construction activity.

The ERs will attend the weekly environmental forum (when/if implemented at any particular site) held by the Project manager.

3.1.7 Environmental Specialists (ESs) Environmental Specialist will be called in to assist site teams where special environmental conditions e.g. ecological and archaeological apply on any given contract

3.2 Site Environmental Forum Meeting
Environmental issues will form part of the agenda of the normal weekly site progress meeting. However, depending on the magnitude of the environmental impact, additional environmental forum meetings will be arranged on site by the site environmental manager.

3.3 Implementation of ECop
It is the responsibility of the project management team, led by the project manager and assisted by the SHE manager to implement and monitor compliance with the ECoP.

4.0 – Control Procedures & Review

Compliance and Relevant Legislation

The SHE procedures sets out how it will ensure compliance with the various legal obligations, relating to our projects.

The procedure for the preparation of method statements (ref. FM-SITE-001) requires that each activity is assessed for compliance with health and safety, quality and environmental issues.

The method statement procedure also includes provision of a Construction Operation Plan (COP), if required, which shall contain information relevant to the construction activity with regard to environmental awareness and potential environmental impacts.

Evaluation of compliance will be carried out by the use of periodic audits at The Grange, the Plant Yard, and current project sites. These audits will be recorded. All actions from the audit will be given a priority category, with actions for the relevant manager to closeout. Audit findings will be included within the agenda of the management review meetings and feedback provided to relevant site and HQ progress meetings.

4.1.5 Monitoring Non-Conformance

Non-conformance with the procedures required by the ECoP will be recorded on a System Defect Proforma, an example of which is included in the, Pollution Incident Control Procedure.

The procedure for the completion of system defects is referenced within the QA procedure PR-IMS-005 Control of Non-conformance.

Records of environmental non-conformance will be maintained by the project manager, subject to a monthly review to identify any frequently recurring non-conformances and measures will be implemented to ensure that non-compliance does not occur.

This continual process forms the basis of ASL.'s continuous improvement process by identifying non-conformance and implementing measures to prevent recurrence.

Records and Reporting: Reporting on environmental issues will be undertaken on a weekly basis by the ERs where appointed, and these will be forwarded to the project manager to fit in with the project reporting requirement. These will highlight issues that need resolving and include details of weekly environmental inspections, the number of environmental incidents, details of environmental site meetings, waste and energy management, auditing and training.

ECoP Review The ECoP including the procedures, will be subject to regular review by the SHE manager.

5.0 – Auditing

Internal Audit Schedule

5.1 Twice yearly internal audit of the environmental management systems and procedures will be carried out to ensure that the procedures in the ECoP are being implemented, and also to confirm compliance with the project requirements. These audits will take place just prior to the scheduled management review meeting following the same format as that used within our QA 9001 procedure. On site audit/inspections will be conducted following the format within the ASL Health, Safety and Environmental Hazard Identification Report. These audits will be carried out monthly to check conformity with site specific controls identified within the Contract Management Plan.

All audit report findings will be discussed at the management review meetings and scheduled site progress/environmental. forum meetings.

6.0 – Training

General ASL views the raising of environmental awareness as a crucial element in the appreciation and implementation of the aspects of the integrated management system. As a consequence, all site management teams will undergo environmental training at a number of levels:

- environmental awareness training for all site staff/operatives at site induction;
- the importance of minimising noise (nuisance) to neighbours;
- the avoidance of litter and housekeeping;
- toolbox talks on sensitive works operations or works in environmentally sensitive areas; and
- environmental briefings for all works activities, via the COPs, when incorporated into method statements for the works.

Specific Training. The construction teams will develop specific training programmes and during the review of these programmes, consideration will be given to core and objective training requirements.

Further environmental awareness training will be given to engineering staff and will address the following areas of the contract:

- specific training for management staff on the SHE procedures;
- pollution incident control;
- surface water protection;
- ecological awareness;
- minimising effects of works on agricultural land, and landscape areas;
- contaminated land and waste management issues;
- dust prevention, noise and vibration minimisation; and
- archaeological awareness.

A record of all staff training will be maintained by the training department.

Appendix 'A'

This List records the legislative and regulatory requirements and other codes applicable to the environmental aspects of the activities and operations that may apply to any given project. List 'A' will always apply. List 'B' will nearly always apply. List 'C' may possibly apply at some sites.

LIST 'A'

1. The Groundwater Regulations (1998)
2. Control of Pollution Act 1974
3. Controlled Waste Regulations 1992
4. Waste Management Licensing Regulations 1994
5. Control of Substances Hazardous to Health (COSSH) Regulations 2002
6. Control of Pollution (Special Waste) Regulations 1980
7. Special Waste Regulations 1996
8. The Hazardous Waste (England and Wales) Regulations 2005
9. Environmental Protection Act 1990
10. Water Resources Act 1991 (Protection of Controlled waters)
11. Water Industry Act 1991 (Discharge to Sewers)
12. Environmental Protection (Duty of Care) Regulations (Waste Management)
13. Environment Act 1995
14. The Land Drainage Act 1991
15. Clean Air Act 1993
16. BS 5228 Noise Control on open and Construction Sites Parts 1 and 2: 1984 and Part 4: 1992

LIST 'B'

1. SI 1968 Construction Plant and Equipment (Harmonising of Noise Emission Standards)
2. SI 361, 1988 Construction Plant Equipment (Harmonisation of Noise Emission Standards) Regulations
3. SI 1127, 1989 Construction Plant and Equipment (Harmonising of Noise Emission Standards) (Amendment) Regulations
4. SI 3073, 1992 Machinery (S~) Regulations (EC Directive 891392/EEC) and subsequent amendments
5. BS 5969 Specification for sound level meters
6. BS 7189 Specification for sound calibrators
7. BS 7580 Specification for the verification of sound level meters
8. BS 6472 Evaluation of Human Exposure to Vibration in Buildings (1 Hz to 80 Hz). 1992
9. BS 6481 Measurement and Evaluation of Human Exposure to Whole Body Mechanical Vibration and Repeated Shock: 1987
10. BS 7385 Evaluation and Measurement for Vibration in Buildings: Part 2 Guide to Damage Levels from Ground-borne Vibration: 1993
11. Town and Country Planning General Development (Amendment) No. 3 Order1993
12. Transport Act 1968
13. Highways Act 1980
14. Road Traffic Regulations Act 1984
15. Road Traffic Act 1988
16. New Roads and Street Act 1991
17. Wildfire and Countryside act 1981
18. BS 5837 Guide for trees in relation to Construction 1991
19. Conservation Regulations (natural Habitats) Regulations 1994
20. PPO 23 Planning and Pollution Control (DoE 1994)
21. HSE Protection of workers and the general Public during the development of contaminated land. HS(G)66, HSE, 1992
22. BS 603 1: Code of Practice for Earthwork

LIST 'C'

1. DoE Circular 1192 Planning Control Over Sites of Special Scientific Interest
2. Protection of Badgers Act 1992
3. Planning Policy Guidance Note 9, Nature Conservation
4. The Conservation (Natural Habitats, etc) Regulations & 1994, S1 1994 NO 2716 (HMSO 1994)
5. DoE: Planning Policy Guidance on Nature Conservation: PPG 0: ~SO 1994)
6. Guidance on Good Practice for the reclamation of Mineral Workings to Agriculture
7. ICE Site Investigation Steering Group: Site. Investigation in Construction Sites, 1993, Volume 4, Guidelines on the Safe Investigation by drilling of landfills and contaminated land
8. Archaeological Investigation, Code of Construction Practice for mineral operators. CBI (Confederation of British Industry) 1991
9. Institute of Field Archaeologists Code of Practice
10. Planning (Listed Buildings and Conservation areas) Act 1990
11. Burials Act 1857

Appendix 'B'
FLOWCHART

Legislation ⇩	A list of Legislation is provided at Appendix 'A' of this ACoP. The list is split into 3 sections. List 1 will probably apply to All or projects. List 2 are likely to apply while list 3 may only occasionally or rarely apply. This list provides the legal requirements
Environmental Aspects ⇩	These are the elements of our organisations Activities that may interact with the environment. We must identify all our aspects at our Head Office 'The Grange' and those that interact with the environment at our Plant Yard, Rutherglen. Project environmental aspects may differ from project to project and must be identified at pre-construction phase from information supplied within the tender documentation. By use of Appendix B2 of the Contract Management Plan. Aspects must then be categorised as low, medium or high following a risk assessment.
Risk Assessment ⇩	For each environmental aspect, a site-specific risk assessment must then be carried out for all impacts that have an influence on the environment. Form FM-SITE-003 within our risk assessment procedure PR-SITE-001 must be used for this purpose. Environmental risk will be identified by an 'E' while safety risk will be identified by an 'S'. The risk rating will be established by the severity x frequency. Control measures must then be clearly defined and implemented.
Control Measures ⇩	We have specific procedures for the control and protection where our activities have an interface with land air and water. Control measures must be implemented, maintained, inspected and reviewed by the management team responsible for a specific area of work activity or environmental interface.

Key Reference Documents

Surface and Groundwater Protection Procedure

Scope

This document describes the procedures and plans to be implemented with regards to surface water and groundwater on, and surrounding Andrew Scott Ltd (ASL) construction sites and other facilities.

This document provides details of the procedures to be adhered to ensure that Best Practicable Means (BPM) are employed on site during the construction phase, to protect surface water and groundwater from direct pollution impact and impact of changes in flow, water quality and water levels. The procedure for dealing with and the reporting pollution incidents are described in the pollution incident control plan PR-ENV-03.

Best Practical Means are as defined under Section 79 of the Environmental Protection Act 1990.

Relevant Contractual and Legal References

A list of legal references, legislation, and guidance is included in Appendix A of the ASL Environmental Code of Practice (ECoP) - PR-ENV-01.

Background

The extent of pollution of surface and ground water caused by building, construction, and civil engineering works will vary for each given project or location. This procedure gives guidance in regards to the possible water pollution on site. The starting point for each specific project or contract, will be the completion of Environmental Hazard Identification Chart within the Environmental Plan (incorporated into the Construction Management plan, controlled form **FM-SITE-001**. Tender stage information followed by a pre-construction site visit should identify issues which may give rise to surface and ground water pollution.

All watercourses (including ditches, land drains, etc.) within and adjacent to any of our works area are potentially sensitive areas. The construction team will identify particular sensitive watercourses and water bodies. These areas will be subject to frequent inspections and, where watercourses are present, the proforma in Appendix A. will be used to monitor any impact on water quality. The list of identified sensitive sites will be reviewed by the project manager with input from the company environmental adviser and amended in the light of any information provided by the Natural resources Wales/environment agency, regarding water quality, fisheries or watercourses.

The control measures to ensure that groundwater is not compromised during construction works are included in Appendices 2 to 6 of this procedure. They will be implemented by the project/site manager to ensure that BPM are employed during construction works.

Planning and Implementation

Discharge Consent

The requirement for discharge consents required under the Water Resources Act (and the Water Resources Act for discharges to foul sewer), will be discussed by the construction teams and the company environmental adviser at the pre-construction stage of the contract and reviewed at monthly progress meetings.

This review will include run-off and foul drainage from temporary site office/compound areas, and long-term dewatering operations required during construction works.

Highway drainage is exempt from consent under the Water Resources Act.

Land Drainage Consent

Land Drainage Consents are required under the Land Drainage Act (1991*)* for any temporary or permanent work that is likely to affect the flow, purity, or quality in any watercourse or other surface waters or groundwater. Land drainage consents will be acquired by the Project manager. The construction teams will be responsible for notifying their requirement for any temporary works that may affect watercourses.

There is an approval process for all applications to the Natural resources Wales/Environment Agency. Any requirements for works affecting watercourses must therefore be identified at the start of each project, and thereafter ASAP when new work areas are identified. The project manager will maintain a schedule of notifications to NRW/EA, of the commencement and completion of works on site, as required by the land drainage consents.

Water Abstraction

Approval from Natural Resources Wales / Environment Agency, must be sort before any abstractions of water from surface and groundwater sources, however, it is unlikely that consents would be given.

In certain circumstances groundwater removed from temporary excavations may be used for the purpose of construction as dust suppressant water. This will be subject to review by the construction team and approval from the company environmental adviser, prior to any use of water from excavations.

Land Drainage

Land drainage consents may be required for new land drainage installed as part of permanent construction works. This may include; agricultural land drainage; highway drainage; pre-earthworks drainage; and other drainage installed during the construction works.

The project manager (if consents have not already been obtained by the design team) will be responsible for obtaining consents that are required for land drainage once the construction team have identified their requirements.

Activities to be Addressed & Control Procedures

Control measurers

Appendices 2 to 6 of this procedure detail the control measures to be adopted in the preparation of method statements (ref. ASL/SHE/01) for works which may have an impact on ground or surface waters. These are as follows:

- Control of pollution.
- Control of suspended solids release.
- Plant maintenance, fuel handling etc.

General measures, which are to be adopted site-wide for the control of pollution are included in Appendix 4. This includes for the provision of adequate storage for rain water or surface water run-off, to ensure that the suspended solid content settles out prior to the release of the water into a watercourse or water body.

Discharge of Temporary Surface Water Run Off

The release of suspended solids to watercourses will be controlled by measures laid down in Appendix 4.

- The construction teams will agree all temporary discharge of water with the company environmental adviser.
- There will be no discharge of water into watercourses without prior consents being in place.
- The construction teams must continuously monitor all discharge to watercourses.
- The accidental release of suspended solids into a watercourse is classed as pollution and must be recorded using a system defect report, as defined in the Pollution Incident Control Procedure, ref: PR-ENV-03

Watercourse Diversions

Temporary and permanent watercourse diversions require consent from the Natural Resources Wales or Environmental Agency.
The project manager will liaise with the NRW's/EA's Environmental Protection Officer in advance of any watercourse diversion works.

Plant Maintenance

Plant maintenance, fuel handling, fuel deliveries etc., are identified as potentially polluting activities. Control measures for fuel handling is given in Appendix 5.
Main subcontractors will be required to adhere to ASL procedure's or produce their own procedures for fuel handling, delivery and repair of broken-down equipment on site.

Concrete Wash-out Areas

Due to the Environmental Agency's implementation of the Groundwater England & Wales Regulations (2009) temporary concrete washout areas must be provided on site to prevent the uncontrolled release of chromium (present in significant concentrations in concrete). Signage and instruction must also be in place to inform delivery drivers of these requirements.
The concrete washout area will be emptied before they reach 75% full. Emptying will be either by pouring concrete wash and allowing the liquid to set hard and provide an additional washout pit, or by pumping out liquid for disposal off site. **This liquid cannot be used for dust suppression.**

Monitoring, Auditing and Reporting

Surveillance will be undertaken via monthly environmental audits, performed by ASL H&S department, and by weekly E, H&S inspections undertaken by site supervision / management.

Full auditing will be undertaken as per requirements of ASL annual audit programme.

The ERs will be responsible for maintaining records of all pollution incidents within their construction teams. Reporting of major and minor incidents will be undertaken on the appropriate form, as described above.

Major environmental incidents will be recorded on "Environmental Incident Notification Report" and by using the system incident reporting procedure (see next paragraph). These forms will be copied to the safety department at The Grange, and a copy filed at the site, as environmental incidents.

The project manager will be immediately notified verbally, of a major incident occurring and an incident report form will be completed and copied to the project manager as soon as is practicable but no longer than 24 hours following the incident.

All minor environmental incidents must be reported to the project manager using the accident / incident report **SITE-REG-29**, or Safety observation card **FM-SITE-405**. The completed forms will be copied to the site manager within 48 hours of the incident.

The project manager will maintain a record of all major incidents. These will be reviewed monthly to continually improve on the environmental management systems in operation on site.

Training requirements

Training will be provided in accordance with the EcoP.

Specific training for Pollution Incident Control Teams will be provided prior to the commencement of major construction works on site. This will include:

- familiarisation with the Pollution Incident Control Plan;
- procedures to be followed in the event of a spillage;
- specialist training on the use of spillage control materials will be provided for the pollution incident control team(s) by the equipment manufacturers;
- training on the disposal of spent spill-kit products, in accordance with the waste management plan; and
- procedures for the notification of pollution incidents ;

The project manager and ERs will be responsible for all training activities in respect of this plan.

Appendix 1 – Relevant Legislation

Further information on surface and ground water pollution Issues can be obtained from the following:

- Collection & Disposal of Waste Regulations 1988 (amended 1989)
- The Waste (England & Wales) Regulations 2011
- Controlled Waste (England & Wales) Regulations 2012
- Site Waste Management Plans Regulations 2008
- Hazardous Waste (England and Wales) (amendment) Regulations 2009
- The Environmental protection Act 1990
- Environment Act 2021

Appendix 2 - Daily watercourse inspection sheet

SCOTT	DAILY WATERCOURSE INSPECTION SHEET	FM-ENV-03
		Rev 2 March 2016
		Page 1 of 1

PROJECT:	WATERCOURSE REF:

DAY/DATE/TIME	COMMENTS
MONDAY	Initial:.....
TUESDAY	Initial:.....
WEDNESDAY	Initial:.....
THURSDAY	Initial:.....
FRIDAY	Initial:.....

Comments to include:	Primary Activity: Protective measures provided: Further Protective measures required: e.g. bunding. Settlement lagoon. Stone/straw filter, Oil boom.

Note: No parking, refuelling activities or maintenance of any plant to be conducted within 10 metres of any watercourse.

Form to be completed wherever a risk to pollution to a local watercourse has been identified (e.g. proximity of works, during excessive weather conditions, project requirement, etc)

Appendix 3 – Daily settlement tank monitoring sheet

SCOTT	DAILY SETTLEMENT TANK MONITORING SHEET	FM-ENV-04
		Rev 2 March 2016
		Page 1 of 1

PROJECT:	LOCATION:

DAY/DATE/TIME	COMMENTS
MONDAY	Initial:.....
TUESDAY	Initial:.....
WEDNESDAY	Initial:.....
THURSDAY	Initial:.....
FRIDAY	Initial:.....

Comments to include:	*(Examples below – delete as necessary)* *Quality of discharge* *Any oil present in trap* *Quantity of solids in tank* *Planned removal of solids (tanker etc)* *Any absorbent mats or booms used* *Any evidence of leakage or pollution risk?*

Note: Form to be completed wherever a settlement tank solution is has been installed on a project

Appendix 4 – CONTROL MEASURES FOR POLLUTION PREVENTION

Control Measures for Pollution Prevention

The following sections are included for guidance and use in the preparation of task specific method statements (for temporary and permanent works) where there is a potential impact of any kind on a surface water body or watercourse.

Compound Areas

Hard standing areas will be used for all plant maintenance and washing off. Waste water from these areas will pass through an oil interceptor and settling tank system, the arrangement of which will depend upon the likelihood of silt or oils arising from within a particular compound area. These areas will be sited so as to be remote from any drain or watercourse.

Disposal of effluent from offices, canteens, vehicle washing areas containing detergent etc., will be disposed of via either a foul sewer where a connection is readily available or via disposal to a cess pit for emptying by an appropriate subcontractor.

Sampling and/or inspections will be undertaken to monitor water quality when appropriate.

Site Wide Activities

The layout of the site and facilities will be designed to minimise the risk of pollution reaching the groundwater or watercourses. Any potentially polluting activities will be at least 10 m from any watercourse. Potentially polluting substances, where stored on site, must he kept to the minimum level required to complete the work in progress. On site storage of chemicals, fuels, etc., will be checked regularly and any container found to be leaking will be, removed to a suitable handling facility. Bunding capable of containing 110% of the maximum stored potentially polluting liquid will be constructed around storage areas.

The area of influence of dewatering activities and longer-term effects on groundwater flow and quality will be kept to a minimum.

Fording, or any work in watercourses will not be allowed without a land drainage consent and consultation with the company environmental adviser.

Only essential activities will be carried out in relation to the construction of culverts, bridges and associated works. Any work in or around watercourses will be carried out in a manner that reduces the impact of the work on the watercourse. Special attention will be paid to the environments that depend on water to survive, including marshes, ditches, streams and fisheries. Culverts will be constructed without water flowing through them. They will then be brought into use before the closure of the existing culvert. Either submersible electric pumps or sealed pump units with integral spill tanks will be used for moving water; where appropriate.

Where practicable, operations will take place so that they do not limit, reduce or restrict flow at the highest flow periods (September to March). Care will be taken to reduce the erosion of the channels, their banks or margins and changes in sedimentation levels.

Appendix 5 – Control Measures for Minimising Suspended Solids Release

Control Measures for Minimising Suspended Solids Release

Suspended solids are the non-soluble materials carried by water. There are naturally occurring suspended solids in all water bodies. The natural range is from 1mg/l to 500mg/l with an average of around 40 mg/l increases in the suspended solid levels can result in ecological damage. This can occur by the suspended solids settling out of the water as the speed of the flow changes and smothering the bottom of a water course, causing changes in both physical and chemical characteristics. In severe cases, the suspended solids can directly affect animals by clogging their gills or feeding apparatus and by reducing the available light for primary production.

Care will be taken when working in areas close to a floodplain, or watercourse to ensure that the flow of floodwater will not be impeded. The operation of field and land drains will not be impeded. Where flood defenses have to be altered or have been damaged, they will be made good as soon as it is feasible.

A land drainage consent will be required for any works affecting flow in watercourses.

Temporary water storage lagoons or balancing ponds may need to be constructed when large amounts of water control such as pumping operations etc. These may be used as sources of water for dust control, with the prior consultation of the company environmental adviser.

The construction and the location of any potential lagoons will be agreed in advance with Natural resources Wales/ Environment Agency and the siting of the lagoons will take into account nearby sensitive receptors.

The work on site will be performed in such a way as to minimise the effect on the flow of the watercourse at high flows. Any rubbish or materials that are likely to float will be stored in areas that are unlikely to flood.

At the end of each working day, all earthworks sites will be made "safe' from heavy rainfall by the construction of surface water control features, such as bunds, grips and, settlement traps, situated to reduce the potential for surface water run-off.

Reducing Sediment in Run-off

- Areas of broken ground will be kept to a practical minimum to reduce the amount of suspended solids washed out of the site.
- Large-scale ground clearance work will be avoided during the wettest periods in the year (when possible) to reduce the suspended solids in the site drainage.
- Drainage systems will be installed at the boundaries of the site and within the site to reduce surface run-off from outside the site from flowing across exposed soil materials.
- Drainage ditches will be constructed with a gentle slope (1 in 100) where possible, to reduce scour and suspended solids loading. Drains will outflow into vegetated areas or sediment control systems.

Appendix 6 – Plant Maintenance, Refuelling and Chemical Storage etc.

Fuel Handling and Chemical Storage Procedures (refer also to Plant Maintenance and Refueling Procedure)

Refueling is a potentially polluting activity. It must be carried out as far away as possible from any watercourse or drain. Best Practicable Means for both fixed pump sites and mobile refueling will be adopted. This includes.

- the positioning of sites for refueling away from sensitive receptors and areas;
- static plant and equipment will be provided with drip trays, (or other suitable means for oil spillage control) and will be emptied regularly in accordance with the Waste Management Procedure;
- all mobile plant and equipment will be returned to compounds or designated storage areas at the end of each working day and at weekends;
- no plant or equipment will be located within 10 m of watercourses without additional, protective measures and subject to the agreement of the company environmental adviser;
- the construction of containment bunds (capable of containing 110% maximum stored liquid) for all potentially polluting liquids;
- a regular inspection routine, with maintenance and repair as appropriate;
- dispensing nozzles with automatic shut-off and lockable flow controls which lock when not in use;
- provision of spillage kits, locks and other suitable security devices;
- refueling areas will be paved with an impervious surface and drained. Drainage from the areas will pass through an oil interceptor and settling tank system prior to discharge (the location of which will be dependent on the likelihood of silt and oil pollutants arising from the storage area); and
- fuel bowsers and stores will be as far as possible vandal-proof.

Appendix 7 - Example of Emergency Contacts and Telephone Numbers List

SCOTT	ESSENTIAL CONTACT NUMBERS	
Position	**Name**	**Telephone**
Ambulance-Police-Fire	Emergency Service	999
ASL Director		
Project Manager		
Project Foreman		
Project Engineer		
Water supplier	Welsh Water	0800 0520 130
Sewerage	Welsh Water	0800 0853 968
Gas	Wales & West Utilities	0800 111 999
Local Hospital		
Electricity	Nation Grid electricity distribution	0800 6783 105
HSE Executive		0345 300 9923
Project safety		
NRW / EA Hotline	24 hour Emergency	0300 065 3000
ESSENTIAL PERSONS AVAILABLE OUTSIDE OF NORMAL WORKING HOURS		
Managing Director	Mark Bowen	07557 682110
Contracts Director	David Evan-Williams	07734 098972
Contracts Director	Steve Rees	07985 254117
SHE Manager	Justin Kingdom	07775 807867
Project Manager		
Temporary Works Coordinator		
Site Engineer / Agent		
Foreman		

Appendix 8 – INSTRUCTIONS FOR ALL SITE STAFF in the event of a Pollution incident

	Action	Responsibility
1.	**Immediately stop work on site**. Take appropriate safe actions to prevent further pollution occurring. Refer to the Emergency Spill Response Plan, and call emergency contacts.	Personnel present at the incident site
2.	Notify Environmental Representative / Pollution Incident Control Team /Foreman/Team Leader of incident, possible environmental impact and effect on works.	Senior staff member at the incident site
3.	Notify Site / Project Manager, and SHE Manager	Environmental Representative
4.	Identify nearby potentially sensitive receptors and take appropriate safe actions to prevent migration of pollutants if safe to do so.	Environmental Representative, Incident Control Team
5.	Determine level of incident in line with this procedure and the Emergency Spill Response Plan. If required, inform external agencies and nominated emergency spill response contractor.	Site / Project Manager, SHE Manager
6.	Monitor areas for further contamination/migration of pollutants.	Environmental Representative
7.	Agree and implement remediation techniques (prepare method statements if required and if incident permits). This may include liaison with external agencies and suppliers.	Project Manager / Environmental Representative, External agencies (if required)
8.	Complete Pollution Incident Report. Senior Contract Manager / Director to provide instruction to re-start works on remediation of the incident.	Senior staff member(s) at the incident site, SHE Manager.

Appendix 9 – Emergency Spill Response Plan (Site form FM-SITE-014)

SCOTT	EMERGENCY SPILL RESPONSE PLAN	FM-SITE-014
		Rev 2 January 2020
		Page 1 of 2

ALL SPILLS			
1	STOP	Further Spillage (Only if safe to do so)	
2	CONTAIN	Spill (If not possible go to stage 5)	
3	NOTIFY	Your Supervisor of the Spill	
	Site Emergency Contact Numbers:	1.	
		2.	
4	CLEAN UP	Spill (If not possible go to stage 5)	
	SPILL KIT LOCATIONS	1.	2.
		3.	4.
		5.	6.

MAJOR SPILLS			
Major Spills are those which cannot be dealt with using equipment available on site, or Spills which have, or are likely to enter a Watercourse / Drain. *Relay the nature of the spill (liquid or powder), approx quantity / volume and substance if known.*			
5	CONTACT	Supervisor to contact Spill Response Company	
	Spill Response Company Name:		
	Contact Number:		
6	NOTIFY	The Following:	
	In All Cases:	Client / Landowner/ Operations & Project Managers / SHEQ Manager	
	Spills into Watercourses / Surface Water Drains/ Onto Land	National Resource Wales (NRW) - 0800 807060 Environment Agency (England) – 0800 807060 (Freephone 24 hour services)	
	Spills into Sewer	Local Water Company / Water Authority	

- COSHH warnings must be followed for hazardous chemicals
- NO SMOKING, EATING or DRINKING in the vicinity of a spill
- Contaminated spill kit materials must be collected up and correctly disposed of.
- Display this plan on all notice boards & ensure all site personnel are informed & inducted

Spill Plan Issue Date:	Spill Plan Revisions:			
Date Spill Plan Tested (Mandatory) Every 3 months				
Initials:				

FM-SITE-014 - Emergency Spill Response Plan IMS Location: Section 4.1- Site Management procedures & forms

Key Reference Documents

Pollution Control Procedure

Scope

This procedure provides details of the steps to be taken in the event of a pollution incident and sets out a method for recording and reporting of such incidents, should they occur.

The procedure also sets out the method of the establishment of Pollution Incident Control Teams (PICTs) where the size, complexity or the environmental risks identified at Pre Construction Phase of a project dictates this requirement.

Background

Construction activities in general have the potential to impact on the environment. We have an interface within existing infrastructure, industry and commercial zones, domestic housing and settlements, as well as predominantly rural areas. There may be many watercourse crossings, of which a number are designated as main rivers by the Environment Agency / National Resources Wales.

Other ecologically environmentally sensitive areas may well be identified at tender stage or during the construction phase of our works, and may well include Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SAC) or Special Protection Areas (SPA).

Sensitive receptors will be identified prior to and during the construction works. A list of sensitive receptors or areas at higher risk will be prepared by the project manager and maintained by a nominated environmental representative (ER) within the construction team. This will form the basis of any risk assessment for environmental issues for works in or adjacent to these areas.

Sensitive receptors may include schools, day care centres, hospitals, nursing homes, railways and roads (in terms of dust), water bodies, and sensitive or endangered species potentially at risk from the effects of construction activities.

Relevant Contractual and Legal References

A list of legal references and legislation is included in Appendix 1.

Planning and Implementation

Handling and Storage of Hazardous Materials

Specific procedures for the handling and storage of hazardous materials are detailed in the Procedure for Surface and Groundwater Protection (PR-ENV-02), and the Dust and Air Quality Procedure (PR-ENV-05).

Unexpected exposure of Hazardous or Polluting Materials

Provisions will be made for contingency plans should any unexpected hazardous or polluting materials be uncovered during construction or demolition activities. These may include contaminated land, asbestos waste, fly-tipped materials or substances within uncharted storage vessels.

Where exposure of contaminated materials is likely, or possible as ascertained from any project pre-construction information or survey reports, then adequate storage facilities and disposal arrangements need to

be risk assessed and included in the project Environmental Management Plan to ensure that no pollution incidents can occur as a result of exposing, excavating, or disturbing, and storage of these materials.

Any materials removed must be classified via an independent testing laboratory to determine if materials are classed as inert (no special controls required), contaminated non-hazardous waste (pollutant and contaminated waste), or hazardous waste (hazardous to health and environmental pollutant).

Pollution Incident Categorisation and Definitions

All pollution incidents must be managed and reported in accordance with the procedure.

In order to be able to report appropriately on a pollution incident, the following definitions will be applied.

Pollution incidents are designated as "Major" and "Minor". The classification of an incident as "Major" or "Minor" where "significant environmental damage" has been caused, is subject to the reporting procedure and will be determined by the project manager and, as appropriate, environmental specialists.

In the event of a major environmental incident, works will stop in the affected area until relevant controls have been implemented to ensure compliance, or to prevent further environmental damage. The procedure included as Appendix 3 "Instructions for all Site Staff in the event of a Pollution Incident" will be followed.

Major Incident Designation
An incident that has occurred due to a failure in management systems and which has caused significant environmental damage.
An incident in breach of legal requirements (i.e. a breach of a legal consent or dispensation or causing a statutory nuisance).
An activity which does not comply with environmental procedures and gives rise to significant environmental pollution, contamination or harm.
An activity identified as a breach of best practical means as set out in the relevant Section 61 Consent.
Working outside of consented working hours, as defined within the Section 61 Consents, **without having notified** the relevant EHO of the offence.

Environmental non-compliance with the specialist environmental procedures will also be categorised and reported as a "pollution incident".

In addition to the classification of pollution incidents, "environmental damage" and "emergency" are defined as follows:

- Environmental damage – emissions to air (which for the purpose of this procedure includes noise), water and land which exceed specified levels of environmental legislation and standards and/or impact to a protected species or habitat; and
- Emergency – an event or series of events that are uncontrollable and which require assistance from external agencies.

Minor Incident Designation
An incident which has occurred due to a failure in management systems.
An incident which has potential to cause environmental damage.
An activity which does not comply with environmental procedures.
A major environmental incident that was normally avoided.
The use of an item of equipment which is considered to be neither best practice nor operating in accordance with best practicable means.

Minor Spillage - ROLES AND RESPONSIBILITIES

General Roles and Responsibilities

General roles and responsibilities are defined in Section 3 of the Andrew Scott Ltd (ASL) **Environmental Code of Practice (ECoP) – PR-ENV-001**. In addition to those roles, the roles of the pollution incident control teams are described in the following section.

The ER (Environmental Representative) will maintain a register of all spillages, how it occurred, how it was cleared and how the contaminated material was disposed of.

Each site established for over any 6 month period will also be required to perform spill drills, to test the emergency plans that are in place for the project. Any drills will be required to be recorded by the ER, highlighting any failures and subsequent corrective actions, or required improvements to the procedure.

Pollution Incident Control Teams

In the event of a pollution incident occurring on site, trained emergency pollution incident control teams (PICTs) will be called upon to implement immediate remediation works.

Each site manager will be responsible for appointing Pollution Incident Control Team members for their section of the works. The PICTs will report to the ERs in the construction teams.

A register of the Pollution Incident Control Teams will be developed by the construction teams and maintained on site. The register will contain:

- Details of the names and roles of the PICT members and their contact telephone numbers;
- Names and contact telephone numbers of external parties; and
- Details of the locations of spill kit equipment will also be included.

A typical example of such an emergency contact list is included as Appendix 2.

Inspection Procedures

In order to maintain controls on pollution control, the PICT members and / or site supervision will undertake weekly inspections of the areas where there is a pollution risk and where control measures are in place, as part of the EHS Site weekly inspections.

Activities to be Addressed & Control Procedures

On discovery of an environmental/pollution incident the procedures detailed in the **Emergency Spill Response Plan – FM-SITE-014** will be followed (see Appendix 4).

It should be noted that the detailed control and remediation of the pollution incident, will depend upon its severity (i.e. major or minor, as defined earlier) and the type of incident (e.g. a spillage to a watercourse).

Monitoring, Auditing and Reporting

Surveillance will be undertaken via monthly environmental audits, performed by ASL SHEQ department, and by weekly E, H&S inspections undertaken by site supervision / management and the designated PICT members. (Ref: ASL controlled form **FM-SITE-006 – Health, Safety & Environmental checklist**)

Full auditing will be undertaken as per requirements of ASL annual audit programme.

The ER will be responsible for maintaining records of all pollution incidents within their construction teams.

Reporting of major incidents will be undertaken on the **Accident / Incident Report form – SITE REG 29.** Minor incidents and small spills can be reported using the incident report form, or via the safety / environmental observation card reporting system (Ref: ASL **observation card FM-SITE-405**).

The SHE manager, and a member of the Board of Directors / Contract Management team will be immediately notified verbally of any major incident occurring, and an incident report form will be completed and copied to the SHE manager as soon as is practicable, but no longer than 24 hours following the incident.
Where required, the relevant external authority shall be notified of the incident in line with the requirements of the emergency spill response plan.

All minor environmental incidents must be reported and recorded by each site team using the proformas noted above. The completed details will be copied to the SHE manager within 48 hours of the incident.

The SHE manager will maintain a record of all major incidents. These will be reviewed monthly to continually improve on the environmental management systems in operation of our sites, and will also be reviewed at the company IMS Management Review Meeting.

Training requirements

Training will be provided in accordance with the details set out in the ASL EcoP **PR-ENV-001**.

Specific training for Pollution Incident Control Teams will be provided prior to the commencement of major construction works on site. This will include:

- familiarisation with the Pollution Incident Control Plan;
- procedures to be followed in the event of a spillage;

- specialist training on the use of spillage control materials will be provided for the pollution incident control team(s) by the equipment manufacturers;
- training on the disposal of spent spill-kit products, in accordance with the Waste Management Plan; and
- procedures for the notification of pollution incidents

The project manager and ERs will be responsible for all training activities in respect of this plan.

Appendix 1 – Relevant Legislation

Further information on Waste Management Issues can be obtained from the following:

- Collection & Disposal of Waste Regulations 1988 (amended 1989)
- The Contaminated Land (England) *and* the Contaminated Land (Wales) Regulations
- The Waste (England & Wales) Regulations 2011
- Controlled Waste (England & Wales) Regulations 2012
- Site Waste Management Plans Regulations 2008
- The Waste Electrical & Electronic Equipment (WEEE) Regulations 2007
- Hazardous Waste (England and Wales) (amended) Regulations 2009
- The Environmental Protection Act (EPA) 1990
- The CLAIRE Code of Practice (Contaminated Land: Applications in Real Environments)
- Environment Act 2021

Appendix 2 – EXAMPLE OF EMERGENCY CONTACTS AND TELEPHONE NUMBERS LIST

SCOTT	**ESSENTIAL CONTACT NUMBERS**	
Position	**Name**	**Telephone**
Ambulance-Police-Fire	Emergency Service	999
ASL Director		
Project Manager		
Project Foreman		
Project Engineer		
Water supplier	Welsh Water	0800 0520 130
Sewerage	Welsh Water	0800 0853 968
Gas	Wales & West Utilities	0800 111 999
Local Hospital		
Electricity	Nation Grid electricity distribution	0800 6783 105
HSE Executive		0345 300 9923
Project safety		
NRW / EA Hotline	24 hour Emergency	0300 065 3000
ESSENTIAL PERSONS AVAILABLE OUTSIDE OF NORMAL WORKING HOURS		
Managing Director	Mark Bowen	07557 682110
Contracts Director	David Evan-Williams	07734 098972
Contracts Director	Steve Rees	07985 254117
SHE Manager	Justin Kingdom	07775 807867
Project Manager		
Temporary Works Coordinator		
Site Engineer / Agent		
Foreman		

Appendix 3 – INSTRUCTIONS FOR ALL SITE STAFF in the event of a Pollution incident

	Action	Responsibility
1.	**Immediately stop work on site**. Take appropriate safe actions to prevent further pollution occurring. Refer to the Emergency Spill Response Plan, and call emergency services if necessary.	Personnel present at the incident site
2.	Notify Environmental Representative / Pollution Incident Control Team /Foreman/Team Leader of incident, possible environmental impact and effect on works.	Senior staff member at the incident site
3.	Notify Site / Project Manager, and SHE Manager	Environmental Representative
4.	Identify nearby potentially sensitive receptors and take appropriate safe actions to prevent migration of pollutants if safe to do so.	Environmental Representative, Incident Control Team
5.	Determine level of incident in line with this procedure and the Emergency Spill Response Plan. If required, inform external agencies and nominated emergency spill response contractor.	Site / Project Manager, SHE Manager
6.	Monitor areas for further contamination/migration of pollutants.	Environmental Representative
7.	Agree and implement remediation techniques (prepare method statements if required and if incident permits). This may include liaison with external agencies and suppliers.	SHE Manager / Environmental Representative, External agencies (if required)
8.	Complete Pollution Incident Report. Senior Contract Manager / Director to provide instruction to re-start works on remediation of the incident.	Senior staff member(s) at the incident site, SHE Manager.

Appendix 4 – Emergency Spill response plan

SCOTT	EMERGENCY SPILL RESPONSE PLAN	FM-SITE-014
		Rev 2 January 2020
		Page 1 of 2

ALL SPILLS			
1	STOP	Further Spillage (Only if safe to do so)	
2	CONTAIN	Spill (If not possible go to stage 5)	
3	NOTIFY	Your Supervisor of the Spill	
	Site Emergency Contact Numbers:	1.	
		2.	
4	CLEAN UP	Spill (If not possible go to stage 5)	
	SPILL KIT LOCATIONS	1.	2.
		3.	4.
		5.	6.

MAJOR SPILLS			
Major Spills are those which cannot be dealt with using equipment available on site, or Spills which have, or are likely to enter a Watercourse / Drain. *Relay the nature of the spill (liquid or powder), approx quantity / volume and substance if known.*			
5	CONTACT	Supervisor to contact Spill Response Company	
	Spill Response Company Name:		
	Contact Number:		
6	NOTIFY	The Following:	
	In All Cases:	Client / Landowner/ Operations & Project Managers / SHEQ Manager	
	Spills into Watercourses / Surface Water Drains/ Onto Land	National Resource Wales (NRW) - 0800 807060 Environment Agency (England) – 0800 807060 (Freephone 24 hour services)	
	Spills into Sewer	Local Water Company / Water Authority	

- COSHH warnings must be followed for hazardous chemicals
- NO SMOKING, EATING or DRINKING in the vicinity of a spill
- Contaminated spill kit materials must be collected up and correctly disposed of.
- Display this plan on all notice boards & ensure all site personnel are informed & inducted

Spill Plan Issue Date:	Spill Plan Revisions:			
Date Spill Plan Tested (Mandatory) Every 3 months				
Initials:				

FM-SITE-014 - Emergency Spill Response Plan — IMS Location: Section 4.1- Site Management procedures & forms

Key Reference Documents

Waste Management Procedure

Introduction

This Waste Management Procedure describes the on-site practices which Andrew Scott Limited will adopt to ensure that wastes arising from their project are managed in a suitable manner, maximising the opportunities to reduce, reuse and recycle materials.

The overall purpose of the Waste Management Procedure is to minimise the quantity of waste generated by the construction works and consequently to reduce the volume of material leaving site for disposal. The Procedure sets out the environmental controls, which will be applied during the contract to safeguard the environment and to minimise the risk of prosecution by the Environment Agency (EA) / National Resources Wales (NRW) for breaches of waste management legislation.

Compliance with this Waste Management Procedure will ensure compliance with the requirements of the Waste Management (England & Wales) Regulations (2006), the Hazardous Waste (England and Wales) Regulations 2005 and the Environmental Protection (Duty of Care) Regulations (1991), and ultimately the Environmental Protection Act 1990.

Relevant Contractual and Legal References

A list of legal references, legislation and guidance is included in Appendix A of the Andrew Scott Environmental Code of Practice (ECoP) - PR-ENV-01.

Background

Andrew Scott Limited has a duty to minimise the volume of all types of wastes generated on the site, including excavation of existing waste, construction waste and office waste. The procedures outlined in further in this document will be adhered to with respect to waste minimisation.

Where possible, Andrew Scott Limited will reuse or recycle materials, which are deemed suitable for alternative uses. Construction materials (wood, kerbs, plastic pipes, imported stone, etc.) will be reused where practicable. Recycling of office materials (paper, cardboard, plastic cups, etc.) will be encouraged at the company Head Office (The Grange).

Andrew Scott Limited is responsible for the identification, handling, storage and disposal of waste. Our approved waste disposal company will be responsible for the collection and disposal of waste from Andrew Scott Limited sites.

Planning and Implementation

Waste Management

The preparation of method statements by the construction teams, adherence to designs and the implementation of good site practice, will ensure that the minimum quantity of construction waste is generated. Where practicable, any excess material will be utilised for other construction areas or construction sites. This will be implemented via the method statement preparation and review procedure.

Andrew Scott Limited are committed to minimising waste to landfill sites and will ensure that 50% of all waste is diverted from landfill as an absolute minimum. The ultimate goal is to achieve zero waste to landfill.

The main elements of work involved in our projects are as follows:

- new build industrial & commercial premises;
- new build education & care homes;
- office and domestic high-rise developments;
- refurbishment of listed buildings/ health care;
- construction of sport stadia & leisure facilities;
- maintenance of existing heavy industry and chemical plants;
- earthworks and substructure concrete placement work;
- site clearance and demolition of existing structures and buildings;

Much of this work will generate significant quantities of waste materials, the majority of which may able to be re-used for temporary or permanent construction.

Waste Transfer

Transport of waste will only be undertaken by Registered Waste Carriers who hold a valid Certificate of Registration, issued by the EA or NRW. The Registered Carrier must comply with the Environmental Protection Act 1990, and The Waste (England & Wales) Regulations 2011.

Andrew Scott Limited site management will ensure that subcontractors removing waste from Andrew Scott Limited sites are appropriately licensed, and will periodically check that waste carriers used for waste disposal are in compliance with the relevant regulations.

Waste Disposal

Disposal of all wastes arising from within the works will be taken to a suitably licensed waste management facility (either a transfer station, landfill site, treatment plant, or in the case of waste oil and scrap metal, a recycling facility). Andrew Scott Limited will obtain the appropriate records for the transfer and disposal of waste for all wastes leaving the construction site. Site to ensure the SIC code of 42990 is used on all transfer notes associated with Andrew Scott Limited.

Our approved waste disposal company will ensure that waste disposal facilities used during the course of the contract are appropriately licensed and will obtain copies of the relevant sections of the licence prior to the disposal of waste materials.

The proforma used for the collection, storage and disposal of controlled and special wastes is form FM-ENV-02

The Company Environmental Adviser will aid the preparation and implementation of a procedure for the disposal of special waste arising from any of our construction works.

Organisation and Responsibilities

The Project Manager will identify site operations that are likely to generate waste material and, where appropriate, will prepare submissions to the EA or NRW for exemptions to the Waste Management Licensing Regulations (1994).

Where appropriate, the project manager will appoint a person responsible for controlling waste who will have the following responsibilities;

- Establishment and maintenance of waste management compounds at the construction sites, including provision of waste skips (general construction wastes, materials for recycling or re-use, COSHH materials, special waste skips, etc).
- Undertaking weekly inspections of waste compound facilities.
- Maintenance of disposal records of all cess pool and welfare facility wastes and ensuring that the Duty of Care audit trail is maintained.

Inspection Procedures

To maintain controls on material and waste storage, the designated waste controllers will undertake weekly inspections of the site waste compounds, as part of the EHS Site weekly inspections.

Monitoring, Auditing and Reporting

Surveillance will be undertaken via monthly "Environmental" audits, performed by Andrew Scott Limited H&S department.

Full auditing will be undertaken as per requirements of Andrew Scott Limited annual audit programme.

Monthly reports will be made detailing quantity of wastes disposed of, and percentages reclaimed / recycled on a monthly basis by specialist waste carrier companies.

Training requirements

Specific training for Project and Site Managers, Site Foreman and Supervisors and the construction teams will be provided in relation to the reuse of construction materials and the need for exemptions to The Waste (England & Wales) Regulations 2011.

Waste Minimisation Procedure

Best Practice: waste minimisation

A Site Waste Management Plan for a particular contract will improve waste management practices and help to reduce the amount of waste produced (and associated costs). However, to obtain the best possible results a full waste minimisation initiative is undoubtedly the key to success, particularly for larger projects. This section provides guidance on how to introduce the concept of waste minimisation.

Andrew Scott Limited will always fulfil its duty to apply the waste hierarchy as required by Regulation 12 of The Waste (England & Wales) Regulations 2011. This means Andrew Scott Limited will investigate methods to reduce waste production, reuse waste or excess product, and ensure where practicable that products that cannot be re-used are recycled prior to disposal.

Appointment of a designated "Waste Controller "

It can be a daunting task to incorporate waste minimisation practices onto a contract. Before any action is taken a Site Waste Controller (or 'champion') and project team should be in place. There can be no prescriptive rule as to who will make a good waste controller for a waste minimisation programme. However, he or she must be able to demonstrate a number of characteristics:

- The waste controller must be able to communicate with staff and management;
- They should be able to put in place the required resources, information, staff motivation and training when necessary;
- A good knowledge of the contract and especially its operations side is also essential, and it may therefore suit a member of staff who has worked in several different sections, with a good overview of them all;
- Management must also recognise that the waste controller will require time set aside for waste minimisation activities and make the necessary commitment; and
- A project team should be appointed for larger contracts.

The implementation of the waste minimisation programme consists of:

- Planning
- Ownership
- Training
- Monitoring

General procedures will be adopted for the minimisation of wastes:

- Interface with procurement and procurement procedures, to control ordering of materials;
- Compound inspections will be initiated by the waste controller, to monitor compound and storage areas to ensure that materials are stored and handled correctly to minimise waste;
- Waste storage areas will be constructed and managed to avoid cross contamination (skip areas, contaminated material storage areas, construction, waste storage areas and the wash-water recycling plant associated with concrete batching plants);
- Construction methods will be reviewed during the preparation of method statements to ensure that the minimum amount of waste materials is generated;
- Where possible, materials will be re-used or recycled in accordance. With exemptions to Waste Management Licensing obtained from the Environment Agency-, and
- Where it can be demonstrated that materials are suitable for use, construction materials can be imported to the site under the terms laid down by exemptions to Waste Management Licensing and consultations with the EA or National Resources Wales (NRW).

Waste Classification List

A full detailed list of current waste classifications – The European Waste Catalogue (EWC) can be located and referenced in the Andrew Scott IMS System – Section 5.10 / Environmental.

Some of the more commonly classified wastes found on Andrew Scott sites are as follows;

Note: * Denotes hazardous waste and must be removed by specialist licenced Hazardous waste carriers.

17 01 concrete, bricks, tiles and ceramics

17 01 01 concrete 17 01 02 bricks 17 01 03 tiles and ceramics
17 01 06* mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances
17 01 07 mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06

17 02 wood, glass and plastic

17 02 01 wood 17 02 02 glass 17 02 03 plastic
17 02 04* glass, plastic and wood containing or contaminated with dangerous substances

17 03 bituminous mixtures, coal tar and tarred products

17 03 01* bituminous mixtures containing coal tar
17 03 02 bituminous mixtures other than those mentioned in 17 03 01
17 03 03* coal tar and tarred products

17 04 metals (including their alloys)

17 04 01 copper, bronze, brass 17 04 02 aluminium 17 04 03 lead
17 04 04 zinc 17 04 05 iron and steel 17 04 06 tin
17 04 07 mixed metals **17 04 09*** metal waste contaminated with dangerous substances
17 04 10* cables containing oil, coal tar and other dangerous substances
17 04 11 cables other than those mentioned in 17 04 10

17 05 soil (including excavated soil from contaminated sites), stones and dredging spoil

17 05 03* soil and stones containing dangerous substances
17 05 04 soil and stones other than those mentioned in 17 05 03
17 05 05* dredging spoil containing dangerous substances
17 05 06 dredging spoil other than those mentioned in 17 05 05
17 05 07* track ballast containing dangerous substances
17 05 08 track ballast other than those mentioned in 17 05 07

17 06 insulation materials and asbestos-containing construction materials

17 06 01* insulation materials containing asbestos
17 06 03* other insulation materials consisting of or containing dangerous substances
17 06 04 insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05* construction materials containing asbestos

17 08 gypsum-based construction material

17 08 01* gypsum-based construction materials contaminated with dangerous substances
17 08 02 gypsum-based construction materials other than those mentioned in 17 08 01

17 09 other construction and demolition wastes

17 09 01* construction and demolition wastes containing mercury
17 09 02* construction and demolition wastes containing PCB (for example PCB-containing sealants, PCB-containing resin-based floorings, PCB-containing sealed glazing units, PCB-containing capacitors)
17 09 03* other construction and demolition wastes (including mixed wastes) containing dangerous substances
17 09 04 mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Appendix 1 – Relevant Legislation

Further information on Waste Management Issues can be obtained from the following:

- Collection & Disposal of Waste Regulations 1988 (amended 1989)
- The Waste (England & Wales) Regulations 2011
- Controlled Waste (England & Wales) Regulations 2012
- Site Waste Management Plans Regulations 2008
- Hazardous Waste (England and Wales) Regulations 2005
- The Environmental Protection Act 1990

Key Reference Documents

Dust and Air Quality Control Procedure

Scope

This document describes the procedures and plans to be implemented with regards to dust and air quality on and surrounding Andrew Scott Ltd (ASL) construction sites and other facilities.

This document provides details of the procedures to be adhered to ensure that Best Practicable Means (BPM) are employed on site during the construction contract to maintain dust levels at a minimum and to ensure air quality is not significantly adversely affected during the construction works. Best Practical Means are as defined under Section 79 (9) of the Environmental Protection Act 1990.

Relevant Contractual and Legal References

A list of legal references, legislation and guidance is included in Appendix A of the ASL Environmental Code of Practice (ECoP) - PR-ENV-01.

Background

The extent of pollution by dust, odours and other particles caused by building, construction and civil engineering works will vary for each given project or location. This procedure gives guidance for known pollutants within a generic framework. The starting point for each specific project or contract will be the completion of Environmental Hazard Identification Chart within the environmental plan (incorporated into the construction management plan, controlled form **FM-SITE-001**. Tender stage information followed by a pre-construction site visit should identify issues which may give rise to deterioration in air quality.

The control measures to ensure that air quality is not compromised during construction works are included in Appendices 2 to 6 of this procedure. They will be implemented by the project/site manager to ensure that BPM are employed during construction works and are as follows:

- measures for handling of loose granular materials on site
- measures for the control of vehicle
- movements on site;
- measures for the control of site operations;
- measures for the control of demolition;
- measures for the avoidance of odours
- measures for the avoidance of nuisance from exhaust emissions.

Planning and Implementation

Dust Management

The preparation of method statements by the construction teams, adherence to designs and the implementation of good site practice will ensure that the minimum amount of site dust is generated. Dust suppression **will** occur on site. This will be implemented via the method statement preparation and review procedure.

ASL are committed to minimising waste, to minimise dust nuisance on site, and within the site locality

Handling and Storage of Hazardous Materials

Specific procedures for the handling and storage of hazardous materials are detailed in the Procedure for Surface and Groundwater Protection (PR-ENV-02), and the Dust and Air Quality Procedure (PR-ENV-05).

Surface Water Lagoons

On large projects where site activities could cause a dust problem, the project/site manager will identify areas for the construction of permanent and temporary surface water lagoons, for the storage of rainwater or dewatering activity for the purposes of dust suppression.

Organisation and Responsibilities

The project manager will identify site operations that are likely to generate dust or air quality problems, and will ensure monitoring of the works to ascertain which control measures will be put in place.

Activities to be Addressed & Control Procedures

Control Measurers

Appendices 2 to 6 of this procedure detail the control measures to be adopted in the preparation of method statements (ref. ASL/SHE/01) for works which may have an impact on ground or surface waters. These are as follows:

- Control of pollution
- Control of dust
- Plant movements etc.

General measures, which are to be adopted site-wide for the control of pollution are included in Appendix 4. This includes for the provision of reduction of potential dust creating operations on site.

Monitoring, Auditing and Reporting

Surveillance will be undertaken via monthly “Lead Safe” EHS audits, performed by ASL H&S department, and by weekly E, H&S inspections undertaken by site supervision / management.

Full auditing will be undertaken as per requirements of ASL annual audit programme.

The ERs will be responsible for maintaining records of all pollution incidents within their construction teams. Reporting of major and minor incidents will be undertaken on the appropriate form, as described above.

Major environmental incidents will be recorded on “Environmental Incident Notification Report” and by using the system Incident Reporting procedure (see next paragraph). These forms will be copied to the safety department at The Grange and a copy filed at the site, as environmental incidents.

The project manager will be immediately notified verbally, of a major incident occurring and an incident report form will be completed and copied to the project manager as soon as is practicable but no longer than 24 hours following the incident.

All minor environmental incidents must be reported to the project/site manager using the accident / incident report **SITE-REG-29**, or safety observation card **FM-SITE-405**. The completed forms will be copied to the project manager within 48 hours of the incident.

The project manager will maintain a record of all major incidents. These will be reviewed monthly to continually improve on the environmental management systems in operation on site.

Training Requirements

Training will be provided in accordance with the EcoP.

Specific training for Pollution Incident Control Teams will be provided prior to the commencement of major construction works on site. This will include:

- familiarisation with the Pollution Incident Control Plan;
- procedures to be followed in the event of a release;
- familiarisation with the dust and air quality procedure;
- identification on site of dust sensitive receptors; and
- monitoring and recording of dust and air quality emissions

The site manager and ERs will be responsible for all training activities in respect of this plan.

Appendix 1 – Relevant Legislation

Further information on Waste Management Issues can be obtained from the following:

- The Control of Pollution Act 1974
- Control of Substances Hazardous to Health (COSHH) Regulations 2002
- The Health and Safety at Works etc Act 1974
- Clean Air Act 1993
- The Environmental Protection Act 1990
- Environment Act 2021

Appendix 2 – CONTROL MEASURE FOR STAORAGE AND HANDLING OF LOOSE GRANULAR MATERIAL AND BAGGED POWDER ON SITE

These will include the following:

- Site strip/top soil materials
- Limestone aggregate (delivered by tipping lorry)
- Silo/hopper/batcher supplied materials
- Sand
- Cement
- Lime
- Plaster
- Grout
- fine, dry materials shall be stored within buildings or with adequate protection from the wind;
- silos and stockpiles shall be located, as far as is reasonably practicable, away from residential areas, places of public access, or other sensitive receptors as identified by the project/site manager.
- slopes of stockpiles, tips and mound, shall be maintained at an angle not greater than the natural angle of repose and sharp changes of shape shall be avoided;
- the surface of stockpiles of dry, fine or friable materials, shall be damped by controlled application of water spray, or shrouded or screened as appropriate and necessary;
- handling areas shall be maintained as far as is reasonably practicable to reduce the risk of dust emission;
- static sprinklers, bowsers and other watering methods shall be employed as necessary to reduce or prevent emissions of dust; and
- procedures for the inspection of storage and handling facilities for dry, fine and friable materials shall be established and agreed, with the site environmental manager, including procedures for the prompt clearance of any spillages (where practicable, spillages of cement powder shall be cleared using wet handling).

Appendix 3 – CONTROL MEASURE FOR VEHICLE MOVEMENTS ON SITE

To ensure that dust emissions from vehicle movements are kept at a minimum, the following control measures will be implemented on site:

- paved site/haul roads and associated vehicle waiting areas shall be regularly inspected and kept cleaned of mud and materials which may give rise to emissions of dust;
- plant crossings, site accesses and egress points will be regularly swept and dampened down;
- unpaved roads and verges shall be maintained in a compacted condition as appropriate and necessary;
- static water sprinklers and/or bowsers will be provided to damp down haul and access roads as necessary;
- all vehicle deliveries to site will be sheeted;
- road sweepers will be used to limit the dust and material on paved roads;
- general site traffic shall be restricted to watered or treated haul roads; and
- speed limits shall be established and enforced on site traffic routes (speed limits shall be reduced in the event of extreme dry conditions to further reduce the potential for the generation of dust).

Appendix 4 – CONTROL MEASURE FOR SITE OPERATIONS

In addition to the site access and haul roads, there is the potential for the generation of dust from general site operations. The control measures to be implemented to reduce these emissions are described below:

- burning on site of any waste arising from any construction activities is prohibited;
- equipment likely to generate excessive quantities of dust shall be enclosed, shielded or where appropriate fitted with dust extractors, filters and scrubbers, which shall be fitted and maintained in accordance with the manufacturer's specifications;
- the number of material handling operations shall be kept to a practicable minimum;
- drop heights of materials on to vehicles and stockpiles shall be kept to a practicable minimum;
- where appropriate, wind breaks, netting screens or semi-permeable fences shall be used to reduce dust emissions from working areas and/or screen sensitive locations (as identified by the project/site manager). Where necessary, water sprays shall be employed to control dug generated during construction of earthworks and during piling operations; and
- long term stockpiles (greater than six months) shall be planted or sealed as appropriate

Appendix 5 – CONTROL MEASURE FOR DEMOLITION

The control measures to be adopted to prevent emissions of dust or hazardous materials from the demolition works are as follows:

- any potentially hazardous materials shall be identified, removed and disposed of prior to commencing demolition works;
- where necessary, water sprays will be used to dampen down buildings, and materials prior to and during demolition and clearance;
- where necessary and practicable, buildings shall be screened with debris screens, or other suitable sheeting;
- spoil and waste chutes will be shielded and watered, and waste skips shall be either covered or dampened down as necessary;
- there will be no long-term storage of debris, all temporary storage areas shall be covered, shielded, or dampened down as necessary;
- special precautions will be undertaken in the event of asbestos being identified in any structure. Work will stop and specialist advice will be sought from the Environmental and Heath and Safety Adviser and specialist subcontractor as necessary;
- all demolition waste will be covered prior to removal from site by a suitably licensed waste haulier.

Appendix 6 – CONTROL MEASURE FOR THE AVOIDANCE OF NUISANCE FROM EXHAUST EMISSIONS

Where significant number of earthmoving vehicles or other site based plant will be used on the project/ contract, measures will be put in place to ensure that exhaust emissions do not give rise to nuisance:

- no vehicle or item of equipment emitting visible black smoke, other than during ignition, shall be used on any construction site or public highway;
- combustion engines (on all items of plant and equipment) shall not be left running unnecessarily;
- all vehicle and equipment engines and exhaust systems shall be maintained so that the exhaust emissions do not breach statutory limits set for the vehicle/equipment type, and mode of operation;
- all vehicles and equipment shall be maintained in accordance with the manufacturers' recommendations; and
- exhausts of vehicles and equipment used for construction shall be positioned at a sufficient height to ensue dispersion of exhaust emissions.

Appendix 7 - Example of emergency contacts and telephone numbers list

	ESSENTIAL CONTACT NUMBERS	
Position	**Name**	**Telephone**
Ambulance-Police-Fire	Emergency Service	999
ASL Director		
Project Manager		
Project Foreman		
Project Engineer		
Water supplier	Welsh Water	0800 0520 130
Sewerage	Welsh Water	0800 0853 968
Gas	Wales & West Utilities	0800 111 999
Local Hospital		
Electricity	Nation Grid electricity distribution	0800 6783 105
HSE Executive		0345 300 9923
Project safety		
NRW / EA Hotline	24 hour Emergency	0300 065 3000
ESSENTIAL PERSONS AVAILABLE OUTSIDE OF NORMAL WORKING HOURS		
Managing Director	Mark Bowen	07557 682110
Contracts Director	David Evan-Williams	07734 098972
Contracts Director	Steve Rees	07985 254117
SHE Manager	Justin Kingdom	07775 807867
Project Manager		
Temporary Works Coordinator		
Site Engineer / Agent		
Foreman		

Appendix 8 – INSTRUCTIONS FOR ALL SITE STAFF in the event of a Pollution incident

	Action	Responsibility
1.	**Immediately stop work on site**. Take appropriate safe actions to prevent further pollution occurring. Refer to the Emergency Spill Response Plan, and call emergency services if necessary.	Personnel present at the incident site
2.	Notify Environmental Representative / Pollution Incident Control Team /Foreman/Team Leader of incident, possible environmental impact and effect on works.	Senior staff member at the incident site
3.	Notify Site / Project Manager, and SHE Manager	Environmental Representative
4.	Identify nearby potentially sensitive receptors and take appropriate safe actions to prevent migration of pollutants if safe to do so.	Environmental Representative, Incident Control Team
5.	Determine level of incident in line with this procedure and the Emergency Spill Response Plan. If required, inform external agencies and nominated Emergency spill response contractor.	Site / Project Manager, SHE Manager
6.	Monitor areas for further contamination/migration of pollutants.	Environmental Representative
7.	Agree and implement remediation techniques (prepare method statements if required and if incident permits). This may include liaison with external agencies and suppliers.	HSE Manager / Environmental Representative, External agencies (if required)
8.	Complete Pollution Incident Report. Senior Contract Manager / Director to provide instruction to re-start works on remediation of the incident.	Senior staff member(s) at the incident site, SHE Manager.

Key Reference Documents

Noise and Vibration Management Procedure

Scope

This document describes the procedures and plans to be implemented with regards to noise and vibration management, on and surrounding Andrew Scott Limited construction sites and other facilities.

This document provides details of the procedures to be adhered to ensure that Best Practicable Means (BPM) are employed on site during the construction contract, to minimise the impact of noise and vibration on the surrounding environment as far as reasonably practical.

This procedure adopts a hierarchy of noise and vibration controls, with engineering or design controls for noise sources being the first option implemented. If due to safety reasons this is not permissible, consider other control processes.

The procedure will also define how to obtain section 61 consents to allow works to proceed on site, ensure compliance with section 61 consents, and to provide the necessary procedure so that any corrective action required is undertaken in a timely and effective manner. It will also define the requirements for monitoring and recording of noise and vibration during the construction works.

Best Practical Means are as defined under Section 79 of the Environmental Protection Act 1990.

Relevant Contractual and Legal References

A list of legal references, legislation and guidance is included in Appendix 1

Background

The extent of noise and vibration caused by building, construction and civil engineering works, will vary for each given project or location. This procedure gives guidance regards to the possible pollution caused by noise and vibration on site. The starting point for each specific project or contract will be the completion of Environmental Hazard Identification Chart within the Environmental Plan (incorporated into the Construction Management plan, controlled form **FM-SITE-001**.) Tender stage information followed by a pre-construction site visit should identify issues which may give rise to noise and vibration problem.

Where our client requires that Andrew Scott Limited negotiate with the local authorities to determine controls for noise and vibration during construction works on site, the company will negotiate a standard section 61 application and consent format with local authorities in which our project works take place. “Section 61” refers to section 61 of the Control of Pollution Act (1974) which in effect allows a contractor to agree methods of working with local authority to control noise and vibration emissions during construction works.

Noncompliance with a section 61 consent is an offence which could lead to action being taken against Andrew Scott Limited by the Environmental Health Office of the local council under the

Control of Pollution Act (1974). This could in turn lead to restrictions in construction activities on site.

The local authorities which are affected by construction work will be identified at tender stage of the contract.

Under the terms of Control of Pollution Act, any sub-contractors must be given notice of the requirements of any consent and conditions that it imposes on the works. It is Andrew Scott Limited's responsibility to communicate this information to the sub-contractor and to ensure the sub-contractor's compliance. This will be done via the procurement, sub-contractor start-up meeting using form (FM-QS-015), before work starts on site, and Method Statement (PR-SITE-001) procedures, included within the Construction Management Plan.

Andrew Scott Limited is responsible for implementing the requirements of the Section 61 Consents on site and for ensuring that compliance with the Section 61 Consents can be demonstrated. The ERs, during the environmental inspections, will undertake monitoring of Andrew Scott Limited's works, including sub-contractors works.

Planning and Implementation

Each new project generates a site specific Construction Management Plan (CMP). Appendix 5 Environmental Hazard Identification Chart of this plan identifies all environmental aspects for that site. This process starts at tender stage and must be developed significantly prior to the start of the Construction Phase.

The site management must develop, document and maintain knowledge of the baseline, and for existing operations, background noise and vibration levels, identify which components of the site, and which activities are the key contributors to external noise and vibration levels and understand the generation, propagation and potential environmental impact under a range or operating conditions. Establish the likely effectiveness of noise and vibration control mechanism following procedure PR-SITE-001 Risk Assessment.

The plant yard at Rutherglen, being a static site need only produce a Specific Environmental Risk Assessment using form (FM-SITE-003) Environmental Aspects must be identified, the affect our operatives have on these aspects. Implementation of the controls, monitor and record compliance.

Obtaining Section 61 Consents

The procedure to be followed for the submission of applications for Section 61 Consents is illustrated in Appendix 2 (Figure 1). This procedure is for the assessment of noise and vibration levels before commencing activities on site and should be in place and approved prior to starting works.

A tracking schedule for Section 61 Consents will be maintained by the Project Manager, which will identify expiry dates for consented applications and dispensations.

Section 61 Implementation Prior to starting works

The Section 61 Consent application procedure is described above. Following the issue of Consent, each activity will be assessed during the preparation of Method Statements (refer to procedure No. PR-SITE-001) or Construction Management Plan to ensure compliance with the appropriate Consent (Figure No. 2, Appendix 2). This must include an assessment of plant and equipment levels at method statement preparation, before starting activities on site. Provided that the Consent is complied with, works will then be allowed to proceed.

Should the method statement or field control sheet identify a non-compliance with the Consent, then the work package will be reviewed with the Consent, by relevant site staff and the Project Manager. The plant listing must then be changed, or the proposed works modified in order that the requirements of the consent can be complied with.

If it is not possible to modify the plant and/or equipment for reasons of engineering practicability, then an application must be submitted to revise/amend the Section 61 Consent (see Figure 2, Appendix 2)

Section 61 Implementation During Works

It is imperative that monitoring is undertaken and documented to demonstrate compliance with Section 61 Consents. This is undertaken by physically monitoring of numbers and types of plant and equipment, as a result there is no need to undertake noise measurements.

Figure No. 3 (Appendix 2) details the procedure for monitoring and compliance with Section 61 Consents during construction and normal planned working. The proforma included in Appendix 3 must be used to monitor plant and equipment in use on site. This must be completed at least on a weekly basis at each "working location".

Where works are being undertaken adjacent to sensitive areas (as defined in the Section 61 Consents) then completion of the proforma may need to be undertaken more than weekly and possibly daily, depending on the nature and sensitivity of the work. This must be highlighted in the associated control documents, for example, method statements or risk assessment.

Planned changes to consented works

There will be occasions where it is not possible to work within the conditions of the Section 61 Consent(s). Such situations may include:

- highway possession working, motorway working (or other planned out-of-hours works);
- continuous working operations (where continuity of the construction process is essential, etc.)
- where noise limits set by the Section 61 Consents will be exceeded, even using best practicable means during construction.

- During extended working hours due to emergency or unplanned overruns during construction (concrete pours, watercourse diversions, etc).

Changes and departures from expected plant, programme etc., during construction must be notified to the relevant authority using the Amendment to Consent Procedure, detailed on Figure No.4, Appendix 2.

If the change is not significant (i.e., there will be no increase in the noise or vibration levels as a result of the change), then a Minor Amendment form will be prepared for issue to relevant local authority for their acceptance prior to works starting on site. A copy of the Minor Amendment form is included as Appendix 4. The Project Manager will maintain a schedule of all amendments to Section 61 Consents.

If the change to consented working is likely to give rise to an increase in noise or vibration levels and/or the Minor Amendment is likely to be not approved by the relevant local authority, then the Project Manager must be informed and a modification to the relevant Section 61 Consent must be obtained from the authority(ies) prior to works commencing.

The amendment must be submitted to the local authority, at least two weeks before the planned works are due to commence. Where the planned works will take place outside of normal working hours, then the Company Environmental Adviser must be informed and the local residents notified in advance of the activity.

Project/Site Managers, or Operations Director can only sign these forms for issue. The Environmental representative (ERs) will maintain schedules of all Minor Amendments appropriate to their sites. The ERs and Project Manager will review the amendments on a monthly basis.

If the planned works are foreseen and no mitigating actions are undertaken, then the non-compliance must be reported in accordance with the procedures detailed in the Pollution Incident Control Procedure. Failure to notify the authorities of planned changes to consented working will be classed as a major incident and will be reported in accordance with the Pollution Incident Control Procedure.

Unplanned changes to consented working

In the event of working outside consented hours, or using more than the consented items of equipment or different types of equipment due to unforeseen circumstances, then the relevant local authority must be notified using the proforma included in Appendix 5.

The proforma must be completed and issued by email to the appropriate authority. This must be undertaken by the engineer responsible for the works and the form must be received by the relevant authority on the night/afternoon of the over-run. The Project Manager, and Company Environmental Adviser must also be informed of the reason(s) for the overrun and the likely time at which works will finish.

Schedule of all out-of-hours notification will be maintained by the construction teams. These will be reviewed on a monthly basis with Project Manager. Provided that the local authority is informed, then working outside of consented conditions is not classified as an incident and does not require reporting as such. Failure to notify the relevant authority of working beyond extended hours will be classed as a major incident, as laid out in the Pollution Incident Control Procedure.

Roles and Responsibilities of Environmental staff

The Managing Director is ultimately responsible for all matters relating to Section 61 applications and consents and any additional noise and vibration obligations identified as part of the contract, including for signing off any dispensation applications or other consents.

The Managing Director will formally notify other senior members of staff of their responsibility and authority in respect of the Section 61 Consent procedures.

The Project Managers will be responsible for ensuring that construction works on their projects are undertaken in accordance with the Section 61 Consents. Engineers and works managers/foremen will be responsible for ensuring that the numbers and types of plant and equipment used to carry out construction works complies with the Section 61 Consents(s).

The Project Manager and Company Environmental Adviser will liaise with Local Authority representatives (Environmental Health Officers) at regular liaison meetings (when instigated), as required and identify the need to notify local residents where significant disruption/inconvenience is anticipated.

The Project Manager will agree the criteria for noise and vibration monitoring with the local authorities via the Section 61 Consent process. The construction teams will be responsible for ensuring that their works are covered by Section 61 Consents and for demonstrating that works are being undertaken in accordance with those consents.

Signatories to Section 61 Consents and Related Documents

The level of authority for the signature and approval of Section 61 Consents and related documents is given in the table below.

Section 61 Consent applications	Operations Director only
Minor Amendment notifications	Project Manager, Operations Director,
Out-of-hours working notifications	Site Manager/Engineer responsible for the works that have over-run.

Monitoring, Auditing and Reporting

Surveillance will be undertaken in accordance with EcoP and via monthly "Lead Safe" EHS audits, performed by Andrew Scott Ltd H&S department, and by weekly E, H&S inspections undertaken by site supervision / management.

Monitoring will be undertaken to ensure compliance with Section 61 Consent requirements. The responsibility for ensuring that monitoring is undertaken lies with the construction Project Manager

Checks will be made to confirm compliance with the numbers and types of plant and equipment listed within the Section 61 Consents. The engineers and foremen/works managers responsible for the works sites will generally undertake these. The construction team ER's will also periodically check plant and equipment numbers during weekly environmental inspections. Examples of plant and equipment monitoring proforma are included in Appendix 3

Full auditing will be undertaken in accordance with EcoP and as per requirements of Andrew Scott Limited annual audit programme.

Physical and technical non-compliance with any Section 61 Consent must be communicated to the Project Manager immediately following the identification of the non-compliance. The Project Manager will liaise with the construction team and the relevant local authority in respect of any non-compliance

The procedure for reporting non-compliance with the Noise and Vibration Management Procedure, is via the System Defect Reporting procedure. This is referred to in the Pollution Incident Control Procedure.

Breaches of Section 61 Consent conditions will be recorded, also in accordance with the Pollution Incident Control Procedure (PR-ENV-03). A breach of Section 61 Consent is classed as a "Major Incident" as it is an offence under the Control of Pollution Act (1974), which could result in a conviction and fine.

There is no requirement for external reporting to the local authorities. However, records of surveillance and monitoring results must be kept available on site for their inspection at any time.

Schedules of minor amendments and out-of-hours notifications will be maintained by the Construction Teams, these schedules will be maintained in the site Environmental Files.

Weekly reviews of amendments to consent and out-of-hours notifications will be held with the Construction Teams ERs and the Project Manager at the weekly environmental management meeting (as required by the EcoP)

Training requirements

Training will be provided in accordance with the EcoP.

Specific training for Pollution Incident Control Teams will be provided prior to the commencement of major construction works on site. This will include:

- familiarisation with the Pollution Incident Control Plan;
- procedures to be followed for completion of section 61 consent forms;
- specialist training for monitoring of noise or vibration incidents; and
- procedures for the notification of pollution incidents

The Site Manager and ERs will be responsible for all training activities in respect of this plan.

Appendix 1 – Relevant Legislation

Further information on surface and ground water pollution Issues can be obtained from the following:

- The control of pollution Act 1974
- The health and safety at works etc Act
- Control of Noise at Work Regulations 2005
- Noise at Work Regulations 1989
- The Environmental Protection Act 1990

Appendix 2 - SECTION 61 CONSENTPROCEDURES (FLOW CHARTS)

Figure 1. Section 61 Application Procedure

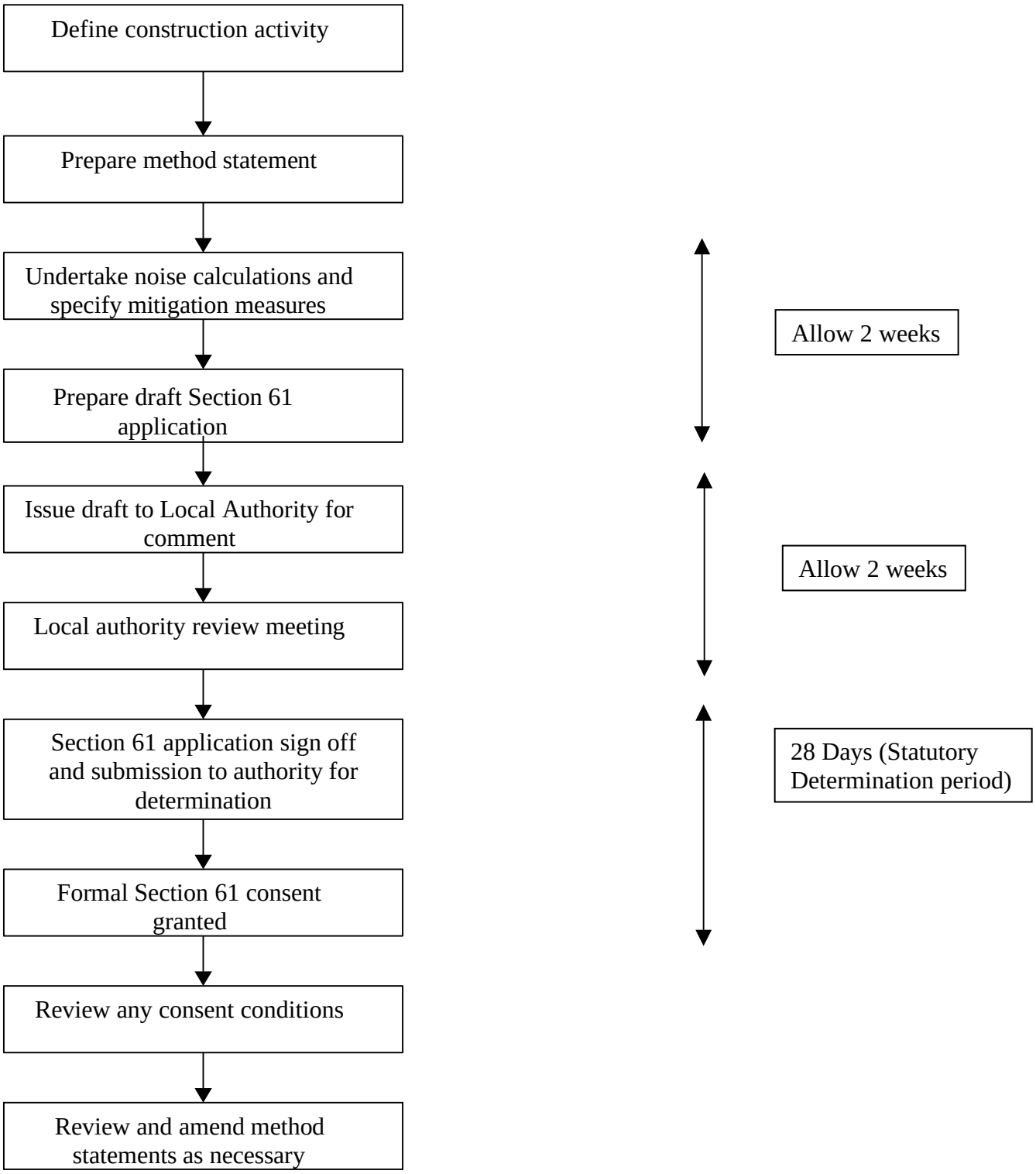


Figure 2. Start-up Procedure (Method Statement Review).

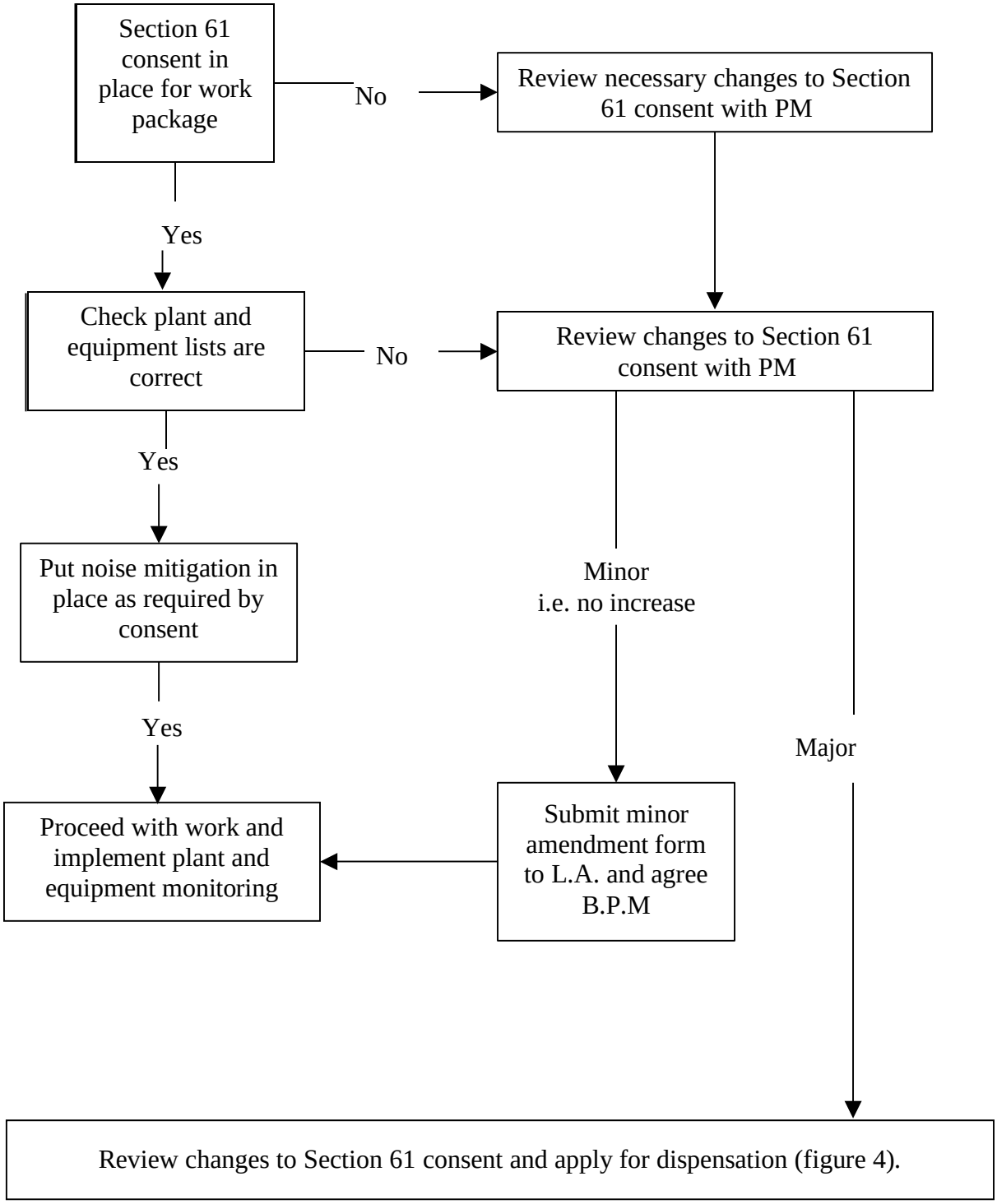


Figure 3. Site Surveillance and Complaint Resolution

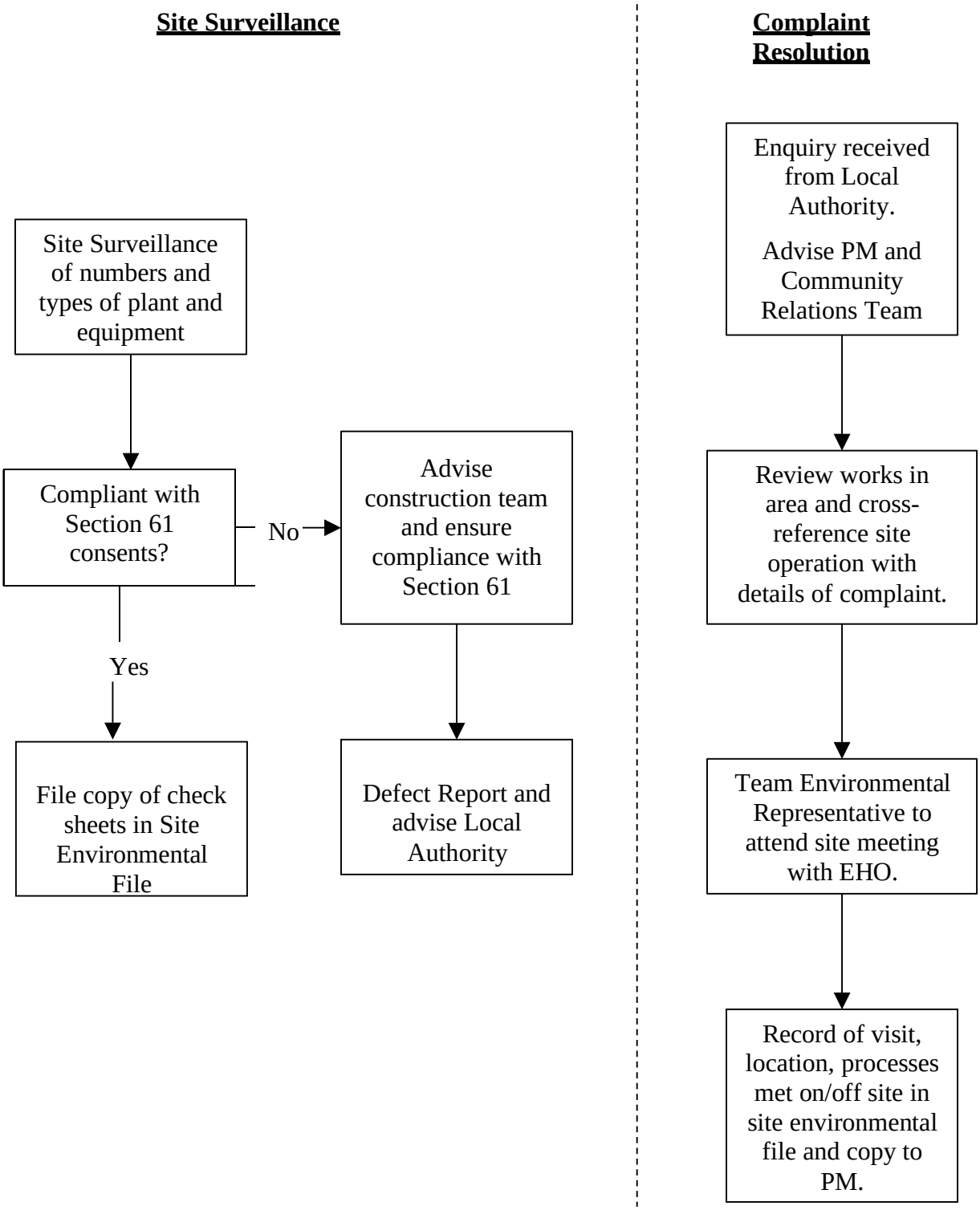
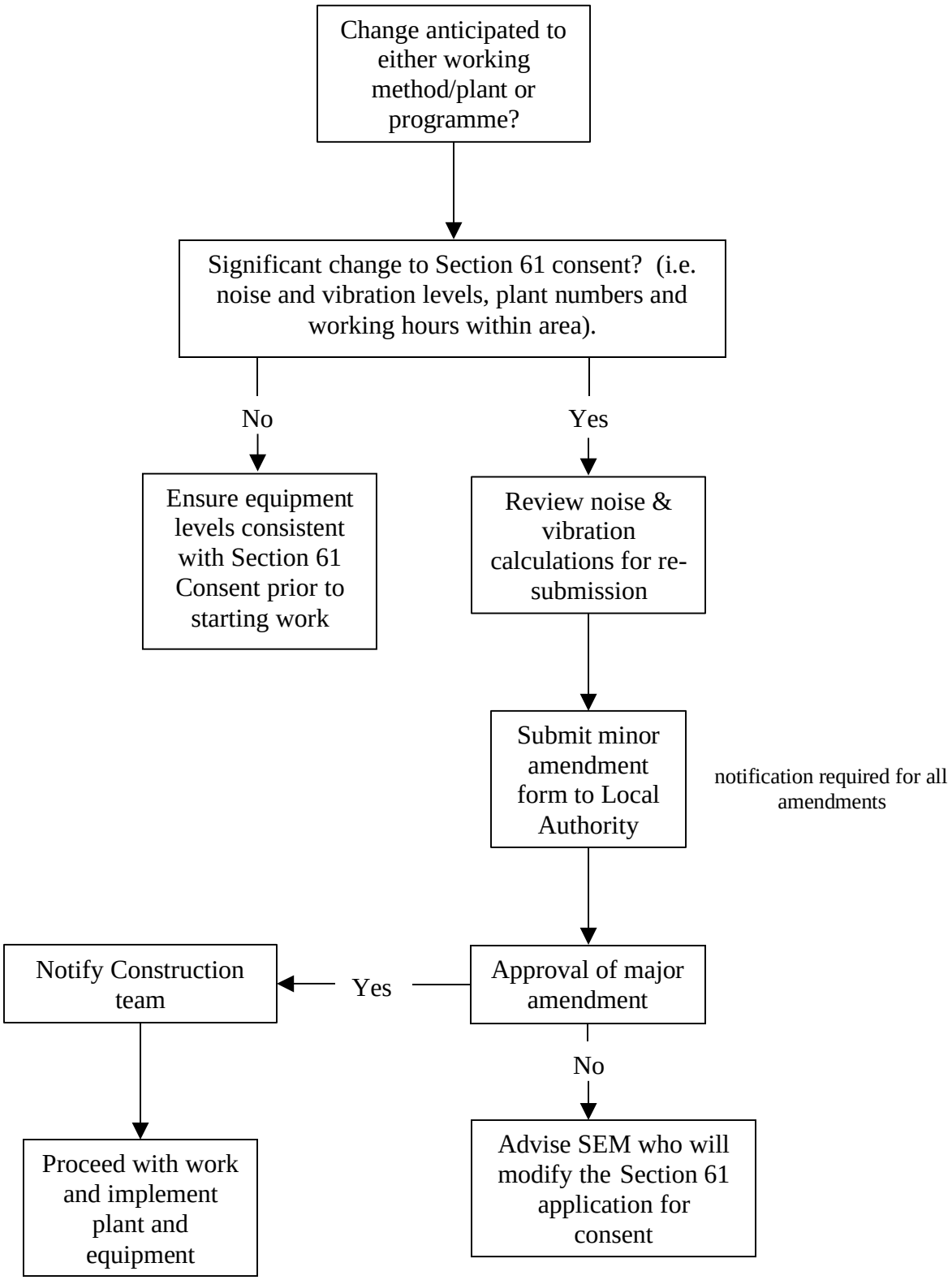


Figure 4. Amendment Procedure



Appendix 3 – Plant & Equipment Monitoring Proforma

EARTHWORKS SECTION 61 CONSENT
PLANT MONITORING RECORD

Section 61 Consent Ref: _____

Related Method Statement/COP Reference Number _____

Activity _____

_____

_____

Chainage _____ **Location:** _____

Adjacent Receptor(s) _____

_____

_____

Plant Types Complete list of plant

PLANT	NUMBER
Motor Scraper	
D9 Dozer	
D10 Dozer	
25t All Terrain Crane	
D6 Blade	
D8 Pusher Blade	
Pedestrian Roller	
BoMag 1200 Twin Drum Self Propelled	
Vibratory Roller	
BoMag 213D	
Cat 245 Backacter	
Cat 320 Backacter	
Cat 340 Backacter	
Cat 365 Backacter	
Cat 428 7t Backacter	
25t Tracked Excavator	
20t Tracked Excavator	
18t Tracked Excavator	
D400 Dump Truck	
Cat 250 Dump Truck	
7t Dump Truck	
150mm Vacuum Pump	
Road Delivery HGV	
Road Saw	
Compressor	

Activity compliant with Method Statement YES/NO

Activity compliant with S61 Consent YES/NO

Action Taken if **NO** to either of the above

_____

_____

_____

_____

_____

Name _____

Signature _____

Date _____

Highlight any additional plant being used in the activity.

		DOZERS				ROLLERS			BACKACTERS					EXCAVATORS			DUMP TRUCKS						
Plant List for Section 61 Control and Monitoring	Motor Scraper	Pusher - D9	Pusher - D10	Blade - D6	Pusher/Blade - D8	Pedestrian Roller	Drum Self propelled	Vibratory Roller	BoMag 213D	345 Backacter	Backacter	Backacter 365	Backacter	Backacter CAT 428	25t Trckd Excvtr	20t Trckd Excvtr	18t tracked excavator	D400 Dmp Trcks	Dump Truck Cat 250	Delivery by Dmp Trck	7t Dumper	Vac Pump 150mm	Road Delivry HGV	Road Saw	Compressor
	Crane																							
	No. of Plant items in each team.																							
Remove Topsoil - Option 1 - Motorscrapers (Team of 4)																								
Topsoil scrape - point source	4				1																			
Scraper hauling (full)	4																							
Excavate Spoil - Option 1																								
Scrapers - point source	4		1	1																				
Scraper hauling (full)	4																							
Deal with Spoil - Option 1																								
Landscape spoil	1			2																				
Place/compact fill - vibratory/deadweight	1			2				1																
Place/compact fill - deadweight	1			2					1															
Remove Topsoil - Option 2 - 1 Excavator and 6 Dump Trucks																								
Remove topsoil				1						1								2						
Dump Trucks hauling																		6						
Excavate - Option 2 - 1 Excavator + 6 Dump Trucks																								
Excavate fill normal				1								1						2						
Excavate fill - hard ground				1								1						2						
Dump Trucks hauling																		6						
Deal with Spoil - Option 2																								
Landscape spoil				2														2						
Place/compact fill - vibratory/deadweight				2				1										2						
Place/compact fill - deadweight				2					1									2						

Remove Topsoil - Option 3 - Dozer + Box							
Remove topsoil		1					
Dozer + Box hauling		1					
Deal with Spoil - Option 3							
Landscape spoil		2 1				2	
Balancing Ponds							
Excavators Digging/Shaping					1 1	2 1	1
Dumpers hauling spoil						12 loads/hour total	
Deliveries:						1	
Deliveries: sand via site							1
Pre-earthworks Drainage							
Form V ditches					1		1

Appendix 4 – Section 61 Minor amendment Proforma

SECTION 61 AMENDMENT/DISPENSATION PROFORMA

Section 61 Application No: *{insert}*	ASL Ref: *{insert}*
Date: *{insert}*	Amendment Number: *{insert}*

DESCRIPTION OF AMENDMENT

{insert}

Approved By:

ASL	
Title:(see note)	

{insert} District Council	
Title:	

Distribution:
J Kingdom
ER
{insert}

Variation approved with no conditions	Work may proceed
Variation approved (conditions attached)	Work may proceed, amend COP
Variation not approved	Work can **NOT** proceed. Liaise with SEM to agree variation to S61 Consent

Note: ASL signatory must be the Operations Director, or the Environmental Manager or Project/Site Manager with written authority from ASL's Construction Director. (Appointed Person)

Appendix 5 – Out of hours working notification Proforma

OUT-OF-HOURS WORKING NOTIFICATION

Site Address:..... Contract number.....

OUT-OF-HOURS WORKING NOTIFICATION

FACSIMILE TRANSMITTAL SHEET	
TO: *{insert}*	**FROM:** ***{insert}***
FAX: *{insert}*	DATE: *{insert}*
CC: *{insert}*	
ONE PAGE ONLY	
This facsimile is intended for the named recipient only. It may contain privileged and/or confidential information. If you are not an intended recipient, you must not copy, distribute, or take any action in reliance upon it. If you have received this in error, please inform the sender	

Due to unforeseen circumstances work has proceeded beyond consented working hours at

Chainage:_____ Location:_____

- Due to difficulty with piling operations
- Due to safety or environmental protection
- Or in other circumstances (describe)
- Due to delays in procurement
- Due to plant and equipment deliveries to site being delayed

Person in charge of works:		Description of works:
Position:		
Contact telephone number:		List plant to be used:
Estimated finish time:		

When using this form, ensure that any:

- **Site Security that may be involved at the site or location are informed.**
- **and the Community Relations contact if involved are contacted and notified of work continuing on site.**

Key Reference Documents

Andrew Scott – Sustainable Procurement Manual



Sustainable Procurement policy Manual

Andrew Scott Limited

SUSTAINABLE PROCUREMENT POLICY MANUAL

DOCUMENT REVIEW HISTORY			
DATE	**PAGE**	**REV**	**DESCRIPTION OF REVISION**
03/09/17	N/A	0	First issue
28/08/20	N/A	0	Reviewed

ANDREW SCOTT LTD
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CIVIL ENGINEERING AND CONSTRUCTION

CONTENTS :

1.0	**Sustainable procurement Policy document (Statement of intent)**	4
2.0	**Objectives & Scope**	5
3.0	**Summary of supply chain requirements**	7
4.0	**Goods**	11
4.1	*Construction products*	11
4.2	*Setting up our sites*	13
4.3	*Office Consumables*	14
4.4	*Information Technology*	14
4.5	*Catering*	14
4.6	*Transport*	15
5.0	**Works**	15
5.1	*Works supply chain partners*	15
6	**Services**	15
6.1	*Professional services*	16
6.2	*Waste & Recycling*	16
6.3	*Agency & Security staff*	16

1.0 SUSTAINABLE PROCUREMENT POLICY (Statement of intent)

- **Introduction:**

We are committed to developing a safe and sustainable business by providing sustainable solutions for our employees, our customers and the communities and environment within which we work and live. We aim to become a sustainable business by developing and adopting best practice principles and responding to the needs of our stakeholders.
This policy outlines our guiding principles in our approach to sustainability.

- **Working with Local Communities:**

We recognise our responsibility to act in a way that is considerate and takes into account the views and expectations of the local communities in which we work. We look to improve the communities in which we work by contributing to the local economy by employing local labour, using local companies and improving the surrounding areas. We will:

  - Respect the local communities by listening and understanding their views and concerns.
  - Create training and job opportunities within those communities where we work.
  - Be a good neighbour and support local charities and initiatives.
  - Encourage wider employee participation.
  - Encourage and facilitate a positive work-life balance for our employees.
  - Register our sites to the Considerate Constructor Scheme and abide by the core principles of the scheme.

- **Providing a Safe and Healthy Working Environment:**

The health and safety of our employees and others that may be affected by our business activities is of paramount importance. It is our responsibility to provide a safe environment for our employees, subcontractors, customers and other people visiting our sites and other premises. We will:

  - Adopt an effective and practical approach to Health & Safety management throughout our business.
  - Regularly monitor the implementation and effectiveness of our policies and procedures.
  - Provide appropriate health and safety training for our employees.
  - Ensure that the general public are kept safe from our work activities.
  - Minimise the risk of accidents and incidents occurring on our sites and other premises.
  - Develop and implement a best practice approach to Health & Safety by involvement with health & safety initiatives, safety forums and awareness training.

- **Natural Resource Protection and Environmental Enhancement:**

We recognise that our activities could have a potentially significant environmental impact. We have a responsibility to manage and minimise this impact. We will always strive to:

  - Prevent pollution from our activities through adherence to our certified integrated management system and other best practice principles.
  - Minimise waste and promote recycling and material re-use to set company KPI's.

- Use resources and materials efficiently.
- Implement environmental improvement initiatives on our sites and in our offices.
- Monitor and measure our environmental performance.
- Promote environmental awareness amongst our employees.

- **Climate Change and Energy:**

  We will work to reduce our impact on climate change by monitoring and minimising all our uses of energy. We will always strive to:
  - Actively reduce our use of energy and emissions of greenhouse gases in transport, design, construction, maintenance and in the operation of our facilities.
  - Achieve excellence in life-cycle design and exceed our customer expectations by delivering more innovative, cost effective sustainable solutions.

- **Sustainable Development:**

  We are a long-established company with a solid business model that aims to provide further growth and profit in a sustainable manner by:
  - Being selective in choice of market and business opportunities
  - Recognising and managing risk
  - Working with our supply chain to provide consistent high-quality solutions at affordable cost
  - Building relationships with clients to maximise project value, minimise cost and seek out repeat opportunities
  - Further growing the business and continue to add value for our stakeholders
  - Promoting sustainability throughout the company to reduce costs and increase efficiency.

- This policy shall be reviewed periodically to ensure its compliance with the relevant legislative standards and agreed industry codes of best practice, and to highlight any significant changes to Andrew Scott Limited working practices.

Signed: **Revision:** **1** **Date:** **9th March 2015(Reviewed Aug 2020)**



M. Bowen
Managing Director (with Health, Safety and Environmental Responsibilities)
Andrew Scott Limited



2.0 SCOPE & OBJECTIVES

This policy demonstrates the sustainable procurement requirements for Andrew Scott Limited

The policy applies to all procurement activities undertaken by or on behalf of Andrew Scott Limited and our supply chain partners, including designers, consultants, specifiers, trade contractors, product manufacturers and product distributers. It covers:

Goods – The materials from manufacturers and suppliers (including energy) that are purchased by Andrew Scott Limited, either directly or on our behalf.

Works – The procurement of labour and trade contractors that work on our projects.

Services – The procurement of professional skills and expertise including design consultancy, site security, waste and information technology.

The requirements set out in this Policy are categorised as:

Mandatory – Must be complied with by all relevant parties.

Preference – We will procure with a preference for these requirements when all other aspects of delivery are equal.

Where technically feasible – Where project constraints allow Andrew Scott Limited and its supply chain must comply with these constraint

3.0 SUMMARY OF SUPPLY CHAIN REQUIREMENTS

Below is a summary of the key supply chain requirements and preferences. Further detail can be found within sections.

PROCUREMENT ACTIVITY	CATEGORY	DESCRIPTION	MANDATORY	PREFERENCE	WHERE TECHNICALLY FEASIBLE
GOODS					
CONSTRUCTION PRODUCTS	**ALL GOODS SUPPLY CHAIN PARTNERS**	Have a full and relevant environmental policy	X		
		Provide technical and transparent evidence to support any performance related product claims when requested.	X		
		Adhere to the provisions of the UN Global Compact principles.	X		
		Comply with the requirements of the Modern Slavery Act and Andrew Scott Limited Anti-Slavery Policy.	X		
		Ensure that all materials and substances used comply with relevant legislation.	X		
		Collaborate with Andrew Scott Limited e.g. share best practice, new products & innovation.		X	
		Have, or demonstrate a commitment to securing, a fully accredited environmental management system e.g. EMAS, ISO 14001 or BS8555 from a UKAS registered certification body		X	
		Products to comply with a recognised scheme for responsible sourcing of materials such as BES 6001 or BS 8902		X	
		Product manufacturers to have, or be working towards BS EN 15804 compliant Environmental Product Declarations (EPDs)		X	
		Provide locally sourced goods where possible		X	
	FINISHES & SEALANTS	No paints or other finishes to contain lead	X		
		High VOC paints finishes, and sealants should be designed out or low and zero VOC alternatives selected where technically feasible e.g. water based instead of solvent based paint for external walls.			X
	INSULATION	The Global Warming Potential (GWP) of insulants to be less than 5	X		
	TIMBER & TIMBER PRODUCTS	All fixed timber & temporary timber must be from legal and sustainable sources (PEFC or FSC), accompanied by Chain of Custody information and evidence of this issued to Andrew Scott Limited	X		
		All supply chain members providing timber must be able to evidence compliance with obligations of the EU Timber Regulation (EUTR) when required.	X		
		When suitable products are available, procure timber which is assured as 'Grown in Britain'.		X	
		Avoid products with added urea formaldehyde		X	

PROCUREMENT ACTIVITY	CATEGORY	DESCRIPTION	MANDATORY	PREFERENCE	WHERE TECHNICALLY FEASIBLE
	NATURAL STONE	Procure natural dimensional stone from suppliers demonstrating leadership in the ethical stewardship of their supply chain.		X	
	POLYVINYL CHLORIDE (PVC) PRODUCTS	PVC manufacturers must have phased out, or be working towards and reporting on the phasing out of, heavy metals	X		
		All chemicals used in manufacture of PVC to be registered under REACH	X		
		Procure PVC products with recycled content (unless specifically precluded by third-party performance requirements such as BBA).		X	
		Provide alternatives to, or design out the use of, PVC products containing Phthalates.		X	
	PACKAGING	All supply chain partners must apply the waste hierarchy to packaging.	X		
		Use of larger pack sizes to reduce the amount of packaging per unit		X	
		Use cardboard wrapping where appropriate instead of plastic wrapping i.e. bubble wrap		X	
		Suppliers to collect and reuse packaging as many times as possible		X	
		Supply products that are available in concentrated forms		X	
		Promote the use of manufacturer branded pallets		X	
		Polystyrene packaging should be avoided		X	
SETTING UP OUR SITES	**PLANT & EQUIPMENT**	Site plant or equipment including generators to be no more than 18 months old		X	
		Site lighting to use LEDs		X	
		Non-road diesel engines should be Stage IIIA compliant (unless local standards stipulate more stringent requirements e.g. London Low Emissions Zone).		X	
	SITE ACCOMMODATION	Temporary accommodation units must comply with the Andrew Scott Limited requirements on energy and water saving measures. E.g. cabin zoning and sub-metering.		X	
		Hand towels are not to be provided where hand dryers are installed	X		
		All white goods provided must be a minimum of A-rated	X		
OFFICE CONSUMABLES	**PAPER PRODUCTS**	Paper must be sourced under a certified forest management scheme	X		
		Paper must be: elemental chlorine-free (ECF), processed chlorine-free (PCF) or total chlorine-free (TCF)	X		
		External publications to use standard paper sizes, uncoated paper stock is preferred		X	
		Vegetable oil ink should be specified for external publications		X	
		Minimise the use of printed media and publications		X	
		Paper should minimise the use of virgin fibre and contain a minimum of 50% recycled fibre.		X	
	INFORMATION TECHNOLOGY	Photocopiers and networked printers (excluding wide format printers) to be capable of double-sided printing and secure print.	X		

PROCUREMENT ACTIVITY	CATEGORY	DESCRIPTION	MANDATORY	PREFERENCE	WHERE TECHNICALLY FEASIBLE
		Products to be rated low energy consumption as recognised by Energy Star or similar	X		
		Must include built-in power management features	X		
		Equipment manufacturers to have a managed asset recovery service to take back and recycle equipment	X		
		Information on the full life-cycle performance of a product must be made available by the supplier so it can be considered during procurement	X		
	CATERING	All tea and coffee to be either Fairtrade or Rainforest Alliance certified	X		
		Supply chain caterers to select food using Fairtrade produce, locally sourced and food currently in season.		X	
		Where water dispensers are required, we shall endeavor to install mains supplied filtered water dispensers to avoid the use of bottled water and bottled water dispensers.			X
TRANSPORT	COMMERCIAL VEHICLES	All commercial vehicles procured, by or for Andrew Scott Limited, must comply with the latest European engine emission standards, and be fitted with speed restrictors.	X		
		Tyre pressure monitoring systems (TPMS) should be specified to all commercial vehicles used by Andrew Scott Limited, if not fitted as standard vehicles must be supplied with manual tyre pressure	X		
		Telematics systems should be fitted to all vehicles used by Andrew Scott Limited to allow effective route planning and reduce unnecessary mileage.	X		
WORKS					
WORKS SUPPLY CHAIN PARTNERS	LABOUR AND TRADE	To have a full and relevant environmental policy	X		
		Comply with the requirements of the Modern Slavery Act and Andrew Scott Limited Anti-Slavery Policy.	X		
		Comply with all UK employment legislation and ensure that workers have the right to work in the UK.	X		
		Maintain a trained and competent workforce appropriate to the duties they are undertaking and provide evidence if requested.	X		
		Supply chain partners to minimise construction waste arisings wherever possible.	X		
		Collaborate with Andrew Scott Limited to ensure continuous development and improvement.		X	
		To have, or be committed to securing, a fully accredited environmental management system e.g. EMAS, ISO 14001 or BS8555 from a UKAS registered certification body.		X	
		Promote, create and manage apprenticeship opportunities and/or training and development of site operatives.		X	
		Engage local labour and provide opportunities for small and medium sized enterprises.		X	
SERVICES					
PROFESSIONAL SERVICES	ALL SERVICE PROVIDERS	All providers of professional services and their employees to comply with the principles and objectives set out within our procurement policy.	X		
		Comply with the requirements of the Modern Slavery Act and Andrew Scott Limited Anti-Slavery Policy.	X		
		All personnel and key stakeholders involved with have the necessary skills, knowledge and experience, and provide evidence if requested.	X		

PROCUREMENT ACTIVITY	CATEGORY	DESCRIPTION	MANDATORY	PREFERENCE	WHERE TECHNICALLY FEASIBLE
WASTE & RECYCLING	**WASTE MANAGEMENT CONTRACTORS**	Waste service providers must demonstrate a minimum diversion from landfill of 90% for construction waste, unless agreed with the Group Environment Manager	**X**		
		Procure waste services from providers who are accredited to PAS 402 or have committed to working toward accreditation with a clear timeframe.		**X**	
AGENCY & SECURITY STAFF	**AGENCY LABOUR & SITE SECURITY**	Where agency staff, cleaners, site labour or site security personnel are engaged, supply chain companies must have appropriate systems and processes in place to ensure compliance with all UK employment legislation (including the National Minimum Wage, the Agency Worker Regulations 2011, the Asylum and Immigration Act 2006 and the Modern Slavery Act 2016). They must also comply with Andrew Scott Anti Slavery Policy.	**X**		
		Use security services from companies approved by the Security Industry Authority (SIA)	**X**		
		All security guard personnel on our projects to have a current SIA license	**X**		
		Engage local labour and provide opportunities for small and medium sized enterprises.		**X**	

4.0 GOODS

4.1 – Construction products

4.1.1 – All goods supply chain partners

Companies who manufacture, fabricate, assemble goods or distribute them must:

- have a full and relevant environmental policy
- provide technical and transparent evidence to support performance related product claims when requested
- adhere to the provisions of the UN Global Compact principles
- collaborate with Andrew Scott Limited e.g. share best practice, new products & innovation
- comply with the requirements of the Modern Slavery Act & Andrew Scotts Anti-Slavery Policy
- ensure that all materials and substances used comply with relevant legislation

Preference will be given to those who go beyond our mandatory requirements and:

- have, or demonstrate a commitment to securing[1], a fully accredited environmental management system e.g. EMAS, ISO 14001 or BS8555 from a UKAS registered certification body
- provide products with a recognised responsible sourcing scheme. This includes certification to BES 6001 or through the development of a sector specific scheme that complies to BS 8902, verified by a third party

Products that have, or are working towards adoption of, BS EN 15804 compliant EPDs (Environmental Product Declarations) will be given preference over equivalent ones without.

We will also procure with a preference for locally sourced goods and provide opportunities to small and medium sized enterprises as well as the voluntary sector where possible. Ensuring we invest in the communities we are working in and reduce the emissions associated with vehicle movements to our sites. Where our supply chain partners are procuring on our behalf we also expect them to procure with the same preferences.

4.1.2 – Finishes & Sealants

Long-term exposure to VOCs can have a serious negative effect on human health. These chemicals can be found in paints, sealants, glues and internal finishes. To limit the impact of materials containing VOCs, we will directly, and through our supply chain:

- not use paints or other finishes containing lead
- use low or zero-VOC paints, finishes and sealants (e.g. water based in place of solvent based paint) where technically feasible
- design out the use of high-VOC products by selecting alternative materials and finishes where technically feasible and appropriate

4.1.3 – Insulation

To reduce the contribution, we make to climate change, we require our supply chain to specify and use insulants with a Global Warming Potential of less than 5.

4.1.4 – Timber & Timber Products

Andrew Scott Limited is committed to sourcing timber and timber products for both temporary and permanent inclusion in our projects from legal and sustainable sources as defined by the UK Government Central Point of Expertise on Timber (CPET). There are two types of evidence required to prove the legality and sustainability of timber and timber products:

- Cat A evidence is preferred and can be provided through a scheme recognised by CPET, both PEFC and FSC are acceptable with a full chain of custody.
- Cat B evidence is alternative documentary evidence which provides assurance that the source is legal and sustainable. This type of evidence can be used where the supplier or contractor is not certified. However, this is classed as being a "broken chain of custody". In these cases, an auditable trail to the certified supplier must be provided. We also recognise timber traceable to a forest with a fully implemented forest management plan in line with the UK Forestry Standard (UKFS).

In support of the above requirements our supply chain partners must provide a Chain of Custody certificate and delivery notes quoting the Chain of Custody reference from the certificate for that delivery.

Andrew Scott Limited is a supporter of Grown in Britain and will give preference to the use of timber and timber products which are assured as 'Grown in Britain', to create a more sustainable future for our forests and woodlands.

All supply chain members providing timber must be able to evidence compliance with obligations of the EU Timber Regulation (EUTR) when required.

Where possible we also have a preference for products with no added urea formaldehyde.

4.1.5 – Natural Stone

Andrew Scott Limited recognises the inherent risks in sourcing dimensional natural stone and will give preference to suppliers demonstrating leadership in the ethical stewardship of their supply chain.

This can be evidenced through compliance with a recognised responsible sourcing scheme certified by a third party. We also recognise membership of, and participation in the Ethical Trading Initiative (ETI Stone Group), the TFT Responsible Stone Program, or the United Nations Global Compact and membership of the Stone Federation GB.

4.1.6 – Polyvinyl Chloride (PVC)

The manufacture and disposal of PVC creates toxic chemicals. When considering alternatives to PVC, we must consider the economic, environmental and social impacts across their whole life cycle, including fitness for purpose, exposure, workability, maintenance, dismantling, and ease of recycling.

Where PVC is required to be used we seek to work with suppliers who minimise impacts by having the following processes in place:

- PVC manufacturers must have phased out, or be working towards and reporting on, the phasing out of heavy metals such as lead, mercury or cadmium

- all chemicals used in the production of virgin PVC must be registered for use under the regulations with the European Chemical Agency (REACH)
- either operating a take-back scheme that offers a closed-loop recycling system or identifying a mechanical recycling system for unbonded installation waste

Andrew Scott Limited also has a preference for PVC products with recycled content (unless specifically precluded by third-party performance requirements such as BBA). We also expect our suppliers to provide alternatives to, or design out the use of, PVC products containing Phthalates where possible.

4.1.7 – Packaging

Andrew Scott Limited is committed to reducing waste. We will engage with our supply chain partners to jointly develop strategies to reduce packaging on our projects. As a minimum we require our supply chain to minimise packaging waste by implementing the waste hierarchy and sharing best practice with us.

The actions listed below are considered best practice and where other factors (cost, quality, protection etc.) are equal Andrew Scott Limited will procure with a preference for products where these actions have been implemented:

- use of larger pack sizes to reduce the amount of packaging per unit
- collect and reuse packaging and protective materials as many times as possible
- using cardboard wrapping where appropriate instead of plastic wrapping e.g. bubble wrap
- supply products that are available in concentrated forms
- promote the use of manufacturer branded pallets to ensure clear ownership and encourage repatriation
- avoid polystyrene packaging as it cannot be easily recycled or reused

Andrew Scott Limited may require manufacturers, suppliers or subcontractors to take back any excessive packaging for subsequent reuse or recycling at their own expense.

4.2 – Setting up our sites

4.2.1 – Plant & Equipment

To reduce carbon emissions and fuel we will endeavor to procure all plant and equipment efficiently-sized for the task in hand. Non-road diesel engines should be Stage IIIA compliant (unless local standards stipulate more stringent requirements e.g. London Low Emissions Zone) as this plant is cleaner, more energy efficient and cost-effective to run. We encourage our supply chain to do the same.

Our policy on plant is in line with European emission standards for new non-road diesel engines which apply to any machine either built in or imported for sale into the UK. The standards have been developed to radically reduce particulates, CO_2 and NO_X emissions from engines.

Temporary lighting systems should use LEDs where cost neutral or beneficial.

4.2.2 – Site Accommodation

Temporary accommodation units provided by Andrew Scott Limited must comply with the current

Group requirements on energy and water saving measures. This includes but is not limited to cabin zoning and sub-metering.

Hand towels are not to be provided where hand dryers are installed.

All white goods provided must be a minimum of A-rated under the EU Energy Efficiency Labelling Scheme.

4.3– Office Consumables

The following section relates to office consumables procured by Andrew Scott Limited

4.3.1 – Paper products

Andrew Scott Limited minimises the use of printed media through larger screens and the use of mobile devices where appropriate and will always consider the use of electronic publications. However, where this is not possible, in line with our Corporate Brand Manual, all paper for printing, photocopying and external publications must be sourced under a certified forest management scheme to either PEFC or FSC. Paper products should minimise the use of virgin fibre and contain a minimum of 50% recycled fibre.

All paper products must be elemental chlorine free, processed chlorine free or total chlorine free including oxidising and reductive bleaching. Printed publications must utilise standard paper sizes to minimise waste. Uncoated stock is preferred, and vegetable oil ink should be specified where possible with the environmental impact of specialist finishes carefully considered.

4.4 – Information Technology

Andrew Scott Limited will ensure that, when purchasing or leasing IT equipment, including mobile phones, the following objectives are met:

- all networked photocopiers and printers (excluding wide format printers) must be capable of double-sided printing and secure print
- the procurement and use of stand-alone desktop printers are to be discouraged where larger Multi-Functional Devices (MFDs) exist
- products must be rated low energy consumption as recognised by Energy Star or a similar standard with built-in power management features and automatic switch off when not in use, except for equipment that needs to run all the time, such as servers
- the full life-cycle performance of a product should be considered during procurement
- equipment manufacturers must have a managed asset recovery service to take back and recycle equipment

4.5 – Catering

Andrew Scott Limited has an established process for the procurement of catering services delivered across our sites, offices, events and conferences. Our supply chain caterers are encouraged to select Fairtrade produce, locally sourced and food currently in season. All tea and coffee should be either Fairtrade or Rainforest Alliance certified.

Where water dispensers are required, we use reasonable endeavors to install mains supplied filtered water dispensers and avoid the use of bottled water and bottled water dispensers.

4.6 – Transport

4.6.1 – Commercial vehicles

All commercial vehicles procured by, or on behalf of, Andrew Scott Limited must comply with the latest European engine emission standards and be fitted with speed restrictors. Tyre pressure monitoring systems (TPMS) should be specified, if not fitted as standard, and vehicles must be supplied with manual tyre pressure gauges.

In collaboration with our supply chain Andrew Scott Limited will also consider the following measures; GPS trackers, engine remapping for improved efficiency, low rolling resistance tyres and the use of electric/hybrid vehicles.

4.6.2 – Company cars

Andrew Scott Limited has group policies to reduce CO_2 emissions, distances travelled and to procure a more efficient fleet. We review emission level for all company cars annually.

5.0 WORKS

5.1 – Works supply chain partners

All works supply chain partners must:

- have a full and relevant environmental policy,
- comply with all UK employment legislation including the Modern Slavery Act & Andrew Scott Limited Anti-Slavery Policy
- maintain a trained and competent workforce appropriate to the duties they are undertaking and provide evidence if requested
- minimise construction waste on all projects

Andrew Scott Limited has processes in place to foster collaboration with its supply chain partners to identify best practice and innovative solutions which all supply chain partners must support and engage with to demonstrate continuous development.

Andrew Scott Limited procures works with a preference for those who:

- are receptive to the promotion, creation and management of apprenticeship opportunities and/or training and development of site operatives
- have secured, or have committed to securing, a full accredited environmental management system e.g. EMAS, BS8555 or ISO 14001 from a UKAS registered certification body, with targets, objectives and an improvement programme

We will also procure with a preference for locally based labour and supply chain partners and provide opportunities to small and medium sized enterprises as well as the voluntary sector and social enterprises where possible. Where our supply chain partners are procuring on our behalf we also expect them to procure with the same preferences.

6.0 SERVICES

6.1 – Professional services

We rely on our design and consultant supply chain partners to help deliver sustainable procurement and sustainable development. All providers and their people who create designs and specifications must be familiar with, and adhere to, the principles and objectives set out within this policy. We require that all personnel and key stakeholders involved have the necessary skills, knowledge and experience, and provide evidence if requested. They must also adhere to the requirements of the Modern Slavery Act & Andrew Scott Limited Anti-Slavery Policy.

We will also procure with a preference for local services and provide opportunities to small and medium sized enterprises where possible. Where our supply chain partners are procuring on our behalf we also expect them to procure with the same preferences.

6.2 – Waste & Recycling

Andrew Scott Limited carries out regular audits of waste contractors to ensure that they have advanced waste management capabilities that guarantee maximum segregation and recovery.

To support our zero waste to landfill ambition, we only work with companies who can demonstrate a minimum diversion from landfill of 90% for mixed construction waste, unless agreed with the Safety Health & Environmental Manager. Works supply chain partners employing their own waste contractors to remove waste material from our projects must operate to the same standard.

Preference will be given to those waste service providers who are accredited to, or have committed to achieving accreditation to, PAS 402 with a clear timeframe.

6.3 – Agency & Security staff

Where agency staff, cleaners, site labour or site security personnel are engaged, supply chain companies must have appropriate systems and processes in place to ensure compliance with all UK employment legislation (including the National Minimum Wage, the Agency Worker Regulations 2011, the Asylum and Immigration Act 2006 and the Modern Slavery Act 2016) they must also comply with Andrew Scott Limited Anti-Slavery Policy.

For the procurement of security services, we will only use companies approved by the Security Industry Authority (SIA) which is the organisation responsible for regulating the private security industry. All security guard personnel on our projects must have a current SIA license.

We will also procure with a preference for locally sourced labour and provide opportunities to small and medium sized enterprises where possible to ensure we invest in the communities we are working in. Where our supply chain partners are procuring on our behalf we also expect them to procure with the same preference.

Key Reference Documents

EA Guidance: Managing Japanese Knotweed on Development Sites – The Knotweed Code of Practice (2013)

Environment Agency

Managing Japanese knotweed on development sites (version 3, amended in 2013)

the knotweed code of practice



We are the Environment Agency. It's our job to look after your environment and make it a better place – for you, and for future generations.

Your environment is the air you breathe, the water you drink and the ground you walk on. Working with business, Government and society as a whole, we are making your environment cleaner and healthier.

The Environment Agency. Out there, making your environment a better place.

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Environment Agency

Managing Japanese knotweed on development sites

the knotweed code of practice

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defra

Network Rail

Contents

	Contents	02
	Summary	04
	Introduction	05
	Managing Japanese knotweed – legislation	06
	The status of this code	08
	Tips for developers	09
1	Ecological information on Japanese knotweed	10
	1.1 - What is Japanese knotweed?	
	1.2 - What does Japanese knotweed look like?	
	1.3 - Regeneration	
	1.4 - Dispersal	
	1.5 - Why do I need to manage Japanese knotweed on my development site?	
	Flowchart for treating Japanese knotweed	12
2	How do I prevent Japanese knotweed spreading?	13
	2.1 - Avoiding contamination around the site	
	2.2 - Good site hygiene	
	2.3 - Avoiding new contamination to the site	
	2.4 - Reusing treated soils on site	
3	How do I manage my Japanese knotweed problem?	15
	3.1 - Japanese knotweed management plans	
	3.2 - Herbicide treatment	
	3.3 - Which herbicide should I use?	
	3.4 - Combined treatment methods	
4	How do I use root barrier membranes?	19
	4.1 - Cell formation	
	4.2 - Protecting structures and hard surfaces	
	4.3 - Preventing horizontal spread	
	4.4 - Protecting services, etc	
5	How do I treat or dispose of Japanese knotweed on site?	25
	5.1 - Cutting Japanese knotweed canes	
	5.2 - Burning	
	5.3 - Excavation	
	5.4 - The burial method	
	5.5 - The bund method	
6	How do I dispose of Japanese knotweed off-site?	29
	6.1 - Arrangements for landfill	
	6.2 - Duty of care for hauliers	

Contents

7 How do I move soil containing Japanese knotweed? 31
- 7.1 - Moving soil on-site
- 7.2 - Moving soil off-site
- 7.3 - Decontaminating vehicles

8 How will Japanese knotweed affect using the site in the long term? 32
- 8.1 - Managing buried Japanese knotweed in the long term
- 8.2 - Controlling potential regrowth around the site
- 8.3 - Advice to new owners
- 8.4 - What do I do if Japanese knotweed starts to grow through tarmac and other engineered surfaces and structures?
- 8.5 - How do I stop Japanese knotweed from neighbouring properties reinfesting the site?
- 8.6 - How do I treat Japanese knotweed regrowth amongst valuable shrubs and planting schemes?

9 Sources of additional information 34
- 9.1 - Additional information
- 9.2 - Some useful resources

Glossary 35

Appendix

I A guide to identifying and excavating Japanese knotweed rhizome
- i) What is Japanese knotweed?
- ii) What is Japanese knotweed rhizome?
- iii) Why is it important to be able to identify Japanese knotweed rhizome?
- iv) How do I recognise rhizome?
- v) How do I remove rhizome?

II Root/rhizome identification chart

III Root/rhizome identification chart – other common plants

IV Table for identifying Japanese knotweed rhizome

V Template Japanese knotweed management plan

VI An example of a Japanese knotweed management plan.

VII Restricted access sign

Summary

Managing land infested by Japanese knotweed in a timely and appropriate way can avoid:

- excessive cost
- potential prosecution and/or compensation claims
- physical damage to buildings and hard surfaces
- harm to the environment.

Identifying Japanese knotweed on a site early lets developers assess and cost options for destroying, disposing of and managing it, as well as negotiating an appropriate change in the purchase price of the land.

You should keep the amount of Japanese knotweed-infested soil you excavate to a minimum.

Making sure your staff can identify Japanese knotweed rhizome can reduce waste costs and improve how you manage Japanese knotweed on site.

Do not accept topsoil until you have inspected it for Japanese knotweed rhizome.

Japanese knotweed-infested soil that has been treated can be reused for landscaping the site, but should not be taken off site, unless to landfill.

Designating a clerk of works to oversee the Japanese knotweed management plan is a good way of ensuring that contractors treat Japanese knotweed in an appropriate manner.

You have a choice of herbicides that are effective against Japanese knotweed, depending on your situation.

It is an offence to plant or cause Japanese knotweed to spread in the wild under the Wildlife and Countryside Act 1981 and all waste containing Japanese knotweed comes under the control of Part II of the Environmental Protection Act 1990.

You can get advice on managing waste from us on our customer services line; 03708 506 506

If you see anyone illegally moving or disposing of waste, call our incident hotline on; 0800 80 70 60.

Introduction

Purpose

This code has been written for anyone involved in the development and haulage industry who may encounter sites with Japanese knotweed, or soil containing it. It allows our staff to provide consistent advice.

This code replaces "The Environment Agency code of practice for the management, destruction and disposal of Japanese knotweed" May 2001. This code was amended in 2013 to include changes in legislation and refinements to the 2006 code.

This code of practice will help developers manage Japanese knotweed legally. It also gives you options for cost effectively managing Japanese knotweed on site. Architects, planners, designers, contractors, consultants and landscape gardeners can also use this code.



Japanese knotweed Fallopia japonica var japonica is a non-native invasive species of plant. Since it was introduced into the UK as an ornamental garden plant in the mid-nineteenth century it has spread across the UK, particularly along watercourses, transport routes and infested waste areas.

Plants within their native range are usually controlled by a variety of natural pests and diseases. When these plants are introduced into new areas that are free from these pests and diseases, they can become larger and more vigorous. They invade natural habitats and out-compete the native plants and animals that normally live there. Rivers, hedges, roadsides and railways form important corridors for native plants and animals to migrate, and large infestations of non-native weeds can block these routes for wildlife.

Japanese knotweed isn't just a problem for our native wildlife. The vigorous growth can damage buildings and hard surfaces. Once established underneath or around the built environment, it can be particularly hard to control. Riverside Japanese knotweed damages flood defence structures and reduces the capacity of channels to carry floodwater.

Footpaths become crowded with tall canes, making it difficult for pedestrians to see and making them feel less safe. In winter, the tall dead canes show where litter has become caught up and rats can live there. Lawns and gardens become infested and the cost of maintaining buildings increases.

There are a number of ways in which we can manage the impact of Japanese knotweed. It is important that we find out the ways in which Japanese knotweed has been spread and try to tackle these. Disposing of soil from development sites is one way Japanese knotweed has spread.

Brownfield development is an important aspect of urban and rural regeneration and protecting green belt. Many of these sites support infestations of Japanese knotweed, which can live in poor soil quality and contamination common to these areas. These sites have often been used to receive waste, often fly-tipped by gardeners.

Managing Japanese knotweed - legislation

Legislation covering the handling and disposal of knotweed includes the following:

The Control of Pesticides Regulations 1986 require any person who uses a pesticide to take all reasonable precautions to protect the health of human beings, creatures and plants, safeguard the environment and in particular avoid the pollution of water. For application of pesticides in or near water approval from the Environment Agency should be sought before use.

Section 14(2) of the **Wildlife and Countryside Act 1981 (WCA 1981)** states that "…if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence." Japanese knotweed is one of the plants listed in Schedule 9. Anyone convicted of an offence under Section 14 of the WCA 1981 may face a fine of £5,000 and/or 6 months imprisonment, or 2 years and/or an unlimited fine on indictment.

The **Environmental Protection Act 1990 (EPA 1990)** contains a number of legal provisions concerning "controlled waste", which are set out in Part II. Any soil or plant material contaminated with Japanese knotweed that you discard, intend to discard or are required to discard is likely to be classified as controlled waste. The most relevant provisions in the EPA are in section 33 (1a) and (1b). These create offences to do with the deposit, treating, keeping or disposing of controlled waste without a permit. Section 33 (1)(c) makes it an offence to keep, treat or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health. Section 34 places duties on any person who imports, produces, carries, keeps, treats or disposes of controlled waste. Waste must be handled responsibly and in accordance with the law at all stages between its production and final recovery or disposal.

Waste must be transferred to an authorised person, in other words a person who is either a registered carrier or exempted from registration by the **Waste (England and Wales) Regulations 2011** (Waste Regulations). A waste transfer note must be completed and signed giving a written description of the waste as per regulation 35 of the Waste Regulations. This must be sufficient to enable the receiver of the waste to handle it in accordance with their own duty of care. Failure to comply with these provisions is an offence.

The **Hazardous Waste Regulations 2005 (HWR 2005)** contain provisions about the handling and movement of hazardous waste. Hazardous wastes are defined by reference to regulation 6 of the HWR 2005. A waste is a hazardous waste if it is listed as a hazardous waste in the List of Wastes Decision as well as the **List of Waste (England) Regulations 2005**. The Secretary of State is also able to decide if a particular batch of waste is to be determined as hazardous. Schedule 3 of the HWR 2005 includes a list of properties that render waste hazardous. Annex I, II and III of the **Hazardous Waste Directive** also provides further guidance on what constitutes hazardous waste.

Consignment notes must be completed when any hazardous waste is transferred. They must include details about the hazardous properties and any special handling requirements. If a consignment note is completed, a waste transfer note is not necessary. Untreated Japanese knotweed is not classed as hazardous waste, but material containing knotweed which has been treated with certain herbicides, may be classified as hazardous waste.

The **Environmental Permitting (England and Wales) Regulations 2010** (EPR) includes reference to the 'Exercise of relevant functions' in Schedule 9, paragraph 4. These objectives are derived from Article 13 of the **European Waste Framework Directive**. These objectives state that necessary measures shall be taken to ensure that *"…waste management is carried out without Endangering human health, without harming the*

environment and, in particular without risk to water, air, soil, plants or animals; without causing a nuisance through noise or odours; and without adversely affecting the countryside or places of special interest."

Exemptions from the need for a permit are available in some circumstances, and are set out in Schedule 2 and 3 of the EPR. Exempt waste operations must comply with the general rules governing operations and must register with the relevant authority.

The above legal provisions have consequences for a range of people, including anybody involved in the management or disposal of knotweed. For example knotweed which is cut down or excavated and removed from a development site must be transferred to an authorized person, and correctly described. It must be disposed of appropriately, as set out below in this Code.

If you are going to bury knotweed on a development site you will need to consult the Environment Agency first to make sure that the material does not contain any other contaminant that may affect the quality of groundwater.

If you pollute the environment or cause harm to human health you may be prosecuted. Anyone who uses a herbicide must ensure that they do not pollute the water environment and the use of herbicides in or near water requires approval from us. If any waste soil or knotweed is sent for landfill either before or after any treatment, it must go to a landfill that is authorized to receive it. It is not an offence to have Japanese knotweed to grow onto other people's property may be regarded as a private nuisance under common law, but this would be a civil matter.

knotweed management in paragraphs 4.1, 5.4 and 5.5 this would normally require you to have an environmental permit or a pollution prevention and control permit. However if you carry out these activities in full accordance with this code of practice, and the work meets the waste relevant objectives described above, then in accordance with our Enforcement and Prosecution Policy we would not normally prosecute for failure to have an environmental permit.

Our Role

The Environment Agency is responsible for regulating waste. We grant waste management permits, register exemptions and can take enforcement action including prosecution if the law is not complied with. We give approvals under the **Control of Pesticides Regulations 1986** for use of pesticides in or near water.

We may take enforcement action under WCA 1981, but there are also a number of other organisations that can do so. We would not normally use this legislation unless a waste offence had also been committed.

We are not responsible for controlling Japanese knotweed, other than that growing on our land. Managing knotweed is the responsibility of the owner/occupier of a site. We do not endorse Japanese knotweed management plans, or endorse companies that do this.

The status and use of this Code

Provided there is a suitable location, this code describes ways of managing Japanese knotweed that developers may wish to consider, which will avoid creating a waste disposal problem. We are keen to provide alternatives that allow developers to treat Japanese knotweed on site, so you don't have to use landfill. Landfill is very expensive for the development industry, it reduces valuable landfill capacity and needs haulage, which damages the environment and increases the risk of Japanese knotweed spreading. Sometimes, due to shortage of time and location, landfill is the only reliable option, but it should be treated as a last resort.

There are a number of ways of managing Japanese knotweed within a development site. Site managers need to be careful of claims made about products and methods on offer for controlling Japanese knotweed, particularly those that claim it can quickly destroy the problem completely.

Since the publication of the 2006 code, various soil screening and sieving methods have become a popular method for rhizome removal. Where conditions are appropriate for this method, screening can provide an effective means of rhizome removal. Screened soil must still be regarded as potentially containing viable knotweed rhizome and must not be reused off-site or sold for re-use. If soil is taken off-site, it should be disposed of at an approved landfill, in accordance with section 6 of the code. If soil has been efficiently screened it can be reused on-site, in accordance with section 2.4 of the code.

We cannot guarantee that any of the methods we describe in this code will be successful. We believe the methods within this code are among the best that are currently available, but do not reflect the complete choice that is available. The contractor and client need to agree a contract for effectively treating the problem. Remember that Japanese knotweed can stay dormant for many years.

You may wish to use this code of practice to assist you in carrying out your legal duties concerning knotweed. However this code does not constitute legal advice and it does not aim to give a detailed or comprehensive account of the legislation that could apply to you. You should be aware that is your responsibility to make sure that the law is complied with. Waste legislation is especially complex. You need to discuss these issues with us to make sure you act appropriately.

If you need advice, call our customer services line on 03708 506 506. If you see anyone illegally moving or disposing of waste, call our incident hotline on 0800 80 70 60.

Much of the information in this code concerning on-site treatment options is aimed at suggesting best practice rather than setting out legal obligations.

Tips for developers

We hope that, by developing this code, we will help industry to avoid excessive costs, protect the environment and use natural resources in a sustainable way. We would encourage developers to consider the following particular points:

Check for Japanese knotweed before buying a site.

a) The information and internet links within this code should be enough for you to find out about Japanese knotweed in its various forms. If there is Japanese knotweed on a site, this should not stop you buying it, but you will need to consider this when working out how profitable a development is likely to be.

b) If a site has been skimmed or treated, look for evidence of Japanese knotweed material. Consider some form of legal protection from the potential subsequent cost of managing Japanese knotweed within the purchase agreement.

c) If there is Japanese knotweed, consider whether you will be able to treat the material on site. Have you bought enough space to shift soil and create a bund, for instance?

d) If you think there is no Japanese knotweed on the site, consider getting legal guarantees that say this before you buy the site.

Timetable for treatment and development.

a) Plan to minimise the amount of Japanese knotweed that you have to excavate.

b) Make sure you have allocated enough time within the project timescale to develop and apply a Japanese knotweed management plan.

c) Treating Japanese knotweed early and effectively can significantly reduce the chance of it growing again. You should agree and implement a treatment plan as soon as possible.

d) Consider phasing the development, to allow more time to treat the problem.

e) Use the best methods, including the most effective herbicides for the site in question. This will be determined by factors such as how close the site is to controlled waters and desirable trees and other vegetation.

Managing treated material.
Just because soil has been treated, this does not mean Japanese knotweed cannot grow again. However, if soil is treated effectively, it can be clean enough to be used for landscaping within the development.

You should only use treated soil in localised areas, where Japanese knotweed control methods could easily be used, if material starts to grow again. We advise that you should not use treated soil within 50m of a watercourse.

Long-term management.
You need to consider the chance that Japanese knotweed could grow back when you are managing the site long-term.

Current owners of the site need to accurately record within the deeds of the property where any material is buried and make this available to all subsequent owners so the material is not disturbed.

A summary of the treatment should be included within the vendor statement declaration.



Development site for sale. Would you have spotted the telltale dead winter canes that indicated this site was infested with knotweed?

Ecological information on Japanese knotweed

1.1 What is Japanese knotweed?

Japanese knotweed is a tall, vigorous ornamental plant that escaped from cultivation in the late nineteenth century to become an aggressive invader in the urban and rural environment.

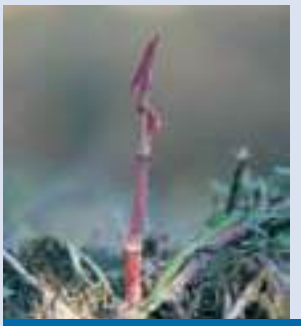
1.2 What does Japanese knotweed look like?

Japanese knotweed, scientific names *Fallopia japonica* (Houtt. Ronse Decraene), *Reynoutria japonica* (Houtt.) or *Polygonum cuspidatum* (Siebold & Zuccarini) is a member of the dock family (Polygonaceae). It is a rhizomatous (produces underground stems) perennial plant with distinctive, branching, hollow, bamboo-like stems, covered in purple speckles, often reaching 2-3 m high. The leaves of the mature plant are up to 120 mm in length with a flattened base and pointed tip and are arranged on arching stems in a zig-zag pattern. The plant flowers late in the season, August to October, with small creamy-white flowers hanging in clusters from the leaf axils (point at which the leaf joins with the stem). The underground rhizomes are thick and woody with a knotty appearance and when broken reveal a bright orange-coloured centre. The rhizome system may extend to, and beyond, a depth of at least 2m and extend 7m laterally from a parent plant.

During winter, the leaves die back to reveal orange/brown coloured woody stems which may stay erect for several years. Stem and leaf material decomposes slowly, leaving a deep layer of plant litter. During March to April, the plant sends up new shoots, red/purple in colour with rolled back leaves. These shoots grow rapidly due to stored nutrients in the extensive rhizome system. Growth rates of up to 40 mm a day have been recorded.

1.3 Regeneration

Only female Japanese knotweed (*F. japonica var japonica*) plants have been recorded to date in the UK. Although seeds are produced, they are not true Japanese knotweed seeds but hybrids, and rarely survive.





Spring Growth



2-3 metre high canes



August - October flowers



Alternate leaves



Zig-zag pattern



Purple speckles

Two species closely related to Japanese knotweed are also found in the UK. These are, giant knotweed (*Fallopia sachalinensis*), a much taller plant which reaches a height of 5m; and a smaller compact variety (*Fallopia japonica var. compacta*), which grows to a height of only 1m. The hybrid (*Fallopia x bohemica*) (a cross between Japanese knotweed and giant knotweed) is also found throughout the UK but is not as common as Japanese knotweed. Both giant knotweed and the hybrid should be managed in the same way as Japanese knotweed.

Japanese knotweed rarely produces viable seeds. In the UK the plant is mainly spread through rhizome fragments or cut stems. Greenhouse trials have shown that as little as 0.7 gram of rhizome material (10 mm in length) can produce a new plant within 10 days. Cut fresh stems have also been shown to produce shoots and roots from nodes when buried in soil or immersed in water. Once cut stem material has been allowed to dry out thoroughly and has reached the orange/brown 'woody' stage, there is no further regeneration. Rhizome material may take much longer to die and may remain dormant for long periods, possibly as long as 20 years.

1.4 Dispersal

The spread and high regeneration rates of the plant have serious implications for dispersal by both natural and human means. In river catchments, fragments of rhizomes or cut stems that are washed into watercourses under high water flows can form new plants downstream. Fly-tipping garden waste that contains stem or rhizome fragments, using contaminated topsoil and transporting soil from infested sites during construction works are the main ways that people spread the plant. Small fragments of stem and rhizome may also be transferred from an infested site to other sites on machinery, for example for building works or for maintaining road verges.

1.5 Why do I need to manage Japanese knotweed on my development site?

Habitats affected by Japanese knotweed include those in both urban and rural areas. In an urban environment, sites such as road verges, railway land and watercourse corridors may be affected. Waste ground, cemeteries and heavily disturbed ground are particularly vulnerable. In rural areas, the problems include disrupting sight lines on roads and railways and, in the riverside environment, disrupting flood defence structures.
The plant damages the urban environment by pushing up through tarmac and paving, out-competing other species in planting programmes as part of landscaping schemes and causing aesthetic problems as litter accumulates in the dense thickets formed by the plant. This also encourages vermin.

Japanese knotweed is also invading continental Europe, particularly in the east. It is also causing problems on the western seaboard of the United States. Within its native range, Japanese knotweed rarely causes problems.

Japanese knotweed has been removed from the natural enemies that control it in its native range in Japan. It out-competes our native plants and animals. The spread of Japanese knotweed is a serious threat to our countryside, and the native plants and animals that rely upon it.



Dead winter canes



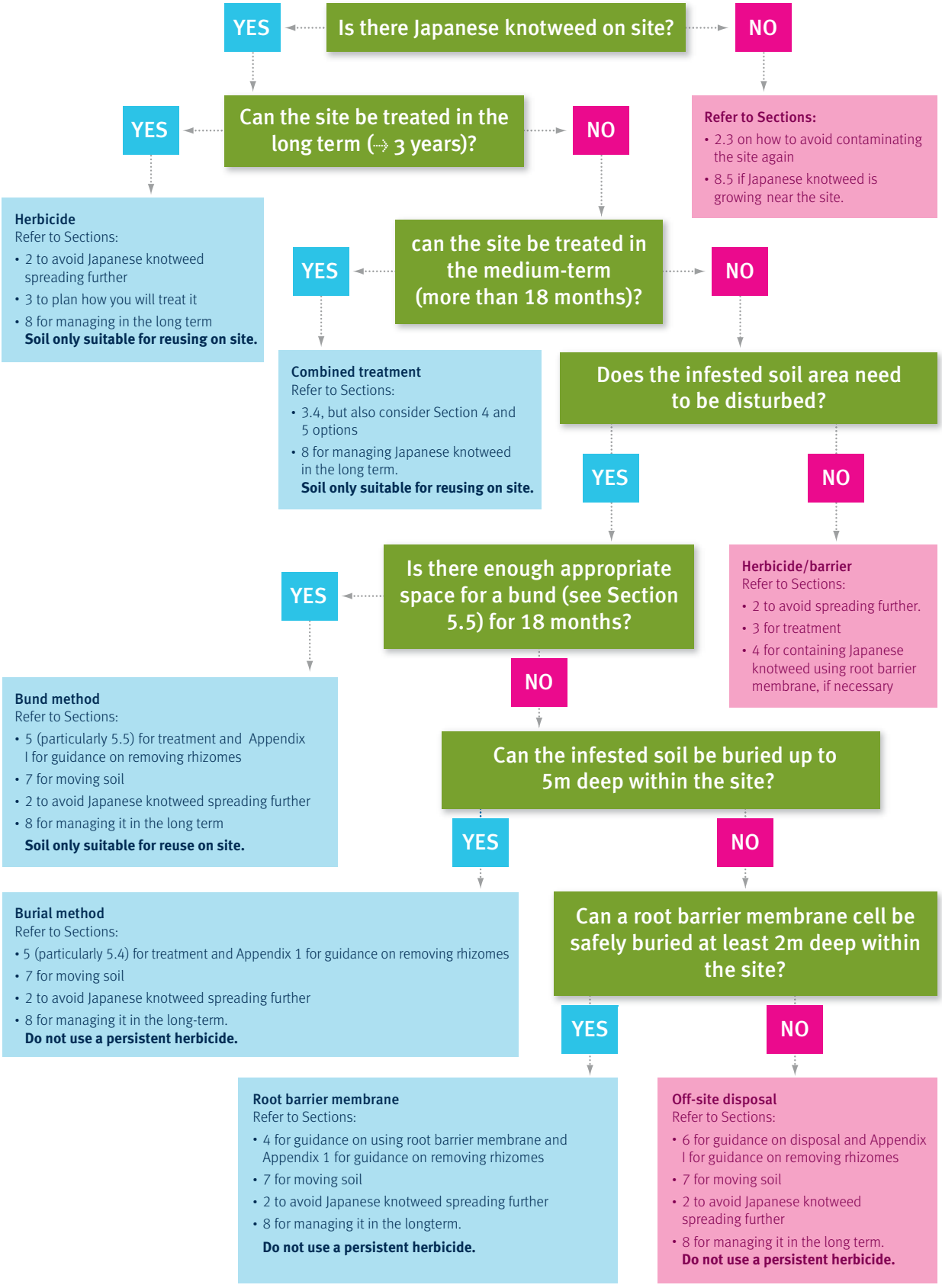


Giant knotweed *F.sachalinensis*



Hybrid knotweed *F.x bohemica*

Flowchart for treating Japanese knotweed



How do I prevent Japanese knotweed spreading?

It is important to make sure that the site is not contaminated by fresh Japanese knotweed, or that parts of the site previously unaffected by Japanese knotweed do not become contaminated. We recommend that:

i) you have a Japanese knotweed management plan (see section 3.1);

ii) all staff are aware of what Japanese knotweed looks like and what their responsibilities are;

iii) you have a clerk of works responsible for the management of Japanese knotweed.

2.1 Avoiding contamination around the site

It is essential that you find out how much Japanese knotweed infestation there is on the site and that everyone working there clearly understands this. You should brief all contractors fully. You should record any areas that are contaminated with Japanese knotweed in the Japanese knotweed management plan (Appendix V and VI), isolate them with fencing and put up a restricted access sign (Appendix VII). Section 7 describes the precautions you need to take when moving soil infested with Japanese knotweed.

2.2 Good site hygiene

To maintain good site hygiene, we suggest:

a) as a general rule, the area of infestation is 7m horizontally from the nearest growth of Japanese knotweed that can be seen. To determine exactly how far the rhizomes have spread, you would need to dig a series of test pits and examine them carefully;

b) a fence that can clearly be seen should mark out the area of infestation. Signs should warn people working there that there is Japanese knotweed contamination (appendix VII);

c) you should indicate stockpiles of soil contaminated with Japanese knotweed with appropriate signs and isolate them;

d) you should not use vehicles with caterpillar tracks within the infested area;

e) vehicles leaving the area should either be confined to haulage routes protected by root barrier membranes, or be pressure washed (see section 7.1);

f) vehicles used to transport infested soils must be thoroughly pressure-washed in a designated wash-down area before being used for other work;

g) areas infested by Japanese knotweed that are not going to be excavated should be protected by root barrier membrane if they are likely to be disturbed by vehicles (see section 4). Root barrier membranes will need to be protected from damage by vehicles with a layer of sand above and below the root barrier membrane, topped with a layer of hardcore or other suitable material as specified by an architect or engineer (see section 7.1);

h) the material left after the vehicles have been pressure washed must be contained, collected and disposed of along with the other Japanese knotweed material;

i) a clerk of works should oversee the Japanese knotweed management plan (appendix V), including the provisions for avoiding contamination. Everyone working on site must clearly understand the role and authority of the clerk of works.

How do I prevent Japanese knotweed spreading?

2.3 Avoiding new contamination to the site

This advice is particularly relevant to sites fortunate enough not to be infested by Japanese knotweed.

The three most common ways a site can become infected are:

Infested topsoil: There have been numerous incidences where site owners have paid to remove Japanese knotweed infested soil from their site, only to introduce it again with topsoil they have bought and not inspected.

BS 3882:2007 'The British Standard Specification for topsoil and requirements for use' states that the supplier shall exercise diligence to avoid the spread of Japanese Knotweed and other pernicious or injurious weeds. You should always inspect topsoil brought into the site, using the guidance in appendix I-IV of this code. You can often get topsoil from different sources. Ideally, you should inspect these sources before you receive material on site. You should use topsoil from different sources within distinct areas of the site and keep a record of this. This may help you with compensation claims against the supplier, should Japanese knotweed subsequently grow. If you have any evidence that sub-standard topsoil is being sold, you should let the local Trading Standards Office know.

Contamination on vehicles: You should inspect vehicles before using them on site. You need to pay particular attention to caterpillar tracks and where trucks and dumpers are stowed.

Fly-tipping: Most Japanese knotweed infestations on development sites started as a result of fly-tipped waste and this often continues after the development has started.

You should report any fly-tipping incidences to us on the 24-hour freephone number 0800 80 70 60.

2.4 Reusing treated soils on site

If soil has been treated and is free from Japanese knotweed contamination and suitable for use, it can be reused on site without the need for a waste management licence or an exemption. If taken off site, this material must be disposed of in a landfill.

Developers reuse treated soils at their own risk, unless the agreement they have with their contractors states otherwise. To minimise the potential problems there could be if the soil was not treated adequately, you should only use soil again where there is little risk of spreading Japanese knotweed. The site should also facilitate herbicide treatment, if it is necessary. Suitable areas should be away from:

a) watercourses (we advise, at least 50m) and ditches;
b) being disturbed by people or livestock;
c) existing amenity areas, lawns and gardens;
d) boundaries with other properties;
e) an area that could be disturbed in the future.

You should also use the soil in a restricted area, rather than spread out across the site. You should record this area in the Japanese knotweed management plan and keep a record of inspection. You must treat any regrowth appropriately.

How do I manage my Japanese knotweed problem?

3.1 Japanese knotweed management plans
Once you find Japanese knotweed on a site, it is essential that you set up some form of Japanese knotweed management plan (KMP). You need to identify a clerk of works to oversee the plan and you need to let all relevant contractors on the site know how important the plan is, for example through 'toolbox' briefings to staff operating on the site.

It is important to only disturb a minimum amount of Japanese knotweed. It is vital that you keep this contaminated material separate from other waste and surplus soil within the site. Soil free from Japanese knotweed and other waste may be disposed of relatively cheaply under exemptions from waste licence. Unless an area of Japanese knotweed is likely to have a direct impact on the development, you should control it in its original location with herbicide over a suitable period of time, usually two - five years.

Appendix V gives a template of a KMP for reference. You can change this according to your own needs. Appendix VI gives an example of a completed KMP.

The KMP is an important document and provides a valuable record of the treatment of the site for future owners. It may also provide evidence that the site has been appropriately managed if subsequent Japanese knotweed regrowth results in litigation against the contractor.

3.2 Herbicide treatment
It is essential that a competent and qualified person carries out the herbicide treatment. Contractors must have the appropriate National Proficiency Tests Council (NPTC) certification. They must carefully follow the instructions on the herbicide label. You can only use certain herbicides in or near water, and you need approval from us before you can use these.



First year regrowth after glyphosate

The most effective time to apply glyphosate is from July to September (or before cold weather causes leaves to discolour and fall). Spring treatment is acceptable, but less effective. Triclopyr, picloram and 2,4-D amine can be used throughout the growing season. You should avoid the flowering period to protect bees and other pollinating insects. The majority of herbicides are not effective during the winter dormant stage because they require living foliage to take up the active ingredient. An exception to this rule is picloram, which can be applied as a soil treatment.



Sub-lethal glyphosate 'bonsai' regrowth

Rhizome can remain dormant for a considerable period after regrowth has apparently stopped, and so you need to check if rhizomes are still living before disturbing the site. **Unconfirmed observations suggest rhizome can stay alive for more than 20 years.** However, treating Japanese knotweed with an appropriate herbicide can reduce its growth, even if it were only treated a few weeks before it was disturbed. If the timescale of the development does not give you enough time to effectively eradicate Japanese knotweed using chemicals, you should still treat the plant, if it is in leaf, as soon as possible.

You should expect to use herbicide treatment for at least three years before Japanese knotweed stops growing back. It is important to remember that you cannot rely just on herbicide to get rid of Japanese knotweed. **You must not see the lack of regrowth as evidence that the Japanese knotweed is no longer alive.** Disrupting the rhizome by disturbing the soil is likely to result in substantial regrowth.

3.3 Which herbicide should I use?

Herbicide	Affects grasses?	Time of application	Approved for use in or near water?	Persistency
Glyphosate	Yes	May - October (late season preferable)	Yes (certain formulations)	Non-persistent
2,4-D Amine	No	May - October (early season preferable)	Yes (certain formulations)	Up to 1 month
Triclopyr	No	May - October (early season preferable)	No	Up to 6 weeks
Picloram	No	All year (soil treatment in winter)	No	Up to 2 years

There is increasing concern about using pesticides. It is important that suitably qualified operators use these chemicals appropriately. When you use a herbicide, always follow the information on the label. The most important questions to ask before deciding which herbicide to use are:

3.3.1: Is the site in or near water?

'In or near water' includes 'drainage channels, streams, rivers ponds, lakes, reservoirs, canals and dry ditches'. It also covers control of vegetation growing on banks or areas immediately adjacent to water bodies. If you intend to use a herbicide within 5m of water, or if your treatment may impact water quality, you should contact us beforehand.

Wherever there is a risk of contaminating a watercourse, choice of herbicides is limited to formulations of glyphosate and 2,4-D amine that are approved for use near water. Not all herbicides that contain these active ingredients are suitable to use in or near water. You must refer to the label to make sure that the product you intend to use is approved for use in or near water. You must consult us before you use a herbicide in or near water. You will need to discuss the treatment with a BASIS[1] qualified officer from the local Area office. You can get the telephone number of your local office by calling our national call centre on 08708 506 506. You may need to complete a WQM1 notification form. You should allow us two weeks to process this application.

3.3.2: Will the treatment damage trees or grass, which I wish to keep?

Glyphosate is a non-selective herbicide and therefore kills most plants, including grass. You can use it, with care, around mature trees and shrubs. Picloram and 2,4-D amine are selective and you can use them without harming grass. Picloram is persistent in soil, prone to leaching and highly damaging to nearby trees.

3.3.3: If I want to reuse the soil from the treated area for replanting, how long before I am able to landscape it?

If you want to carry on using soil or you want to reuse it immediately for landscaping, it would be appropriate to use a non-residual herbicide, such as glyphosate. If replanting is likely to be delayed for at least six weeks, you may consider a formulation containing triclopyr. If you intend to cover the area in a hard surface, or delay replanting for at least two years, a persistent chemical, such as picloram, would be appropriate if you use it away from trees and watercourses. It is not acceptable to bury soil treated with a residual herbicide if it may contaminate groundwater. However, a hard surface can usually be laid over treated soil without causing pollution.

It is highly unlikely that a single treatment of herbicide would provide enough control to let you safely reuse the soil for landscaping purposes. Whenever you reuse soil, you should use it in a localised area rather than spread across the whole site. We advise that you should not use it within 50m of a watercourse. You should choose a site that can easily be inspected and subsequently treated, if Japanese knotweed regrows, as described in Section 2.4 (Reusing treated soils on site).

BASIS[1] is an organisation committed to making sure people involved in handling and using pesticides are competent. BASIS maintain a register of trained advisors, who need to demonstrate an annual programme of continual professional development to maintain their qualification. Details on the BASIS Professional Register are available from 34, St John Street, Ashbourne, Derbyshire DE6 1GH. Tel: 01335 343945.

3.3.4 What should I use if I intend to bury the material or dispose of it off-site?
If you intend to bury the material or dispose of it off-site, you should only use glyphosate formulations. If there are persistent herbicides present, this will prevent you from using burial as a Japanese knotweed disposal option (see section 5.4). Refer to page 6-7 for details of the relevant waste regulation. If sent for disposal off-site, the requirements of the EPA 1990 s.34 and the Duty of Care Regulations will have to be complied with in relation to the transfer of the waste. Using certain types or quantities of pesticide could mean that soil or plant material is classified as 'hazardous waste', and then you would need to dispose of it at a hazardous waste landfill. It would also have to be consigned and suitably described under the HWR 2005, which would include giving a description of the pesticide.

We advise developers to seek the advice of a suitably qualified pesticide operator or BASIS registered pesticides advisor before they start a spraying programme.

There are some practices that you can follow to further reduce the chance of damaging engineered structures. Early results (currently unpublished) suggest that the residual herbicide Tordon 22K, containing picloram as an active ingredient, achieves a high level of Japanese knotweed control when applied direct to foliage or as a soil treatment (5.6 l/ha).

It is advisable to consider soil treatment, or an effective root barrier membrane method before creating an engineered surface over any area that could support living Japanese knotweed rhizome. This is particularly important under tarmac, which can be damaged considerably by Japanese knotweed.

It is important that you use herbicides as stated on the labels. It is not appropriate to use Tordon 22K near water or trees, where the extensive root system can take up the herbicide from the soil.

Only qualified operators should use herbicides and they must follow the instructions on the label when using them.

Further guidance is also available in the former Welsh Development Agency guidelines, now Welsh Assembly Government, detail of which is given in section 9.2. These guidelines should be used in conjunction with this code in Wales.



Post-treatment reaction to picloram



Regrowth after picloram treatment

3.3.5 Use of Picloram

Where the code refers to the use of picloram or Tordon 22K, it is essential to ensure that groundwater quality is protected and nearby watercourses. Groundwater Source Protection Zones (SPZ's) are areas of groundwater where there is a particular sensitivity to pollution risk, due to the closeness of a drinking water source and how the groundwater flows. They are used to protect abstractions used for public water supply and other forms of distribution to the public such as mineral and bottled water plants, breweries and food production plants. Generally the closer the activity is to a groundwater source, then the greater the risk. More information on groundwater SPZ's is available on our website. **Picloram should not be used within the inner zone of SPZ and a risk-based approach should be adopted when considering its use outside of the inner zone.**

3.4 Combined treatment methods

Site trials have shown that combining digging and spraying treatment is effective in reducing the time needed for chemical control. You need to take great care with this method to avoid spreading plant material.

The aim of the treatment is to break up the rhizome, which stimulates leaf production and therefore makes the plant more vulnerable to herbicide treatment. Rhizome is also stimulated to produce green growth if it is near or on the surface. Therefore the success of the treatment will be determined by the amount of rhizome that is brought to the surface layer.

You should cut, dry and burn Japanese knotweed canes on-site if allowed (see Section 5.2). You can also burn crowns and surface rhizome raked from the surface with tines or take them to landfill. You cannot rely on burning to kill rhizome or crowns.

The majority of Japanese knotweed rhizome exists in the upper layers of topsoil. It has been estimated that in an infested area, 14,000 kg/ha dry weight of Japanese knotweed may exist in the top 25cm (Brock, 1994). You may use an excavator to scrape surface crowns and rhizomes into a pile. You can then cultivate the exposed ground to at least 50cm deep, depending on how deep the bulk of the rhizome is, and turn the piled material and re-spread it over the cultivated area.

This process stimulates the rhizome to produce a higher density of stems, which makes it more vulnerable to herbicide treatment. We have seen that subsequent herbicide treatment has achieved significantly better rates of control. Whilst this disturbance technique may have the potential to eradicate Japanese knotweed infestations, it cannot guarantee it. It would be inappropriate to dispose of treated material under a waste exemption. You could reuse soil on-site, in localised areas that would facilitate herbicide treatment if regrowth were to occur (see section 2.4).

You can dig the soil during the winter, if you take care not to compact wet soil, and you can treat regrowth during the spring and summer. Soil can become compacted if you drive over it or work it when it's wet. This reduces rainwater infiltration, which increases runoff and may spread Japanese knotweed across the site and into watercourses. Compacted soils are also less likely to encourage the regrowth needed for treatment.

You must take extreme care to make sure that all equipment used on site is free of Japanese knotweed material before leaving the site to avoid contravening the Wildlife & Countryside Act, 1981. To reduce the risk of contaminating vehicles, you should avoid excavators with caterpillar tracks and thoroughly pressure-wash vehicles after use or before leaving site (see sections 2 and 6.2).

3.5 Soil screening and sieving

Where conditions allow, it may be possible to use mobile plant to sieve and screen soil. This allows the majority of the knotweed rhizome to be extracted and destroyed by incineration or disposal to landfill. It is important to note that 0.7g of rhizome can regenerate into fresh knotweed growth and rhizome can remain dormant for a number of years. Soil that is treated in this manner can be reused on site, in accordance with section 2.4. It should not be reused off-site.

How do I use root barrier membranes?

Various root barrier membranes are available which claim to prevent Japanese knotweed penetrating. A root barrier membrane is only as good as the way in which it has been laid. It is essential that there is expert supervision when the root barrier membrane is supplied.

A root barrier membrane physically protects a structure or clean soil. It must be made of a material that is fit for purpose. It should be made of a material that can be:

a) used without damage;

b) provided in large sizes, to minimise the need for seals;

c) sealed securely;

d) remain intact for at least 50 years;

e) resist UV damage if it is exposed to sunlight.

Various root barrier membranes are available which claim to prevent Japanese knotweed penetrating. A root barrier membrane is only as good as the way in which it has been laid. It is essential that there is expert supervision when the root barrier membrane is supplied.

Japanese knotweed will tend to break through holes or joins in the fabric, so it is essential that the integrity of the root barrier membrane is maintained, and there is a minimum number of seams. Ideally, root barrier membrane material should consist of a single sheet.

You must ensure that root barrier membranes containing leachable chemicals do not pollute streams and groundwater.

Given that Japanese knotweed rhizome may remain dormant for at least 20 years, it is important that a root barrier membrane carries a guarantee well beyond that time. We advise a manufacturer's guarantee of at least 50 years.

Root barrier membranes are vulnerable to damage from burrowing mammals. Burying root barrier membrane cells 2m or deeper should provide some protection against smaller mammals, such as rats. If badgers and rabbits are present, you should consider deeper burial. Badgers and their setts are protected by law and should not be disturbed.

Root barrier membranes are currently used in a number of ways:

- **Cell formation**
- **Protecting structures and hard surfaces**
- **Preventing horizontal spread**
- **Protecting services, etc.**



The importance of intact root barrier membrane



4.1. Cell formation

In some situations where burial is the preferred disposal method but it is not possible to bury Japanese knotweed to 5m (see section 5.4), it may be completely encapsulated into a root barrier membrane cell. These cells may be placed under buildings, within cellar voids or in places that will not be disturbed. It is important that the deeds of the property show where these cells are located, to avoid damage in the future that could be caused, for example, by trenching to lay services. To avoid damage after it has been installed, the upper 'cell' surface must be covered with a capping layer, at least 2m deep. Depending where it is located, the cell is quite often used in the landscape and trees planted within the capping layer.

You must use root barrier membranes in a way that will not increase the risk of subsidence to subsequent buildings.

Cell formation - putting the Dendro-Scott root barrier membrane in place



Stage 1: Calculate volume required and excavate site, allowing for 2m depth of burial



Stage 2: Protect the integrity of the root barrier membrane with a layer of sand and provide shutter ply supports for the edge of the cell.



Stage 3: Put root barrier membrane in place, allowing enough material along the edges to eventually provide a seal.



Stage 4: Protect the root barrier membrane from tyre damage with a layer of sand.

Cell formation - putting the Dendro-Scott root barrier membrane in place



Stage 5: Fill the cell with the knotweed infested soil. No other material, contaminants, or wastes should be included.



Stage 6: Make sure that dedicated vehicles are used and cleaned properly after they have been used. Haulage routes must be protected.



Stage 7: Put the surface of the root barrier membrane in place and make sure the cell is adequately sealed.



Stage 8: Protect the surface of the cell with sand and bury deep enough to prevent disruption in the future.

It is important that the suppliers of root barrier membranes can advise the designing architect of potential problems and supervise installation.

4.2 Protecting structures and hard surfaces

Where there is a chance that Japanese knotweed rhizome is still living within the soil and there are plans to construct buildings in these areas, there are a number of ways root barrier membranes are used:

1. Before development, infested areas are sealed horizontally with the root barrier membrane. Care must be taken that laying the root barrier membrane does not affect the condition of the building or structure, especially on sloping ground.
2. Root barrier membranes are built into the structures to prevent Japanese knotweed entering the building or laid horizontally underneath the paved surface, road or car park.

As Japanese knotweed could create 'heave' and cause initial fractures to concrete floors or a paved surface, it is important that a pliable surface is laid between the concrete and the root barrier membrane. This would allow the Japanese knotweed to grow without stressing the concrete. Care must also be taken to protect the services entering the building.

Surface sealing - putting the Dendro-Scott root barrier membrane in place



Stage 1: Protect the integrity of the root barrier membrane and prevent damage from 'heave' with a layer of sand.



Stage 2: Put the root barrier membrane in place.



Stage 3: Apply another layer of sand over the surface of the root barrier membrane.



Stage 4: Lay final floor surface.

Surface sealing - peripheral protection





Make sure the root barrier membrane is sealed properly around pillars and other structures.





4.3 Preventing horizontal spread

Carefully using a vertical root barrier membrane has been used to prevent the horizontal growth of Japanese knotweed. This is usually used against uncontrolled infestations from neighbouring properties. Vertical root barrier membranes are also often used around the edge of cuts, as a precaution against regrowth from any residual rhizome. Vertical root barrier membranes can often be most conveniently used when reinforced by a plywood frame. If it is not known how deep the rhizome has spread, vertical root barrier membranes should be used to 3m deep as a standard.

Preventing horizontal spread by using a vertical root barrier membrane



Stage 1: Excavate a trench, making sure that all the knotweed is contained.



Stage 2: Put the root barrier membrane in place.



Stage 3: Support the root barrier membrane with shutter ply and backfill the trench.



Stage 4: Make sure that the presence of the root barrier membrane is recorded and is not disrupted by future developments and landscaping.

4.4 Protecting services, etc

If services or other small-scale structures need to be constructed in areas infested with Japanese knotweed, it is often more cost-effective to protect the integrity of the structure within a root barrier membrane rather than subject the entire area to a full-scale Japanese knotweed management plan. It is essential that any soil contained by the root barrier membrane, in proximity to the drain or structure, is free from knotweed. The surrounding infestation can then be controlled using herbicides over a period of time.



How do I treat or dispose of Japanese knotweed on site?

Wherever possible, you should keep the amount of Japanese knotweed excavated to a minimum and focus on treating the Japanese knotweed in its original location and protecting engineered surfaces and structures from being damaged. If you wish to treat Japanese knotweed in its original position, see Section 3, 4.2, 4.3 and 4.4.

5.1 Cutting Japanese knotweed canes

Pulled stems often have the highly invasive crown material attached to them, and must be disposed of in the same way as rhizome. Cut stems are less of a risk, and are safe once they have dried out and turned brown. If you intend to treat regrowth with a herbicide, you should remove cut material from the treatment area to allow the spray to effectively cover the new growth.

You should leave cut stems where they can dry out. Japanese knotweed can grow again from just small pieces of stem, so you should leave drying canes on an appropriate membrane surface, not on soil or grass. Once the stems have dried to a deep brown colour they are dead. This is not the case with crown or rhizome material. Japanese knotweed stems can be left on site after cutting if:

- the stem is big enough that it won't be blown away by wind or traffic;
- there is no risk they can get into a watercourse;
- the stem has been neatly cut near its base using a cutter, hook or scythe.

You should cut stems cleanly so that they don't create pieces of stem that may spread and regrow. You should not use flails. It is good practice to chemically treat Japanese knotweed, rather than continuously cut the regrowth.

5.2 Burning

You can use controlled burning of stem, rhizome and crown material as part of the programme to control Japanese knotweed. This means the material is less likely to survive and there is less material to bury or dispose of off-site. In its native area, Japanese knotweed grows on volcanic ash and around hot fumaroles, so don't rely on heat treatment to completely kill it. Burning must take into account any local by-laws and the potential to cause a nuisance or pollution. You should contact the Environmental Health Office of the relevant local council before burning. You must inform our local Area office Environment Management Team (03708 506 506) at least one week before any burial or burning activity.

You may carry out burning in the open with a registered exemption as described in the Environmental Permitting (England and Wales) Regulations 2010. The relevant exemption is D7 – Burning waste in the open. The specific conditions of a D7 exemption are:

a) the total quantity of waste burned over 24 hours does not exceed 10 tonnes;

b) the total quantity of waste stored at any one time does not exceed 20 tonnes; and

c) no waste is stored for longer than six months.

You must inform our local Area office Environment Management Team (03708 506 506) at least one week before the burning.



5.3 Excavation

Wherever possible, you should treat Japanese knotweed in its original location. You should only consider excavating Japanese knotweed as a last resort, unless this is part of an on-site treatment method. If you use excavation for off-site disposal, you must take great care to avoid excess waste and make sure the excavated Japanese knotweed does not contaminate surplus soil that is currently free from infestation.

It is important to carefully identify rhizomes during the excavation process. Some excavations have been 6 metres deep because of mis-identified tree roots! A recent infestation may have a limited rhizome system that is shallow and only extends a short distance. If Japanese knotweed naturally spreads onto new ground, or is dumped on the surface, rhizome rarely penetrates deeper than 3m. However, if Japanese knotweed was dumped in the early stages of a long period of waste tipping it may have become buried by other deposited waste and be deeper than 3m. Appendices I-IV give guidance on recognising rhizomes, including comparisons with other plant material often found on development sites. Section v) of Appendix I also describes how to excavate Japanese knotweed before burying or bunding it. The guide is designed as a field reference during excavations.

Soil can become compacted if driven over or worked when wet. This reduces rainwater infiltration, which increases runoff and may spread Japanese knotweed across the site and into watercourses. Compacted bunds are also less likely to encourage the regrowth required for treatment (see section 5.5).

5.4 The burial method

Soil containing Japanese knotweed material and burnt remains of Japanese knotweed may be buried on the site where it is produced to ensure that you completely kill it. It is advisable to apply a non-persistent herbicide at least once to reduce the growth of infective material. It is important that a non-persistent herbicide is used, such as glyphosate, because persistent chemicals will contaminate the material for a while. The period of time during which the herbicide is 'active' is described on the product label. Material cannot be buried during that period of activity. Burying material treated with a persistent herbicide may contaminate groundwater. If you are in doubt whether the herbicide is still active, you should consult with the supplier of the product or the contractor who applied it.

You must bury material on-site at least 5m deep, unless you are doing this in accordance with section 4.1. You should then cover the Japanese knotweed material with a root barrier membrane layer (see section 4) before infilling it to 5m deep with inert fill or topsoil. Root barrier membranes that may have been used to protect clean ground from vehicles involved in excavating Japanese knotweed can also be buried. This method relies on the depth of burial as the main Japanese knotweed treatment, rather than the protection from the root barrier membrane. If material cannot be buried deep enough, the method described in paragraph 4.1. must be used.

Where you use on-site burial, we strongly advise that you accurately map and record the location of the burial site to prevent potential disturbance and re-infestation, and that you advise any future owners of its position. Japanese knotweed is likely to survive for many years, depending on how effective the treatment was before it was buried. It is essential that you do not bury it where landscaping, installing services, erosion from a watercourse or subsequent development will disturb it.

You must inform our local Area office Environment Management Team (03708 506 506) at least one week before the burial. We will then inspect and inform you whether we are satisfied that the material can be buried. It is only acceptable to bury Japanese knotweed material if the soil is otherwise uncontaminated. Any other waste, such as rubble or discarded household items, must be separated and removed during excavation. If contaminants cannot be separated, it cannot be buried. If burial results in pollution or harm to health you will not have complied with your waste 'relevant objectives' (see page 6-7) and may face prosecution.

5.4.1 Stockpiling Japanese knotweed infested soil prior to burial

If soil containing Japanese knotweed is stockpiled, the material must be stored in a manner that will not harm health or the environment. The stockpile should be on an area of the site that will remain undisturbed. You should clearly sign this area (appendix VII). You should regularly treat Japanese knotweed regrowth with herbicide to avoid re-infestation. As a precaution, you should lay the stockpiled material on a root barrier membrane to avoid contaminating the site further.

5.5 The bund method

Where local conditions mean you cannot use burial as an option, it may be possible to create a Japanese knotweed bund. A bund is a shallow area of Japanese knotweed-contaminated soil, typically 0.5m deep. The bund can either be raised, on top of the ground, or placed within an excavation to make the surface flush with the surrounding area. The purpose of the bund is to move the Japanese knotweed to an area of the site that is not used. This 'buys time' for treatment that would not be possible where the Japanese knotweed was originally located.

The way you construct the bund is critical, especially if it is likely to be deeper than 0.5m. The aim is to concentrate the rhizome into the upper surface of the bund, where it will grow and be controlled by herbicide. If rhizome is buried deep, it will become dormant when inside the bund and regrow when the apparently clean soil is used for landscaping on the site.

It is best to think about if you will need a bund when you are purchasing the site, and planning the building phases. A bund needs the following:

a) an area set aside for at least 18 months - 2 years for Japanese knotweed treatment. Deeper bunds may need longer;

b) local planning authority approval, if necessary, before creating a bund. It is advisable to emphasise the purpose of the bund, and how long it is expected to take to build when discussing the proposal;

c) an area within the perimeter of the original site. Removing Japanese knotweed contaminated soil from a site will need a waste licence and disposal will only be permitted at licensed landfill sites;

d) positioned away from watercourses (we advise at least 50m) and trees. If the bund is to be created on a site previously free from Japanese knotweed, clean topsoil from the bund area may be removed and used for landscaping purposes, perhaps in restoring the site where Japanese knotweed was excavated;

e) temporary bunds should have a root barrier membrane layer to protect the underlying site from Japanese knotweed infestation. Permanent bunds on previously Japanese knotweed-free areas should also use a root barrier membrane layer to contain the material. If the site was previously contaminated with Japanese knotweed, there is no need for the root barrier membrane layer;

f) not more than 1m deep, and preferably no deeper than 0.5m. Clearly, a large area may be needed to provide enough space for a bund, especially if infestations are scattered around the site or dominate a large part of it.

Pre-excavation treatment

You should treat the Japanese knotweed infestation with a herbicide before removing it. Because material is not intended for burial or removal off-site, you can consider suitable persistent herbicides. But, it is important to consider what will happen to the material when you choose a product. It would not be appropriate to use a herbicide with a two-year residual activity if you intend to use the soil for landscaping after a one-year bunding process.

When you have allowed enough time for the herbicide to take effect (preferably at least a fortnight) you should cut and remove the canes. After it has dried out, you can burn this material, following the restrictions already described (see section 5.2). You should eventually place any unburned material, especially from the base of canes, on top of the bund.

You should rake the surface of the site with tines and collect the crowns and surface material. The majority of rhizome is shallow, and care at this stage can isolate much of the most infective material. If the soil is sandy and not heavily contaminated with stones or solid waste, you can use extended tines to rake rhizome to the surface. You can place this material on top of the dried canes before burning, or spread it on top of the completed bund. Burning this material before placing it on the surface of the bund destroys some rhizome and is the preferred option, but you must make sure that you clear the fire site of all rhizome and crown material and that fires are allowed at the site (see section 5.2).

Refer to section v) of the rhizome identification guide for guidance on excavating rhizome. The excavation should be inspected to make sure there are no living rhizome left. The aim of the excavation is to use the relatively clean subsoil as the base of the bund and concentrate the rhizome-rich material into the surface layer.

Bund construction

A well-constructed bund should have the majority of the rhizome near the surface, which will encourage regrowth. The base of the bund should be made up of the subsoil layer, which has the lowest amount of rhizome in it. When you have created the base of the bund, you can place the topsoil over it and spread the surface material, either burned or not, over the surface.

You can add fertiliser to the bund material to help subsequent regrowth. This will increase leaf area and improve herbicide uptake. You should not use fertiliser near watercourses.

Treating regrowth

The fragmented rhizomes in the surface layer are stimulated to produce new growth. After one or two herbicide treatments, further significant regrowth is unlikely. It is highly advisable to disturb the bund, raking potentially dormant rhizome to the surface and allowing this material to regrow before treating it with herbicide, so that you can be confident that the bund has been treated effectively.

It is particularly important with deeper bunds to concentrate rhizome-rich soil into the surface layer, and disturb the bund after treatment.

There is a choice of herbicide for treating regrowth on the bund. You must think about how you will eventually use the bund material. If you are going to use it for landscaping around the site, avoid herbicides with a protracted residual activity. You must reuse treated soil according to section 2.4.

It is important to remember that research has shown that as little as 0.7g of Japanese knotweed rhizome may grow into a new plant, and larger pieces of rhizome may remain dormant for at least twenty years. A carefully constructed and managed bund is an effective way of treating Japanese knotweed, but it is no guarantee of getting rid of the problem completely.

How do I dispose of Japanese knotweed off-site?

6.1 Arrangements for landfill

If Japanese knotweed cannot be killed by burying or bunding infested excavated soil on site, you must dispose of it at a suitably licensed or permitted disposal facility. You must inform the site operator that there is living Japanese knotweed within the material. You should regard this method as a last resort. Disposing of soil contaminated with Japanese knotweed to landfill uses up valuable landfill capacity, involves large-scale haulage and can be very expensive.

Landfills are classified as being for a) hazardous, b) non-hazardous or c) inert wastes. Regulations set out waste acceptance criteria (WAC) for each class of landfill. Waste soil containing Japanese knotweed is usually classed as controlled waste and that may be hazardous waste if herbicide or another hazardous contaminant is present. Whenever material containing Japanese knotweed is removed to landfill, you must take it to a site that is permitted to accept it. Operators of landfills for hazardous or inert waste are unlikely to be able to accept Japanese knotweed because of the WAC limits on organic material. Waste soil containing knotweed can be disposed of at a non-hazardous waste sites, if they have capacity for it and the soil does not contain hazardous waste, such as persistent herbicides. If it does, it will need to go for incineration.

It is good practice to treat Japanese knotweed with glyphosate at least two weeks before excavating it (see Sections 3.2 and 3.3). This will make any rhizome that may have been lost when it was moved, or left behind after it was excavated, less likely to survive. You should not use persistent herbicides. These are likely to be still active in the soil when it is disposed of, and may mean the soil is classified as 'hazardous waste' as noted above. This is likely to increase the cost of haulage and disposal.

If you use off-site disposal, take great care to avoid losing material en route. For small quantities, this may include 'double-bagging' the waste in heavy duty waste bags. For larger quantities that are being moved in skips or trailers, this will include lining and covering the skip etc. with membrane (See Section 7).

Landfill operators dealing with material contaminated with Japanese knotweed must make sure that:

a) they are licensed/permitted to receive it;

b) they have enough capacity to make sure they can deal with the material according to the following:

Material, including contaminated soils, rhizome and the crown at the base of the stem, must be buried:

- at least 5 metres deep, (immediately cover to 1-2 metres, final depth after 2-4 weeks);
- at least 7 metres from the margins of the site or any engineering features, for example drains or bunds, of the site;
- at least 3 metres above the base/liner of the landfill.

Because landfills need to deal with Japanese knotweed in this way, it is advisable to contact the landfill site several days before any of this material is taken there to allow a suitable area to be prepared for its disposal.

If you need information on the nearest appropriate landfill to your site, call us on 03708 506 506.

6.2 Duty of care for hauliers

Before accepting waste material for transfer off site you must inspect it for Japanese knotweed contamination unless you know it is present already. You must ensure that you comply fully with your waste duty of care and, if the material is hazardous, the requirements of the HWR 2005 must also be met (see page 6-7). If you take it to a landfill, that facility must be licensed or permitted to receive it. You must inform the landfill operator that the waste contains Japanese knotweed so that he can dispose of it appropriately within the site.

As a haulier, you should not accept infested waste unless you can guarantee that you can dispose of it appropriately. If you are aware of waste producers who are failing to inform their hauliers about Japanese knotweed, or you know hauliers who are knowingly disposing of Japanese knotweed infested material inappropriately, you should let us know by calling our incident hotline on 0800 80 70 60.

You must also make sure that when you are removing material off-site, your vehicles do not carry pieces of Japanese knotweed rhizome on them and that vehicles are suitably covered or enclosed to prevent Japanese knotweed escaping when it is being moved (see Section 7). You should brush vehicles down vigorously or jet-wash them and then inspect them for trapped pieces of rhizome.

Some waste disposal activities that we consider safe to the environment do not require a waste licence. These are classed as exempt from waste licensing. There are no waste licensing exemptions available for the use of Japanese knotweed-infested soils and we will treat any use of this material as a waste offence. You can only reuse knotweed-infested soils after treatment. You can only dispose of Japanese knotweed-infested soil off-site at a suitably licensed or permitted landfill. You cannot dispose of it with other surplus soil and you must not sell it as topsoil.

Anyone who does not dispose off-site of any material containing Japanese knotweed appropriately may be prosecuted under Sections 33 and 34 of the E P A 1990 and Section 14 of the Wildlife & Countryside Act 1981. If you need advice, call us on 03708 506 506.



How do I move soil containing Japanese knotweed?

You should try to move Japanese knotweed infested soil as little as possible. You need to thoroughly clean vehicles after you have used them. Avoid using vehicles that are likely to trap pieces of rhizome, particularly those with caterpillar tracks. Remember, just finger-nail sizes pieces of rhizome can lead to it spreading further.

7.1 Moving soil on-site
The Japanese knotweed management plan (Appendix V and VI) should reduce the need to move soil. You need to assess the haulage routes you plan to take for risks, avoiding watercourses, transport corridors and areas of high conservation and amenity value. If haulage routes cross areas free from Japanese knotweed, soil should be protected with a layer of root barrier membrane. This should be protected with a layer of sand above and below the root barrier membrane, and a surface layer of hardcore. This material can be buried within the Japanese knotweed cell, as described above.

You should clearly mark out your haulage routes with tape. You should limit access to these areas to vehicles involved in moving Japanese knotweed. You must decontaminate vehicles before they leave the area.

7.2 Moving soil off-site
When you transport soil infested with Japanese knotweed to landfill, it is essential to carry out strict hygiene measures. If you do not follow these standards, this may lead to Japanese knotweed spreading. Japanese knotweed is a particular problem along transport corridors, where it interferes with the line of vision and can cause accidents.

We recommend that you should only fill trucks up to a maximum of 20cm from the top. You must seal the void with a well-secured membrane. You should use enough membrane to let the soil be sealed into a temporary cell for transporting. It is very important that you contain the soil to prevent any material being lost when it is moved. To contain the soil in the short-term, you can use a lower specification of membrane(see glossary).

7.3 Decontaminating vehicles
You should decontaminate the outside of vehicles whenever they leave an area contaminated with Japanese knotweed. You should clean vehicles before using them to move Japanese knotweed. You should clean the rear of the truck after it has finished moving soil. You should use a pressure washer and stiff-haired brushes to clean the vehicle, making sure that you thoroughly scour any areas that might retain rhizome. You need to pay particular attention to tyre treads and wheel arches. Any material dislodged during this process must be included within the Japanese knotweed waste. You should only carry out this process over a root barrier membrane layer or hard surface that can contain and collect the material washed off. You must not let this material contaminate drains, ditches or watercourses.

People who know what rhizome look like should do the cleaning. You should carry out a thorough inspection before the vehicle is used for other duties.



How will Japanese knotweed affect using the site in the long term?

8.1 Managing buried Japanese knotweed in the long term

If Japanese knotweed material has been buried as described above, subsequent regrowth is highly unlikely. The likelihood of the material growing in the long term will depend on how it was treated before it was buried. If the infestation was effectively treated with herbicide and the rhizome stressed by being broken up and/or drying out, this will greatly reduce the chance of it surviving in the long term. Japanese knotweed rhizome has been known to survive for at least 20 years, so it is important to consider managing it over a long period of time. Site owners in the future must be able to see a record that gives details of the precise location and nature of the burial. It is important that the site is not disturbed. If it has to be disturbed, the contaminated material must be managed according to this code of practice.

8.2 Controlling potential regrowth around the site

When developing a Japanese knotweed management plan, you need to consider the potential for regrowth around the site. When you consider that 0.7 gram of rhizome is enough for it to regenerate, you may expect some regrowth and you will need to build that into any agreement between client and contractor. Regrowth tends to happen when not enough material has been excavated from the initial infestation, tracked vehicles or poor haulage has spread small fragments and when inadequately treated material has been reused for landscaping purposes. Regrowth from fragmented rhizome responds well to herbicide treatment, or careful digging. If regrowth occurs due to undisturbed rhizome that was overlooked during the survey, you will need a long-term control programme.

8.3 Advice to new owners

It is good practice to advise the new owners of the property that the site was subject to a Japanese knotweed management plan. You should include this within a vendor statement of declaration. It is possible for isolated regrowths to occur in the future, and good advice will help to prevent these from becoming established. Japanese knotweed from neighbouring land may also re-invade the site. The Cornwall Knotweed Forum website www.cornwallknotweed.org.uk gives advice to householders on managing Japanese knotweed.



8.4 What do I do if Japanese knotweed starts to grow through tarmac and other engineered surfaces and structures?

Once Japanese knotweed breaks through an engineered surface, there are limited ways of managing it. There is a restricted choice of herbicides, limited to those products that have been approved for treatment on hard surfaces. It is essential that you refer to the label conditions about using the herbicide before treatment. Some formulations of glyphosate are approved for treating hard surfaces, and these would be suitable. It is advisable to let the Japanese knotweed grow before treating it, to allow the maximum surface area of leaf for the herbicide to transfer to the rhizome. You should seriously consider removing the hard surface and treating the infestation, before relaying an intact surface after you have destroyed the infestation.

Prevention is, without doubt, better than cure. If we do not manage Japanese knotweed appropriately and allow it to damage new structures, there are limited ways of controlling it. Herbicides are licensed for specific kinds of treatment, and many chemicals that may have been used before a hard surface was laid cannot be used for treating Japanese knotweed that is growing through tarmac.

8.5 How do I stop Japanese knotweed from neighbouring properties from re-infesting the site?

Co-ordinated control programmes

Ideally, before starting any Japanese knotweed control programme, you should consider any areas of Japanese knotweed close to the boundary of the site within the programme and negotiate some sort of arrangement with the landowner. A site manager may consider including these areas within his treatment programme as an act of goodwill, if the additional costs are negligible. Other options including allowing the neighbouring landowner to pay for material costs, such as herbicide, or sharing the costs according to the area affected.

Root barrier membrane methods

Carefully using a good quality root barrier membrane should be an effective way of stopping Japanese knotweed from spreading from neighbouring infested sites. We discuss this method in section 4 above.

The law of nuisance

Common law recognises the civil wrongs of nuisance, both private and public. A private nuisance is defined as an "unlawful interference with a person's enjoyment of land, or some right over, or in connection with it" (Read v Lyons & Co Ltd 1945) and only a person with a legal right to exclusive possession may sue. A public nuisance occurs where a large section of the public is affected. If there were a case of public nuisance, it is important for you to establish if the accused person could have 'foreseen' this. So, having evidence that you had let the owner of the neighbouring property know about the Japanese knotweed would be important.

8.6 How do I treat Japanese knotweed regrowth amongst valuable shrubs and planting schemes?

Japanese knotweed growth may occur in undisturbed areas of the site where the original vegetation is to be preserved. Regrowth may occur in newly landscaped areas as a result of inadequate treatment programmes or contaminated topsoil introduced to the site. Carefully selecting herbicide, as described in section 3, can avoid damaging grassed areas. Direct application techniques using weed-wipers, or the stem-injection technique can avoid non-target damage.



Appropriate method of herbicide application can avoid non-target damage.

Sources of additional information

9.1 Additional information

You can find good practice on managing Japanese knotweed on the internet. The Cornwall Knotweed Forum **(www.cornwallknotweed.org.uk/environment/knotweed)** provides useful supporting information. This document updates the advice within that website for developers and hauliers. Devon Knotweed Forum advice can be obtained from: **www.devon.gov.uk/index/environment/natural_environment/biodiversity/japanese_knotweed/advice_land_and_gardener.htm**

Electronic versions of this code are available on: **www.environment-agency.gov.uk/subjects/conservation**

Additional information on Japanese knotweed management, including information on landfill tax credits can be obtained on: **www.netregs.gov.uk/netregs/processes**

There are various control methods available from companies specialising in Japanese knotweed management on development sites. You should be careful of products and methods that claim to quickly eradicate Japanese knotweed.

9.2 Some useful resources:

Child, L.E. and Wade, P.M. (2000) The Japanese Knotweed Manual. Packard Publishing Limited, Chichester. ISBN 1 85341 127 2

Cornwall Knotweed Forum (2001) Japanese knotweed. Guidance for householders and landowners.

Welsh Development Agency (1998) The control of Japanese knotweed in construction and landscape contracts: Model specification. (Former Welsh Development Agency), Welsh Assembly Government, Cardiff.

Welsh Development Agency (1998) The eradication of Japanese knotweed: Model tender document. (Former Welsh Development Agency), Welsh Assembly Government, Cardiff.

Glossary

Active ingredient:
The chemical component of a herbicide that actually kills or debilitates the plant.

Axil:
The angle between the leaf stalk of a plant and the stem.

BASIS:
A qualification of technical competence for people who use, store, sell or advise on the use of pesticides. BASIS is an organisation committed to making sure people involved in handling and using pesticides are competent. BASIS maintain a register of trained advisors, who need to demonstrate an annual programme of continual professional development to maintain their qualification. Details on the BASIS Professional Register are available from 34, St John Street, Ashbourne, Derbyshire DE6 1GH. Tel: 01335 343945.

Brownfield:
A site that has been previously used in a manner that requires remediation before it is used again. Such sites are often post-industrial sites or derelict buildings and often have contaminated land and other waste issues associated with them.

Bund:
Shallow pile of soil, spread out to achieve a depth no greater than 1m, preferably 0.5m. Bunds can either be on the surface, or occupy voids to create a level surface. Bunds should have the bulk of the Japanese knotweed rhizome concentrated on the surface, to facilitate regrowth suitable for herbicide treatment.

Canes:
Tall, hollow, bamboo-like stems.

Clerk of works:
Person responsible for managing all the Japanese knotweed on site. The clerk of works oversees the Japanese knotweed management plan and ensures all staff on site are aware of their role with regards Japanese knotweed management.

Control of Pesticides Regulations (CoPR) 1986:
CoPR 1986 require any person who uses a pesticide to take all reasonable precautions to protect the health of human beings, creatures and plants, safeguard the environment and in particular avoid the pollution of water. For application of pesticides in or near water approval from the Environment Agency should be sought before use.

Crown:
The visible part of the rhizome from which canes grow. Crowns can produce many new canes and, because of their size, can be resistant to burning or drying out.

Dormant:
The state in which an organism is still alive, but displays little evidence of life.

Duty of care:
Section 34 of the Environmental Protection Act 1990 (EPA90) imposes a duty of care on persons concerned with controlled waste. The duty applies to any person who produces, imports, carries, keeps, treats or disposes of controlled waste, or as a broker has control of such wastes. Breaching the duty of care is an offence, with a penalty of an unlimited fine if convicted on indictment.

Environmental Protection Act 1990 (EPA 1990):
EPA 1990 contains a number of legal provisions concerning “controlled waste”, which are set out in Part II. Any Japanese knotweed contaminated soil or plant material that you discard, intend to discard or are required to discard is likely to be classified as controlled waste. The most relevant provisions are in sections 33 and 34.

Fly-tipping:
Illegal disposal of waste into the environment.

Environmental Permitting (England and Wales) Regulations 2010 (EPR)

The EPR includes reference to the 'Exercise of relevant functions' in Schedule 9, paragraph 4. These objectives are derived from Article 13 of the European Waste Framework Directive. These objectives state that necessary measures shall be taken to ensure that *"…waste management is carried out without endangering human health, without harming the environment and, in particular, without risk to water, air, soil, plants or animals; without causing a nuisance through noise or odours; and without adversely affecting the countryside or places of special interest".*

Exercise of relevant functions:

See the Environmental Permitting (England and Wales) Regulations 2010, above.

Formulation:

A particular herbicide traded under a specific name. Different formulations of herbicide may share the same active ingredient, but are designed for use in different situations. For instance, only certain formulations of glyphosate are approved for use in or near water.

Green belt:

Area of undeveloped land in proximity to a community that has been preserved to conserve the aesthetic beauty of the location. These areas are referred to as 'green wedges' in Wales.

Hazardous Waste Regulations 2005 (HWR 2005):

HWR 2005 contains provisions about the handling and movement of hazardous waste. Consignment notes must be completed when any hazardous properties and any special handling requirements. If a consignment note is completed, a waste transfer note is not necessary. Material containing knotweed that has been treated with herbicide, may be classified as hazardous waste.

Hazardous waste

Hazardous wastes are defined by reference to regulation 6 of the HWR 2005. A waste is a hazardous waste if it is listed as a hazardous waste in the List of Wastes Decision as well as the List of Waste (England) Regulations 2005. The Secretary of State is also able to decide if a particular batch of waste is to be determined as hazardous. Schedule 3 of the HWR includes a list of properties that render waste hazardous. Annex I, II and III of the Hazardous Waste Directive also provides further guidance on what constitutes hazardous waste.

Heave:

Physical disruption of a hard surface caused by an upward stress.

Hybrid:

A plant or animal that results from reproduction by two different species.

Membrane:

In this code, membrane describes a relatively low specification protective layer used for containing Japanese knotweed when it is being transported (sections 5.1, 6.1, 6.2, 7.2). Compare with 'root barrier membrane' below.

Perennial:

A plant that continues its growth from year to year.

Persistent herbicide:

A herbicide that contains an active ingredient that will not be swiftly degraded after it has been applied. This can sometimes limit the manner in which treated soil can be reused or disposed of.

Rhizome:

Underground stem. Enables Japanese knotweed to survive over-winter, when the canes die back. Small sections of rhizome, as little as 0.7g can regrow into a new plant.

Rhizomatous:

Of or pertaining to a rhizome.

Root barrier membrane:

High specification membrane used for highly stressed short-term protection, such as haulage routes (section 2.2, 7.1 and 7.3), or containing Japanese knotweed in the long term (sections 4, 5 and 8.5). Root barrier membranes must be made of a material that is fit for purpose. It should be made of a material that can be:

a) used without damage;
b) provided in large sizes, to minimize the need for seals;
c) sealed securely;
d) remain intact for at least 50 years (guaranteed by the manufacturer);
e) resist UV damage if used where it is exposed to sunlight;
f) buried without polluting groundwater from chemicals leached from it. Compare with 'membrane', above.

Sett:

The system of tunnels and chambers used by badgers and protected by law.

Tines:

Long pointed teeth attached to a digger bucket to rake out rhizome.

Viable:

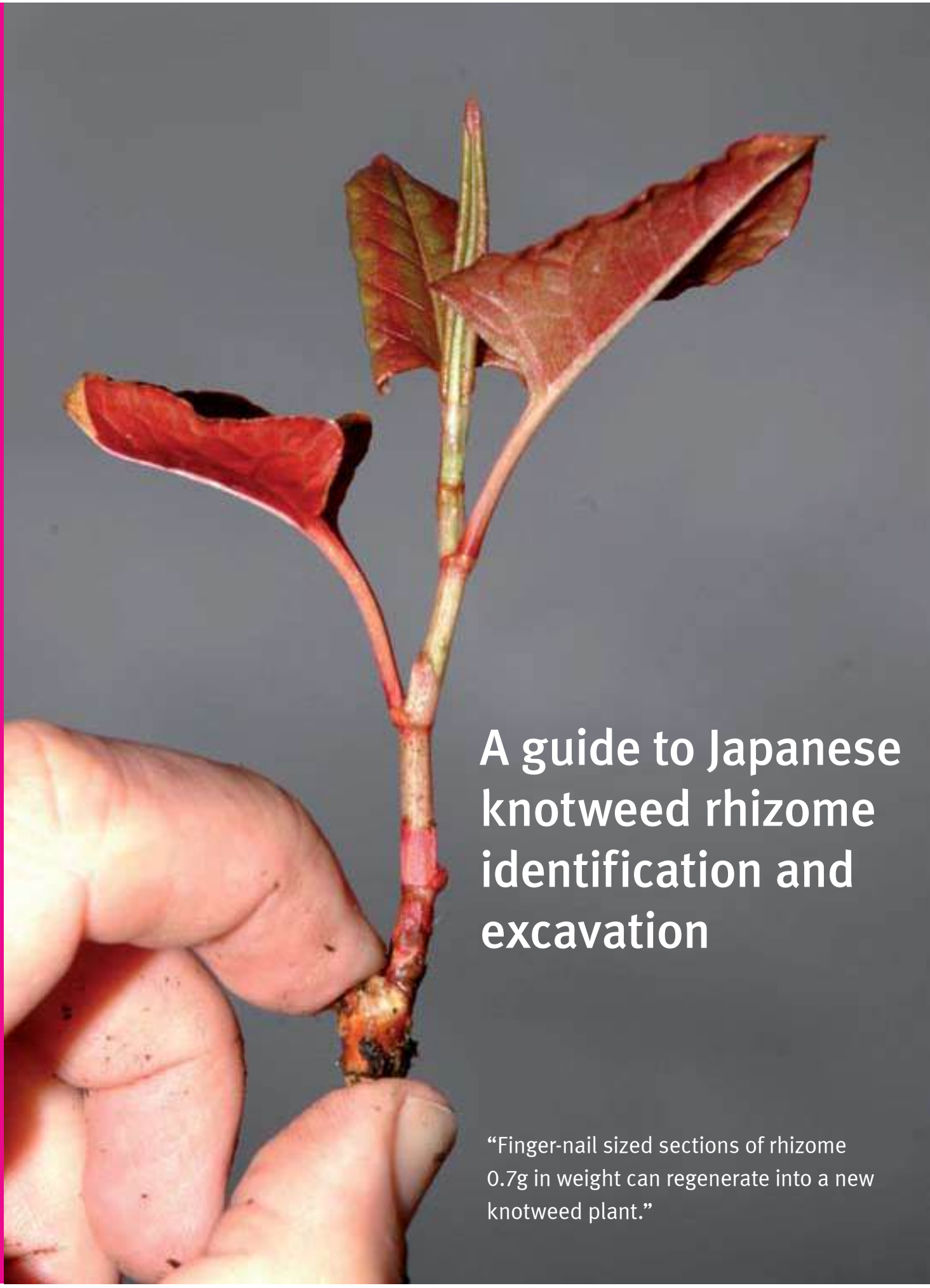
Capable of growing into a new plant.

Waste exemption:

When the disposal of waste is deemed not to present a risk to public health or the environment. A waste operation, water discharge or groundwater activity must meet certain criteria in order to be exempt from the need for an Environmental Permit.

Wildlife and Countryside Act 1981 (WCA 1981):

Section14(2) states that *"if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence."* Japanese knotweed is one of the plants listed in the Schedule.



A guide to Japanese knotweed rhizome identification and excavation

"Finger-nail sized sections of rhizome 0.7g in weight can regenerate into a new knotweed plant."

A guide to Japanese knotweed rhizome identification and excavation



This guide should be used in conjunction with the Environment Agency code of practice, 'managing Japanese knotweed on development sites'. It has been produced as a separate guide to facilitate use during excavations.

i) What is Japanese knotweed?

Japanese knotweed *Fallopia japonica* was introduced into the UK during the mid-nineteenth century as an ornamental plant. It has since become one of the most problematic invasive weeds in Europe (see Section 1 of Code)

Japanese knotweed is a perennial weed, producing tall canes, up to 3m (10 feet) in height during the summer. The canes have characteristic purple flecks, and produce branches from nodes along its length. These branches support shovel-shaped leaves and clusters of white flowers in autumn. The canes die off in winter, turning brown and shedding their leaves. This produces dense mulch that precludes the growth of native plants.

ii) What is Japanese knotweed rhizome?

Japanese knotweed canes grow from dense crowns that also produce extensive underground stems, called rhizomes. These rhizomes also produce fine, white, hair-like roots. It is hard to state with certainty the likely extent of rhizome spread from the parent plant. Research has shown that rhizome can grow a distance of at least 7m (23 feet) and achieve a depth of at least 2m (6 feet) from the parent crown. However, the actual extent of the rhizome can vary considerably depending on the soil type and the history of the site. Many knotweed infestations start life as a result of fly-tipped waste, and repeated applications of waste on top of the initial infestation can result in a deep matrix of rhizome.







iii) Why is it important to be able to identify Japanese knotweed rhizome?

Whilst knotweed can regenerate from small sections of cane, most knotweed in the UK arises from rhizome and crown material. Finger-nail sized sections of rhizome 0.7 g in weight can regenerate into a new knotweed plant. It appears that the regenerative potential of rhizome varies. Thick, old woody tissue appears to be less able to produce new growth than crown material or thinner succulent rhizome. This has implications for those excavating knotweed rhizomes, where there is a risk of thin terminal rhizome from the edge of the cut being overlooked, which would have a high regenerative potential.

There are often situations in which it is necessary to be able to identify rhizome without the benefit of intact knotweed canes for assistance. If a site is undisturbed it is fairly easy to recognise characteristic summer growth, or the dead winter canes. If the site has already been scraped, it is necessary to inspect the waste material for evidence of knotweed; dead canes, leaves and rhizome, to establish if the weed is present on site. Knowledge of rhizome identification is then required to identify the location and extent of the infestation.

The cost of knotweed management can be significantly reduced if knotweed and non-knotweed waste streams can be kept separate. If poor initial management of a site has already precluded this option, this should be of great concern to any subsequent developer.

Waste hauliers also need to take care to inspect waste material prior to accepting it (See Section 6.2 of Code). Soil containing viable knotweed material is not suitable for disposal under an exemption from Section 34 of the Environmental Protection Act 1990. Section 34 imposes a duty of care on a person who produces, imports, carries, keeps, treats or disposes of controlled waste, or acts as a broker for such wastes.

iv) How do I recognise rhizome?

An identification chart for knotweed rhizome, and a comparison with other commonly encountered roots, is provided within Appendix II. The former Welsh Development Agency, now part of the Welsh Assembly Government, has produced a tabular guide to the identification of knotweed rhizome that is reproduced in Appendix III with their kind permission.









In addition to the rhizome described within the identification chart, very new rhizome growth, delicate and white in appearance, can be found during the growing season.

v) How do I remove rhizome?

Put simply, remove the rhizome with extreme care. It is important to read the code of practice before starting excavation. The majority of knotweed rhizome is confined to the top 0.5m of soil. Remove the soil by first scraping off the crowns and surface rhizome and putting to one side. Crowns and rhizome can be dried and burned (see Section 5.2 of Code) prior to treatment with the remaining soil. Crown material in particular is resistant to burning; therefore it is important to regard this material as still potentially infectious.

The next 0.5-1m of soil can then be removed and put aside, and then the remaining soil to a depth of approximately 3m can be excavated. This material should form the base of a bund (See Section 5.5 of Code), or the top layer of buried material (See Sections 5.4 and 4.1 of Code). This process of excavation can be proportioned to any depth of excavation, rather than adopting the 3m generalised depth.

Guidance on the containment and movement of knotweed-infested soil is provided within Sections 2, 6 and 7 of the Code of Practice.

Careful use of the information within this guide should enable operators to effectively inspect the edge of their excavation for remaining rhizome. Depending on the history of the site, the depth to which knotweed rhizome extends can vary between 0.5m – 10m. The history of the infestation, soil type and the water table can all have a profound impact on the extent of rhizome. Situations in which rhizome is greater than 3m tends to be associated with situations in which additional waste has been regularly dumped on an established knotweed stand, or wind-blown sand has created a dune system.

Careful excavation of rhizome has the potential to significantly reduce the volume of waste removed instead of simply excavating a 7m x 3m volume of soil. It also ensures effective removal in situations where a 7m x 3m excavation is an under-estimate. In all cases the precautionary approach must be adopted rather than risk leaving rhizome behind.









Not all rhizome regenerates in the same manner and the factors that determine rhizome regeneration are the subject of research. It appears that older rhizome becomes woody, and tends to be utilised by the plant for food storage, whereas the fresh young rhizome is more carrot-like and much more infectious. Therefore, the small pieces at the extreme edge of the rhizome ring are potentially the most infectious, and therefore require the greatest of care. It is good practice to excavate another 0.5m around the perimeter of the cut after all rhizome has been apparently removed as a further precaution.

Rhizome is an underground stem, rather than a root, and will tend to spread laterally. The rhizome at the periphery of the matrix will tend to be shallow, therefore the excavation usually describes a saucer-shaped profile.

Having excavated the rhizome it is essential that waste streams are kept separate and that rhizome is not allowed to contaminate spoil that has been removed from areas free from rhizome.





Remember:

Do not excavate rhizome unless you have to, especially if you do not have the capacity to treat the material on site.

A 0.7g piece of rhizome is approximately the size of your little fingernail, and this may be capable of growing into a new plant.

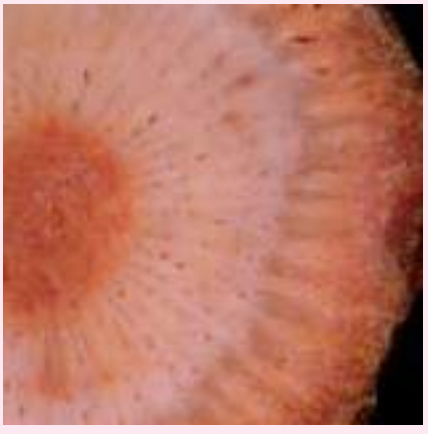
The matrix of the rhizome will vary in size and extent, depending on the nature and history of the site. Careful use of this guide will minimise the waste you produce and significantly reduce your costs.

Rhizome may remain dormant for at least 20 years. Dormant rhizome may regrow if it is disturbed. Lack of regrowth is not evidence of eradication.

Avoid spreading rhizome by following the guidance given within the knotweed code of practice.

If you spread rhizome into the environment you may be liable to prosecution under the Wildlife & Countryside Act 1981.







Root / rhizome identification chart - Japanese knotweed

Plants commonly found on development sites



Japanese knotweed *Fallopia japonica*
(and other Asiatic invasive knotweeds).
Japanese knotweed is commonly encountered on brownfield sites, where soil disturbance and fly-tipping are common. Close proximity to rivers, roads and railways may also provide a source of invasion.

External appearance of root or rhizome



Colour:
Dark brown, lighter when dried.

Texture:
Smooth skin, becoming rough when desiccated.

Features:
often forming long knotty lengths. May support small red buds, particularly on crowns (base of stem). Fine hair-like roots common, particularly on thinner sections.

Snap Test



Snapability:
Easy. Very carrot-like in structure and colour when fresh. More woody when dry. Older material, particularly near the crown, can be very woody. Colour can vary from deep red to pale yellow, with orange the most common. Younger fresh material usually has a different coloured core.

Scrape Test



Outer layer:
Thin skin, easily removed when fresh.

Inner layer:
Pale threads often run through darker fibrous flesh, particularly in larger rhizome. Often variations in colour through rhizome when split lengthways. Crown material is often caked with soil and can be hard to recognise. Cleaning should reveal red buds and characteristic flesh.

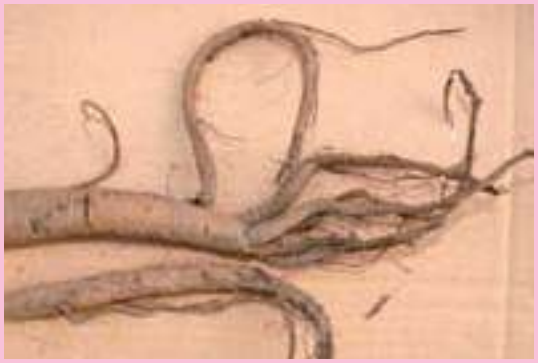
Root / Rhizome identification chart - other common plants

Plants commonly found on development sites



Dock:
Common on disturbed ground and in topsoil. Agricultural weed and covered by the Weeds Act 1959. Closest native plant to knotweed, so similar root appearance.

External appearance of root or rhizome



Colour:
pale red/brown.

Texture:
Fleshy skin.

Features:
Tapering, with branches clustered near the tip. Lacking the knotty appearance of knotweed.

Snap Test



Snapability:
Easy. Rubbery, but lacks the carrot-like snappiness of knotweed. Core is similar colour to the rest of the root, lacking the colour variation of knotweed rhizome.

Scrape Test



Outer layer:
Thin skin, similar to knotweed.

Inner layer:
fleshy, with a distinct core. Orange/yellow in colour, but usually paler than knotweed.

Plants commonly found on development sites



Buddleja (Butterfly bush):
Introduced shrub (intro: 1890), colonising waste ground and masonry. Spread by seed. Pink, purple or white flowers. Corky bark. Silver underside to leaves.

External appearance of root or rhizome



Colour:
Pale brown.

Texture:
Bark-like.

Features:
Bark easily damaged and revealing the woody core. Tough.

Snap Test



Snapability:
Very poor. Tends to rip rather than break cleanly. Distinct core.

Scrape Test



Outer layer:
Thin wrinkled bark.

Inner layer:
White wood.

Root / Rhizome identification chart - other common plants

Plants commonly found on development sites



Elder:
Native shrub, typical of disturbed ground and wasteland. White clusters of flowers in spring, black berries in autumn.

External appearance of root or rhizome



Colour:
Pale brown/yellow

Texture:
Fleshy and smooth. Wrinkled if desiccated.

Features:
Fleshy rootlets.

Snap Test



Snapability:
Reasonable. Thin sections snap, but larger sections are too woody. Tends to tear.

Scrape Test



Outer layer:
Skin easily removed.

Inner layer:
White fleshy layer with a pale woody core.

Plants commonly found on development sites



Sycamore (and most other trees):
Trees are common colonisers of waste ground.
Their roots are occasionally mistaken for rhizome.

External appearance of root or rhizome



Colour:
Mid-brown.

Texture:
Fairly smooth and even.

Features:
Does not fragment as easily as knotweed. Tend to remain in tapered sections. Fine rootlets.

Snap Test



Snapability:
Very poor. Very woody, tending to break and tear rather than snap. Fairly uniform in colour and structure.

Scrape Test



Outer layer:
Tough bark.

Inner layer:
Pale coloured wood.

Table for the identification of Japanese knotweed rhizome		
General characteristics	**Yes**	**No**
Twig-like appearance		
Fleshy with hardness like carrot		
Brittle when fresh, break easily like carrot		
Young rhizome is white and very soft		
Exterior of rhizome	**Yes**	**No**
Colour dark brown, like coffee granules		
Texture of the outer bark leathery		
When bark is removed, tissue is pale orange/yellow		
Nodes at 1-2cm spacing		
Nodes slightly enlarged and 'knotty'		
At nodes white fibrous roots are common		
If present, fresh buds at nodes are red/pink		
Interior of rhizome		
Longitudinal view	**Yes**	**No**
Colour: pale orange and light yellow, similar to a carrot		
Central core is usually dark orange/brown, like rust, and sometimes hollow		
Cross section	**Yes**	**No**
Cortex with rays coming from centre, like spokes from a wheel		
TOTAL		

If the 'yes score is greater than the 'no' score, then treat the identified rhizome as Japanese knotweed.

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Management plan for Japanese knotweed at:

Period covered:

Prepaired by: Date:

Table of contents

1. INTRODUCTION TO THE SITE 2
   - 1.1 Description of the site
   - 1.2 Site management objectives
   - 1.3 Limitations and threats to management objectives
   - 1.4 Inventory of the site

2. OVERVIEW OF MANAGEMENT PLAN 3
   - 2.1 Brief description of management plan
   - 2.2 Setting priorities
   - 2.3 Preventing further spread

3. SPECIFIC CONTROL PLANS FOR JAPANESE KNOTWEED 4
   - 3.1 Management objectives
   - 3.2 Management options
   - 3.3 Actions planned
   - 3.4 How actions will be evaluated
   - 3.5 Resource needs
   - 3.6 Results of evaluation

4. SUMMARY INFORMATION 5
   - Table 1: Priority areas
   - Table 2: Control methods
   - Table 3: Implementation schedule
   - Table 4: Projected resources and costs

5. REFERENCES 6

6. APPENDICES 7
   - Appendix 1. Site maps and Japanese knotweed distribution daps
   - Appendix 2. Japanese knotweed recording sheet
   - Appendix 3. Forms for collecting monitoring data
   - Appendix 4. Herbicide records
   - Appendix 5. Waste records
   - Appendix 6. Useful contacts

Introduction to the site — DRAFT TEMPLATE

1.1 Description of the Site

Brief description of the existing site (prior to any development): Include presence of any nature conservation features – e.g. protected species; vegetation to be retained; water courses (include proximity of streams or rivers if adjacent to the site); buildings to be retained; drainage on site; other relevant features.

Brief description of the proposed development: Include any proposed import or export of soils.

Brief description of the site post-development: Include any parts of the site designated for landscaping, conservation areas etc.

1.2 Site Management Objectives

Brief description of site management objectives: Include proposed timescale and plans for restoration/re-planting.

1.3 Limitations and Threats to Site Management Objectives

Description of how the presence of Japanese knotweed poses a threat to, or limits management objectives. Include for example:

- Increasing costs of development
- Delays in scheduling of works
- Damage or potential damage caused by the plant
- Potential for spread of Japanese knotweed from within and outside the site boundary (e.g. within the site, from adjacent land or via watercourses)
- Potential for import of Japanese knotweed on materials

1.4 Inventory of the Site

Description of the site boundaries, topography, access, special features: Include maps of site pre and post development in Appendix 1.

Description of the Japanese knotweed distribution on site and adjacent to the site:
Include detailed maps showing location of Japanese knotweed and exact area covered (allocate a unique identification number to each location of Japanese knotweed on site e.g. JK001, JK002 etc).
Complete a recording sheet for each location (see Appendix 2) If Japanese knotweed is present on adjacent land, record distribution and details of land use and land ownership.

2.1 Brief Description of Management Plan

Allocate personnel to oversee Japanese knotweed management and to be responsible for sign –off at the end of the treatment period:

2.2 Setting Priorities

Examples:

- Areas of Japanese knotweed on site which require rapid treatment will be identified.
- Prevention of further infestation of the plant on the site is a priority.
- Replacement vegetation/habitat will be considered rather than just eliminating Japanese knotweed.
- Control methods which suit the location and timescale will be adopted.
- Implementation will be based on the above information.
- Regular monitoring will be carried out.
- Management will be revised in response to feedback from the above.

Assign priority to each management objective: (e.g. High, Medium Low) - Record priorities for each location of the plant in Table 1.

2.3 Preventing Further Spread

Description of methods to be employed to prevent further spread:
Include for example:

- Isolation of Japanese knotweed on site by fencing to avoid disturbance during treatment.
- Assessment of risk of re-invasion of Japanese knotweed from adjacent land.
- Liaison with adjacent landowners to treat Japanese knotweed which poses a risk to the site.
- Procedures to ensure that imported materials are free from Japanese knotweed.
- Identification of designated haul routes through site to avoid contamination.

Description of training to be given to site operators and contractors during development:
Include for example identification of the plant (both above and below ground parts) and training on site practices to prevent further spread.

Specific control plans for Japanese knotweed **DRAFT TEMPLATE**

Site name:

Responsible manager:

Date plan last updated:

3.1 Management objectives (measurable)

Establish measurable objectives for the planned control activities. Include:

- the impact on density, cover, etc. that you want to achieve;
- the size of the area in which you hope to achieve this;
- the period in which you hope to achieve it.

Examples:

Objective 1. Elimination of Japanese knotweed on all parts of the site within 5 years.
Objective 2. Reduce percentage cover by 50% on 1 ha of the site within 2 years.
Objective 3. Prevention of further spread of Japanese knotweed on site.
Objective 4. Co-ordination with adjacent landowners to commence active treatment of Japanese knotweed in adjacent areas within 1 year.

3.2 Management options

Viable control options are:

- No treatment;
- Treatment alternative 1
- Treatment alternative 2 etc.

Briefly discuss the alternatives, indicate which are preferred and the conditions (size of area treated, location, timing, total anticipated cost, etc.) under which they may be used.

Build in restricted flexibility to allow conditions on site to be taken into consideration. State who the site operatives should contact when none of the listed alternatives can be carried out.

3.3 Actions planned (treatments and monitoring)

Briefly describe the locations to be treated, materials and methods to be used, and an approximate schedule for control and monitoring activities. Record details in Table 2.

3.4 How actions will be evaluated (criteria for success)

Outline the methods that will be used to monitor control activities and the criteria that will be used to evaluate success or failure of the program. The criteria for success should be based on the program's objectives and goals. (Data sheets to be used when collecting monitoring data should be included in Appendix 3).

3.5 Resource needs

Estimate the amount of time for staff, materials, contractors etc. and money that will be required to carry out the planned control, monitoring and evaluation. Record in Table 4.

3.6 Results of evaluation

This section is to be filled in later, preferably within 1 year, when monitoring data has been taken and evaluated. The evaluation should be used to determine whether any of the sections 3.1-3.5 above should be modified.

Summary information — DRAFT TEMPLATE

Table 1 - Priority areas

Area	Description and justifications of priority	Priority level

Table 2 - Control Methods

Area	Control Method	Carried out by

Table 3 - Implementation Schedule

Schedule the planning, surveying, and treatment for Japanese knotweed for at least the next year.

Treatment Schedule	Date

Table 4 - Projected resources and costs

Revise this table annually after comparing estimated to actual costs.

Item	Description	Projected resources	Projected costs	Actual Costs

References — DRAFT TEMPLATE

List references cited or used. For example:

Child, L.E. and Wade, P.M. (2000) The Japanese Knotweed Manual. Packard Publishing Limited, Chichester. ISBN 1 85341 127 2

Environment Agency and Cornwall County Council (1998) Japanese knotweed. How to control it and prevent its spread. Environment Agency, Bodmin.

Environment Agency and Cornwall County Council (2001) Japanese knotweed. Guidance for householders and landowners. Cornwall County Council.

Welsh Development Agency (1998) The control of Japanese knotweed in construction and landscape contracts: Model specification. Former Welsh Development Agency, now part of the Welsh Assembly Government.

Welsh Development Agency (1998) The eradication of Japanese knotweed: Model tender document. Former Welsh Development Agency, now part of the Welsh Assembly Government.

Appendices

Appendix 1 - Distribution maps

Attach copies of the map(s) of the site, and of maps depicting the extent of the Japanese knotweed on the site.

Appendix 2 - Japanese knotweed recording sheet

Example of Japanese knotweed Recording Sheet (complete a new sheet for each area of Japanese knotweed).

Recorded by:	Date:
Site name:	
Grid ref:	Site ref:

Area of Japanese knotweed - NB. Mark outline of area of Japanese knotweed on site map and annotate with site ref. no. If patch measures ‹1.0m^2, mark as + on map and annotate with site ref. no.

m	m

Average height of stems	‹1m	1 - 2.5m	›2.5m
Max. stem diameter at 30cm above ground	‹1cm	1 - 2cm	›2.5cm
Vegetation composition	Japanese knotweed only	Mixture of knotweed & other vegetation	
Proximity to water courses	Yes	No	
Slope	Flat	Moderate	Steep

Land use - Record primary land use as 1 and secondary use as 2 etc. e.g. landscaped area adjacent to riverbank record as Riverbank 1; Landscaped area 2.

Housing	Shops	Public buildings	Business/Industrial
Garden	Park	Recreation ground	Landscaped area
Farmland	Woodland	Waste ground	Graveyard
Car Park	Road verge	Railway embankment	Roundabout
River bank	Stream side	Dock	Canal
Pond	Sea front	hedgerow	Other, specify

Remarks:

Appendix 3 - Forms used in collecting monitoring data

Attach copies of data collection sheets.

Appendix 4 - Herbicide records

Attach details of herbicides used, dose rate and application rates and dates applied.

Appendix 5 - Waste records

Attach details of waste records for any material containing Japanese knotweed taken off site.

Appendix 6 - Useful contacts

Attach details of Contractors, Local Authority contact, Environment Agency contact, adjacent landowners etc.

Management plan for Japanese knotweed at:

Period covered: 2006-2010

Prepaired by: N.E. Body

Date: April 2006

Table of contents

1. INTRODUCTION TO THE SITE 2
   - 1.1 Description of the site
   - 1.2 Site management objectives
   - 1.3 Limitations and threats to management objectives
   - 1.4 Inventory of the site

2. OVERVIEW OF MANAGEMENT PLAN 3
   - 2.1 Brief description of management plan
   - 2.2 Setting priorities
   - 2.3 Preventing further spread

3. SPECIFIC CONTROL PLANS FOR JAPANESE KNOTWEED 4
   - 3.1 Management objectives
   - 3.2 Management options
   - 3.3 Actions planned
   - 3.4 How actions will be evaluated
   - 3.5 Resource needs
   - 3.6 Results of evaluation

4. SUMMARY INFORMATION 5
   - Table 1: Priority areas
   - Table 2: Control methods
   - Table 3: Implementation schedule
   - Table 4: Projected resources and costs

5. REFERENCES 6

6. APPENDICES 7
   - Appendix 1. Site maps and Japanese knotweed distribution maps
   - Appendix 2. Japanese knotweed recording sheet
   - Appendix 3. Forms for collecting monitoring data
   - Appendix 4. Herbicide records
   - Appendix 5. Waste records
   - Appendix 6. Useful contacts

Introduction to the site — DRAFT TEMPLATE

1.1 Description of the Site

Brief description of the existing site (prior to any development): Include presence of any nature conservation features – e.g. protected species; vegetation to be retained; water courses (include proximity of streams or rivers if adjacent to the site); buildings to be retained; drainage on site; other relevant features.

The site is a brown-field industrial site formerly a textiles factory which has been vacant for 10 years. Buildings were demolished some 8 years ago. The site covers an area of approximately 6.5 ha. and is surrounded by mature hedgerows with some mature trees. A watercourse runs along the southern boundary of the site in an westerly direction. Existing vegetation cover is rough ruderal vegetation with several patches of Japanese knotweed within the site and adjacent to the watercourse.

Brief description of the proposed development: Include any proposed import or export of soils.

The development will require site levelling, construction of a service road, installation of drainage and services and the construction of a building. Some material will be exported and the remaining inert material will be used on-site in construction works. Import of top soils for landscaping around car parking and communal areas will be required.

Brief description of the site post-development: Include any parts of the site designated for landscaping, conservation areas etc.

The proposed development will incorporate 3 sports pitches and a car parking area with a club house and facilities to the north eastern corner. A service road will provide access onto the site. Hedgerows to be retained and landscaping to be carried out in the vicinity of the clubhouse. A conservation area to the southern boundary is proposed alongside the watercourse.

1.2 Site Management Objectives

Brief description of site management objectives: Include proposed timescale and plans for restoration/re-planting.

The site is expected to be operational 24 months after works commence. Landscape planting and restoration of the boundary hedgerows and riparian vegetation will be carried out during the construction period.

1.3 Limitations and Threats to Site Management Objectives

Description of how the presence of Japanese knotweed poses a threat to, or limits management objectives. Include for example:

- Increasing costs of development
- Delays in scheduling of works
- Damage or potential damage caused by the plant
- Potential for spread of Japanese knotweed from within and outside the site boundary (e.g. within the site, from adjacent land or via watercourses)
- Potential for import of Japanese knotweed on materials

The presence of Japanese knotweed on site will increase the financial burden on this project both in terms of treatment costs and in delays in scheduling construction works. Any Japanese knotweed left untreated has the potential to damage hard surfaces and sports pitches and to delay the landscaping. A large area of Japanese knotweed exists outside the site to the eastern boundary and there is potential for further spread into the site along the watercourse. The development will necessitate the export of some material and the import of top soils for landscaping and for sports pitches. Materials leaving or brought onto site should be checked to ensure that Japanese knotweed does not leave or enter the site via this route.

1.4 Inventory of the Site

Description of the site boundaries, topography, access, special features: Include maps of site pre and post development in Appendix 1.

The site is reasonably level with access from the B4452 on the western boundary. The site slopes down steeply towards the watercourse on the southern boundary and there is potential in this area to accommodate a conservation area. Two mature Willow trees are located in the south western corner of the site.

Boundaries to the northern, western and eastern edges of the site are composed of mature hedgerow species including Hawthorn, Field maple, Blackthorn with some mature Ash and Oak trees.

Description of the Japanese knotweed distribution on site and adjacent to the site:
Include detailed maps showing location of Japanese knotweed and exact area covered (allocate a unique identification number to each location of Japanese knotweed on site e.g. JK001, JK002 etc).
Complete a recording sheet for each location (see Appendix 2) If Japanese knotweed is present on adjacent land, record distribution and details of land use and land ownership.

There are 6 distinct patches of well established Japanese knotweed on the site in addition to 2 areas where a few stems have become established. These are described in the accompanying maps and recording sheets. On adjacent land to the east of the site, a large area of Japanese knotweed is present adjacent to the watercourse. Total area of Japanese knotweed on site is estimated at 1,900m^2. Total area of Japanese knotweed on adjacent land is estimated at 500 m^2.

2.1 Brief Description of Management Plan

Allocate personnel to oversee Japanese knotweed management and to be responsible for sign –off at the end of the treatment period:

The Management of Japanese knotweed on site shall be overseen by the site foreman and in his absence, his deputy. This Management Plan and appendices and revisions of this plan shall be kept for future site owners. This Management Plan should be read in conjunction with the Environment Agency Code of Practice.

2.2 Setting Priorities

Examples:

- Areas of Japanese knotweed on site which require rapid treatment will be identified.
- Prevention of further infestation of the plant on the site is a priority.
- Replacement vegetation/habitat will be considered rather than just eliminating Japanese knotweed.
- Control methods which suit the location and timescale will be adopted.
- Implementation will be based on the above information.
- Regular monitoring will be carried out.
- Management will be revised in response to feedback from the above.

Assign priority to each management objective: (e.g. High, Medium Low) - Record priorities for each location of the plant in Table 1.

High Priority

- Areas of Japanese knotweed which require rapid treatment –
  JK002 on site access route
  JK004 overlying site drainage route
  JK005 and JK008 on land proposed for sports pitches.
- Prevention of further spread. All Japanese knotweed areas to be isolated prior to any work being carried out on site. This to include an area of at least 7 m laterally from above ground stems to ensure that any underground parts are also isolated.
- All personnel on site to receive training on identification of Japanese knotweed both above and below ground parts.

Medium Priority

- Control Methods for remaining areas of Japanese knotweed. A range of control methods will be adopted to include excavation and stock piling for future treatment (bund method), in-situ herbicide treatment and a combination of digging and subsequent herbicide application (combination method). Herbicides will be selected which are suitable for site use e.g. restrictions on herbicides which can be used in or near water.
- Monitoring –
  A scheme for monitoring will be agreed with the site foreman who will be ultimately responsible for overseeing the control of Japanese knotweed on site.
- Management –
  This management plan will be reviewed on a regular basis and in any case every 6 months from site acquisition to site completion.

Low Priority

- Replacement vegetation. JK003 adjacent to watercourse once eliminated should be replaced with grass cover to prevent bankside erosion.

2.3 Preventing Further Spread

Description of methods to be employed to prevent further spread:
Include for example:

- Isolation of Japanese knotweed on site by fencing to avoid disturbance during treatment.
- Assessment of risk of re-invasion of Japanese knotweed from adjacent land.
- Liaison with adjacent landowners to treat Japanese knotweed which poses a risk to the site.
- Procedures to ensure that imported materials are free from Japanese knotweed.
- Identification of designated haul routes through site to avoid contamination.

All areas affected by Japanese knotweed to be fenced and isolated from activities on site immediately to avoid potential for spread on-site. An area including a perimeter of at least 7m from the above ground stems should be isolated. See Environment Agency Code of Practice 2.1, 2.2

There is a high risk of invasion from neighbouring land. Contact the landowner and agree on a co-ordinated treatment programme.

No material to leave the site from the isolated Japanese knotweed areas.
All topsoil and materials brought onto site to be checked prior to accepting. See Environment Agency Code of Practice 2.3
No new materials to be stored adjacent to Japanese knotweed isolated areas.

No movement of Japanese knotweed contaminated material across site unless on designated haul routes, avoiding Japanese knotweed isolated areas.

Description of training to be given to site operators and contractors during development:
Include for example identification of the plant (both above and below ground parts) and training on site practices to prevent further spread.

All contractors and site operatives on site to receive training in Japanese knotweed identification and site practices. Training to be given on day 1. Posters highlighting the key features of the plant to be displayed in all communal areas (see Environment Agency Code of Practice Appendices I-IV).

Site name: Dummy Site

Responsible manager: Site Foreman

Date plan last updated: May 2006

3.1 Management objectives (measurable)

Establish measurable objectives for the planned control activities. Include:

- the impact on density, cover, etc. that you want to achieve;
- the size of the area in which you hope to achieve this;
- the period in which you hope to achieve it.

Examples:

Objective 1. Elimination of Japanese knotweed on all parts of the site within 5 years.
Objective 2. Reduce percentage cover by 50% on 1 ha of the site within 2 years.
Objective 3. Prevention of further spread of Japanese knotweed on site.
Objective 4. Co-ordination with adjacent landowners to commence active treatment of Japanese knotweed in adjacent areas within 1 year.

Objective 1

- Immediately contain existing Japanese knotweed on site and prevent further spread.

Objective 2

- Reduce the percentage cover of Japanese knotweed on site by 50% within 1 year.

Objective 3

- Liaise with adjacent landowner to commence active treatment of Japanese knotweed within 1 year.

Objective 4

- Eliminate Japanese knotweed on site within 4 years.

3.2 Management options - (continue on next page)

Viable control options are:

- No treatment;
- Treatment alternative 1
- Treatment alternative 2 etc.

Briefly discuss the alternatives, indicate which are preferred and the conditions (size of area treated, location, timing, total anticipated cost, etc.) under which they may be used.

Build in restricted flexibility to allow conditions on site to be taken into consideration. State who the site operatives should contact when none of the listed alternatives can be carried out.

The various options for the control of Japanese knotweed include in situ herbicide treatment, combined treatment of digging and herbicide, excavation and stock-piling for future treatment (the bund method), excavation and burial on site or excavation and removal off site. It is not an acceptable option to consider doing nothing.

3.2 Management options - (continued)

Excavation and removal off site is a rapid method of removal but is costly, and in the long term unsustainable. The particular site conditions do not allow for excavation and burial on site to the required depth of 5m (see Environment Agency Code of Practice). As there is sufficient space on site, excavation and stock-piling on site for subsequent herbicide treatment (the bund method) is a viable option particularly for those areas of site which are required to have immediate availability (e.g. access road). The remaining areas of Japanese knotweed could be treated by a combined digging and herbicide treatment or by in-situ herbicide treatment. The range of herbicides available are limited in the case of the affected areas adjacent to the watercourse, but other herbicides could be considered in more open areas away from water and mature trees. It may be necessary to vary the herbicide used or the mode of application once treatment has commenced. This should be discussed and agreed with the approved contractor.

3.3 Actions planned (treatments and monitoring) - (continue on next page)

Briefly describe the locations to be treated, materials and methods to be used, and an approximate schedule for control and monitoring activities. Record details in Table 2.

JK002, JK004, JK005, JK008

Control Method:

The Bund Method (See Environment Agency Code of Practice 5.4)

- Treat affected area with an appropriate non-persistent herbicide and leave for at least 1 week.
- Cut and remove canes and leave to dry on site for subsequent burning.
- Rake the surface of the affected area with tines to remove crowns and surface material – either leave to dry with canes for burning or spread on top of completed bund.
- Excavate affected area until all rhizome material has been removed.
- Create bund on a layer of geotextile starting with least infected soil and build up to 0.5 m to 1 m in height laying crown material and/or stems on top.
- Treat regrowth with appropriate herbicide.
- Disturb bund after one or two treatments and treat regrowth with appropriate herbicide.
- Continue to treat and disturb until no further regrowth appears.
- Soil from the bund may not be used off-site.

3.3 Actions planned (treatments and monitoring) - (continued)

Briefly describe the locations to be treated, materials and methods to be used, and an approximate schedule for control and monitoring activities. Record details in Table 2.

JK001, JK006 - Control Method:

Combined Treatment Method (See Environment Agency Code of Practice 3.4)

- Cut and remove canes and leave to dry on site for subsequent burning.
- Rake the surface of the affected area with tines to remove crowns and surface material and burn with canes.
- Cultivate affected area to a depth of at least 50 cm depending on the depth to which the bulk of rhizome material exists.
- Re-spread the excavated material over the cultivated area
- Apply appropriate herbicide to regrowth.
- Check for new growth at 4 - 6 weeks intervals after treatment and re-treat accordingly.
- Repeat cultivation and herbicide application until no further regrowth appears.

JK003, JK007 - Control Method:

Application of herbicide to above ground stems in situ using a herbicide approved for use in or near water e.g. glyphosate (See Environment Agency Code of Practice 3.2, 3.3)

- Cut and remove dead canes during winter for subsequent burning.
- Apply herbicide according to the manufacturers guidelines.
- Check for new growth at 4 - 6 week intervals after treatment and re-treat accordingly.

3.4 How actions will be evaluated (criteria for success)

Outline the methods that will be used to monitor control activities and the criteria that will be used to evaluate success or failure of the program. The criteria for success should be based on the program's objectives and goals. (Data sheets to be used when collecting monitoring data should be included in Appendix 3).

Monitoring will be carried out by the contractor and the site foreman prior to any treatment being carried out to act as a baseline for future monitoring and every 4 – 6 weeks throughout the growth season. The contractor and site foreman will agree the level of control achieved and the future treatment schedule. Recording sheets will be used to document the percentage cover of Japanese knotweed at each affected area on site over at least 3 representative samples of 1 m2.

3.5 Resource needs

Estimate the amount of time for staff, materials, contractors etc. and money that will be required to carry out the planned control, monitoring and evaluation. Record in Table 4.

3.6 Results of evaluation

This section is to be filled in later, preferably within 1 year, when monitoring data has been taken and evaluated. The evaluation should be used to determine whether any of the sections 3.1-3.5 above should be modified.

Summary information **DRAFT TEMPLATE**

Table 1 - Priority areas

Area	Description and justifications of priority	Priority level
JK002, JK004, JK005, JK008	JK002 on proposed access road, JK004 overlying site drainage route. JK005 and JK008 on land proposed for sports pitches. Rapid treatment required	High
JK001, JK003, JK006, JK007	Stands on or adjacent to site boundaries can be treated in-situ	Medium

Table 2 - Control Methods

Area	Control Method	Carried out by
JK001	Combination treatment	Site operatives and contractor
JK002	Bund method	Site operatives and contractor
JK003	Herbicide application	Contractor
JK004	Bund method	Site operatives and contractor
JK005	Bund method	Site operatives and contractor
JK006	Combination treatment	Site operatives and contractor
JK007	Herbicide application	Contractor
JK008	Bund method	Site operatives and contractor

Table 3 - Implementation Schedule
Schedule the planning, surveying, and treatment for Japanese knotweed for at least the next year.

Treatment Schedule - Bund Me	Date
Chemical treatment to be carried out prior to excavation if plants are in leaf.	day.month.year
Excavate Japanese knotweed and surrounding area until all traces of rhizome are removed. Stockpile excavated material on protective membrane for treatment.	day.month.year
Chemical treatment to be carried out during growing season (March to September).	day.month.year
Apply disturbance to stockpile.	day.month.year
Monitor for new growth.	day.month.year
Chemical treatment to be carried out during growing season (March to September).	day.month.year

Table 4 - Projected resources and costs
Revise this table annually after comparing estimated to actual costs.

Item	Description	Projected resources	Projected costs	Actual Costs
Chemical treatment	Contractor to apply herbicide	Materials	£	£
		Labour	£	£

List references cited or used. For example:

Child, L.E. and Wade, P.M. (2000) The Japanese Knotweed Manual.
Packard Publishing Limited, Chichester. ISBN 1 85341 127 2

Environment Agency and Cornwall County Council (1998) Japanese knotweed.
How to control it and prevent its spread. Environment Agency, Bodmin.

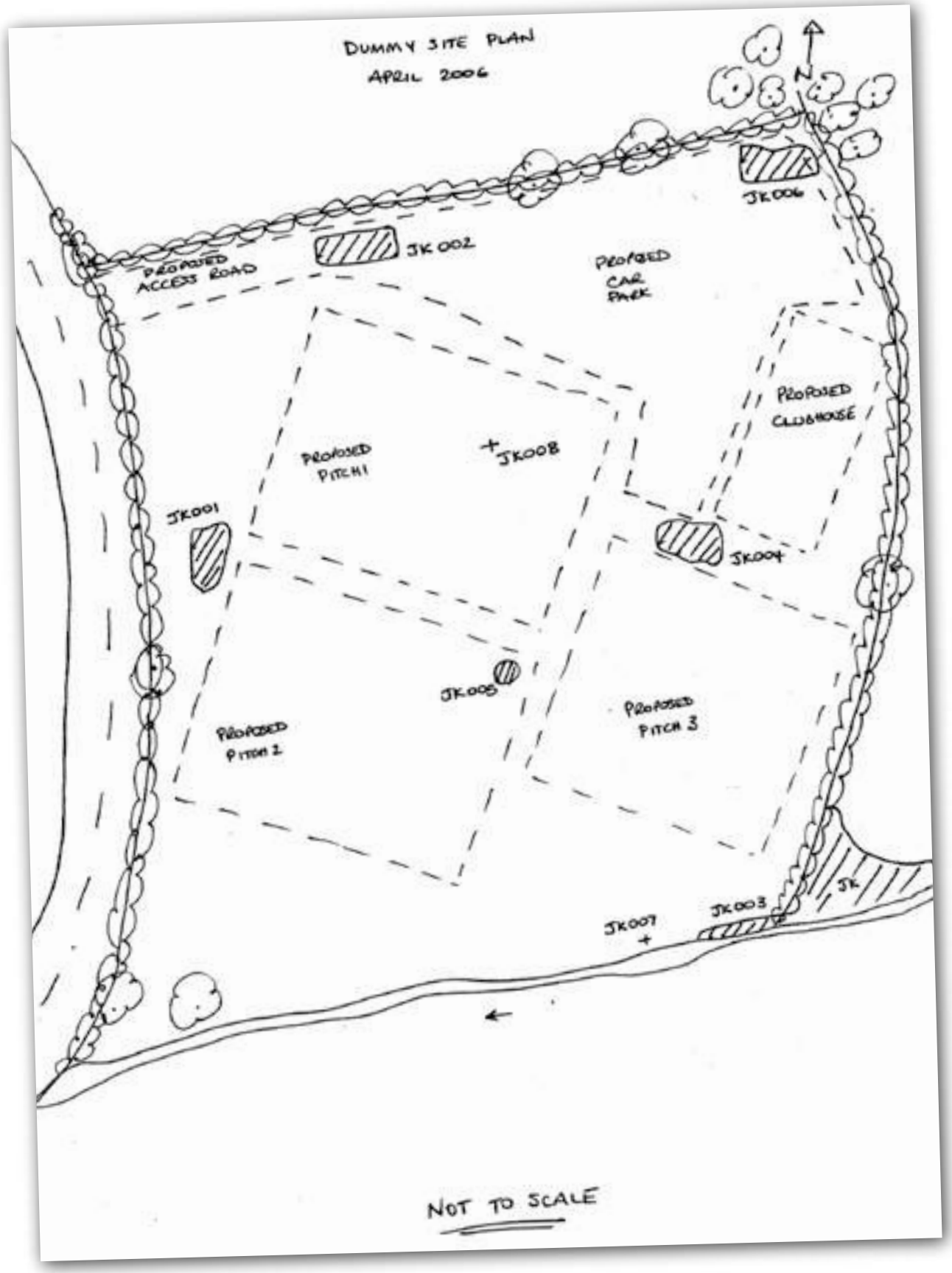
Environment Agency and Cornwall County Council (2001) Japanese knotweed.
Guidance for householders and landowners. Cornwall County Council.

Welsh Development Agency (1998) The control of Japanese knotweed in construction and landscape contracts: Model specification.
Former Welsh Development Agency, now part of the Welsh Assembly Government.

Welsh Development Agency (1998) The eradication of Japanese knotweed: Model tender document.
Former Welsh Development Agency, now part of the Welsh Assembly Government.

Appendix 1 - Distribution maps

Attach copies of the map(s) of the site, and of maps depicting the extent of the Japanese knotweed on the site.



Appendix 2 - Japanese knotweed recording sheet

Example of Japanese knotweed Recording Sheet (complete a new sheet for each area of Japanese knotweed).

Recorded by: MMM	Date: 5 April 2006
Site name: Dummy Site	
Grid ref: XX 032 033	Site ref: JK001

Area of Japanese knotweed - NB. Mark outline of area of Japanese knotweed on site map and annotate with site ref. no. If patch measures ‹1.0m², mark as + on map and annotate with site ref. no.

25 m	18 m

Average height of stems	‹1m		1 - 2.5m	X	›2.5m	
Max. stem diameter at 30cm above ground	‹1cm		1 - 2cm	X	›2.5cm	
Vegetation composition	Japanese knotweed only	X	Mixture of knotweed & other vegetation			
Proximity to water courses	Yes		No	X		
Slope	Flat	X	Moderate		Steep	

Land use - Record primary land use as 1 and secondary use as 2 etc. e.g. landscaped area adjacent to riverbank record as Riverbank 1; Landscaped area 2.

Housing		Shops		Public buildings		Business/Industrial	
Garden		Park		Recreation ground		Landscaped area	
Farmland		Woodland		Waste ground	1	Graveyard	
Car Park		Road verge		Railway embankment		Roundabout	
River bank		Stream side		Dock		Canal	
Pond		Sea front		hedgerow	2	Other, specify	

Remarks: large well established stand

Appendix 3 - Forms used in collecting monitoring data

Attach copies of data collection sheets.

Appendix 4 - Herbicide records

Attach details of herbicides used, dose rate and application rates and dates applied.

Appendix 5 - Waste records

Attach details of waste records for any material containing Japanese knotweed taken off site.

Appendix 6 - Useful contacts

Attach details of Contractors, Local Authority contact, Environment Agency contact, adjacent landowners etc.



Restricted Access

The soil in this area contains Japanese knotweed and is being treated.

Do not enter unless authorised.

Do not remove soil from this area without authorisation.

Would you like to find out more about us, or about your environment?

Then call us on

03708 506 506 (Mon-Fri 8-6)

Calls to 03 numbers cost the same as calls to standard geographic numbers (i.e. numbers beginning with 01 or 02).

email

enquiries@environment-agency.gov.uk

or visit our website

www.environment-agency.gov.uk

incident hotline 0800 80 70 60 (24hrs)
floodline 0845 988 1188

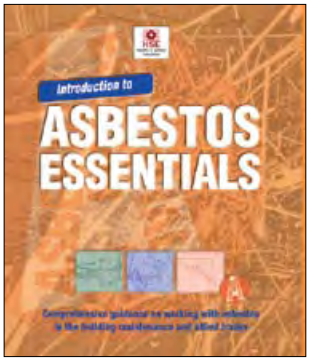
Environment first: This publication is printed on recycled paper.

Key Reference Documents

HSG 213: Asbestos Essentials - Comprehensive Guidance on Working with Asbestos in the Building Maintenance and Allied Trades (2001)

Introduction to asbestos essentials

Comprehensive guidance on working with asbestos in the building maintenance and allied trades



This is a free-to-download, web-friendly version of HSG213 (first edition, published 2001). This version has been adapted for online use from HSE's current printed version.

You can buy the book at www.hsebooks.co.uk and most good bookshops.

ISBN 978 0 7176 1901 6
Price £12.50

This publication is aimed at employers, contract managers, site agents, safety representatives, and self-employed contractors involved in maintaining buildings and associated plant.

Maintenance workers may come across asbestos in the course of their work. This book gives advice on what those responsible must do to ensure the health and safety of maintenance workers who may encounter asbestos.

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This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance as illustrating good practice.

Contents

Asbestos building ***4***

Preface ***5***
Introduction ***6***
Who needs to use this guidance? *6*
Why is guidance needed? *7*
How to use this guidance *8*
What is asbestos? ***9***
How can asbestos affect you? *9*
Where can you find asbestos? ***10***
What the law requires ***14***
Control of Asbestos at Work Regulations 1987 (as amended) (the CAW Regulations) *14*
The Asbestos (Licensing) Regulations 1983 (as amended) *16*
Asbestos (Prohibitions) Regulations 1992 (as amended) *17*
Construction (Design and Management Regulations 1994 (CDM) and Construction (Health, Safety and Welfare) Regulations 1996 (CHSW) *17*
Managing the risk from work with asbestos ***18***
The hazards and risks of ACMs *18*
Managing the risk *20*
When is the risk greatest? *21*
What should you do first? *23*
Step 1 Look for asbestos *23*
Step 2 Decide if there is a problem *25*
Step 3 Decide what action to take *27*
Step 4 Record your findings and take action *28*
Step 5 Check what you have done and review your assessment *28*
Emergency call-out procedures ***29***
Working safely: General considerations ***30***
Other hazards *31*
Training *32*
Area preparation *32*
Area segregation *32*
General good work practices *34*
Equipment and materials *35*
Where can you buy or hire this equipment? *36*
What do you do if ACMs are found or accidentally disturbed? *37*
Waste handling *38*
Protective clothing *38*
Respiratory protective equipment (RPE) *39*
Provision of cleaning and hygiene facilities *42*
Clearance testing *42*
Air monitoring *43*
Waste disposal *44*
Task guidance and equipment and method guidance sheets ***49***
References ***49***

Asbestos building

Typical locations for the most common asbestos–containing materials

Key

Roof and exterior walls
1 Roof sheets and tiles
2 Guttering and drainpipe
3 Wall cladding
4 Soffit/facia boards
5 Panel beneath window
6 Roofing felt and coating to metal wall cladding

Boiler, vessels and pipework
7 Lagging on boiler, pipework, calorifier etc.
8 Damaged lagging and associated debris
9 Paper lining under non-asbestos pipe lagging
10 Gasket in pipe and vessel joints
11 Rope seal on boiler access hatch and between cast iron boiler sections
12 Paper lining inside steel boiler casing
13 Boiler flue

Ceilings
14 Spray coating to ceiling, walls, beams/columns
15 Loose asbestos in ceiling/floor cavity
16 Tiles, slats, canopies and firebreaks above ceilings
17 Textured coatings and paints

Interior walls
18 Loose asbestos inside partition walls
19 Partition walls
20 Panel beneath window
21 Panel lining to lift shaft
22 Panelling to vertical and horizontal beams
23 Panel behind electrical equipment
24 Panel on access hatch to service riser
25 Panel lining service riser and floor
26 Heater cupboard around domestic boiler
27 Panel behind/under heater
28 Panel on or inside, fire door
29 Bath panel

Flooring materials
30 Floor tiles, linoleum and paper backing, lining to suspended floor

Air handling systems
31 Lagging
32 Gaskets
33 Anti-vibration gaiter

Domestic appliances
34 Gaskets, rope seals and panels in domestic boilers
35 'Caposil' insulating blocks, panels, paper, string etc in domestic heater
36 String seals on radiators

Other
37 Fire blanket
38 Water tank
39 Brake/clutch lining

Note: This diagram does not show all possible uses and locations of asbestos-containing materials. A detailed survey will be required to identify all asbestos-containing materials present in a building.

Further information can be found in the HSE publication MDHS100 *Surveying, sampling and assessment of asbestos-containing materials*[8]

Preface

Asbestos was the main cause of occupational ill health in the second half of the twentieth century. The legacy from high exposures until the 1970s is now responsible for between 2000 and 3000 people dying from asbestos-related cancers every year.

These deaths are tragic for the people involved and cause pain and suffering to relatives, friends and colleagues. They also cost the country money. If the proper management procedures had been in place and the correct work practices used by well-trained and equipped workers, most of these deaths could have been avoided.

To ensure that high levels of exposure do not occur during work on asbestos-containing materials (ACMs), HSE has put in place a rigorous regulatory and licensing regime, backed up by comprehensive practical guidance. This guidance adds to the scheme by providing guidance on maintenance work with ACMs which does not fall under the Asbestos (Licensing) Regulations 1983 (as amended).

Remember

Using this guidance can help prevent you or your employees joining those who have died from an asbestos-related disease.

You can get further advice from the British Institute of Occupational Hygienists (BIOH) Tel: 01332 298087; Asbestos Testing and Consultancy (ATAC) who are a division of the Asbestos Removal Contractors Association (ARCA) Tel: 01283 531126; the Asbestos Control and Abatement Division (ACAD) Tel: 01325 466704; your trade association or HSE's InfoLine: Tel: 08701 545500.

Introduction

Who needs to use this guidance?

1 This guidance is aimed at anyone who is liable to control or carry out maintenance work with asbestos-containing materials (ACMs) which does not require a licence from HSE.

Remember

Work with any type of ACM is potentially dangerous.

If you have any doubts that you or your employees can carry out the work safely, employ a specialist contractor licensed by HSE.

You can get details of licensed asbestos removal contractors from HSE's InfoLine Tel: 08701 545500.

2 This guidance will be particularly useful to employers, contract managers, site agents, safety representatives and self-employed contractors involved in maintaining buildings and associated plant. Examples of the wide range of trades where workers may come across ACMs during their normal day-to-day work (not in order of risk) include:

- demolition contractors;
- electricians;
- roofing contractors;
- painters and decorators;
- construction contractors;
- joiners;
- heating and ventilation engineers;
- plumbers;
- telecommunications engineers;
- gas fitters;
- fire and burglar alarm installers;
- plasterers;
- general maintenance staff;
- builders;
- computer installers;
- shop fitters;
- building surveyors.

The practical guidance given in the separate publication, *Asbestos essentials: Task manual*[1] will be of particular use to employees who carry out maintenance work on ACMs.

3 *This list is by no means exhaustive*. If your trade is not included, it *does not* mean that you or your employees are not in danger. The list illustrates that asbestos was used widely. Anyone whose work causes disturbance to the fabric of a building or plant may be at risk of exposure to asbestos.

Why is this guidance needed?

4 In 1995 an influential scientific paper[2] identified the largest group of workers currently at risk from exposure to asbestos fibres (see paragraph 2–3). Workers in these and similar trades may encounter asbestos during their normal day-to-day work.

5 This research showed that 2000–3000 people are dying each year from asbestos-related diseases, in particular mesothelioma (see paragraph 20). About a quarter of these deaths are in the types of trades listed in paragraph 2.

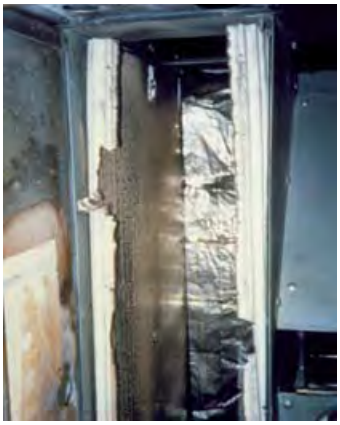


Figure 1 Asbestos paper lining



Figure 2 Asbestos rope seal

6 These deaths are mainly due to high exposures to asbestos before today's Regulations were introduced. However, these trades can still come across ACMs and may have to work on them. For example, Figures 1 and 2 show typical ACMs you may find when carrying out maintenance work in a building.

7 The type of work you can carry out is restricted by the Asbestos (Licensing) Regulations 1983 (as amended) (see paragraphs 37–41).

8 Exposure to asbestos fibres can occur when ACMs are not identified before work is started or when the work is badly planned. Table 1 gives some examples of the exposures which can occur during a range of tasks. Compare these with the control limits in Table 2 (see also paragraphs 33–36)

Reasonably Practicable

Reducing exposure 'so far as reasonably practicable' means that:
you must reduce exposure to the point where there is a big difference between, on the one hand, the sacrifice (in money, time or trouble) that would be involved in further measures and, on the other hand, the risks from exposure (which should be insignificant).

Table 1 Typical exposures to asbestos fibres, where poor control measures and work practices have been used (fibres per millilitre of air (f/ml))

Task	Typical exposure (f/ml)
Dry removal of sprayed (limpet) coating	up to 1000
Dry removal of lagging	up to 100
Drilling AIB	up to 10
Use of a jigsaw on AIB	up to 20
Hand sawing AIB	up to 10
Sweeping AIB debris	up to 100
Drilling AC	up to 1
Hand sawing AC	up to 1
Use of a circular saw on AC	up to 20

AIB: Asbestos insulating board
AC: Asbestos cement

9 If ACMs are identified and the work is planned and carried out using the proper precautions, exposure can either be prevented or reduced to a level that is as low as *reasonably practicable.*

10 Put simply, people will not be exposed to asbestos fibres unless the material is disturbed, making the fibres airborne. But, any activity which disturbs an ACM can, if not controlled, result in exposure of workers to asbestos fibres.



Figure 3 A piece of asbestos lagging being gently shaken

11 Figure 3 shows a piece of asbestos lagging being *gently* shaken. Note the cloud of dust above the lagging. This will contain a large number of microscopic asbestos fibres. This illustrates how easily fibres can be made airborne (the potential to release fibres varies with the type of ACM and the task being carried out – see paragraphs 54–58).

How to use this guidance

12 This guidance takes you through a number of steps to help you prevent or, where this is not reasonably practicable, control exposure to asbestos (Figure 4). It first helps you decide if you have a problem (for example are ACMs present?) and what to do about it.

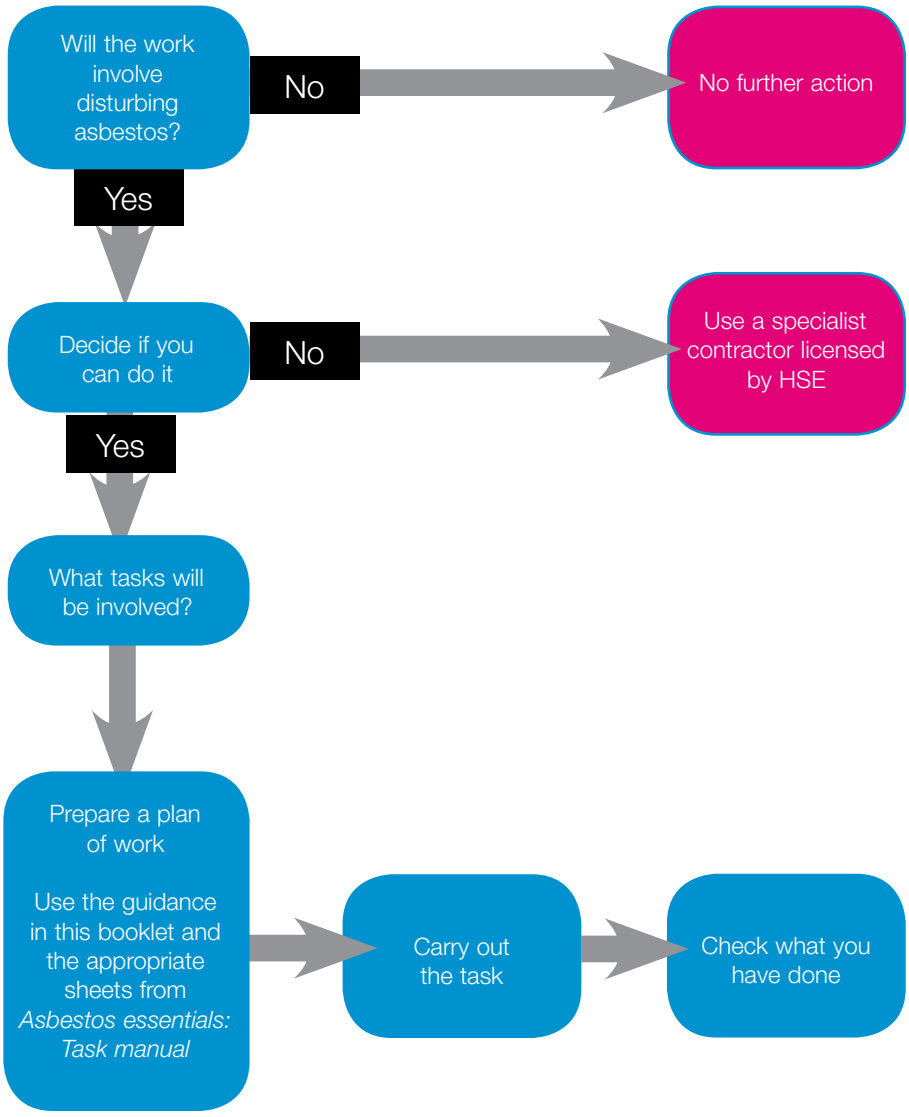


Figure 4 A stepwise approach to using this guidance

13 It then provides practical general advice on good work practices and the type of equipment needed, for example a Type H vacuum cleaner. This information is supported by *Asbestos essentials: Task manual*[1] which explains how to carry out common tasks safely. This publication is explained in more detail in paragraphs 174–179.

14 General guidance on safe working with asbestos cement is given in *Working with asbestos cement.*[3] Guidance on carrying out specific tasks with asbestos cement is given in the task guidance sheets, A9–A16.[1]

What is asbestos?

15 Asbestos is a term used for the fibrous forms of several naturally occurring minerals.

16 The three main types of asbestos which have been commercially used are:

- crocidolite (often referred to as 'blue asbestos');
- amosite (often referred to as 'brown asbestos');
- chrysotile (often referred to as 'white asbestos').



Figure 5 Bundles of microscopic brown asbestos fibres

(Figure 5 shows bundles of microscopic brown (amosite) asbestos fibres. These would not be visible to the naked eye.)

17 *All are dangerous*, but blue and brown asbestos are known to be more dangerous than white. *The different types cannot usually be identified by their colour alone.*

18 Where asbestos is affected by heat or chemicals, or combined with other substances, the colour and appearance can change.

19 There is no simple test to identify the different types of asbestos. Laboratory analysis is required. They often occur as mixtures and unless you are sure which type of asbestos fibres are present you must treat the material as if it contains blue or brown.

How can asbestos affect you?

20 Breathing in asbestos fibres can lead to people developing one of three fatal diseases:

- *asbestosis* which is a scarring of the lung;
- *lung cancer;*
- *mesothelioma* which is a cancer of the lining around the lungs and stomach.

21 These diseases can take from 15–60 years to develop, from first exposure – so you or your employees would not be aware of any sudden change in health after breathing in asbestos.

Remember

It is the precautions you take now which will affect your, or your employees', health in the future.

22 In general, the likelihood that people may develop one of these diseases will increase with:

- the type of asbestos fibre they are exposed to (blue and brown asbestos are more dangerous than white);
- the younger they are when exposure starts;
- the number of fibres they breathe in;
- the number of times they are exposed;
- smoking.

23 Asbestos fibres enter your body when you breathe. The body can get rid of the larger fibres, but microscopic fibres can pass into the lungs where they can cause disease. They can stay there for many years.

24 It is because fibres can remain in the lungs for so long that small, but repeated, exposures on different jobs over the years can lead to the development of an asbestos-related disease. *This is why it is important to prevent or control exposure on every single job.*

25 The body naturally gets rid of any asbestos fibres taken in with food and water. Asbestos fibres cannot be absorbed through the skin.

26 It is important to remember that people *who smoke and are exposed to asbestos fibres* are at greater risk of developing lung cancer than those who do not smoke. If you smoke and carry out maintenance work on ACMs, consider giving up.

27 The best way to make sure that you or your employees do not develop one of these diseases is to avoid disturbing ACMs, or, where this is unavoidable, to keep exposures as low as reasonably practicable.

Where can you find asbestos?

28 ACMs have been put to many uses over the past century. A drawing of an 'asbestos building' is given on the inside front cover. This shows typical locations for the most commonly used ACMs. *Note, it does not include all the possible uses for ACMs you may come across.*

29 The commercial use of asbestos in the UK began around the end of the nineteenth century and increased gradually until World War II. Immediately after World War II, large quantities of asbestos were used, particularly for new 'system-built' buildings in the 1950s, 1960s and early 1970s. ACMs were routinely used in the refurbishment of older buildings.

30 Asbestos has been the subject of gradual voluntary and formal bans since 1969. By 1999 the importation, supply and use of all forms of ACMs had been banned (see paragraphs 42–45).

31 Figures 6–27 show some of the most common types of ACMs which you can come across in a building.



Figure 6 Perforated AIB ceiling tiles



Figure 7 Asbestos cement roof

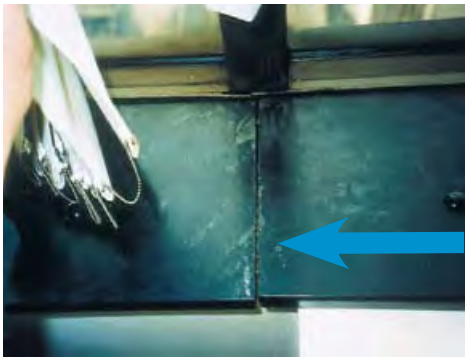


Figure 8 Window sill reinforced with asbestos



Figure 9 Asbestos fire blanket



Figure 10 Flexible asbestos duct connector (gaiter)



Figure 11 Metal/asbestos flue pipe – the asbestos is between the inner and outer layers of stainless steel



Figure 12 Asbestos cement tank



Figure 13 Built-up bituminous roofing containing asbestos



Figure 14 Decorative coating containing asbestos



Figure 15 Asbestos cement drainpipe



Figure 16 Sanitary wear incinerator – the opening can be backed with an asbestos cement panel. The flue can also be made of asbestos cement



Figure 17 Asbestos cement flue – external



Figure 18 Domestic hot water cylinder lagged with asbestos



Figure 19 Domestic hot water cylinder with asbestos removed, lagged with a non-asbestos jacket



Figure 20 The same cylinder as Figure 19. Note the asbestos debris from a previous poor removal job



Figure 21 Asbestos rope seal and soft panelling on the burner/heat exchanger of a domestic boiler



Figure 22 Debris from an asbestos gasket on a pipe flange



Figure 23 Asbestos pipe lagging



Figure 24 Asbestos cement flue in a ceiling void



Figure 25 Sectional 'caposite' asbestos pipe lagging



Figure 26 Asbestos rope pipe lagging



Figure 27 Sprayed 'limpet' coating which has been partly removed

What the law requires

Control of asbestos at work regulations 1987 (as amended) (the CAW Regulations)

32 These Regulations require employers or the self-employed to prevent exposure to asbestos, or, where this is not reasonably practicable, to make sure that it is kept as low as reasonably practicable, and in any case below the control limit (see paragraphs 33–36).

Remember

These Regulations apply to work with *all types* of ACMs and place duties on both employers and the self-employed.

33 The CAW Regulations give control limits for the different types of asbestos fibre. A control limit is a maximum concentration of asbestos fibres in the air (averaged over any continuous four-hour or ten-minute period). Employees must not be exposed above this level and exposure should be reduced as low as reasonably practicable below the control limit. This must be achieved by measures other than respiratory protective equipment (RPE), for example by using the methods given in *Asbestos essentials: Task manual.*[1] Where this cannot be achieved, RPE must be worn to reduce exposure as low as reasonably practicable and in any case below the control limit.

34 Both the four-hour and ten-minute periods have their own control limits, the values of which vary depending on the type of asbestos present. The control limits are given in Table 2.

35 Action levels apply to exposure in the longer term, and are cumulative exposures calculated over any continuous twelve-week period. The twelve-week period should not be chosen in such a way as to avoid exceeding an action level; it should represent a 'worst-case' for the work being undertaken. The action levels are given in Table 2.

Table 2 Control limits and action levels for asbestos

Asbestos type	4-hour control limit (f/ml)	10-minute control limit (f/ml)	Action level (fibre hrs/ml)
White asbestos alone	0.3	0.9	72
Any other form of asbestos, either alone or in mixtures, including mixtures of white asbestos with any other form of asbestos	0.2	0.6	48

36 If an action level is exceeded you will need to comply with a number of additional regulations within the CAW Regulations. You will need to:

- notify the enforcing authority responsible for the site where you are working (for example HSE or the Local Authority);
- designate the work area (see paragraphs 113–121);
- pay for your employees to undergo medical surveillance.

Further information can be found in the Approved Code of Practice, *Control of Asbestos at Work Regulations.*[4]

The Asbestos (Licensing) Regulations 1983 (as amended)

37 Under these Regulations, anyone carrying out work on asbestos insulation, asbestos coating or asbestos insulating board (AIB) will need a licence issued by HSE (*this includes work on the ACM and subsequent cleaning of any contaminated dust or debris*). The exceptions to these requirements are:

- when a person does not work with asbestos insulation, asbestos coating or AIB for more than one hour in seven consecutive days (this is all jobs within the seven days) and the total time spent on that work by all employees does not exceed two hours;
- when the work is carried out on your own premises using your own specially trained and equipped employees. Although you must still give formal notification (14 days) of such work to the relevant enforcing authority, for example HSE.
- when the work is limited to air monitoring (see paragraphs 160–166) or the collection of bulk samples to identify whether asbestos is present;
- clearance testing (see paragraphs 155–159).

38 It is important that the amount of time you or your employees spend working with asbestos insulation, asbestos coatings or AIB is managed to make sure that they do not exceed the time limits given in paragraph 37.



Figure 28 An office made from AIB

39 Figure 28 shows an office built from AIB inside a warehouse. If you wanted to demolish the office you would exceed the time limits given in paragraph 37. The job would need to be carried out by a specialist contractor licensed by HSE. But, you would be able to drill holes in the wall to pass a wire through, as long as the time limits were not exceeded. Or, you could remove a single screwed-in piece of AIB (see A1 'Drilling holes in asbestos insulating board' and A4 'Removal of a single screwed-in asbestos insulating board less than 2m^2 in area' respectively).[1]

40 Work on the following materials is also outside these Regulations:

- asbestos cement;
- articles made of rubber, plastic, resin or bitumen which contain asbestos, for example vinyl floor tiles, electric cables and roofing felt;
- other insulation products which may be used at high temperatures but have no insulation purposes, for example gaskets, washers, ropes and seals.

Remember

You will need to include time spent building a mini-enclosure or carrying out final clearing work in your time estimate (see paragraph 37).

Although you may not need a licence to carry out a particular job you will still need to comply with the requirements of the CAW Regulations.

41 Further information can be found in the flow chart in Figure 41 and the HSE publication, *A guide to the Asbestos (Licensing) Regulations*.[5]

Asbestos (Prohibitions) Regulations 1992 (as amended)

42 These Regulations prohibit the importation, supply and use of all forms of asbestos. Blue and brown asbestos were banned in 1985 and the remaining uses of white asbestos banned in 1999. It is therefore illegal to import, supply or use raw asbestos or new products containing it, and to supply or use existing products for a new purpose. Products in use before the date the Regulations came into force can continue to be used until such time as they need to be replaced. The Regulations also specifically ban the use of second-hand asbestos cement products, and of second-hand boards, tiles or panels which have been painted or covered with paint or textured plaster containing asbestos.

43 The 1999 Prohibitions Amendment Regulations permit the continued use of white asbestos for a limited period in a few specialised areas, where there is no suitable substitute available. With one exception, all new uses of asbestos will have ceased by January 2005.



Figure 29 Asbestos rope seal in a domestic boiler

44 Figure 29 shows an asbestos rope seal, containing white asbestos, between the heat exchanger and flue on a domestic boiler. This material can remain in use until the end of its service life. However, if it needs to be replaced, a suitable asbestos-free material must be used.

45 Nevertheless, it may be a good idea to remove the asbestos product if the unit has been dismantled and to replace it with a suitable non-asbestos substitute. This will prevent further exposure when the unit is next worked on.

Remember

These Regulations apply to new uses for asbestos. ACMs may be left in place and managed.

Construction (Design and Management) Regulations 1994 (CDM) and Construction (Health, Safety and Welfare) Regulations 1996 (CHSW)

46 You must also comply with the:

- Construction (Design and Management) Regulations 1994 (CDM); and
- Construction (Health, Safety and Welfare) Regulations 1996 CHSW).

47 Further guidance can be found in the Approved Code of Practice *Managing construction for health and safety*[6] which accompanies the CDM Regulations and the leaflet *A guide to the Construction (Health, Safety and Welfare) Regulations 1996,*[7] respectively.

Managing the risk from work with asbestos

The hazards and risks of ACMs

Hazard

Hazard means anything that can cause harm (for example asbestos).

Risk

This is the chance, high or low, that somebody will be harmed by the hazard.

48 Asbestos can cause a number of fatal lung diseases. This is what is known as the *hazard*.

49 The hazard will vary with the type of asbestos fibre in the material. *All forms of asbestos are dangerous*, but blue and brown are more dangerous than white. It is quite common for ACMs to contain a mixture of fibre types. Unless you are sure of the type of asbestos present, for example by having a representative sample analysed by a laboratory, you must treat the material as if it contains blue or brown asbestos.

50 Figure 23 shows asbestos-lagged pipework, which can contain a mixture of all three types of asbestos fibre.

51 The type of asbestos fibre used in the manufacture of different products often varied over the years, for example white asbestos was the main form used in the manufacture of asbestos cement, however, blue asbestos was used from 1950–69 and brown asbestos between 1945 to around 1980. Asbestos cement containing blue or brown asbestos would pose a greater hazard than if it contained white asbestos alone.

52 If ACMs are damaged or disturbed, fibres can get into the air more easily than if they are undamaged and undisturbed.

Remember

If the ACMs are kept in good condition and left undisturbed, fibres will not get into the air where they can be breathed in. ACMs should only be worked on when it is absolutely necessary.

53 Once they are in the air, fibres can be breathed in. This is called exposure. The higher the exposure, the greater the *risk*. (Hazard x exposure = risk)

54 Exposure is influenced by the type of material in which the fibres are bound, for example, a loosely bound sprayed 'limpet' asbestos coating is more likely to release fibres when disturbed than asbestos cement where the fibres are firmly bound in the cement matrix (Figures 30 and 31).

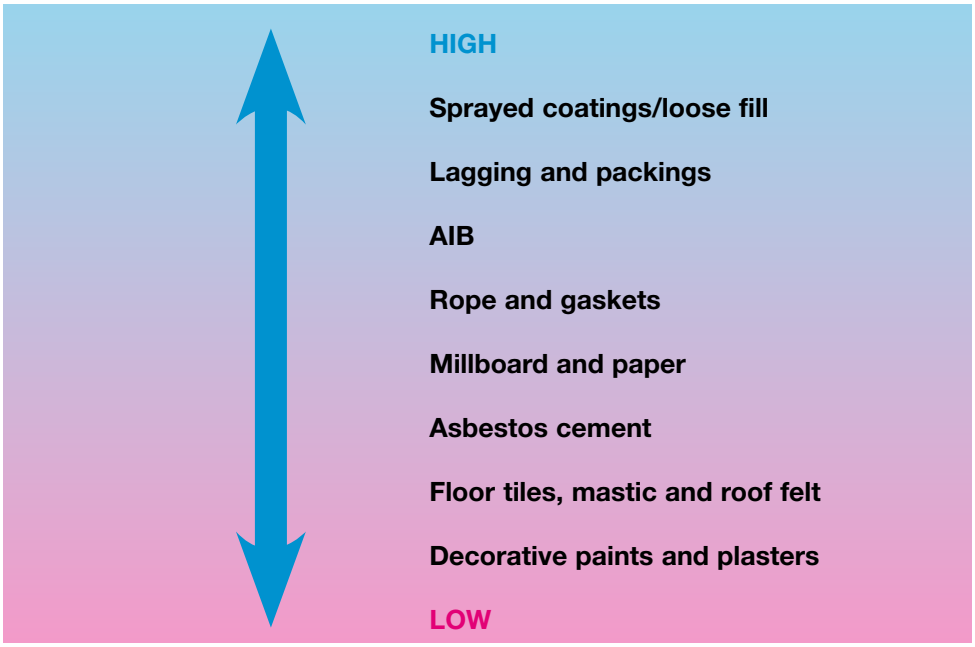


Figure 30 Distance (left) and close up (right) pictures of sprayed 'limpet' asbestos coatings. These can contain up to 85% asbestos which is loosely bound. This type of material readily releases fibres when disturbed



Figure 31 Asbestos cement generally contains 10–15% asbestos fibre bound in a cement matrix. Because the fibres are firmly bound in the cement matrix they will only be released if the material is subject to significant disturbance, such as drilling or sawing

55 The potential for fibres to be released into the air from different ACMs can be ranked as follows:



Remember

The fact that work is on ACMs with a lower potential to release fibres *does not* mean that it is safe. It must still be managed and the proper precautions taken.

56 The level of exposure will also depend on the task being carried out. Tasks which cause significant disturbance to the ACMs will result in more fibres being released into the air.



Figure 32 Asbestos cement flue on a domestic boiler

57 The same task carried out on different types of ACMs can result in different levels of exposure. For example, drilling AIB will result in much higher exposures than similar work on asbestos cement, as it has a higher fibre content than asbestos cement (16–40% compared with 10–15%). Also, the fibres are more firmly bound into the matrix of the asbestos cement and therefore less likely to be made airborne. Figure 32 shows an asbestos cement flue on a domestic boiler.

58 Exposure will also depend on how the task is being carried out and the precautions you take. You can reduce exposure by taking the right precautions. Table 3 gives some examples of comparative activities with high and lower potential to cause fibres to be released.

59 The level of risk will therefore depend on a combination of:

- the type of asbestos fibre;
- the type of ACMs, for example sprayed coating, lagging, AIB, asbestos cement etc;
- the task being carried out;
- the precautions taken to prevent or control exposure

Table 3 Examples of comparable activities with a high and lower potential to cause fibres to be released

High	Lower
Abrasive power and pneumatic tools without local exhaust ventilation (LEV)	Hand tools/use of LEV
Working on dry ACMs	Working on damp ACMs
Sweeping	Vacuuming with a Type H vacuum cleaner (BS5415) (see paragraph 124)
Wire brushing	Gentle scraping using shadow vacuuming (see paragraph 124)
Breaking AIB tiles	Unscrewing AIB tiles and removing whole

Managing the risk

60 Paragraphs 61–102 explain the steps you can take to identify whether the work you plan to carry out could present a danger to you, your employees, and others and then decide what to do about it.

61 When you are assessing a job you must consult and work with any Safety Representatives appointed under the Safety Representatives and Safety Committees Regulations 1977, or where your employees are not represented by a trade union representative, consult them on matters relating to health and safety at work in accordance with the Health and Safety (Consultation with Employees) Regulations 1996.

62 This is important, not only because it is a legal requirement, but also because your employees will often be able to provide valuable information on problems they come across when working with ACMs and how to work safely.

63 For the purposes of this guidance, managing the risk from asbestos is often very simple and a matter of common sense. By managing the risk, you are helping to prevent you or your employees becoming asbestos-related statistics.

Remember

Asbestos does not kill people at work immediately as would, for example falling off a roof or being hit by a fork lift truck. Some cancers can take up to 60 years to develop. Once cancer has developed there is no cure and sufferers will die a painful death.

What you do about this now can affect the well-being of you or your employees for decades to come. You will not see any immediate health benefits but you can be sure that you are investing in the future health of yourself and your employees.

It is vital that you get it right today, otherwise it may be too late.

When is the risk greatest?

64 Paragraph 2 gives examples of the types of maintenance trades where the greatest number of workers are at risk from exposure to asbestos. Because of the nature of their work, workers in these and similar trades are likely to disturb the fabric of a building or plant. There is the potential for you or your employees to be exposed to asbestos fibres, because:

- you are working on an unfamiliar site;
- ACMs were not identified before the job started;
- ACMs were identified but the information was not given to the people doing the work;
- you or your employees do not know how to recognise and work safely with asbestos;
- you or your employees know how to work safely but you *do not* take the proper precautions.

Case Study

Contractors removing a partition wall in a secure area containing a safe did not know that the void between the inner and outer partition walls was filled with loose brown (amosite) asbestos. The walls were removed and carried, unwrapped, from the fifth floor of the building to a general skip. By the time it was realised that asbestos was present they had spread contamination along the whole route, including the lift. Consultants called in to assess the extent of the contamination confirmed that asbestos debris was present and that asbestos fibres were in the air. A specialist asbestos removal contractor was called in to decontaminate the affected areas. This simple mistake led to the contractors and office workers being exposed to asbestos, disruption of the building during the decontamination and a bill for many thousands of pounds.

65 The example in the box above illustrates why it is important that management have clear procedures in place to ensure that:

- ACMs have been identified if you are working on your own site;
- information is obtained about the presence of ACMs when working on someone else's site;
- in both cases, this information is given to the people in control of the work and to the workers doing the job;
- the appropriate actions and precautions are taken;
- appropriate equipment is provided;
- adequate training is given;
- there is adequate supervision.

66 Otherwise, it is possible that ACMs will be unknowingly disturbed or inadequate precautions taken. This will put people's health at risk. Figure 33 shows a damaged AIB partition wall. This type of damage can happen when ACMs are not identified before work starts.



Figure 33 AIB wall panels badly damaged during poorly planned and uncontrolled work

67 Failure to have such procedures can lead to:

- exposure of you, your employees and others to asbestos fibres;
- future ill health;
- costly decontamination. This can be much more expensive than the cost of dealing with the asbestos in the first place;
- prosecution;
- adverse publicity for your company;
- compensation claims;
- higher insurance premiums.

Case Study

A school had been surveyed for ACMs. The council employed consultants to supervise the removal of asbestos lagging from ceiling voids, the boiler room and the under floor duct. However, at the same time an engineer was drilling into AIB ceiling tiles in the school foyer without using any precautions. The engineer would have been exposed to asbestos fibres, his work clothing and the immediate area contaminated with asbestos debris. This example illustrates how an otherwise well-run management system can fail simply because of a lack of communication (on behalf of the council) and of awareness about asbestos (on the side of the engineer).

What should you do first?

68 There are five steps that you should follow when assessing the risk to yourself or your employees and deciding what to do:

Step 1:	**Look for asbestos**
Step 2:	**Decide if there is a problem**
Step 3:	**Decide what action to take**
Step 4:	**Record your findings and take action**
Step 5:	**Check what you have done and review your assessment**

Step 1 Look for asbestos

69 If you are working on your own premises you must manage the risks from ACMs which may be present. Where you are working on someone else's premises, the employer (your client) in control of any work on those premises must manage the risks from any ACMs present on the premises.

70 The person in control of the work must inform you of the presence of ACMs during the planning of the work (if you are working on your own site you will need to determine this yourself). Do not rely on this as your only protection. You should make sure that you ask whether the area has been surveyed and what the findings were. Figure 34 shows pieces of AIB (one of the most common forms of ACM) and Figure 35 shows AIB ceiling tiles in a corridor.



Figure 34 Pieces of AIB



Figure 35 Suspended AIB ceiling tiles in a corridor



Figure 36 Installing a sprayed 'limpet' coating

71 It is also important to remember that debris from damaged ACMs can be found near the parent material. It may also be left over from the installation of ACMs, for example, Figure 36 shows the installation of a sprayed 'limpet' asbestos coating many years ago. This method of application frequently resulted in ACM being sprayed onto surrounding areas.



Figure 37 Asbestos debris on an electrical box, adjacent to a machine which was used to make bituminous roofing felt containing asbestos

72 Debris can be easily disturbed by people working in an area. So, exposure can occur even if the task does not directly involve work on ACMs. This debris will normally need to be removed.

73 Figure 37 shows an electrical switch box, next to a machine which had been used to make bituminous roofing felt containing asbestos. Wet white asbestos had 'splattered' the switch box. Although there were no ACMs nearby, anyone working on the box could be exposed to the material if it was disturbed after it had dried out.

74 Figure 38 shows a piece of debris from a sprayed 'limpet' asbestos coating (brown asbestos) on a cable tray.

75 If the area has not been surveyed, work should not start until a survey has been carried out to check for the presence of ACMs. Further information on carrying out surveys can be found in *Surveying, sampling and assessment of asbestos-containing materials.*[8] Specialist advice can be obtained from the organisations listed on page vii.



Figure 38 Asbestos debris in a cable tray

Remember

Don't forget to ask: 'Has this area been checked for ACMs?'

76 If there are no ACMs in the area where you plan to carry out the work, there is no need to take any further action as far as asbestos is concerned. However, there may be other hazards, such as working at heights, which you will need to address.

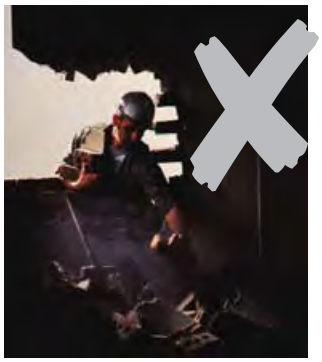


Figure 39 A workman has broken through a brick wall. This disturbed a previously hidden lining of AIB.

77 *However, it is important that you and your employees are aware that it is possible for ACMs to be uncovered during the course of the job* (see Figure 39). If you suspect that any material contains asbestos, even if the area has previously been declared 'asbestos-free' you should **stop work** until the material has been investigated by a competent person (see paragraphs 126–128).

78 Figure 40 shows a section of damaged AIB in a kitchen. This material had not been identified during the asbestos survey. It was uncovered by ventilation engineers who damaged the AIB before they realised what it was. This led to contamination of the kitchen and the exposure of the engineers and kitchen staff to asbestos fibres. Work was delayed for a day while the area was decontaminated.

79 A similar problem can occur if the scope of the work changes during the job. This could bring additional areas or equipment within its scope. Work should not take place until the asbestos register (a record of the presence of ACMs) has been consulted or the area surveyed.



Figure 40 Damaged AIB

Remember

You and your employees should always be alert to the danger presented by *'hidden'* ACMs.

Step 2 Decide if there is a problem

80 You will now know whether ACMs are present. What you now need to do is decide whether anyone is likely to be exposed to asbestos fibres and how much, as a result of the work. This is often referred to as a 'risk assessment'.

81 To do this you will need to find out what the work will involve, for example:

- the type and quantity of ACMs present;
- the condition of the ACMs (if damaged the risk may be greater);
- which tasks will directly disturb the ACMs, for example drilling AIB;
- which tasks could indirectly disturb ACMs, for example removing a door with the AIB backing panel intact;
- how the work will be carried out, which methods will be used to prevent or control exposure, including the use of personal protective equipment;
- the likely levels of exposure;
- how long the job will take;
- any other information relevant to safe working practices, for example prevention of falls.

Further information on carrying out risk assessments for work with asbestos can be found in the CAW Approved Code of Practice.[4]

82 It is also important that you find out who may be affected by your work. Don't forget that there may be other people present besides you or your employees, for example:

- other workers in the vicinity of the job;
- visitors;
- the public.

83 You must pay particular attention to young workers or trainees who may be at special risk because of their lack of experience.

84 If a number of jobs are very similar you need only carry out one detailed risk assessment which will cover all of them. But, you will still need to check that the jobs really are similar and that your work will not affect others. Also, if there is a change in the type of work being carried out or the way you do it then you will need to review the assessment.

85 Some of the materials you use may contain hazardous substances, for example solvents in adhesive sprays. You will need to assess exposure under the Control of Substances Hazardous to Health Regulations 1999 (COSHH). Where reasonably practicable you should use products containing the least hazardous components. Otherwise you will need to control exposure as determined by your assessment. Further information can be found in *COSHH: A brief guide to the Regulations*.[9]

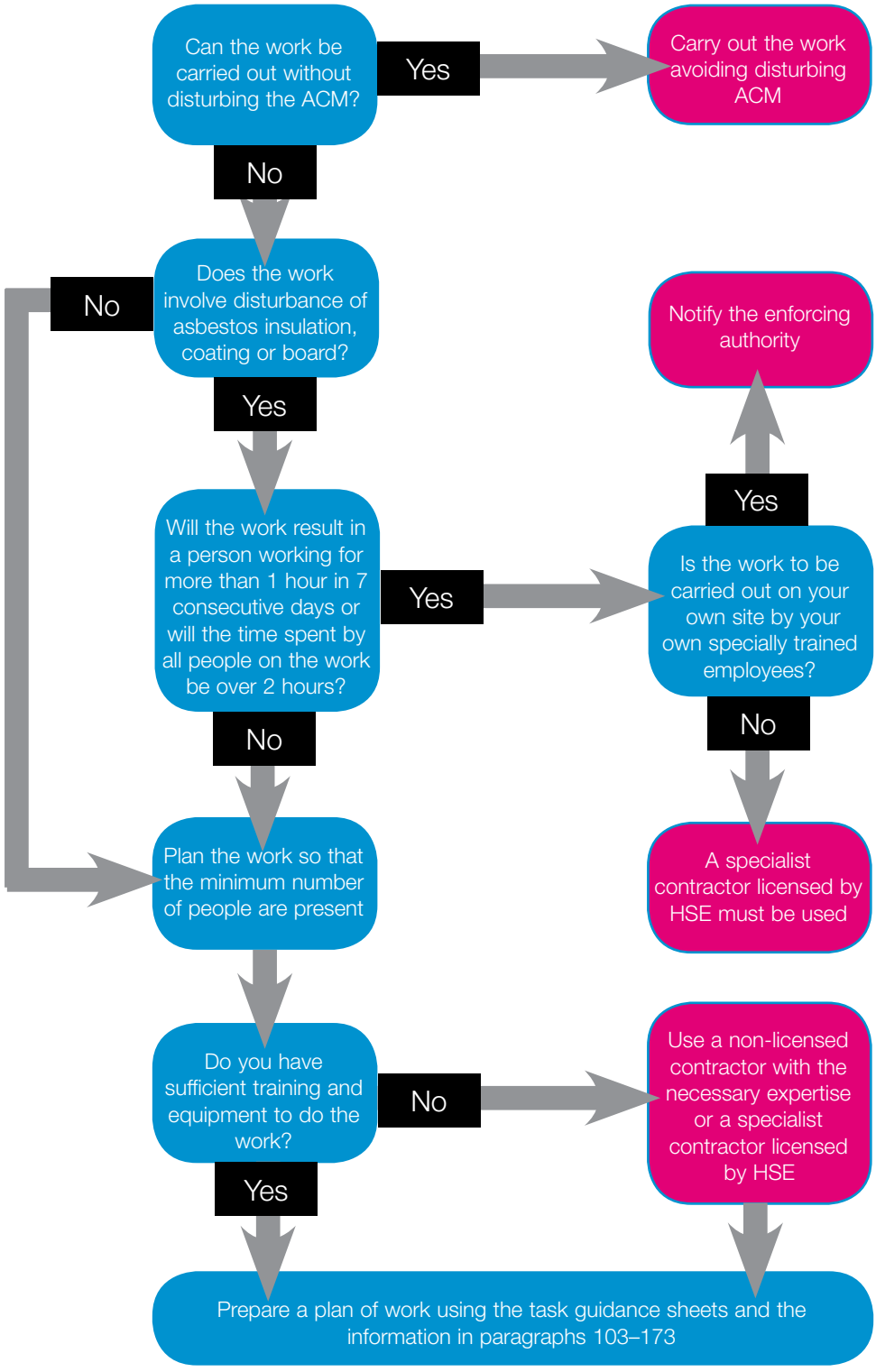


Figure 41 A simple decision flow chart. This will help you decide who should carry out the work

Step 3 Decide what action to take

86 Using the information collected in Steps 1 and 2, you can take one of three decisions (Figure 41):

- the work must be carried out by a specialist contractor licensed by HSE;
- the work can be carried out without a licence but someone with more expertise, appropriate equipment etc than yourself is needed to do it;
- the work can be carried out without a licence and you have adequate training and equipment to do it safely.



Figure 42 A plastic 'enclosure' for use when drilling AIB

87 If you can, and choose to carry out the work yourself, you should:

- where reasonably practicable, plan the work so that ACMs are not disturbed;
- develop a safe system of work. You can do this by using the general advice given in paragraphs 103–173 and then choosing the appropriate guidance sheets from *Asbestos essentials: Task manual*,[1] for example, Figure 42 shows attachments which can be used when drilling small and large holes in AIB; Figure 43 shows one in use (EM4 'Using a Type H vacuum cleaner when working with asbestos' and A1 'Drilling holes in asbestos insulating board' respectively).[1] This will form the basis of the plan of work for the job.



Figure 43 A plastic 'enclosure' in use

88 The plan of work should include:

- the nature and likely duration of the work;
- the address and location of the work;
- when the work should be carried out;
- the work procedures and precautions to be taken to reduce exposure to as low as reasonably practicable and prevent the spread of asbestos, for example, Figure 44 shows LEV being used when unscrewing AIB;
- the equipment required, including personal protective equipment;
- decontamination;
- emergency procedures;
- whether replacement non-ACMs are required;
- the level of supervision required. This will vary with the nature and extent of the work.



Figure 44 Using LEV during unscrewing AIB

Remember

- Your first aim should be to prevent exposure.
- Where this not possible you should reduce exposure as far as reasonably practicable.

89 The plan of work and *Asbestos essentials: Task manual*[1] should be issued to the workers carrying out the tasks. The task manual contains task guidance sheets and the equipment and method guidance sheets (see paragraphs 174–179). It is important that the correct task guidance sheets are used. It is not good enough to use a 'similar' one.

Remember

It is important that the workers carrying out the procedures in the plan of work understand it and have received adequate training.

90 It is no good producing a safe plan of work if you do not provide your employees with the tools to do the job. The equipment you provide should be appropriate for the job, clean and in good working order.

91 Although site conditions can change, the jobs/tasks that people carry out may be similar. Consequently, it can be possible to prepare generic plans of work. These would only require minor modification to highlight where ACMs can be found and any other specific requirements of the site.

92 A copy of the assessment and plan of work should be kept readily available at the work site and be followed. If there is a need to modify the plan of work, this should be agreed with the site supervisor or client.

Finally – you should ask yourself:

'Have I done all that I can to prevent or reduce exposure to asbestos fibres?'

Step 4 Record your findings and take action

93 You need to make sure that everyone involved in the work is fully aware of the plan of work and why each action is being taken. They should also be properly equipped for, and trained in, the procedures laid down in the plan of work.

94 If you have fewer than five employers you do not have to record the findings of your assessment, but it is useful to do so. If you employ more than five employees, the Management of Health and Safety at Work Regulations 1999 requires you to record the significant findings of your assessment.[10]

Step 5 Check what you have done and review your assessment

95 Good management is an ongoing process. Where the type of work changes you will need to repeat steps 1 to 4 to decide whether the risk has changed and if you will need to modify the plan of work.

96 You will also need to ensure that the systems that you have put in place to prevent or control the risk are being used correctly and are effective. The type of work covered in this guidance may be carried out anywhere on your site, or, if you are a contractor, on the site of your client.

97 It is therefore important that you have an effective system of supervision. This can range from a supervisor on a particular job to a safety advisor who can visit the site/job unannounced.

98 If you are self-employed, you will normally not have anyone who will check that you are working correctly. Because of this, it is important that you familiarise yourself fully with the advice given in this guidance and follow it closely.

99 To ensure that the measures you have taken are continuing to be effective you can make the following checks:

- make sure that everyone is following the plan of work;
- where necessary, monitor your employees' exposure to asbestos fibres (see paragraphs 160–166);
- regularly review your assessment of exposure;
- routinely clean, inspect and test all equipment;
- provide your employees with refresher training at appropriate intervals (see paragraphs 109–111).

Remember

Good management will anticipate problems rather than deal with them after they have occurred.

Work with any type of ACM is potentially dangerous.

If you have any doubts about how to carry out the work safely it is recommended that you consider employing a specialist contractor licensed by HSE.

Emergency call-out procedures

100 Wherever possible, work with asbestos should be carefully planned in advance. However, there will be situations where it may not be possible to prepare a specific assessment and plan of work, for example, a burst pipe behind an AIB panel in a department store at night.

101 This does not mean that you or your employees can cut corners.

Remember

It is in situations like these that high exposures can occur.

102 If you offer an emergency call-out service, you will need to presume that the work will involve disturbing ACMs so that you or your employees are aware and properly equipped. Err on the side of safety. Follow these simple steps:

- where you have an emergency call-out contract with a client, you should either have been made aware in advance of the location of ACMs or have an emergency contact number;
- if this cannot be done you should identify the types of emergency work commonly carried out and prepare generic assessments and plans of work which can be used in emergency situations. The assessment will need to detail the types of work which are likely to be carried out and those which must be carried out by a specialist contractor licensed by HSE;
- the people carrying out this type of work should be suitably equipped to work with ACMs where this proves necessary;
- the people carrying out the work should have sufficient training so that they are aware of what ACM looks like and what it was used for. They should be trained and able to follow the assessment and plan of work safely;
- if the people carrying out the work suspect that disturbance of ACMs may be extensive (ie beyond the scope of the generic assessment and equipment), they should not proceed until they have obtained further specialist advice (for example from management, an occupational hygienist or other health and safety professional, the enforcing authority etc).

Warning

Emergency call-out work is not an excuse for lower standards.

You or your employees should not attempt work which is beyond the scope of your training and equipment, or which should be carried out by a specialist contractor licensed by HSE. The better trained and equipped you or your employees are, the less likely the work will need to be stopped.

Working safely: General considerations

103 For the purposes of this guidance, managing the risk from asbestos is normally fairly simple. By following a few simple principles you can ensure that you or your employees are not put at risk while at work. It is important that managers and supervisors (including the self-employed) are aware of the hazards posed by asbestos, the risk presented by the work and the precautions to take.

104 You must also be committed to protecting your health and that of your workers. The death toll from asbestos-related diseases shows the level of suffering which can result from poor management and work practices.

105 This section provides guidance on general principles of control. *Asbestos essentials: Task manual* [1] provides guidance on how these principles can be applied to specific tasks. These can be used to draw up the plan of work.

Other hazards

106 It is important to remember that asbestos may not be the only hazard present. There are many others, some of which have the potential to cause serious injury or death, for example:

- heights;
- confined spaces;
- other hazardous substances;
- noise;
- electrical equipment;
- vehicles.



Figure 45 Work on a fragile asbestos cement roof without proper precautions



Figure 46 The consequences of not taking the proper precautions to prevent a fall (staged picture)

107 Figure 45 shows work being carried out on a fragile asbestos cement roof without any precautions against falling either through gaps in the roof where the sheets have been removed, through the roof itself, or off the side of it. There is also no proper means of access. The possible consequences of working in this way are shown in Figure 46. Guidance on safe working at heights is given in *Health and safety in roof work*.[11]

108 The risks presented by these hazards can be significant and often fatal, as described in paragraph 107. You must always take them into account during your risk assessment and write a safe system of work down in the plan of work. This should be followed.

Case study

A factory owner was concerned about the condition of the asbestos cement roof on one of his buildings. He asked a 16-year old apprentice to go up and inspect it for damage, lichen growth etc. He kitted him out with overalls, boots, disposable respirator and hard hat. He was well-protected against the very small risk presented by the asbestos fibres present in the roof sheets. Unfortunately, the employer had become fixated on the risk from asbestos and ignored the more immediate and potentially life-threatening risk from working on fragile roofs.

Within 30 minutes the boy had fallen through the roof and was killed.

Remember – consider all risks

Training

109 Training should include the following:

- the health hazards of asbestos, including the added danger of smoking and working with asbestos;
- the presence of other hazards such as working at heights;
- the uses and locations of ACMs in buildings and plant;
- the type of work you are allowed to do by law;
- what the CAW Regulations require you to do;
- work methods and equipment;
- correct choice, use and maintenance of personal protective equipment;
- decontamination procedures;
- maintenance of control measures;
- emergency procedures;
- waste disposal;
- where applicable, the role of medical surveillance.

110 Refresher training should be given every year or more often where:

- work methods change;
- the type of equipment changes;
- the type of work changes significantly.

Further information is given in EM2 'Training'.[1]

111 HSE is developing asbestos awareness training material for use in the existing National Vocational Qualification/Scottish Vocational Qualification courses for construction and related industries. This material is supported by a video which shows the risks of unknowingly disturbing ACMs. Also, HSE and the National Training Organisations of the Construction Forum have jointly produced basic asbestos awareness pocket cards/leaflets which will be distributed to employers and workers in those industries. The training material and the video will be available from HSE Books/HSE Videos. Further information on organisations providing training can be obtained from HSE's InfoLine (Tel: 08701 545500).

Area preparation

112 Before you begin it may be necessary to prepare the work area. This may involve moving items such as clothes rails in the vicinity of a ceiling tile which needs to be drilled, covering items with polythene sheeting etc. Following the methods given in *Asbestos essentials: Task manual*[1] will minimise fibre release but you will need to take these precautions in case of accidental damage to the ACM.

Area segregation

113 Regulation 14 of the CAW Regulations requires that where exposure can exceed an action level the work area should be designated as an 'asbestos area'. It should be designated as a 'respirator zone' if exposure could exceed the control limit (see paragraphs 33–36). These zones should be clearly and separately segregated and warning notices put up (Figure 47). Employees not engaged in the work should not be permitted into either of these designated areas.

114 You may still wish to segregate other areas where work with asbestos is going on.

115 The first aim must be to minimise the release of fibres when carrying out the task. But, there may still be some level of fibre release.



Figure 47 Examples of warning signs and tape

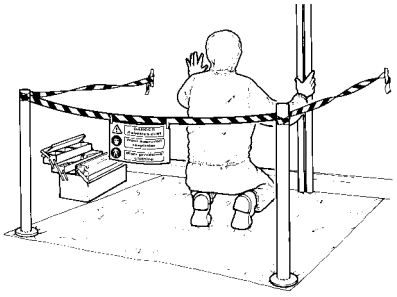


Figure 48 Segregated area

116 How much you need to do will depend on the task and will be decided by the outcome of the assessment. In most cases covered by this guidance, it will be sufficient to divide off the work area, for example using warning tape and signs, to prevent non-asbestos workers approaching (Figure 48).

117 How you segregate the work area will depend on the type of area in which you are working. It may not be appropriate or necessary to erect a barrier and post warning notices in a house, for example when working on a domestic boiler in the kitchen. In this case it may only be necessary to inform the householder that the work is going on and then close the door to that room. What is important is that the person carrying out the work is in control of the work area. However, in a factory environment this may not be as easy. So it may be better to use barriers to restrict access to the work area.

Remember

It is important that you control access to the work area.

118 A physical barrier ('mini enclosure') is required where an AIB ceiling tile is to be removed (see A2, 'Removal of a single asbestos insulating board ceiling tile').[1] Guidance on the design and construction of a 'mini enclosure' is provided in EM3 'Building a "mini enclosure" for the removal of a single asbestos insulating board ceiling tile'.[1] Figure 49 shows a 'mini enclosure' being built for board removal of a ceiling tile.

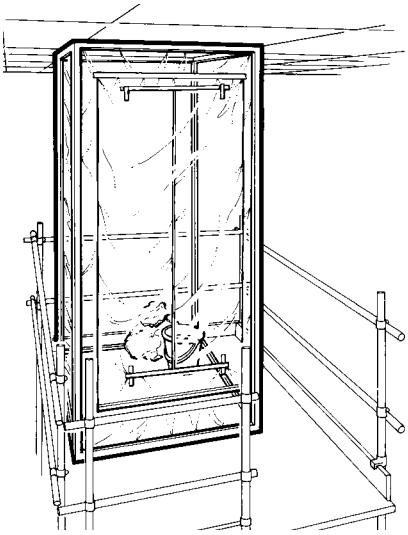


Figure 49 A 'mini enclosure' being built for removal of a ceiling tile

Remember

You must include the time it takes to build and dismantle the enclosure when deciding if the work must be carried out by a specialist contractor licensed by HSE.

119 It is very unlikely that full enclosure with negative pressure units will be necessary for the type of work covered by this guidance. Negative pressure units remove and filter air from an enclosure. This keeps the air pressure inside the enclosure lower than that outside, ensuring that any leaks are inwards. These units are used in major asbestos removal projects by specialist contractors licensed by HSE.

120 The task guidance sheets[1] give advice on the level of segregation required for different tasks.

121 Workers should not eat, drink, or smoke in these areas. Separate arrangements should be made for these activities.

General good work practices

122 When putting together your plan of work, there are a number of simple measures which can be applied regardless of the task being carried out. These include:

- ✔ where reasonably practicable, plan the work so that ACMs are not disturbed;
- ✔ where this is not reasonably practicable, keep disturbance to a minimum;
- ✔ carry out the work with the minimum number of people present;
- ✔ make sure surfaces which may get covered in contaminated dust and debris are covered, for example with 500 gauge polythene sheeting;
- ✔ always work carefully with ACMs;
- ✔ where practicable, keep the material damp when working on it;
- ✔ avoid breaking ACMs;
- ✔ avoid working on ACMs directly above your head;
- ✔ use hand tools in preference to power or pneumatic tools. Additional control measures such as Local Exhaust Ventilation (LEV) will be needed (see paragraph 124);
- ✔ where power or pneumatic tools have to be used (sometimes they are preferable, as they take the manual effort out of the task and make it easier to carry it out safely) they should be set at the lowest effective speed and additional control measures used, for example LEV (see paragraph 124);
- ✘ do not use angle grinders, sanders or grit blasting on ACMs as these will release large amounts of asbestos fibres;
- ✔ use low dust cleaning methods, such as vacuuming with a Type H (BS 5415) vacuum cleaner, wet rags, impregnated ‘Tak Rags’ etc (see paragraph 124);
- ✘ do not use cleaning methods such as sweeping or blowing with compressed air – these will make asbestos fibres airborne where they can be breathed in.
- ✔ wear suitable personal protective equipment, including respiratory protective equipment (see paragraphs 130–150);
- ✔ keep the work area clean and tidy;
- ✔ make sure the work area has been thoroughly cleaned on completion of the work (see paragraphs 155–159);
- ✔ dispose of asbestos waste correctly (see paragraphs 167–173);
- ✔ make sure you wash thoroughly each time you leave the work area (see paragraphs 151–154).

123 Specific procedures for individual tasks are given in *Asbestos essentials: Task manual*.[1]

Equipment and materials

124 It is essential that you use or provide your employees with the necessary information, equipment and materials, otherwise the job cannot be carried out safely. The following may be required, although the nature of the job will dictate the specific requirements (see *Asbestos essentials: Task manual*): [1]



Figure 50 Drilling through paste

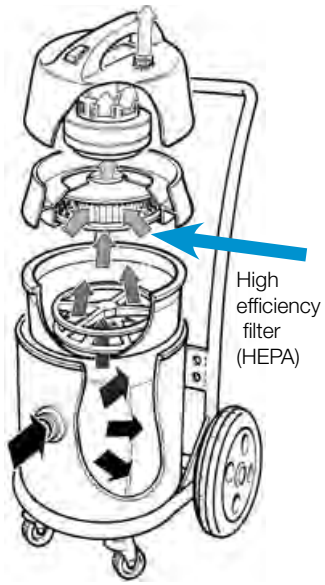


Figure 51 Schematic diagram of a Type H vacuum cleaner

- *plan of work, task guidance sheets and equipment and method guidance sheets*.[1] These should be available to the people carrying out the work, so that they know and understand the scope of the work and the precautions to take;
- *polythene sheeting, spray adhesive and duct tape to cover* surfaces which may become contaminated. These can also be used where some form of 'mini enclosure' is required. Remember to consider the presence of hazardous substances such as solvents in spray adhesives (see paragraph 85);
- *a proprietary 'mini enclosure' or timber or other suitable framework* to build one (see EM3 'Building a "mini enclosure" for the removal of a single asbestos insulating board ceiling tile');[1]
- *warning notices and suitable barriers* to ensure that people who are not involved in the work do not approach (see Figure 47);
- *a thick paste*, such as ready-to-use wallpaper paste for drilling materials such as asbestos cement (see Figure 50);
- *a wetting agent* to help make sure the asbestos fibres are properly wetted (see EM5, 'Wetting asbestos materials');
- *a water spray*, for example a garden spray, to keep ACMs damp;
- *liquid nails*. This can be used to repair AIB panels. A non-asbestos material can be attached over a hole without the need to be screwed in;
- *non-asbestos panelling*. This can be used to protect ACMs from impact;
- *a Type H vacuum cleaner (with attachments) to BS5415* (Figure 51). This is a vacuum cleaner fitted with a high efficiency (HEPA) filter which removes very small particles, such as asbestos fibres from the discharged air (see EM4 'Using a Type H vacuum cleaner when working with asbestos').[1] Most domestic type vacuum cleaners do not have HEPA filters and would blow fibres back to the atmosphere. *These and domestic type vacuum cleaners with HEPA filters, but not to BS5415, should not be used;*

Warning

Cleaning Type H vacuum cleaners can lead to high exposures. This work should be carried out by a specialist company such as a hirer with the necessary facilities and training.

- *low speed tools.* Hand tools are preferred, but where power or pneumatic tools need to be used, they should be set at the lowest effective speed. *Tools used for asbestos work should be cleaned each time they are used;*
- *hole cutters.* These can be used to cut larger holes in AIB. They can be used with bigger LEV 'enclosures'. The advantage of using these is that part of the hole is removed intact (a disc of AIB will remain in the hole cutter). An ordinary drill will 'destroy' the AIB being cut, creating more dust;
- *local exhaust ventilation (LEV)*. Measures such as LEV can be used to control fibre release. This can take two forms:



Figure 52 Shadow vacuuming during removal of a screw from AIB



Figure 53 Smoke tube

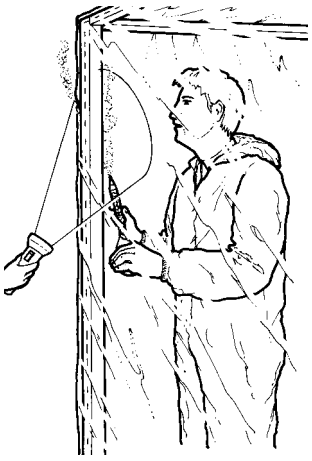


Figure 54 Testing seal with a smoke tube, with second person using a torch to check for smoke leaking from seals

Enclosing the drill point. Plastic 'enclosures' are placed over the point to be drilled and fitted to the Type H (BS5415) vacuum cleaner (Figure 42). The drill is inserted through an opening and the hole drilled. The suction inside the 'enclosure' draws away the dust and asbestos fibres. This can be used for small and large holes. The 'enclosure' should be cleaned after use.

Shadow vacuuming is where the nozzle of a Type H (BS 5415) vacuum cleaner, fitted with a suitable attachment, is held as close as possible to the source of fibre release throughout the task (Figure 52). Shadow vacuuming can be used when using sharp knives, removal of debris, removing screws etc.

Where a Type H (BS 5415) vacuum cleaner is used to provide LEV, it should be checked at the start of each shift; inspected weekly and tested and thoroughly inspected every six months;

- *rags.* Household rags, for example cotton (which do not leave fibrous deposits behind) or impregnated rags (for example 'Tak Rags') to remove fine dust deposits and to clean tools such as screw drivers, drill bits, inside of the plastic 'enclosures' etc (see EM7 'Using rags to clean surfaces and equipment contaminated with asbestos');[1]
- *a bucket of water* to allow tools etc to be cleaned, rags wetted etc – take care not to get electrical equipment/tools or installations wet;
- *sealant.* This will be needed where the work has disturbed ACMs and left unsealed edges or surfaces which need to be repaired. You can also seal ACMs to provide impact resistance or possibly for aesthetic reasons.

In some circumstances, for example, where the ACM is providing thermal insulation or fire protection, the sealant will need to meet the appropriate specification.

There are a number of sealants available. Polymeric elastomers can provide substantial impact resistance for many years. PVA (poly vinyl acetate) can be applied by brush or spray but does not provide much impact resistance. Its main use is the sealing of ACMs such as the backs of ceiling tiles while they are being removed. An alkali-resistant and vapour-permeable sealant is normally required when painting asbestos cement.

Remember to consider hazardous substances which may be present in the sealant (see paragraph 85);

- *tools* such as screwdrivers, scrapers, utility knives etc.
- *approved asbestos waste containers.* Suitable waste containers should be available for the safe disposal of asbestos waste (see paragraphs 167–173).
- *lighting,* so that the person carrying out the work can see properly (work may be carried out in poorly lit areas), particularly to check that the area has been thoroughly cleaned on completion of the work.
- *personal protective equipment.* This is dealt with in more detail in paragraphs 130–150.
- *smoke tubes.* These can be used to test the integrity of 'mini enclosures'. Figure 53 shows a smoke tube and Figure 54 shows one in use;
- non-asbestos replacement materials. These may be required where ACMs have been removed (see paragraphs 42-45).

Where can you buy or hire this equipment?

125 A lot of the equipment described in paragraph 124 can be obtained from good hardware or hire shops. Details of where to get the more specialised equipment can be obtained from theorganisations listed on page v.

What do you do if ACMs are found or accidentally disturbed?

126 It is possible that, even after every precaution has been taken, you may come across 'hidden' ACMs when working in a building or on plant. It is important that you know what they look like and what you should do.

127 It is also possible that ACMs you are working on or nearby could be damaged. Again, you need to know what to do.

128 Figure 55 outlines a suggested course of action.

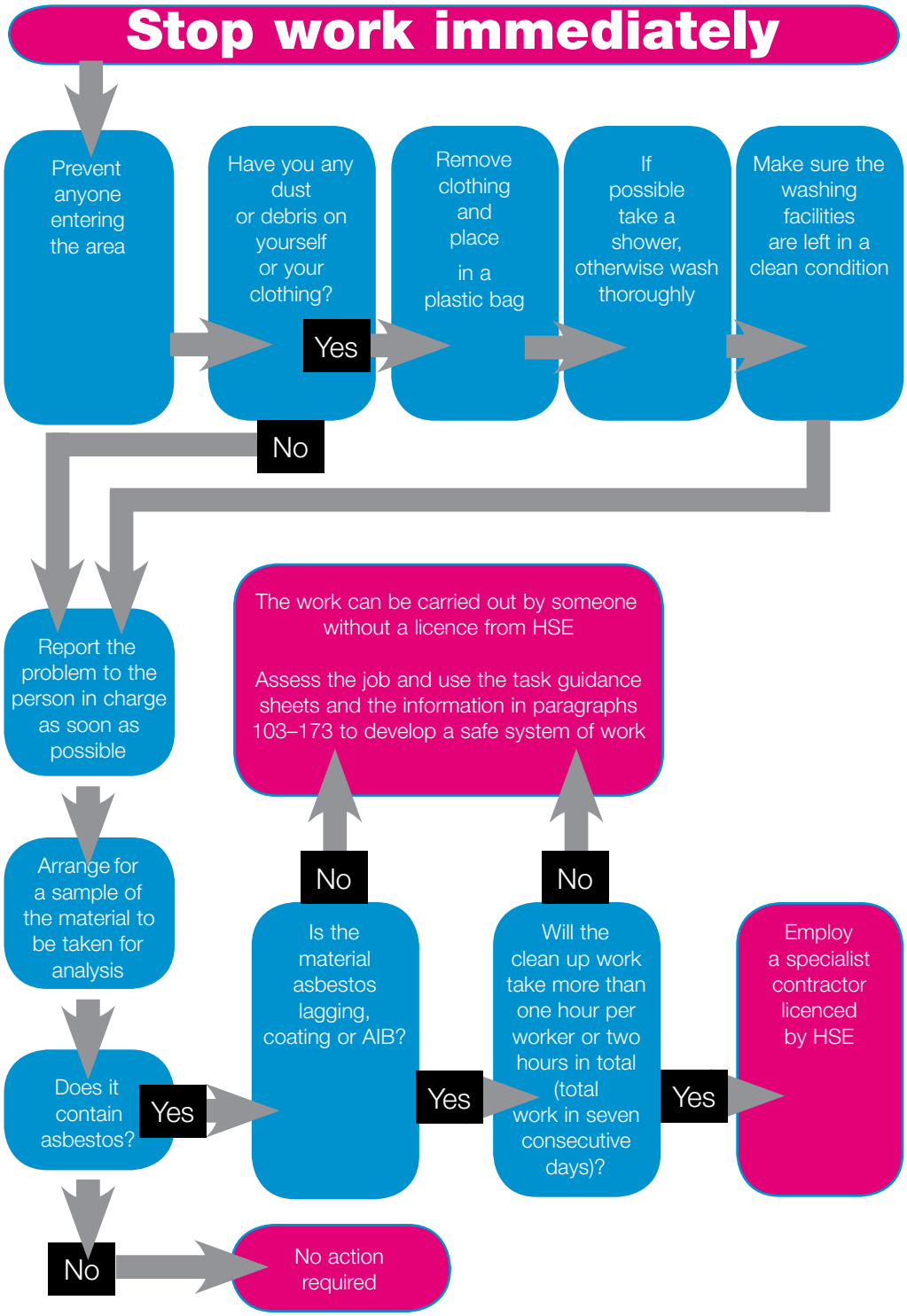


Figure 55 One course of action you can take if you realise that you may be working on ACMs that you had not been warned about, or they are accidently damaged during the job.

Waste handling

129 It is important that waste material is handled carefully, otherwise you could be exposed to asbestos fibres or have a spillage of asbestos debris. You should:

- ✔ double bag the waste. You can place the asbestos waste bag (paragraph 170) inside a clear bag so that it is obvious they are double bagged (see Figure 56);
- ✔ seal the waste bag by twisting the end tightly and then wrapping with duct tape;
- ✘ not overfill the waste bag. This makes it difficult to seal and carry;
- ✘ avoid expelling air from the bag before sealing it. The air will be contaminated with asbestos fibres;
- ✔ wipe clean the inner bag before double bagging and the outer one before removal from the work area;
- ✘ never break ACMs to fit them in a waste bag – wrap them in 1000 gauge polythene sheeting and label that instead. Figure 57 shows a door with an AIB panel wrapped in polythene sheeting;
- ✔ wrap any sharp materials, which could puncture a bag, in 1000 gauge polythene sheeting, and label it. If the sheeting is wrapped loosely around the object it is less likely to puncture it;
- ✔ waste bags should be handled with care – do not throw them.



Figure 56 Asbestos waste double bagged



Figure 57 Door with an AIB panel wrapped in polythene sheeting

Protective clothing

130 When someone is working with ACMs their clothing may collect dust and debris. For this reason, it is advisable to provide them with protective clothing, such as footwear and disposable overalls.

131 You should use boots without laces, for example wellingtons, as they are easier to clean.

132 Disposable overalls are normally better than cotton overalls, as they don't need to be laundered. Cotton, or other types of overalls, can be worn during the remainder of the work when ACMs are not being disturbed.

133 In some circumstances you will need to consider other types of protective clothing, for example working outside in cold and wet conditions may require waterproof clothing to be worn.

134 It is important that overalls are worn correctly, for example:

- ✔ it is normally advisable to wear a size too big. This helps prevent them from ripping at the seams if you stretch;
- ✔ if the cuffs are loose, tape them to prevent any dust getting into the sleeve;
- ✘ avoid long sleeve shirts which may be difficult to cover;
- ✔ the legs should be worn over footwear, for example, they should not be tucked into wellington boots as dust can get into the tops;
- ✔ the hood should be over the straps on the RPE (this should cover the fringe of your hair);
- ✘ do not wear the hood under the straps as this can result in the RPE 'moving' slightly as the hood moves with the actions of the wearer. If you are wearing the hood as shown in Figure 58, you are wearing it correctly.

135 Protective clothing should be cleaned before removal. If the task guidance sheets[1] have been followed, the amount of cleaning should be minimal. In most cases it will be sufficient to use a wet rag to pat clean the overalls. But, where a Type H (BS5415) vacuum cleaner is available it can be used instead. Where there are two of you working together you can each clean the other's overalls – this makes it easier to clean areas such as the back of your shoulders.



Figure 58 Hood worn over the RPE – correct

136 The protective clothing should be cleaned and removed when leaving the work area for breaks and at the end of the job. The best way of removing overalls is to turn them inside out as they are being taken off. This minimises contact with the outer surface of the clothing. They can then be placed in an asbestos waste container. Leave your RPE on until you have removed and bagged your overalls. Further information can be found in EM8 'Personal decontamination'.[1]

137 Protective clothing should be stored separately from clean clothing. Used overalls should *never* be taken home. If you use cotton overalls you will need to make arrangements for cleaning at a specialised laundry equipped to deal with asbestos-contaminated clothing and follow their packaging procedures. Waterproof clothing will need to be sponged or wiped clean.

Respiratory protective equipment (RPE)

138 RPE should not be used as the only means of controlling exposure. Before considering the use of RPE, the amount of asbestos fibres in the air should be reduced as low as is reasonably practicable by other means, such as those described in this guidance and the *Asbestos essentials: Task manual*.[1]

139 If, despite these precautions, exposure to asbestos fibres is likely to exceed the control limit, then you must always provide suitable RPE (in addition to the other precautions) which should then reduce exposure as low as reasonably practicable and in any case below the control limit. If you follow the methods given in the task guidance sheets[1] it is unlikely that the control limits will be exceeded. However, it is recommended that RPE still be used as an added precaution.

140 Different types of RPE have different efficiencies. Always remember to choose RPE which protects employees from a level of exposure well within the upper limit of its protection range. If in doubt, always select higher performance equipment, providing that it is suitable for the task.

141 It is very important that the most suitable type of RPE is chosen and that it is worn correctly. Otherwise, you or your employees will not be protected from asbestos fibres while carrying out the task.

142 The effectiveness of RPE depends on a good fit between the wearer's skin and the face seal of the mask. Otherwise, air containing asbestos fibres will pass between the RPE and the wearers' face without being filtered (Figure 59). The selection of RPE should therefore include quantitative or qualitative fit testing.

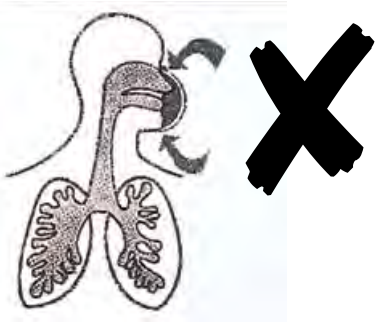


Figure 59 Ineffective face fit. The arrows show the unfiltered air passing between the RPE and wearers' face

143 Quantative and qualitative fit testing applies to whatever type of RPE is being worn and is a method of making sure that the wearer chooses RPE which is the best fit possible. There are several methods by which this test can be carried out. Your supplier will be able to advise you.

144 The task guidance sheets[1] indicate the type of RPE which can be used. For the purposes of the maintenance work covered by this guidance a disposable particulate respirator (FFP3) will be adequate. *But, when assessing the job you should ensure that the RPE will provide sufficient protection and is suitable for the task.*

145 Figure 60 shows one example of the wrong type of disposable respirator used on a task involving work with asbestos. This picture shows a general 'nuisance dust' respirator. It has been 'doubled-up' in an attempt to provide better protection.

146 Figure 61 again shows the wrong type of disposable respirator ('nuisance dust'). This has been 'screwed up' and kept in the worker's pocket during a break. Even if it were the correct type it would be difficult to wear it properly.



Figure 60 The wrong type of RPE for use with asbestos ('nuisance dust' respirator) doubled up to 'try' and give more protection

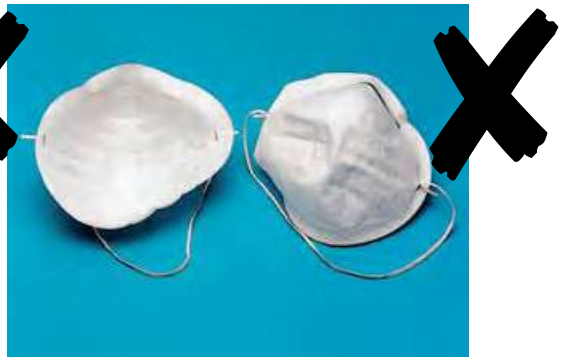


Figure 61 Wrong type of RPE which has been screwed up in a pocket

Remember

You should never rely on RPE as your main method of controlling exposure.

RPE is no substitute for minimising the quantity of fibres released.

147 Figure 62 shows RPE being worn in the wrong way:

- the bottom strap is not around the wearer's head
- the top has not been 'pinched' against the wearer's nose – a gap is clearly visible;
- the hood is down.



Figure 62 Disposable RPE being worn wrongly



Figure 63 If your disposable RPE looks like this then you are wearing it correctly

148 If your disposable RPE fits like the example given in Figure 63, you are wearing it correctly.

149 To fit properly:

- ✔ the wearer should be clean shaven;
- ✔ both straps should be placed firmly around the top/back of the head;
- ✔ the top should be 'pinched' over the nose;
- ✔ spectacle wearers should take their spectacles off before putting RPE on, otherwise the face piece can sit on the frame, causing a gap. The RPE should be fitted and then the spectacles put on;
- ✔ the hood should be worn over the RPE straps.

150 Further guidance on the correct choice and use of RPE can be found in:

- EM6 'Personal protective equipment';[1]
- the free HSE leaflet *Selection of suitable respiratory protective equipment for work with asbestos*.[12]

Provision of cleaning and hygiene facilities

151 Hygiene facilities will need to be provided so that you or your employees can wash thoroughly after working with ACMs. The type and extent of the washing facilities will depend on the nature and degree of exposure to asbestos.

152 If you follow the task guidance sheets,[1] exposure should be low. It will normally be possible for you to use the existing washing facilities where you are working. As a precaution, access to these facilities will need to be limited to the workers involved in the asbestos work.

153 But, If you do not decontaminate yourself properly, you may take asbestos fibres home on your clothing. You or your family and friends could be exposed to them if they were disturbed and became airborne. Further information can be found in EM8 'Personal decontamination'.[1]

154 Once the work has finished the facilities should be cleaned and inspected (see paragraphs 155–159). If the work lasts for several days, then they should be cleaned and inspected daily.

Clearance testing

155 Once the work is finished it is important that the work area is checked to make sure that it can be safely reoccupied. This process can be split into two parts:

- a visual inspection;
- air monitoring;

Together, this is referred to as 'clearance testing'.

156 The most important part is the visual inspection. This is a detailed check of all surfaces within the segregated area/enclosure (and any other area which may have become contaminated, for example washing facilities). The aim is to make sure that all traces of asbestos (except for any material that is supposed to remain) and other dust and debris have been removed.

157 It is important to remove all dust deposits, even if they do not immediately look like asbestos. This is because they may have become contaminated with microscopic fibres which are not visible to the naked eye. The inspection should also include any asbestos-containing materials remaining in the area to make sure that they have been properly sealed or protected.

158 Figure 64 is a picture taken by a microscope of ordinary dust containing microscopic asbestos fibres. If the dust were disturbed these would become airborne and could be breathed in. This shows why it is important that you carefully clean all dust from surfaces which may have been contaminated.



Figure 64 Microscopic (x 400 magnification) asbestos fibres (dark needle-like structures) in dust from a surface which was not cleaned properly following asbestos removal - these would not be visible to the naked eye. The dark specks and light needle-like structures are non-asbestos dust

159 In major asbestos removal jobs the visual inspection is normally followed by air monitoring. This makes sure that any remaining asbestos fibres in the air are below permitted levels. If the task guidance sheets[1] are followed carefully, it will not normally be necessary to carry out air monitoring for the types of tasks covered by this guidance.

Air monitoring

160 If you carry out the tasks using this guidance then you should be able to prevent or control exposure to a level as low as reasonably practicable. Therefore, air monitoring will not normally be required.

161 However, you may wish to consider air monitoring:

- as confirmation that you are adequately controlling the exposure;
- where the work is of a particularly sensitive nature to the building occupants. In such cases it can be used to reassure them that all is well;
- to provide proof of control to an inspector.

162 Figure 65 shows someone wearing personal monitoring equipment correctly. This consists of a sampling pump, worn on the worker's belt, attached by a length of plastic tubing to a sampling head on his lapel. The sampling pump draws air at a known rate over a filter held in the sampling head. The filter is analysed using a microscope.

163 If the equipment is worn or used incorrectly, you will get a false measure of exposure.



Figure 65 Personal monitoring equipment worn correctly

164 As an employer you must only use laboratories to carry out air monitoring who can demonstrate that they conform to European Standard EN45001 by accreditation with a recognised accreditation body. As part of this, these laboratories will need to demonstrate satisfactory performance in a quality assurance scheme known as RICE (Regular Inter-laboratory Counting Exchanges). This scheme monitors the performance of laboratories who carry out the analysis of measurements of asbestos fibres in air. A list of accredited laboratories can be obtained from the United Kingdom Accreditation Service (UKAS) (Tel: 020 8917 8400).

165 If you wish to carry out your own air monitoring, you must make sure that employees carrying out the monitoring receive similar standards of training, supervision and quality control to those required by EN45001.

166 Further guidance on air monitoring is given in *Asbestos: exposure limits and measurements of airborne dust concentrations*[13] and *Asbestos fibres in air*.[14]

Waste disposal

167 Asbestos waste, defined as any waste containing more than 0.1% w/w (weight for weight) asbestos in the waste, is subject to the waste management controls set out in the Special Waste Regulations 1996 (as amended) and must be consigned to a site which is authorised to accept asbestos waste. This is enforced by the Environment Agency in England and Wales, and the Scottish Environment Protection Agency in Scotland.

168 The Special Waste Regulations 1996 place duties on:

- consignors (the company causing the waste to be removed);
- carriers (the waste collector); and
- consignees (the waste management facility).

169 The consignor must ensure that the relevant special waste consignment note is completed and signed. Details must include:

- an accurate waste description;
- the total quantity;
- the total number and weight (or volume) of each package;
- a hazard code;
- the process giving rise to the waste.

170 Whatever type of waste container (for example, a plastic sack) is used it should be:

- made of a material which in normal handling is strong enough to contain the waste and which takes account, if necessary, of materials in the waste sharp enough to cause punctures;
- capable of being readily decontaminated before leaving the work area;
- kept secure on site until sent for disposal, for example in a locked skip;
- properly labelled (see Figure 66).

171 In certain circumstances the following Regulations may apply to the waste material:

- The Carriage of Dangerous Goods (Classification, Packaging and Labelling) and The Transportable Pressure Receptacles Regulations 1996;
- The Carriage of Dangerous Goods by Road Regulations 1996;
- The Carriage of Dangerous Goods by Rail Regulations 1996;
- The Carriage of Dangerous Goods by Road (Driver Training) Regulations 1996;
- The Transport of Dangerous Goods (Safety Advisers) Regulations 1999.

Where these Regulations do not apply, Schedule 2 of the CAW Regulations will be applicable.

172 Further guidance can be found in:

- *Carriage of dangerous goods explained. Guidance for consignors of dangerous goods by road and rail (classification, packaging and provision of information). Part 1;*[15]
- *Carriage of dangerous goods explained. Guidance for road vehicle operators and others involved in the carriage of dangerous goods by road. Part 2.*[16]
- *Carriage of dangerous goods explained. Guidance for rail operators and others involved in the carriage of dangerous goods by rail. Part 3.*[17]
- *The Transport of Dangerous Goods (Safety Advisers) Regulations 1999.*[18]
- *Dangerous Goods Safety Advisers.*[19]
- *Are you involved in the carriage of dangerous goods by road or rail?* [20]

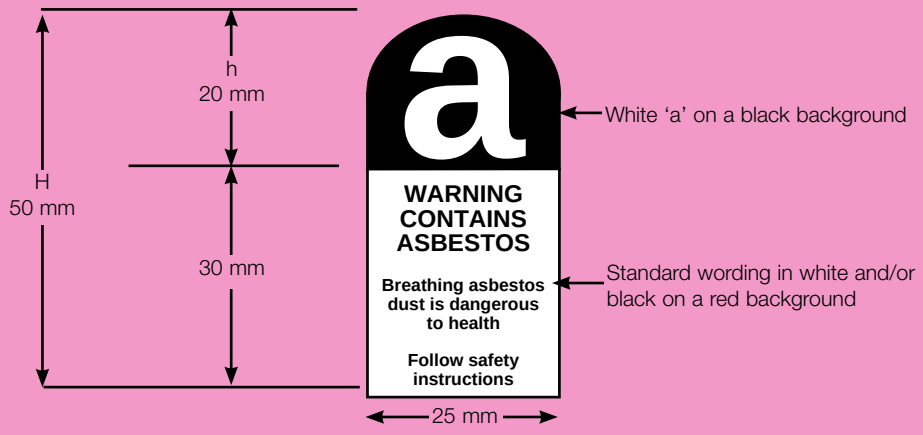
Remember

Illegal dumping of asbestos waste is punishable by the Courts.

173 Further information can be obtained from the Environment Agency (Enquiry Line: 08459 333111) in England and Wales and the Scottish Environment Protection Agency in Scotland (Head Office: 01786 457700) and see Figure 67.

Proper shipping name	Class number	
Waste blue asbestos (crocidolite)	UN 2212	Carriage of Dangerous Goods (Classification, Packaging and Labelling) and Use of Transportable Pressure Receptacles Regulations 1996 Regulations 7 and 8 refer
Waste brown asbestos (amosite)	UN 2212	
Waste white asbestos (chrysotile)	UN 2590	

Danger sign



The dimensions in millilitres of the label shall be those shown on the diagram, except that larger measurements may be used, but in that case the dimension of the label indicated as h, on the diagram above, shall be 40% of the dimension indicated as H on that diagram.

The label shall be clearly and indelibly printed so that the words in the lower half of the label can be easily read, and those words shall be printed in black or white.

Figure 66 Labelling requirements for plastic bags/sacks containing asbestos waste

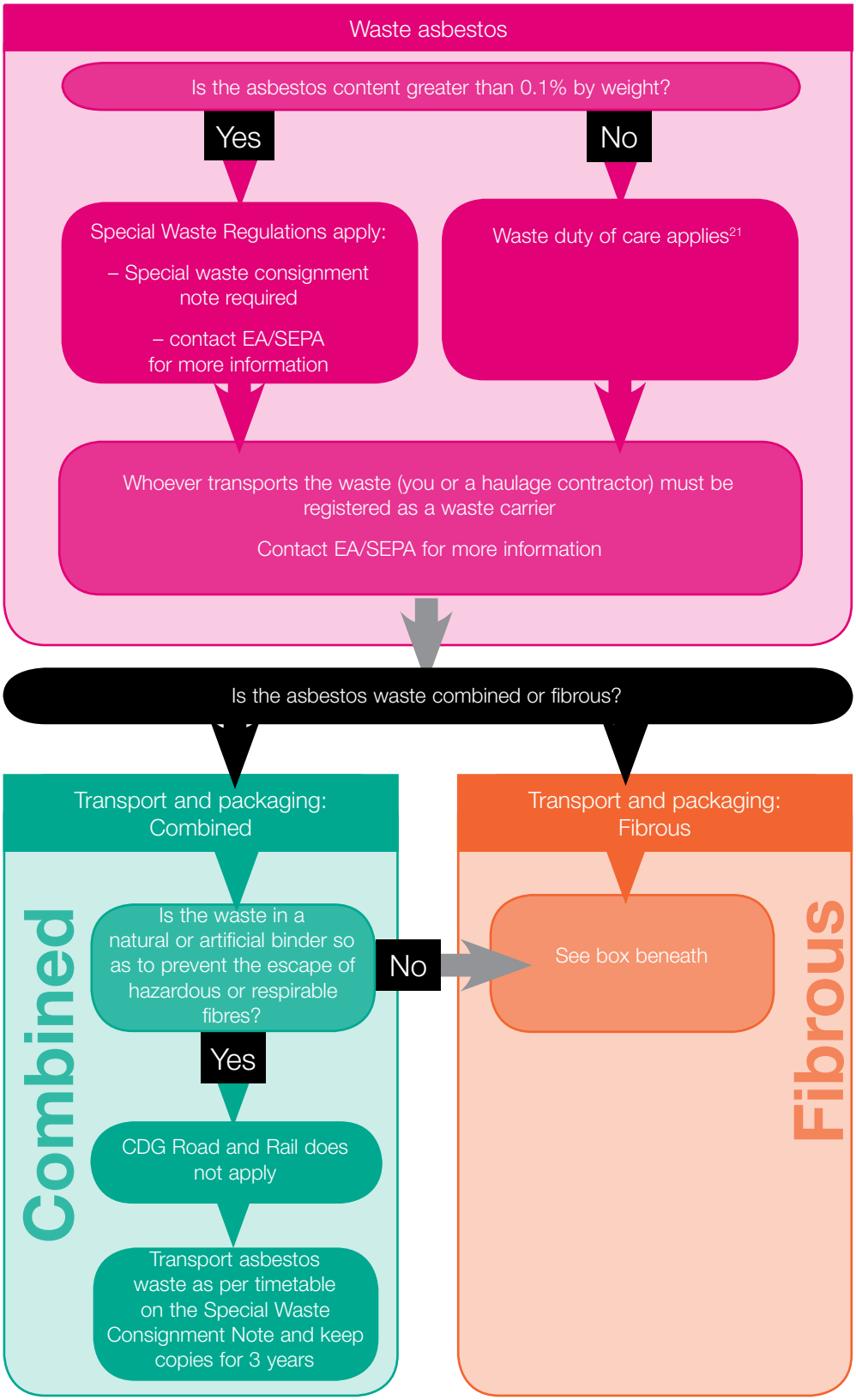
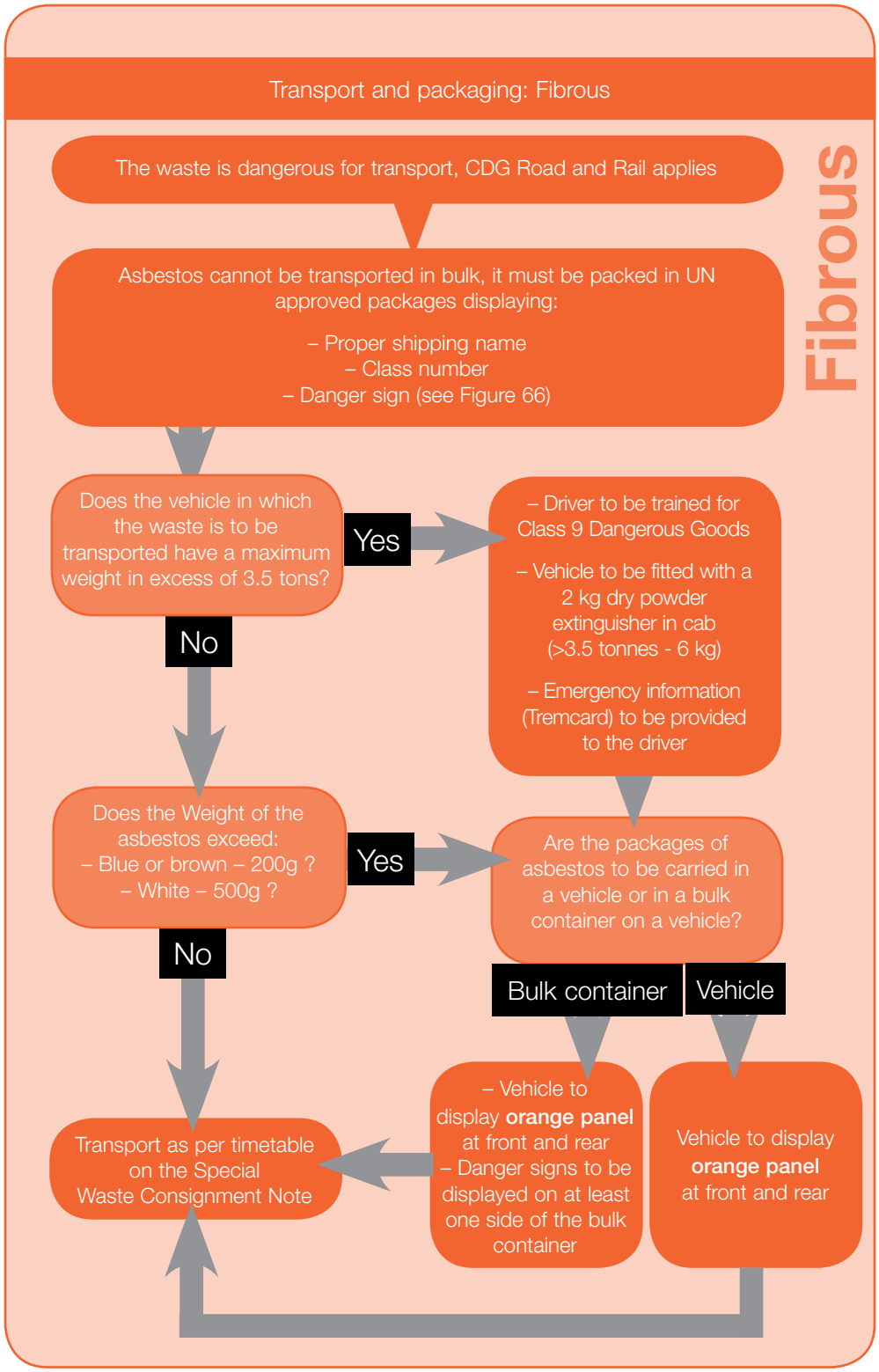


Figure 67 Procedure for dealing with asbestos waste



Special Waste Consignment Note to be kept by the consignor for three years.
Other documentation to be kept by the operator for three months.

Key
EA: Environment Agency
SEPA: Scottish Environment Protection Agency
CDG Road and Rail: five sets of regulations (see list in paragraph 171)

Task guidance and equipment and method guidance sheets

174 The task guidance sheets give practical guidance on how 25 common tasks can be safely carried out. If you closely follow the method given in the sheets you will be able to prevent or reduce exposure to asbestos fibres to a level as low as reasonably practicable.

175 The task guidance sheets refer to the range of equipment and methods which should be followed so as to make sure that the procedure is effective. If the wrong equipment is used, or used in the wrong way, you will not get the full benefit.

176 The equipment and method guidance sheets describe the equipment and how to use it. The task guidance sheets tell you when particular equipment and method guidance sheets should be consulted.

177 You can use these sheets, along with the information provided in paragraphs 103–173 when preparing a safe system of work and plan of work. It is strongly recommended that workers are given copies of *Asbestos essentials: Task manual*[1] as part of the plan of work. They can use the task guidance sheets to make sure they are doing the job properly.

178 It is important that a task guidance sheet is only used for the task it is meant for, for example, the task guidance sheet for repairing AC is not appropriate if you are working on AIB – you would not effectively control exposure.

179 The photographs in each task guidance sheet and equipment and method guidance sheet[1] illustrate how the task should be done or what it should look like when completed. For illustrative purposes, many of the illustrations show the task being carried out on non–ACMs.

References

1 *Asbestos essentials: Task manual* HSG210 2000 HSE Books ISBN 0 7176 1887 0

2 Peto J, Hodgson J 'Continuing increase in mesothelioma mortality in Britain' *The Lancet* 1995 **345** (8949) 535-539

3 *Working with asbestos cement* HSG189/2 1999 HSE Books ISBN 0 7176 1667 3

4 *Control of asbestos at work* L27 1999 HSE Books ISBN 0 7176 1673 8

5 *Guide to the Asbestos (Licensing) Regulations* L11 1999 HSE Books ISBN 0 7176 2435 8

6 *Managing construction for health and safety: Construction (Design and Management) Regulations 1994. Approved Code of Practice* L54 1995 HSE Books ISBN 0 7176 0792 5

7 *A guide to the Construction (Health, Safety and Welfare) Regulations 1996* Leaflet INDG220 1996 HSE Books (single copy free or priced packs of 10 ISBN 0 7176 1161 2)

8 *Surveying, sampling and assessment of asbestos-containing materials* MDHS100 2001 HSE Books ISBN 0 7176 2076 X

9 *COSHH: A brief guide to the Regulations: What you need to know about the Control of Substances Hazardous to Health Regulations 1999 (COSHH)* Leaflet INDG136(rev1) 1999 HSE Books (single copy free or priced packs of 10 ISBN 0 7176 2444 7)

10 *Management of health and safety at work. Management of Health and Safety at Work Regulations 1999. Approved Code of Practice and guidance* L21 2000 HSE Books ISBN 0 7176 2488 9

11 *Health and safety in roof work* HSG33 (Second edition) 1998 HSE Books ISBN 0 7176 1425 5

12 *Selection of suitable respiratory protective equipment for work with asbestos* Leaflet INDG288 1999 HSE Books (single copy free or priced packs of 5 ISBN 0 7176 2456 0)

13 *Asbestos: Exposure limits and measurements of airborne dust concentrations* EH10 2001 HSE Books ISBN 0 7176 2129 4

14 *Asbestos fibres in air* MDHS 39/4 1995 HSE Books ISBN 0 7176 1113 2

15 *Carriage of dangerous goods explained. Guidance for consignors of dangerous goods by road and rail (classification, labelling and provision of information). Part 1* HSG160 1996 HSE Books ISBN 0 7176 1255 4

16 *Carriage of dangerous goods explained. Guidance for road vehicle operators and others involved in the carriage of dangerous goods by road. Part 2* HSG161 1996 HSE Books ISBN 0 7176 1253 8

17 *Carriage of dangerous goods explained. Guidance for rail operators and others involved in the carriage of dangerous goods by rail. Part 3* HSG163 1996 HSE Books ISBN 0 7176 1256 2

18 *The Transport of Dangerous Goods (Safety Advisers) Regulations 1999* SI 1999/257 1999 TSO ISBN 0 11 080434 1

19 *Dangerous Goods Safety Advisers* AO677 DETR and Scottish Qualifications Authority

20 *Are you involved in the carriage of dangerous goods by road or rail* Leaflet INDG234(rev) 1999 HSE Books (single copy free or priced packs of 10 ISBN 0 7176 1676 2)

21 *Waste Management. The duty of care. A code of practice. Environment Protection Act 1990, Section 34* 1996 HMSO ISBN 0 11 753210 X

While every effort has been made to ensure the accuracy of the references listed in this publication, their future availability cannot be guaranteed.

Further information

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

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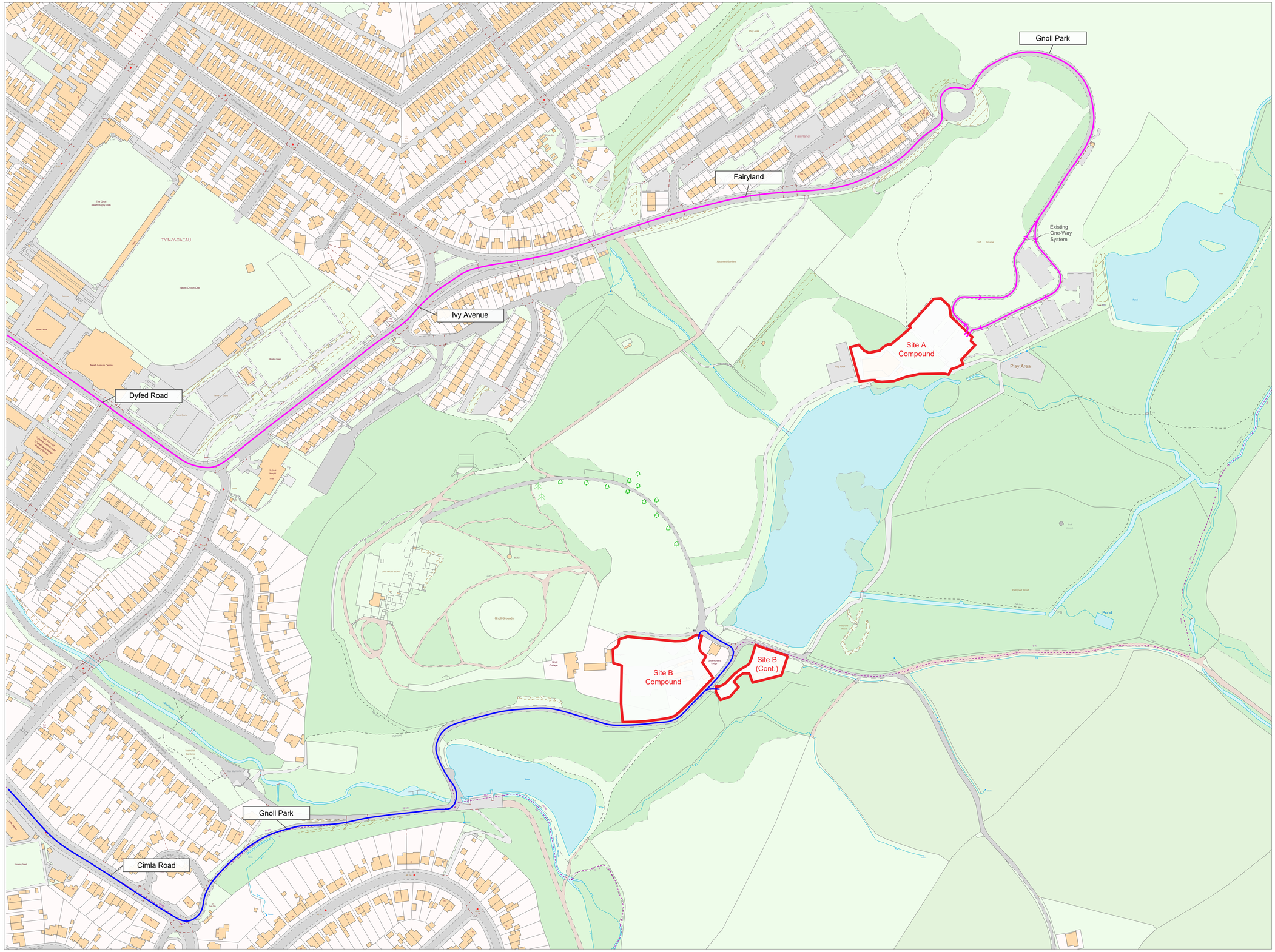
Published by HSE 01/10

Appendix E

Logistics Plans

Logistics Plans

Site Setup Location Plan (Deliveries)



Gnoll Park - Site Location Plan (Deliveries)
Scale: 1 : 1250

Key:

- Route to Site A
- Route to Site B
- Site Boundary

NOTE:
No deliveries permitted during school pick-up and drop-off times, between 8:00-9:30 and 14:30-16:00.

All deliveries to be pre-booked and scheduled to arrive between 10:00-14:00.

Site B is restricted to essential deliveries only.

SCOTT Established 1870 — 150 1870 2020 YEARS

JOB TITLE
Gnoll Park - Site Location Plan (Deliveries)

SHEET SIZE & SCALE	DATE
A0 @ 1:1250	05/2024
DRAWING NUMBER	**DRAWN BY**
0001 - Rev B	ASL

CLIENT
Andrew Scott

Logistics Plans

Site Logistics Plan (North)



Gnoll Park - Site Logistics Plan (North)
Scale: 1 : 250

Key:

- Timber Hoarding
- Heras Fencing
- Silt Fence
- Work Areas
- Existing Structures

NOTE:

- Temporary work areas / service trenches will be enclosed in Heras fencing as required.

- Further information on Fencing, Hoarding & Surface Water Management are included within Appendix H.

SCOTT Established 1870 — 150 1870 2020 YEARS

JOB TITLE

Gnoll Park - Site
Logistics Plan (North)

SHEET SIZE & SCALE	DATE
A0 @ 1:250	05/2024
DRAWING NUMBER	**DRAWN BY**
0002	ASL

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Neath Port Talbot Council

Logistics Plans

Site Logistics Plan (South)

Vehicle Barrier (Existing)
Sentry Box & Gateman
Wheel Wash
De-Watering Treatment Plant
Materials Storage
Unloading & Turning Area
Materials Storage
Pond Cottage
Gnoll Nursery Lodge
Kitchen Gardens Accommodation
Unloading & Turning Area
Materials Storage
De-Watering Treatment Plant
Materials Storage
Unloading & Turning Area
De-Watering Treatment Plant
Silt Fence
Pedestrian Access (Site Staff Only)
Stor-age
Plant Storage & Refuelling Area
Turnstile Site Access
Access Stair
Accommodation Car Parking
Contractor Parking
Office & Welfare
Contractor Parking
Silt Fence
Contractor Parking
Silt Fence
De-Watering Treatment Plant

Gnoll Park - Site Logistics Plan (South)
Scale: 1 : 250

Key:

- Timber Hoarding
- Heras Fencing
- Silt Fence
- Work Areas
- Existing Structures

NOTE:

- Temporary work areas / service trenches will be enclosed in Heras fencing as required.

- Further information on Fencing, Hoarding & Surface Water Management are included within Appendix H.

SCOTT Established 1870

1870 2020 150 YEARS

JOB TITLE

Gnoll Park - Site Logistics Plan (South)

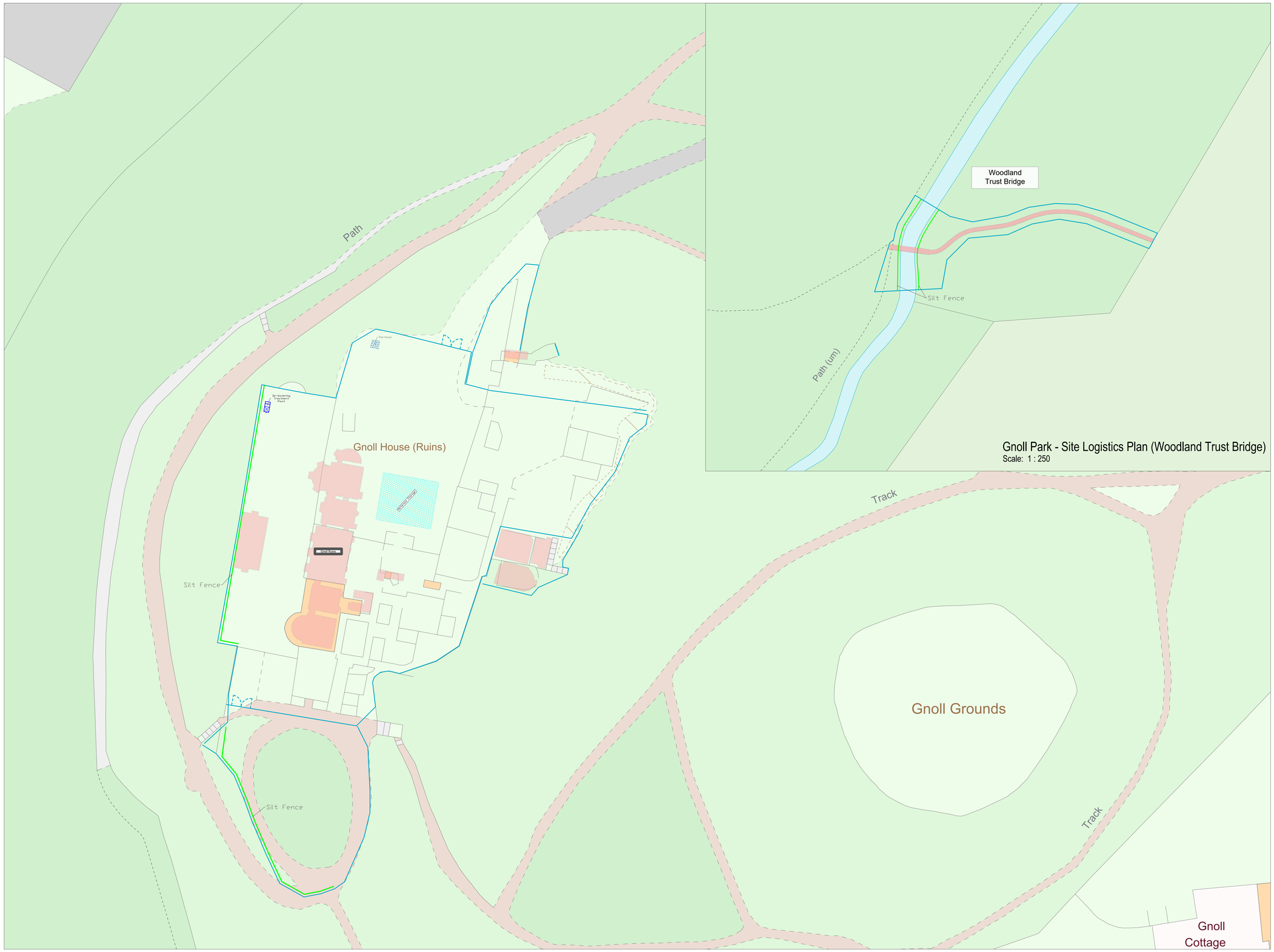
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0003	ASL

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Neath Port Talbot Council

Logistics Plans

Site Logistics Plan (Ruins & Woodland Trust Bridge)



Gnoll Park - Site Logistics Plan (Woodland Trust Bridge)
Scale: 1 : 250

Gnoll Park - Site Logistics Plan (Ruins)
Scale: 1 : 250

Key:

- Timber Hoarding
- Heras Fencing
- Silt Fence
- Work Areas
- Existing Structures

NOTE:

- Temporary work areas / service trenches will be enclosed in Heras fencing as required.

- Further information on Fencing, Hoarding & Surface Water Management are included within Appendix H.

SCOTT Established 1870 — 150 YEARS 1870 2020

JOB TITLE	Gnoll Park - Site Logistics Plan (Ruins & Woodland Trust Bridge)
SHEET SIZE & SCALE	A0 @ 1:250
DATE	05/2024
DRAWING NUMBER	0004
DRAWN BY	ASL
CLIENT	Neath Port Talbot Council

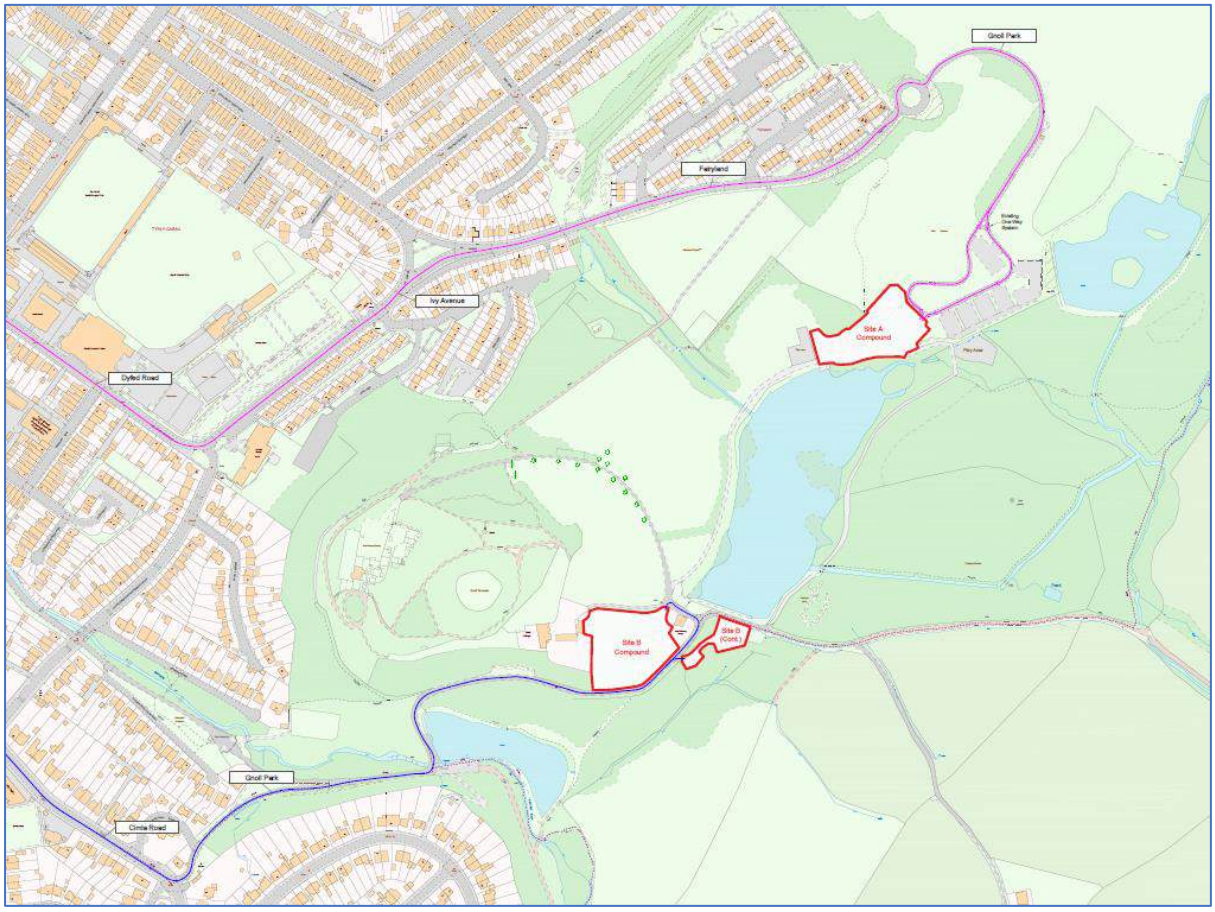
Logistics Plans

Traffic Management Plan

Andrew Scott Ltd - Gnoll Park - Internal Traffic / Material Distribution

The following points will be relayed to all site operatives during the ASL site induction and prior to any works commencing on the project.

We propose to utilise two main areas for materials storage on the project. These storage areas will further be utilised to distribute materials to all proposed works areas. The main compound will be located to the North of the site, situated within the main car park as, the second will be located to the South of the site, within the existing service yard for Gnoll Park as shown on the below site plan (included within Appendix E).



Materials from external suppliers may be delivered directly to the additional car parking and new facilities building work areas by prior arrangement, as they will be on the route to site set-up A. This approach will minimise traffic movement on site and reduces the overall risk to members of public and other users of the park.

Site Set-up A (North) will serve the following locations:

- New Visitors Centre
- New Woodland Trust Bridge
- New Adventure Playground

Site Set-up B (South) will serve the following locations:

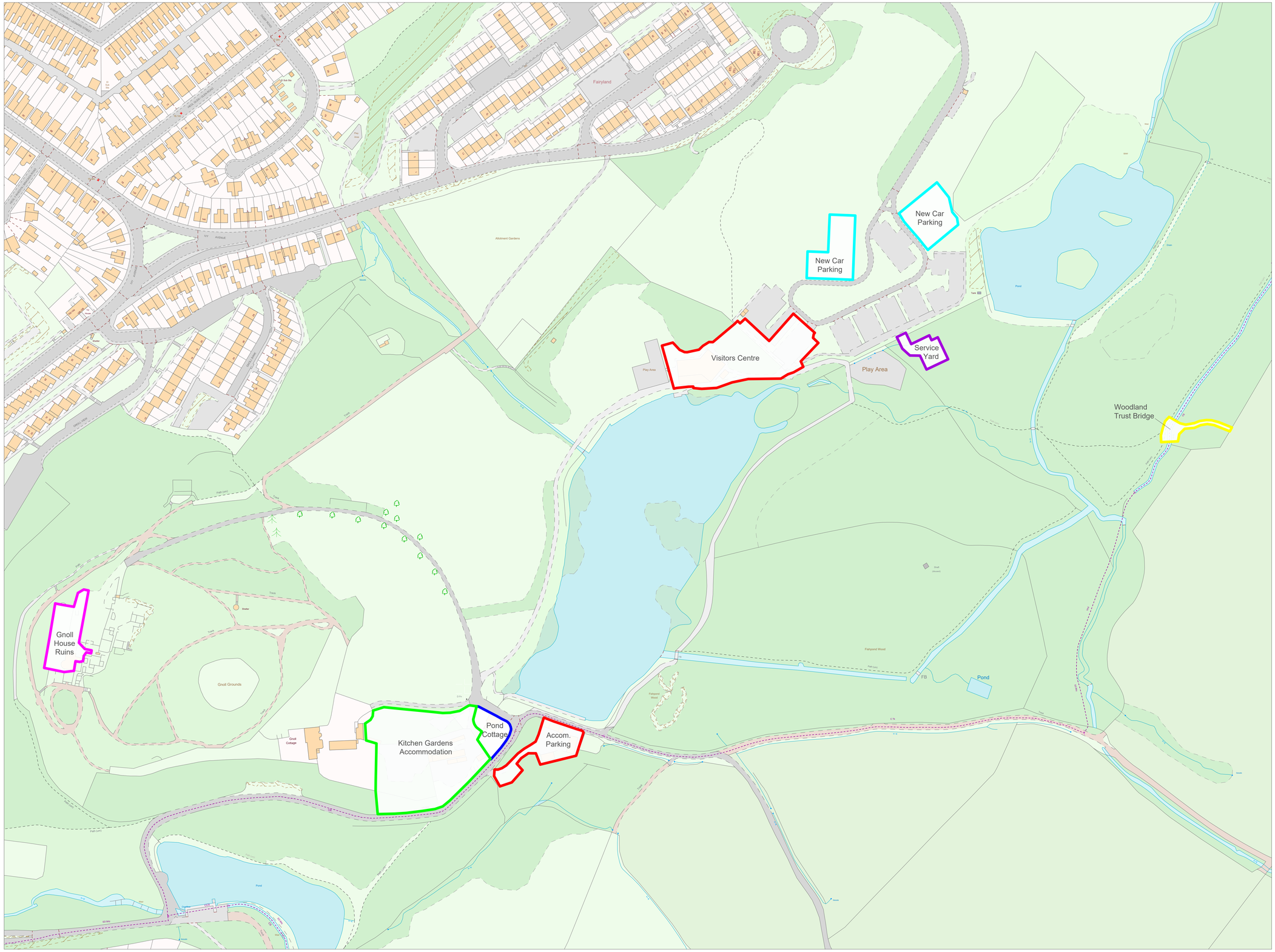
- Pond Cottage
- Kitchen Gardens and Service yard
- Gnoll Ruins

Internal distribution notes

- All deliveries for each section will be delivered to the required compounds in good time between the hours of 10am & 2pm. All deliveries will be scheduled to minimise disruption to the local community on the planned delivery routes.
- On site distribution will be completed before 11am each morning prior to peak visiting hours, to minimise any disruption to the park users. This will be brought forward to 10am during the school holidays, where the park will be at its busiest.
- All plant and vehicle movements throughout the park will be controlled via bankspersons. This must always include one the front and one rear.
- Where required, clearance for turning circles will be set out using suitable pedestrian barriers.
- Weekly meetings will be held with the Park Manager to agree vehicular movements around the park to ensure construction activities will not impact upon planned activities at the park.

Logistics Plans

Phasing Plan



Gnoll Park - Phasing Plan
Scale: 1 : 1000

Dates:

- 01/07/24 to 03/04/25
- 01/07/24 to 26/11/24
- 01/07/24 to 12/08/24
- 12/07/24 to 28/02/25
- 19/07/24 to 08/08/25
- 30/07/24 to 14/02/25
- 08/08/24 to 07/01/25

NOTE:

Dates are indicative and may be subject to change.

SCOTT Established 1870

150 1870 2020 YEARS

JOB TITLE

Gnoll Park - Phasing Plan

SHEET SIZE & SCALE	DATE
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0005 - Rev B	ASL

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Logistics Plans

Construction Programme

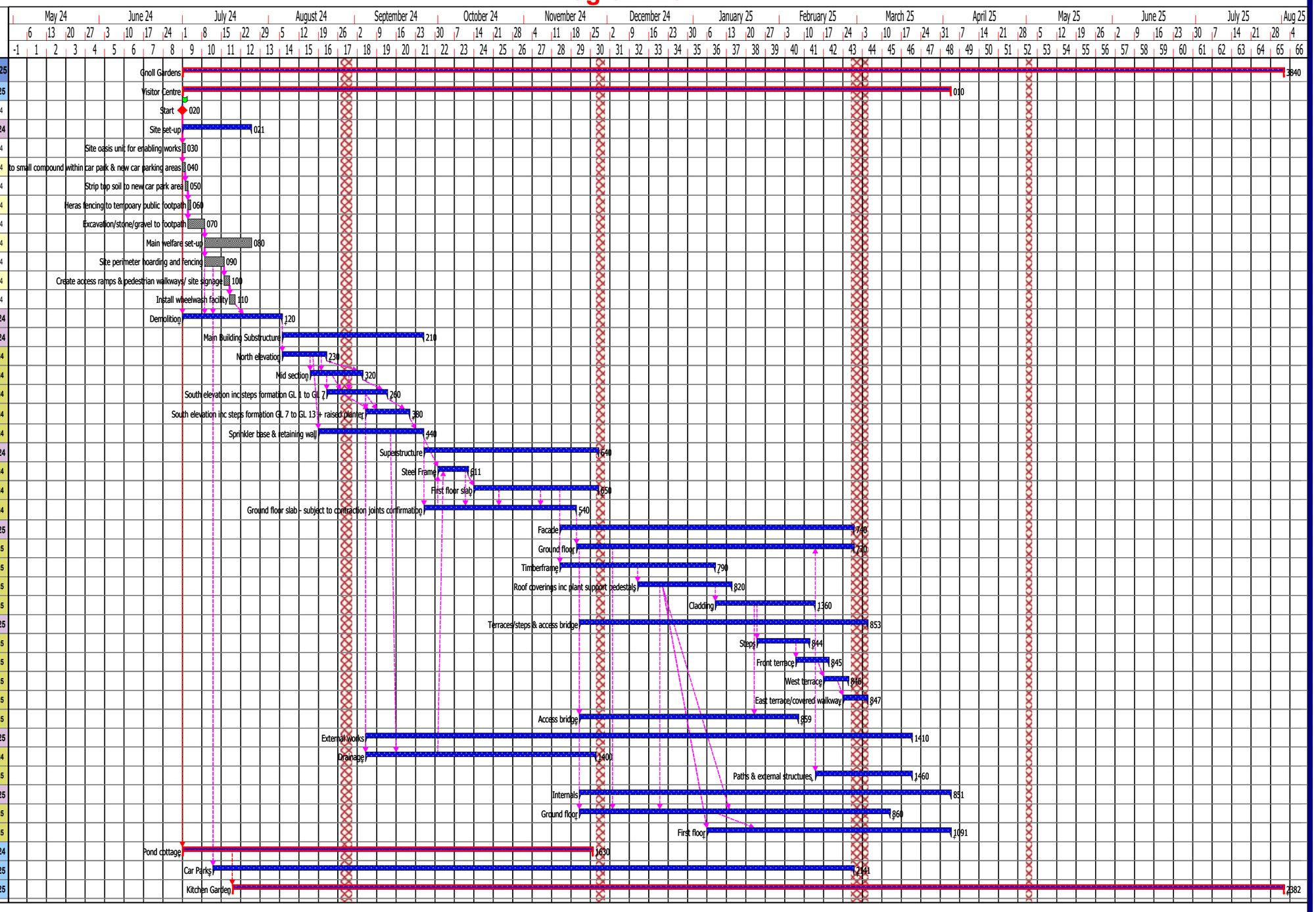
SCOTT

Gnoll Country Park

Neath port Talbot CBC

Programme

Line	Name	Unique task ID	Duration / Effort	Start	Finish
1	**Gnoll Gardens**	**3840**	**270d**	**01/07/2024**	**01/08/2025**
2	**Visitor Centre**	**010**	**188d**	**01/07/2024**	**03/04/2025**
3	Start	020		01/07/2024	01/07/2024
4	**Site set-up**	**021**	**19d**	**01/07/2024**	**25/07/2024**
5	Site oasis unit for enabling works	030	1d	01/07/2024	01/07/2024
6	Heras fencing to small compound within car park & new car parking areas	040	1d	01/07/2024	01/07/2024
7	Strip top soil to new car park area	050	1d	02/07/2024	02/07/2024
8	Heras fencing to tempoary public footpath	060	1d	03/07/2024	03/07/2024
9	Excavation/stone/gravel to footpath	070	4d	03/07/2024	08/07/2024
10	Main welfare set-up	080	13d	09/07/2024	25/07/2024
11	Site perimeter hoarding and fencing	090	5d	09/07/2024	15/07/2024
12	Create access ramps & pedestrian walkways/ site signage	100	2d	16/07/2024	17/07/2024
13	Install wheelwash facility	110	2d	18/07/2024	19/07/2024
14	**Demolition**	**120**	**26d**	**01/07/2024**	**05/08/2024**
15	**Main Building Substructure**	**210**	**36d**	**06/08/2024**	**25/09/2024**
16	**North elevation**	**230**	**12d**	**06/08/2024**	**21/08/2024**
17	**Mid section**	**320**	**12d**	**16/08/2024**	**03/09/2024**
18	**South elevation inc steps formation GL 1 to GL 7**	**260**	**15d**	**22/08/2024**	**12/09/2024**
19	**South elevation inc steps formation GL 7 to GL 13 + raised planter**	**380**	**12d**	**05/09/2024**	**20/09/2024**
20	**Sprinkler base & retaining wall**	**440**	**27d**	**19/08/2024**	**25/09/2024**
21	**Superstructure**	**640**	**45d**	**26/09/2024**	**27/11/2024**
22	**Steel Frame**	**611**	**9d**	**01/10/2024**	**11/10/2024**
23	**First floor slab**	**650**	**33d**	**14/10/2024**	**27/11/2024**
24	**Ground floor slab - subject to contraction joints confirmation**	**540**	**39d**	**26/09/2024**	**19/11/2024**
25	**Facade**	**740**	**66d**	**14/11/2024**	**27/02/2025**
26	**Ground floor**	**770**	**62d**	**20/11/2024**	**27/02/2025**
27	**Timberframe**	**790**	**30d**	**14/11/2024**	**08/01/2025**
28	**Roof coverings inc plant support pedestals**	**820**	**14d**	**12/12/2024**	**14/01/2025**
29	**Cladding**	**1360**	**26d**	**09/01/2025**	**13/02/2025**
30	**Terraces/steps & access bridge**	**853**	**64d**	**21/11/2024**	**04/03/2025**
31	**Steps**	**844**	**13d**	**24/01/2025**	**11/02/2025**
32	**Front terrace**	**845**	**8d**	**07/02/2025**	**18/02/2025**
33	**West terrace**	**846**	**7d**	**17/02/2025**	**25/02/2025**
34	**East terrace/covered walkway**	**847**	**7d**	**24/02/2025**	**04/03/2025**
35	**Access bridge**	**859**	**47d**	**21/11/2024**	**07/02/2025**
36	**External works**	**1410**	**131d**	**05/09/2024**	**20/03/2025**
37	**Drainage**	**1400**	**59d**	**05/09/2024**	**26/11/2024**
38	**Paths & external structures**	**1460**	**25d**	**14/02/2025**	**20/03/2025**
39	**Internals**	**851**	**86d**	**21/11/2024**	**03/04/2025**
40	**Ground floor**	**860**	**70d**	**21/11/2024**	**12/03/2025**
41	**First floor**	**1091**	**64d**	**06/01/2025**	**03/04/2025**
42	**Pond cottage**	**1630**	**105d**	**01/07/2024**	**26/11/2024**
43	**Car Parks**	**2141**	**154d**	**12/07/2024**	**28/02/2025**
44	**Kitchen Garden**	**2382**	**256d**	**19/07/2024**	**01/08/2025**



Milestone Appearances

Start Milestone

General Comment : Comment - Chart Properties		Author : Planner - Chart Properties	Programme No.
Rev. Comment : Rev 8 P Revision comment - Chart Properties		First Drawn :	**T483 Gnoll**
			Revision **Rev 8 P**

C:\Users\Andy Chick\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\DHLZ1UXC\T

ANDREW SCOTT Ltd. The Grange, Margam, Port Talbot Tel: (01639) 889800 Fax: (01639) 889829

Appendix F

Demolition Plans

Demolition Plans

Visitors Centre

North.
(Indicative)

Existing Visitor Centre
to be demolished

SCOTT
Established 1870

1870 2020 150 YEARS

JOB TITLE

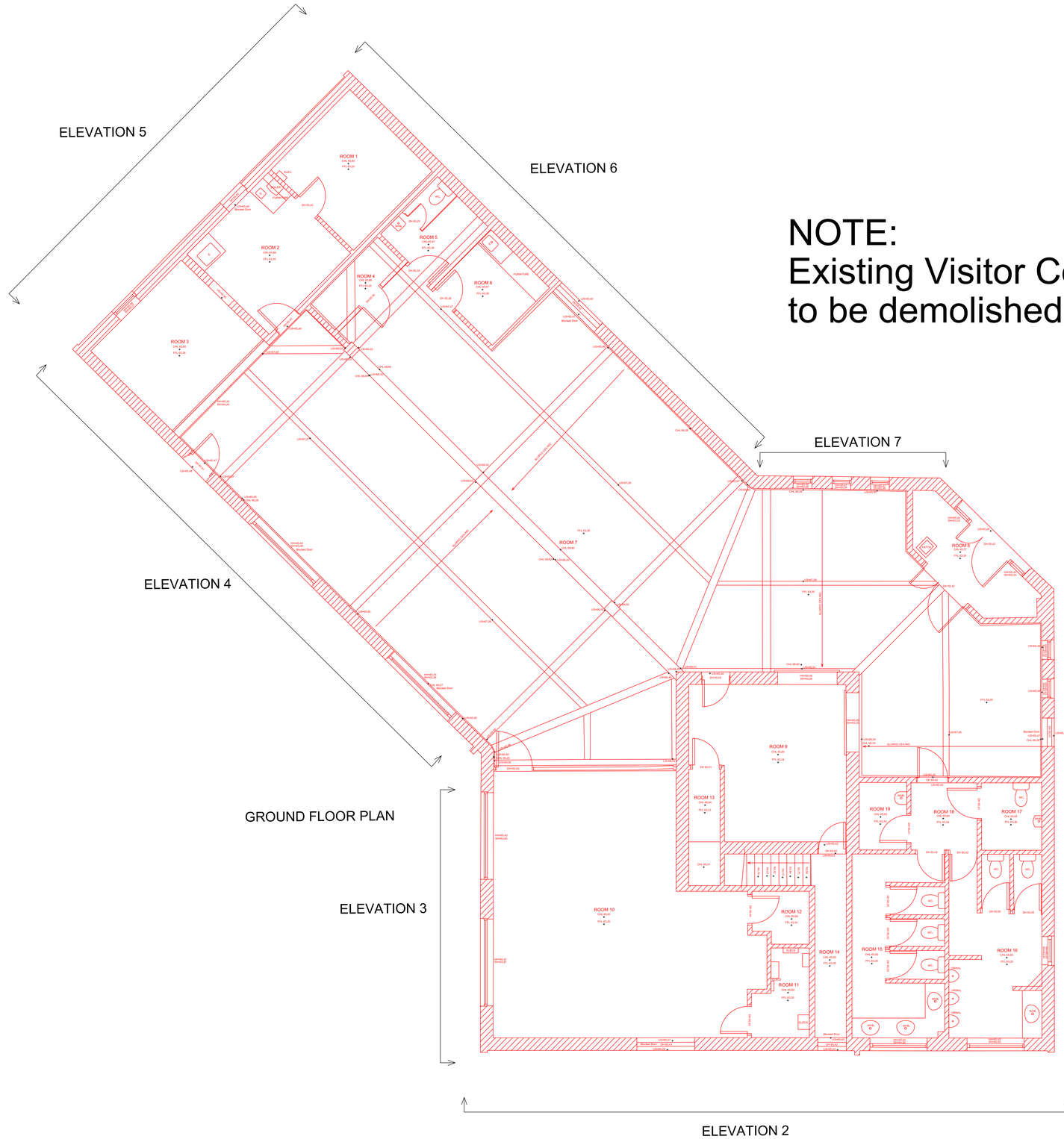
DEMOLITION
Gnoll Park - Visitor Centre

SHEET SIZE & SCALE	DATE SURVEYED
A1 @ 1:200	03/2023

DRAWING NUMBER	DRAWN BY
6571-1-Sheet 1	PO/AS

CLIENT

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NOTE:
Existing Visitor Centre
to be demolished

0m 1 2 3 4 5 10m

SCALE BAR

SCOTT Established 1870

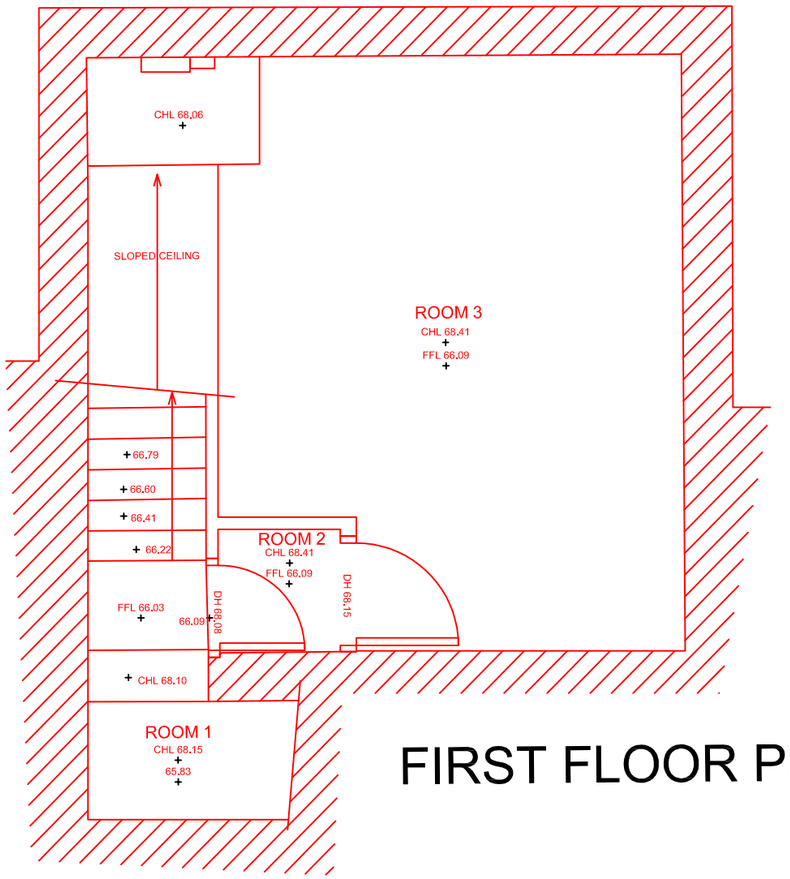
150 1870 2020 YEARS

JOB TITLE
DEMOLITION
GROUND FLOOR PLAN
Gnoll Park – Visitor Centre

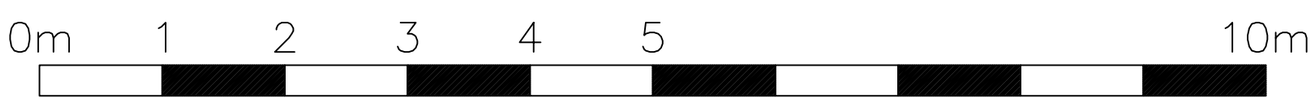
SHEET SIZE & SCALE	DATE SURVEYED
A0 @ 1:50	03/2023
DRAWING NUMBER	DRAWN BY
6571-MBS	RR

CLIENT
Andrew Scott

NOTE:
Existing Visitor Centre to be demolished



FIRST FLOOR PLAN



SCALE BAR

SCOTT Established 1870

150 1870 2020 YEARS

JOB TITLE

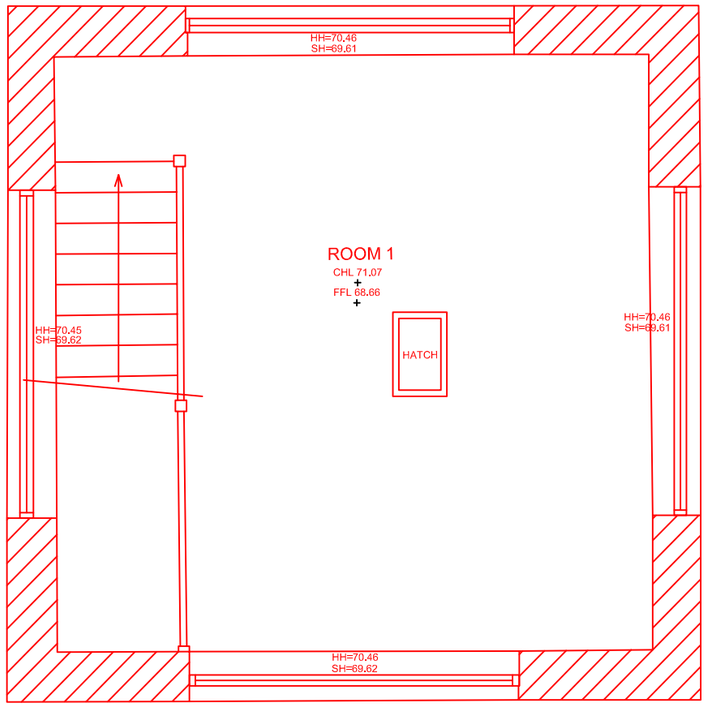
DEMOLITION
FIRST FLOOR PLAN
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	*DATE SURVEYED*
A3 @ 1:50	03/2023
DRAWING NUMBER	*DRAWN BY*
6571-MBS	RR

CLIENT

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NOTE:
Existing Visitor Centre to be demolished



SECOND FLOOR PLAN



SCALE BAR

SCOTT Established 1870

150 1870 2020 YEARS

JOB TITLE

DEMOLITION
SECOND FLOOR PLAN
Gnoll Park – Visitor Centre

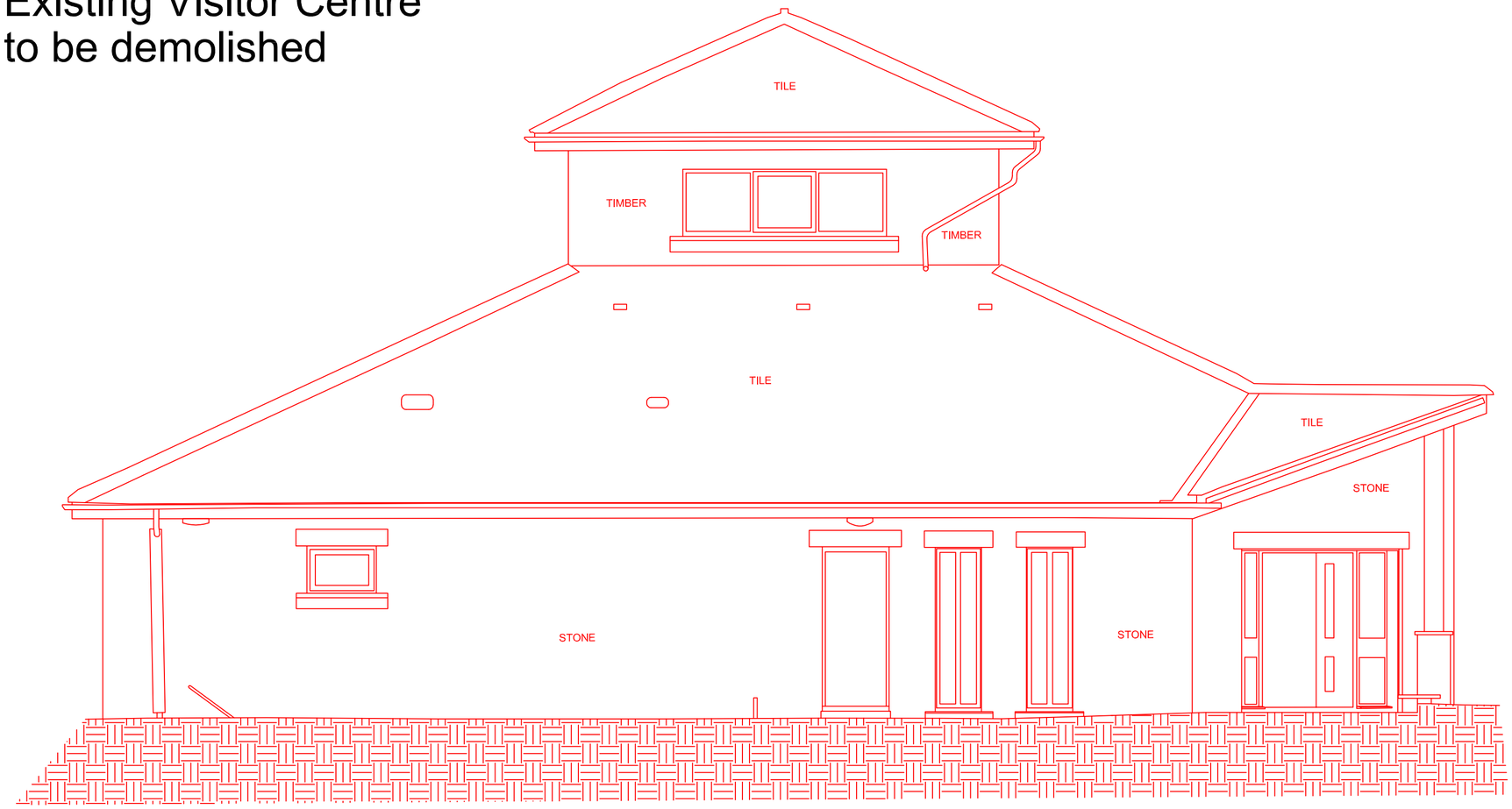
SHEET SIZE & SCALE	*DATE SURVEYED*
A3 @ 1:50	03/2023

DRAWING NUMBER	*DRAWN BY*
6571-MBS	RR

CLIENT

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NOTE:
Existing Visitor Centre
to be demolished



ELEVATION 1

DATUM
60.00M

0m 1 2 3 4 5 10m

SCALE BAR

SCOTT Established 1870

150 1870 2020 YEARS

JOB TITLE

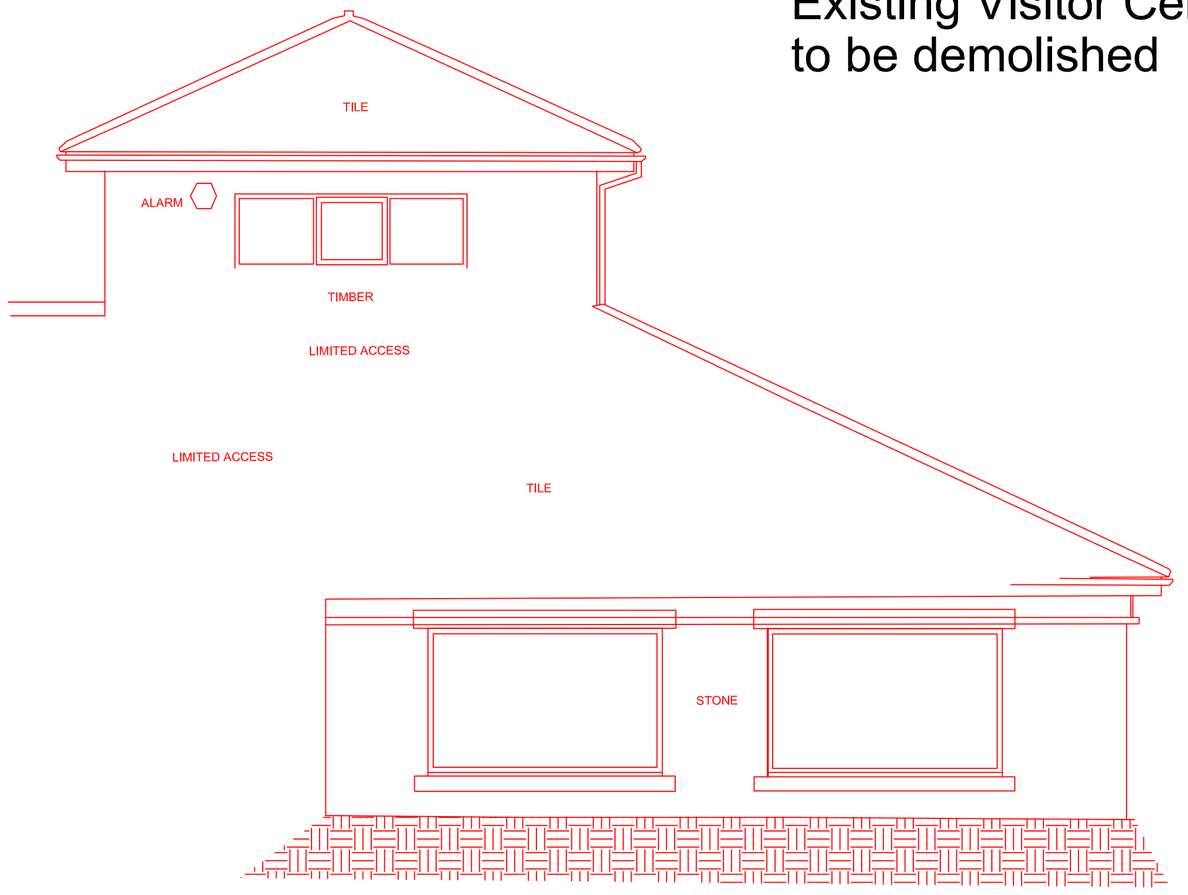
DEMOLITION
ELEVATION 1
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	*DATE SURVEYED*
A2 @ 1:50	03/2023
DRAWING NUMBER	*DRAWN BY*
6571-MBS	RR

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NOTE:
Existing Visitor Centre
to be demolished



ELEVATION 3

DATUM
60.00M

0m 1 2 3 4 5 10m

SCALE BAR

SCOTT Established 1870

150 1870 2020 YEARS

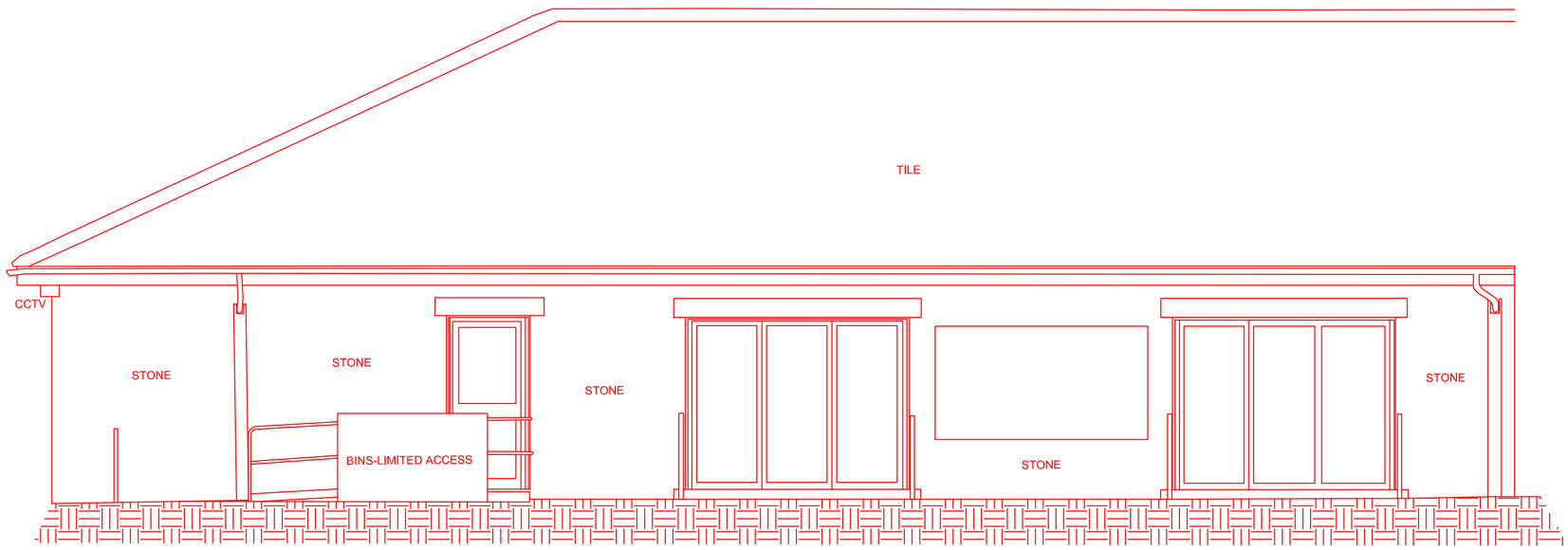
JOB TITLE
DEMOLITION
ELEVATION 3
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	DATE SURVEYED
A2 @ 1:50	03/2023

DRAWING NUMBER	DRAWN BY
6571-MBS	RR

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NOTE:
Existing Visitor Centre
to be demolished



ELEVATION 4

DATUM
60.00M

0m 1 2 3 4 5 10m

SCALE BAR

SCOTT Established 1870

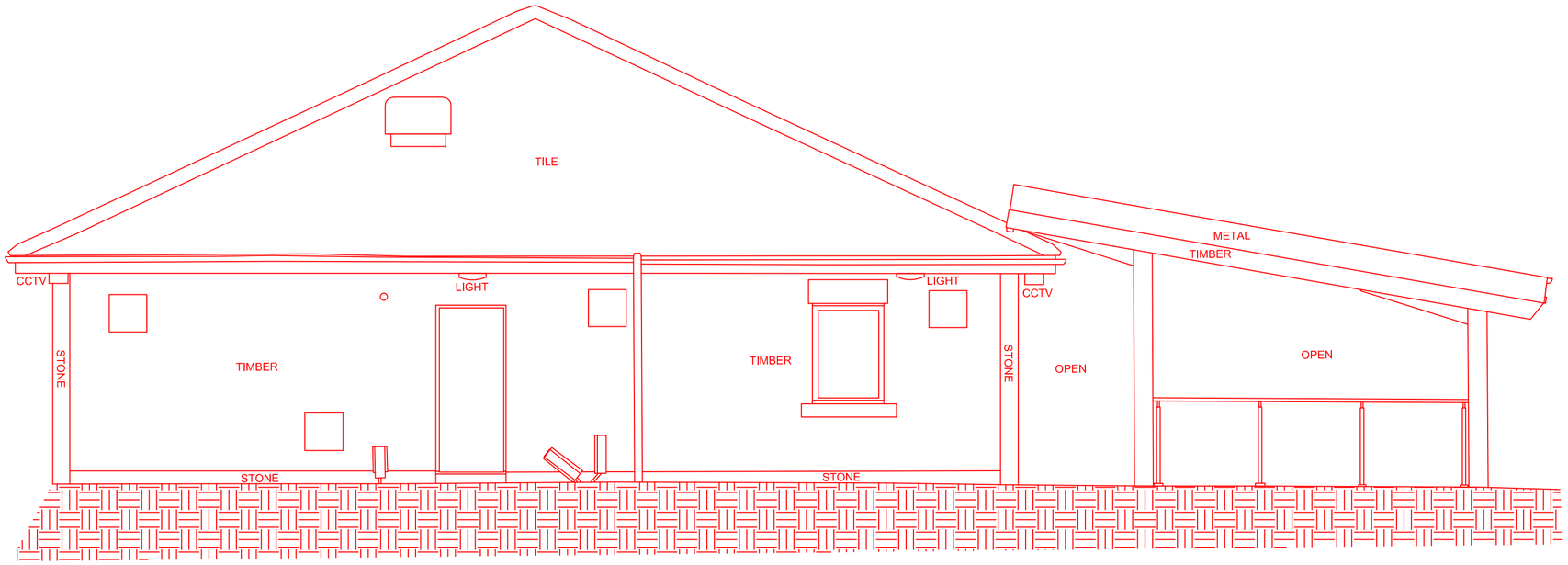
150 1870 2020 YEARS

JOB TITLE
DEMOLITION
ELEVATION 4
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	*DATE SURVEYED*
A2 @ 1:50	03/2023
DRAWING NUMBER	*DRAWN BY*
6571-MBS	RR

CLIENT
Andrew Scott

NOTE:
Existing Visitor Centre
to be demolished



ELEVATION 5

DATUM
60.00M

0m 1 2 3 4 5 10m

SCALE BAR

SCOTT Established 1870

150 1870 2020 YEARS

JOB TITLE

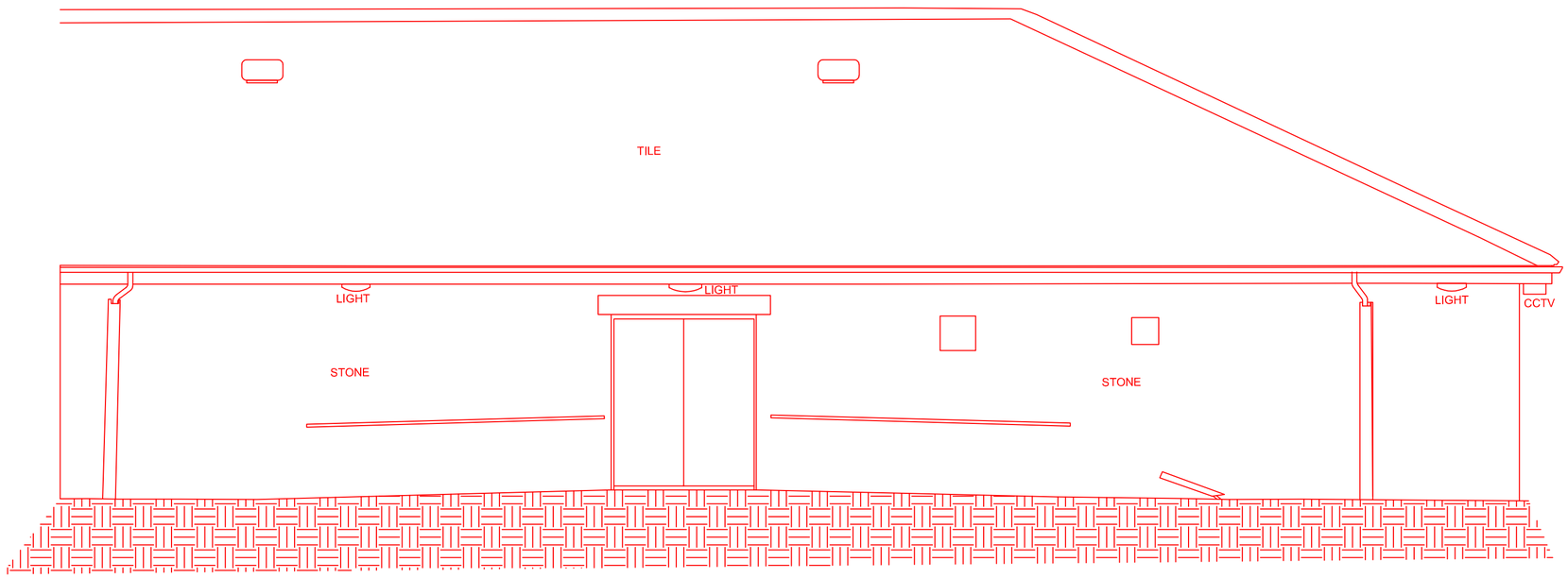
DEMOLITION
ELEVATION 5
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	DATE SURVEYED
A2 @ 1:50	03/2023
DRAWING NUMBER	DRAWN BY
6571-MBS	RR

CLIENT

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NOTE:
Existing Visitor Centre
to be demolished



ELEVATION 6

DATUM
60.00M

0m 1 2 3 4 5 10m

SCALE BAR

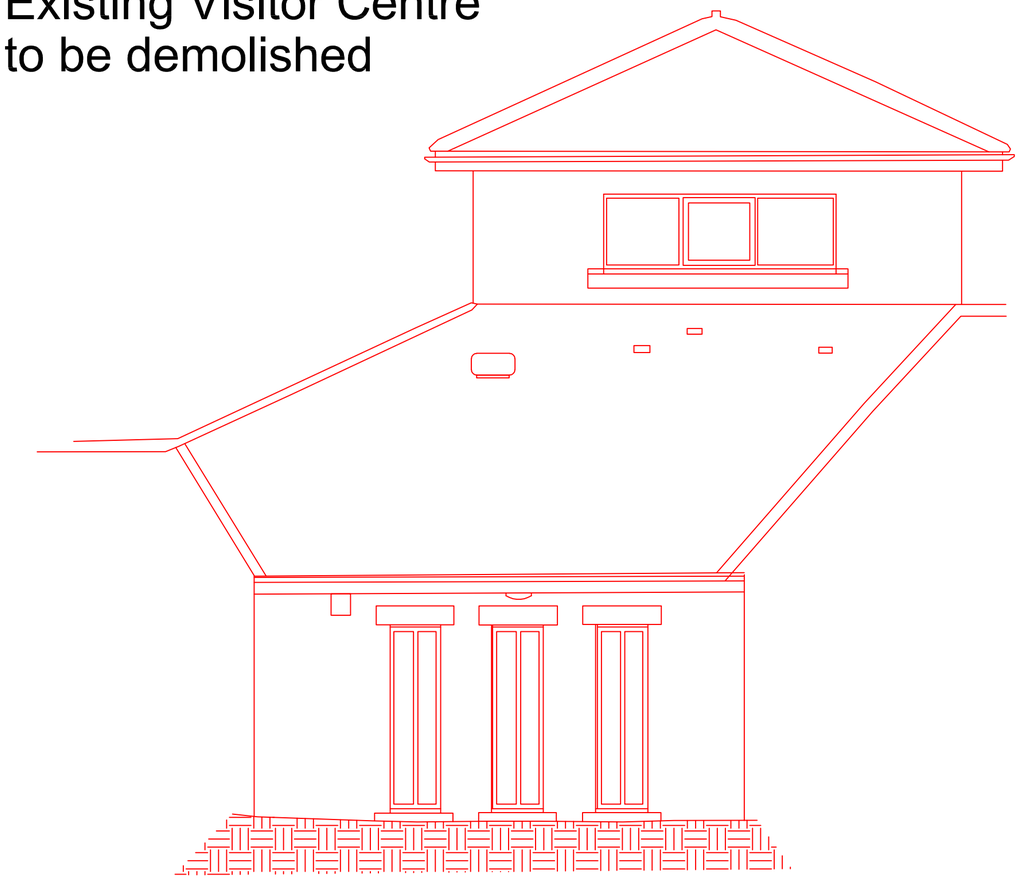
SCOTT Established 1870 — 150 1870 2020 YEARS

JOB TITLE
DEMOLITION
ELEVATION 6
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	*DATE SURVEYED*
A2 @ 1:50	03/2023
DRAWING NUMBER	*DRAWN BY*
6571-MBS	RR

CLIENT
Andrew Scott

NOTE:
Existing Visitor Centre
to be demolished



ELEVATION 7

DATUM
60.00M

0m 1 2 3 4 5 10m

SCALE BAR

SCOTT Established 1870

150 1870 2020 YEARS

JOB TITLE
DEMOLITION
ELEVATION 7
Gnoll Park – Visitor Centre

SHEET SIZE & SCALE	DATE SURVEYED
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DRAWING NUMBER	**DRAWN BY**
6571-MBS	RR

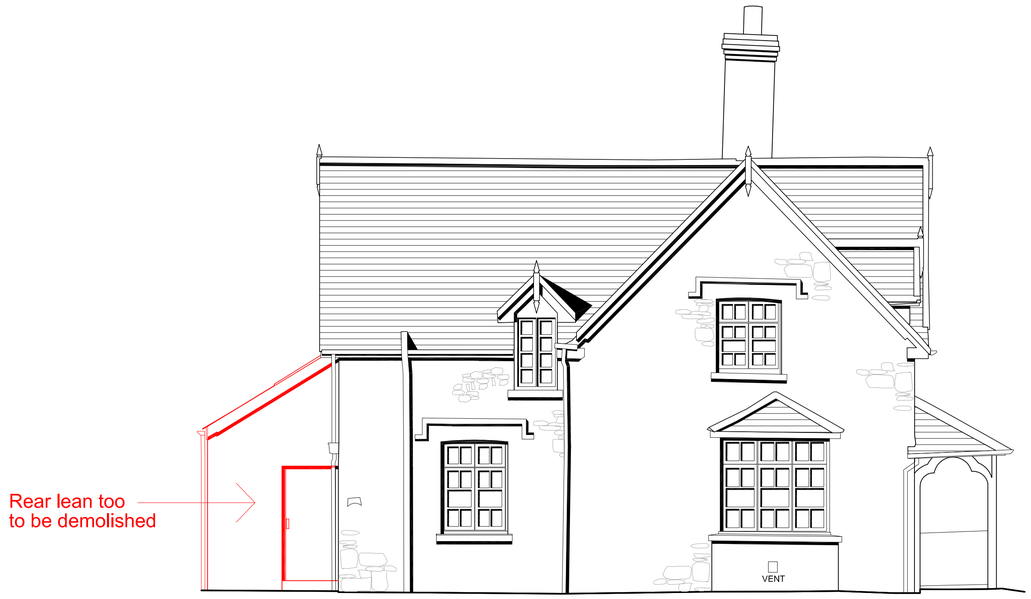
CLIENT
Andrew Scott

Demolition Plans

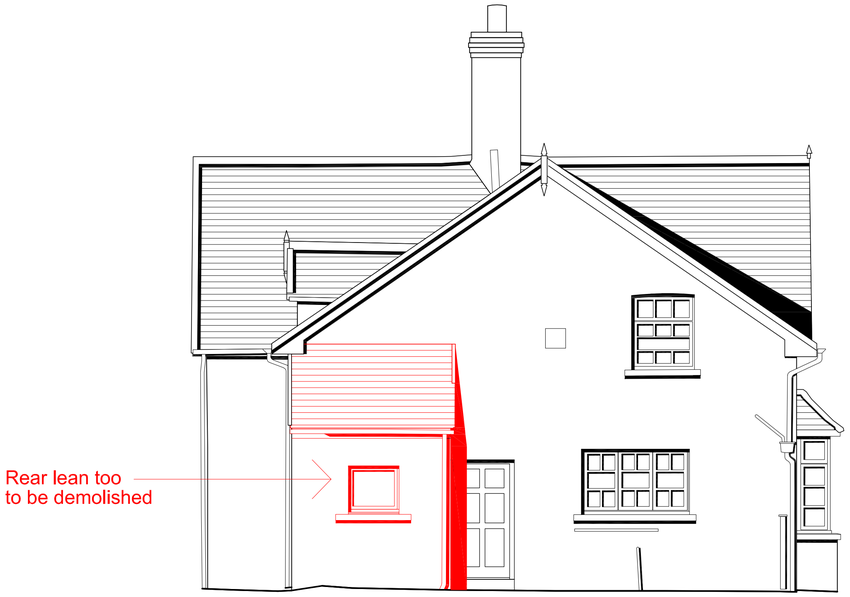
Pond Cottage



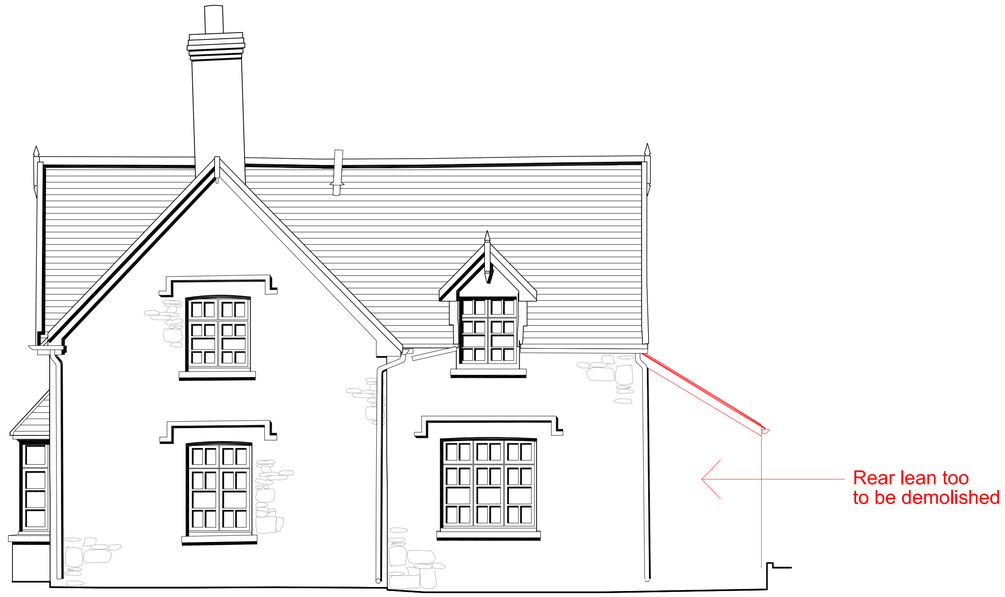
EX 03040.1 NORTH ELEVATION
SCALE 1:50 @ A1, 1:100 @ A3



EX 03040.2 EAST ELEVATION
SCALE 1:50 @ A1, 1:100 @ A3



EX 03040.3 SOUTH ELEVATION
SCALE 1:50 @ A1, 1:100 @ A3



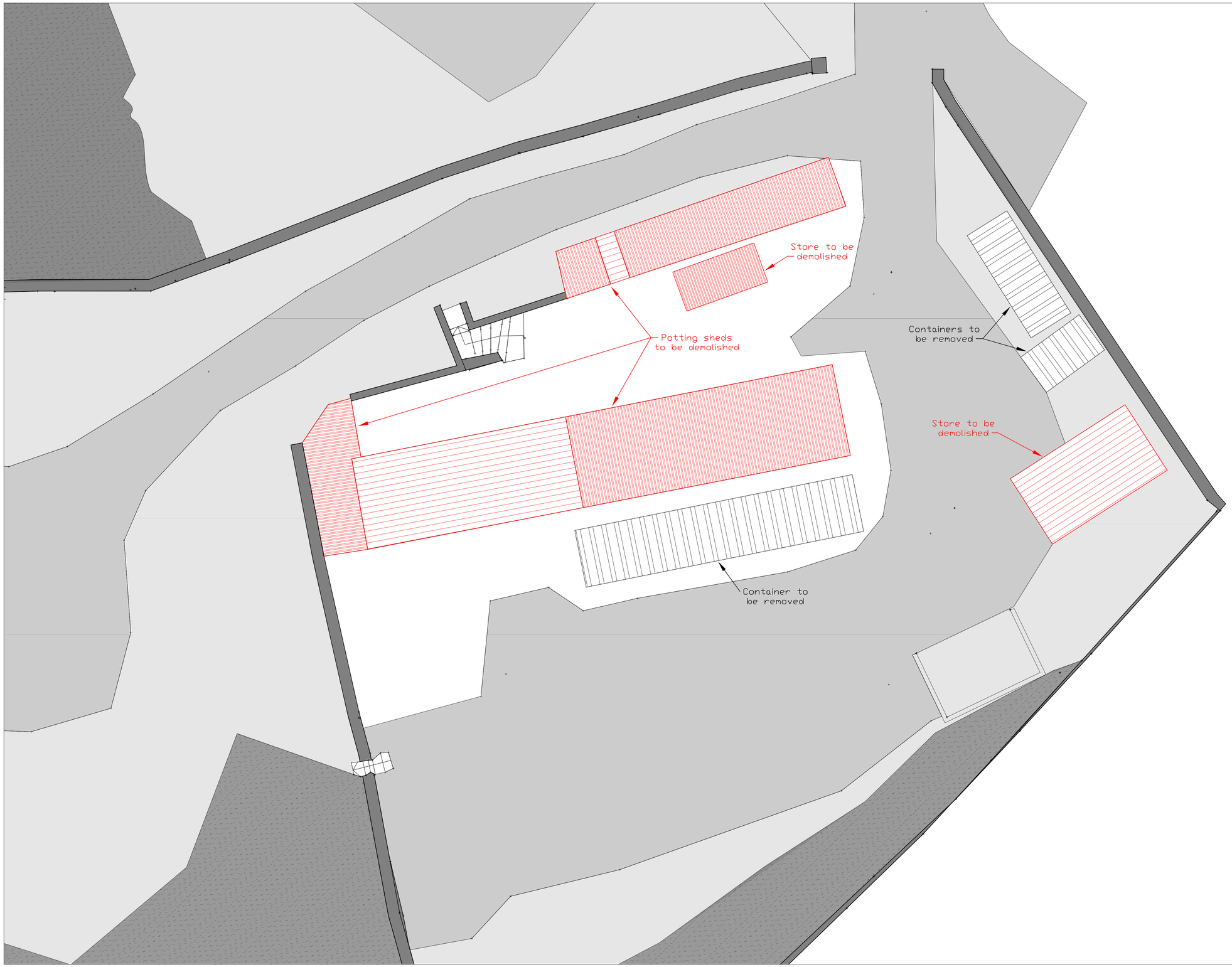
EX 03040.4 WEST ELEVATION
SCALE 1:50 @ A1, 1:100 @ A3

SCOTT Established 1870 — 150 1870 2020 YEARS

JOB TITLE	DEMOLITION Gnoll Park - Pond Cottage
SHEET SIZE & SCALE	A1 @ 1:200
DATE SURVEYED	03/2023
DRAWING NUMBER	6571-1-Sheet 1
DRAWN BY	PO/AS
CLIENT	Andrew Scott

Demolition Plans

Kitchen Gardens – Potting Sheds



Potting Sheds Demolition
Scale: 1 : 100

SCOTT
Established 1870

1870 2020 150 YEARS

JOB TITLE

DEMOLITION
Gnoll Park - Potting Sheds

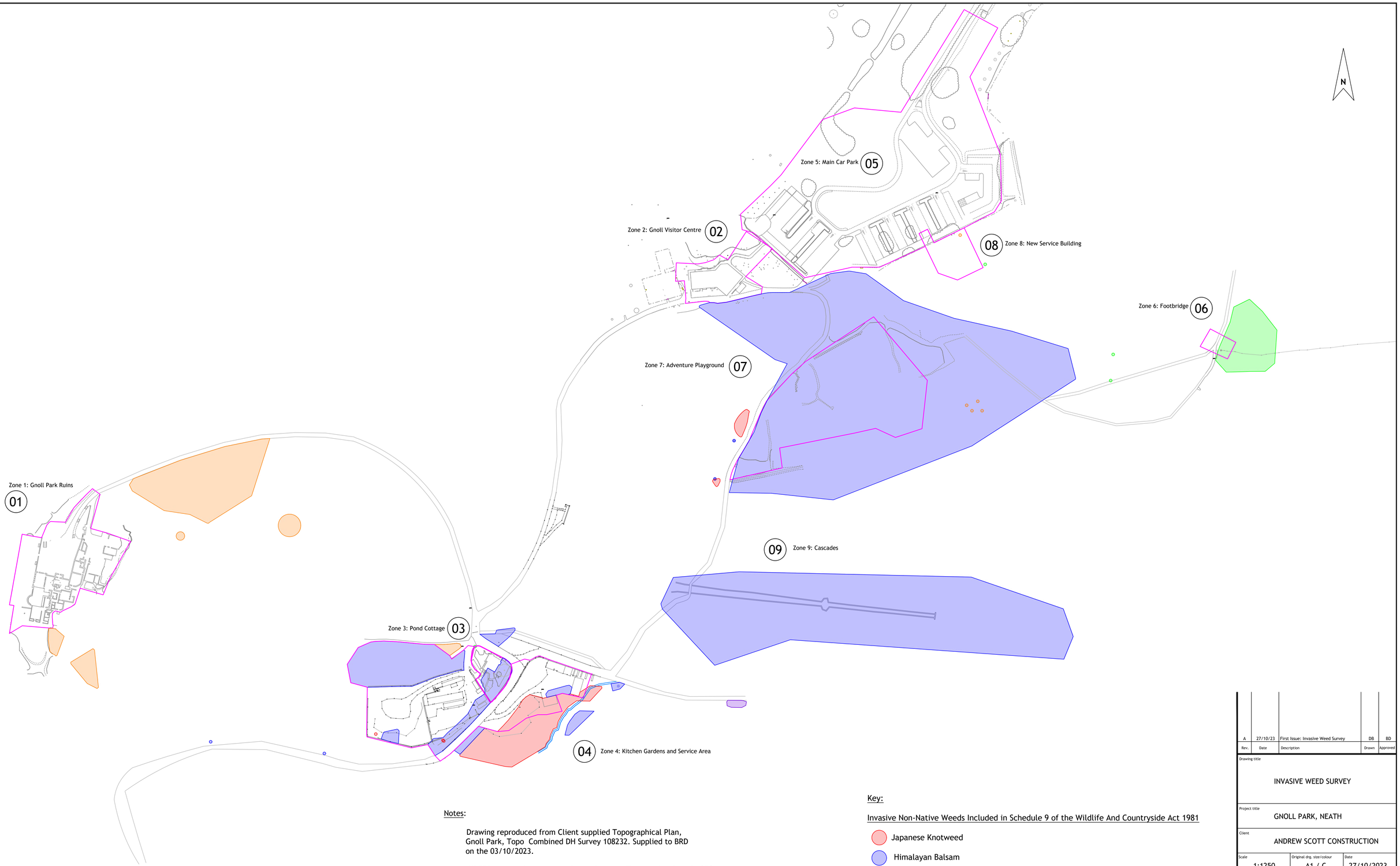
SHEET SIZE & SCALE	DATE SURVEYED
A1 @ 1:100	03/2023
DRAWING NUMBER	**DRAWN BY**
6751-1-Sheet 2	LR

CLIENT

Andrew Scott

Appendix G

Invasive Species Map



Notes:

Drawing reproduced from Client supplied Topographical Plan, Gnoll Park, Topo Combined DH Survey 108232. Supplied to BRD on the 03/10/2023.

All BRD surveyed points were located using a Topographical grade GPS.

All BRD boundaries are approximate only and subject to change.

BRD survey was limited to proposed construction works locations as defined by the Client and immediate surrounding areas.

Due to the amount of invasive weeds present only the visible extents were surveyed.

The extents of the invasive weeds surveyed are current at the time of the survey on 18th and 19th October 2023. Further spread of the invasive weeds is anticipated in future growing seasons.

Key:

Invasive Non-Native Weeds Included in Schedule 9 of the Wildlife And Countryside Act 1981

- Japanese Knotweed
- Himalayan Balsam
- Rhododendron Ponticum
- Giant Rhubarb

Invasive Non-Native Weeds:

- Bamboo
- Client provided works boundaries

Rev.	Date	Description	Drawn	Approved
A	27/10/23	First Issue: Invasive Weed Survey	DB	BD

Drawing title: INVASIVE WEED SURVEY

Project title: GNOLL PARK, NEATH

Client: ANDREW SCOTT CONSTRUCTION

Scale	Original drg. size/colour	Date
1:1250	A1 / C	27/10/2023

Drawn	Checked	Approved
DB	IH	BD

Drawing Number	Rev
BRD4335-OD1	A

BRD Environmental Ltd
01295 272244
info@brduk.com
www.brduk.com

Appendix H

Fencing, Hoarding and Water Management

Fencing, Hoarding and Water Management

Examples



Welfare

Proposed site welfare to be provided at two site compounds providing coverage to workers across the entire site.

Welfare foul water will be collected in holding tanks and emptied at regular intervals. Tanks will be double bunded and fitted with alarms to prevent overfilling.

SCOTT



Hoarding

Site hoarding will be solid timber with kentledge blocks (concrete Bocks) to prevent unnecessary excavations for fence posts. This approach will minimise damage to tree roots within all work areas.

Hoarding will be inspected on a daily basis.



Heras Fencing

Heras fencing will be erected to secure any work areas outside of the site compounds.

Fencing will be inspected on a daily basis.



Wheel Wash

Existing and temporary hard standing will be utilised to minimise debris transfer via vehicular movements.

This will be supplemented with dry wheel wash systems to ensure mud and debris are not transferred outside of the construction zone, whilst also minimising potential run-off.



Silt Fences

Silt fences will be installed at key interfaces to prevent the transfer of sediment via stormwater run-off.

The condition of all silt fences will be inspected daily.



De-Watering Treatment

Suitable de-watering treatment plant will be used to separate and capture sediment from the water before it can be discharged into existing drainage.

Fencing, Hoarding and Water Management

Hoarding & Fencing Inspection Checklist

SCOTT	Daily Fence & Hoarding Inspection	FM SITE 042 Rev 0 January 2015 Page 1 of 1

Project Number: …… Date of Inspection: ……/……/……

Area	Hoarding	Security Fence & Accessories	Silt Fence	Comments/Remedial Actions	Signature
Site Compound A (Visitor Centre)	Y	Y	Y		
Site Compound B (Pond Cottage & Kitchen Gardens)	Y	Y	Y		
Site Compound B Cont. (Lower Yard)	Y	Y	Y		
Gnoll Ruins		Y	Y		
Woodland Trust Bridge		Y	Y		
New Car Parking		Y	Y		
Facilities Building		Y	Y		