FORTH REPLACEMENT CROSSING – FIFE ITS

FRC/ITS/GC/GLCWM/01

Geology, Land Contamination and Waste Management Plan

Contents

Appendices:

Appendix D

D.1 - Guidance Notes for Completing the Quarterly SWMP Returns
D.2 - SWMP data sheet
D.3 - Expectations in relation to subcontractors waste removal
D.4 - Log of waste removed from site

Appendix E

E.1 - Identification of waste & proposals for reuse and recycling

Appendix F

F.1 - Duty of care waste transfer note

Appendix G

G.1 - (Waste poster) Use the Correct Skip
G.2 - (Waste poster) Follow the Waste Colour Coding System

Appendix H

H.1 -Typical Hazardous Waste Streams
H.2 - Hazardous waste minimisation plan

5.1 WASTE

5.1.1 Objective

To take reasonable precautions in carrying out the works to prevent, contain, or limit adverse environmental impacts and health and safety risks arising from the handling and disposal of waste, including contaminated materials. To maximise, where reasonable, reuse of site-won materials within the construction of the Project and recycling of surplus materials in order to reduce adverse environmental effects associated with disposal off-site.

5.1.2 Procedures for classification of all waste

The waste needs will be identified and described. This requires determination of the chemical and physical characteristics of the material, identifying any special problems associated with the waste, and ensuring that it is properly labeled and that a written description is prepared.

Soils will also be assessed in line with Environment Agency Technical Guidance WM2 to determine whether they are hazardous or non-hazardous.

5.1.3 Procedures for the recording of the types, quantities and locations of waste materials generated during construction

See Appendix D and SWMP.

Actual waste quantities within the SWMP are collected for review by the Environmental Manager on a Quarterly basis.

5.1.4 The measures to be implemented to reduce waste generation

Waste will arise on this project mainly from excavation, unavoidable construction waste and material surpluses. Our proposals for minimising these waste arisings are as follows:

<u>Waste Minimisation action 1</u>
Waste minimisation will be underpinned by education and awareness throughout all levels of the project team, from the project team to the site operatives who will handle the construction materials.

- Intended results - Reduction in waste generated.

<u>Waste Minimisation action 2</u>
The Purchasing Manager shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.

- Intended results - Increased resource efficiency.

Waste Minimisation action 3

A brain storming session has been held to identify further strategies for minimising waste on site.

- Intended results - Reduction in waste generated.

Waste Minimisation action 4

Graham will set off-cut and surplus targets and include sub-contractors in these targets. A positive incentive scheme will also be set up for on-site waste champions.

- Intended results - Reduction in waste generated.

Waste Minimisation action 5

All opportunites to utilise "supplier take-back schemes" will be explored and implemented where feasible, particularly for packaging and pallets.

- Intended results - Reduction in waste generated.

Waste Minimisation action 6

Graham will utilise our waste data collected in order to monitor and review our waste objectives and targets for the project. Where necesscary the procedures will be reviewed in order to steer the project towards meeting them.

- Intended results - Reduction in waste generated.

Note *- See also Appendix H2 regarding measures to minimise hazardous wastes.*

5.1.5 The measures to be implemented for recycling and/ or re-use of spoil material

See Appendix E and SWMP.

5.1.6 Measures to be adopted for management of waste on site

A "Waste Champion" namely, Paul Murphy has been appointed for the site. His remit will include ensuring that all skips are clearly labelled and inspected daily to ensure no contamination of segregated skips is occurring.

As part of our subcontractor pre-negotiation meetings we have advised our subcontractors that they must act in accordance with the Graham waste management procedures.

Waste management roles within the project

Site Operation Manager

- Implementing and managing the plan on site.
- Arranging for full details of all arisings, movements and treatment of waste discards to be recorded during the Works.
- Distinguish reusable materials from materials suitable for recycling.
- Ensure maximum segregation at the source and separate materials for recovery.

Environmental Manager

- Providing training.

- Provide advice and guidance to the Site Manager and ensure that best practice is transferred across the organisation.
- Conducting waste audits and monitor implementation of waste procedures on site.

Procurement Manager
- Ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.

5.1.7 The proposed storage, handling, treatment and disposal procedures for waste

Food Waste
Food waste is deposited at recycling points at site offices and canteens.
Recycling points for food waste will include:
- A mixed waste bin.
- A plastics bin.
- An aluminium cans bin.
- A paper/ cardboard bin.

These bins are appropriately labelled.

Food waste bins are regularly removed to external closed receptacles. An approved and licensed Waste Management Carrier is used to transport the food waste from the site to a licensed disposal facility.

Copies of all waste management licenses are obtained and held on site prior to any movement of food waste taking place. A waste transfer note is completed for all movements of food waste from site (appendix F1).

Construction Waste
A specific area has been laid out and labelled to facilitate the separation of materials for potential recycling, salvage, reuse and return. The segregation of wastes will be of the following types:

- Timber
- Metal
- Hazardous/ Special
- Mixed Waste (for all other wastes)

All skips utilised on site will:
- Prevent spillages or leakages.
- Be corrosive resistant (to the weather elements).
- Be covered to prevent rainwater accumulation and to prevent dust and litter being blown out.
- Be clearly labelled at all times whilst on site.
- Will prevent savaging from animals.
- Be regularly inspected and replaced when full.

Potentially, additional skips may be provided, depending on the types of waste being produced at a particular time in the work packages.
All skips are labelled as necessary.

Any waste streams which cannot be reused on site will be segregated on site into separate skips/ stockpiles. All opportunity for the reuse and recycling of the material off site will then be explored and the materials subsequently removed to the approved materials recycling facility or reuse destination.

Graham will handle, store and manage waste to contain and limit impacts and avoid nuisance arising from dust and odour.

5.1.8 The licensing arrangements for waste disposal

We will obtain any necessary waste management licenses or apply to SEPA for registration of any relevant exemption from waste licensing necessary during construction works.

Copies of all waste management licenses and exemptions are obtained and held on site prior to any movement of waste taking place. For all waste transfers, Graham will obtain a copy of the receipt, or a copy of the invoice, from the authorized disposal site as proof that the waste reached the proposed destination.

5.1.9 Details of the waste carriers and off-site disposal sites to be used, including the terms of their respective licences and details of waste to permitted to be transported and received

Only registered carriers of waste are employed for transport purposes. As site activities commence, the table below will be updated as appropriate, to include any new waste carriers.

Waste Management Contractor Name	Waste Management Contractor Address	Waste carrier license number; date of issue and expiry
John Graham (Dromore) Ltd	Ballygowan Road Hillsborough BT26 6HX	SCO 334/240 Date of issue: 03/04/2009 Date of expiry: 02/04/2012
WC Drainage Services Scotland Limited	Unit 1, 95 Cambuslang, Glasgow, G72 7UB	WCR/R/1092190 Date of Registration 17/03/2011 Date of Expiry of Registration 16/03/2014 Date of Last Amendment 16/03/2011 SEPA Registration No. SWE/019263
William Tracey Group	Burnbrae Road Linwood Ind' Estate Linwood Renfrewshire PA3 3BD	Date of Registration 03/04/2010 Date of Expiry of Registration 02/04/2013 Date of Last Amendment 03/04/2010 SEPA Registration No. SEA/074361
Loo King	Kirktonfiel Ind Estate Neilston Glasgow G78 3NY	Date of Registration 09/11/2008 Date of Expiry of Registration 09/11/11 Date of Last Amendment 09/11/2008 SEPA Registration No. SWE/019263

Waste Management Contractor Name	Waste Management Contractor Address	Waste carrier license number; date of issue and expiry
Ryan Plant	30 Overwood Drive Kings Park Glasgow G44 5SG	Date of Registration: 20/06/2010 Date of Expiry of Registration 19/06/2013 Date of Last Amendment: 20/06/2010 SEPA Registration No. SWE/019263

Only licensed or exempt off-site waste disposal sites will be utilised. As site activities commence, the table below will be updated as appropriate, to include any new disposal sites.

Name of waste disposal site	Disposal site address	Disposal site License or exemption number; date of issue and expiry	Details of waste permitted to be received
Former Tip, Castle Key, Rosyth, Fife	Former Tip, Castle Key, Rosyth, Fife	WML/XC/1031796	Waste soils and stones
William Tracey Limited	49 Burnbrae Road Linwood Industrial Estate Linwood Paisley Renfrewshire PA3 3BD	WML/5/96	Scrap vehicles/metals, General Waste,

5.1.10 Procedures, such as use of consignment notes, to enable an appropriate audit trail of waste disposal activities to be identified

All movements of waste are accompanied by waste transfer notes. Graham site staff shall ensure that the waste is described as accurately as possible and that the waste transfer note is signed by both the waste producer and the waste carrier. The waste carrier will hand over a copy of the note to a member of Graham site staff prior to leaving the site.

Graham retain all controlled waste transfer notes for a minimum of two years and hazardous/ special waste transfer notes for a minimum of three years. Waste transfer notes will initially be retained on site and upon project completion will be handed over to the Employer's Representative. See Appendix F.

5.1.11 Disposal of contaminated or hazardous materials

Storage of Hazardous Wastes

All Hazardous waste streams will be stored separately from other Hazardous wastes and will be stored separately from controlled waste in secure and labelled containers.

Typical Hazardous Waste Streams
Typical hazardous waste streams occurring on site are listed in Appendix H.

Moving and Transporting Hazardous Waste
Hazardous wastes must be:

- Transported by a registered or exempt waste carrier.
- Accompanied by a consignment note.
- Transferred to a facility that holds a suitable Waste Management Licence or pollution prevention and control (PPC) permit.

Consignment Notes
A consignment note should be completed every time hazardous waste is removed from the site. The consignment note will then accompany the hazardous waste whilst it is being moved or transferred. In line with our legal requirements copies of completed hazardous waste consignment notes should be kept for three years.

Consignment notes can be purchased/ obtained from the relevant statutory authority. The type of consignment note you need to complete depends on how and where the waste is transported. You can use single or multiple collection forms.

Pre-notification
SEPA will be notified at least three clear working days and not more than one month before any hazardous waste leaves your site. You do this by filling in the pre-notification form within the consignment note.

Minimisation of hazardous waste
See "Hazardous waste minimisation plan" in Appendix H

5.1.12 Consents/ Licences necessary for the deposition or disposal of surplus material within the Firth of Forth including sediments excavated from the bed of the Firth of Forth

FEPA licence is not relevant to the Fife ITS Scheme and will not be required.

5.2 GEOLOGY, SOILS AND LAND AFFECTED BY CONTAMINATION

5.2.1 Objective

To take reasonable precautions in carrying out the works to prevent, contain, or limit adverse environmental impacts and health and safety risks arising from construction on or adjacent to land affected by contamination or disturbance of contaminated soils during construction activities, including limiting adverse impacts on designated geological features.

5.2.2 Mitigation of potential impacts on or due to works in geology and soils

Ferry Hills Site of Special Scientific Interest (SSSI)
We have consulted with SNH in respect of our procedures and processes for any works which may affect the geological interest Ferry Hills SSSI.

Works to be undertaken over abandoned mine workings

We have consulted with the Coal Authority and SEPA, as appropriate, in relation to undertaking works over abandoned mine workings. We have also carried out a risk assessment of the potential impact of drilling and grouting to consolidate abandoned mine workings on groundwater and ground gas migration and ground movements and have identified appropriate measures, where required, to mitigate potential environmental impacts and health and safety risks.

Ground gases

There is a risk to workers in excavations where the presence of ground gas may lead to confined space risks, or due to works associated with mine workings where risks associated with ground gas may be present was assessed via monitoring for levels of carbon monoxide, methane and hydrogen sulphide. No significant levels of these gases were identified as part of the monitoring regime implemented.

Water environment

An on-going water monitoring programme has been implemented on site in order to identify elevated contaminant levels should they arise as part of our works. Likewise the assessment of soils to be reused has been carried out in order to identify any potential risks posed to the water environment from reused soils to be used in embankments. To date none of the soil samples tested have shown elevated contaminant levels.

5.2.3 Construction on or adjacent to land affected by contamination

- Information relating to historical site research has been subject to detailed assessment.
- If required, site investigations will be carried out to determine the extent and type of contaminants present.
- Watching briefs will be carried out, where required to identify areas within the Project where land contamination may be encountered.
- Potential sources of contamination, pathways connecting contamination sources and receptors capable of being harmed will be identified, and assessment of the risk of harm to receptors undertaken.
- Existing pathways through services (e.g. land drains) affected during construction will be sealed.
- Drainage trenches will be lined as part of the permanent works design to prevent the ingress of contaminated groundwater or lateral migration through granular backfill.
- We will consult with the relevant local authorities and SEPA regarding control or protection measures to be implemented to deal with identified risks, including appropriate techniques for excavating contaminated material and the control of contaminants and discharges in their insitu or mobilised form, for solids, liquids, gas and leachate; and appropriate health and safety and precautionary measures.
- Any remedial action undertaken in relation to land affected by contamination will be carried out under the appropriate remediation licensing.
- If piling works are undertaken in areas of land affected by contamination, we will adhere to appropriate guidance including the Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention, National Groundwater and Contaminated Land Centre Report NC/99/77.

5.2.4 Discovery of contaminated land emergency procedure

All site personnel must be vigilant during excavating for signs of unexpected contamination. Where contamination is suspected during the works the following action must be taken;

- All work must be stopped immediately.
- The Site Manager must notify the discovery to the SHEQ department
- The area must be sealed off in order to contain the spread of contaminants.
- The site must be cleared to ensure there is nothing that could cause fire or explosion.
- The Site Manager should seek expert advice to identify, if appropriate and possible, the extent and cause of contamination (e.g. prior land use, spillage on site).
- If asbestos is uncovered it should be re-covered temporarily to prevent release to atmosphere.
- A specialist contaminated land survey should be undertaken in order to determine the level of contamination and whether disposal or remediation methods are required.
- The Site Manager must complete an Environmental Incident Report form.
- Good practice must be followed to remediate the land.

5.3 CONSULTATION WITH SEPA AND THE LOCAL AUTHORITY REGARDING THE GEOLOGY, LAND CONTAMINATION AND WASTE MANAGEMENT PLAN

Consultation with SEPA and the Local Authority took place prior to the site compound setup.

Appendices:

Appendix D

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D.4 - Log of waste removed from site

Appendix E

E.1 - Identification of waste & proposals for reuse and recycling

Appendix F

F.1 - Duty of care waste transfer note

Appendix G

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G.2 - (Waste poster) Follow the Waste Colour Coding System

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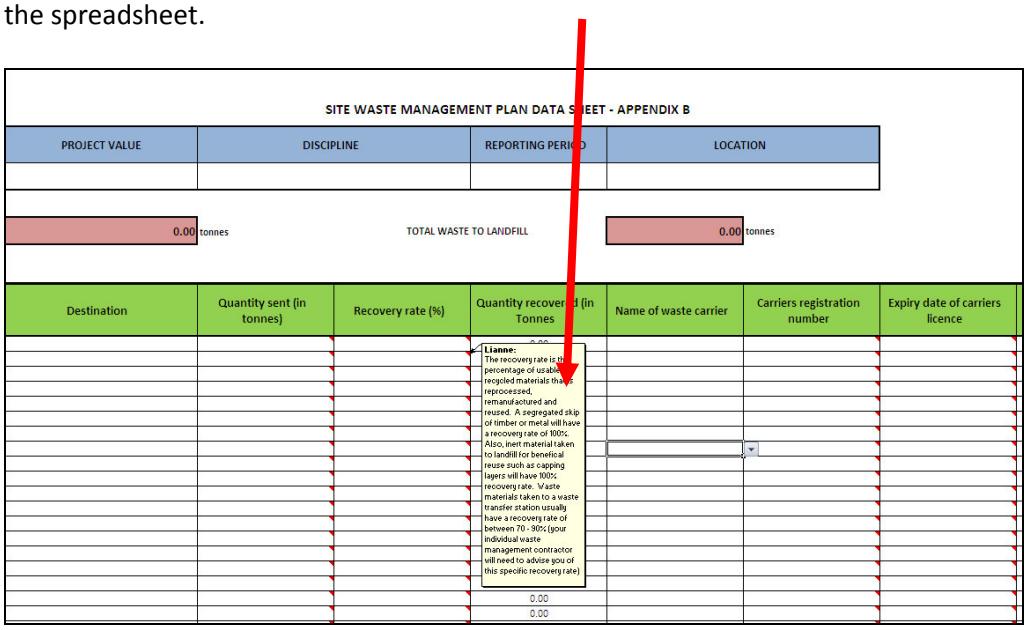
Appendix D.1 Guidance Notes for Completing the Quarterly SWMP Returns

Detailed guidance notes on how to complete the SWMP data sheet are available within comment boxes of the spreadsheet.

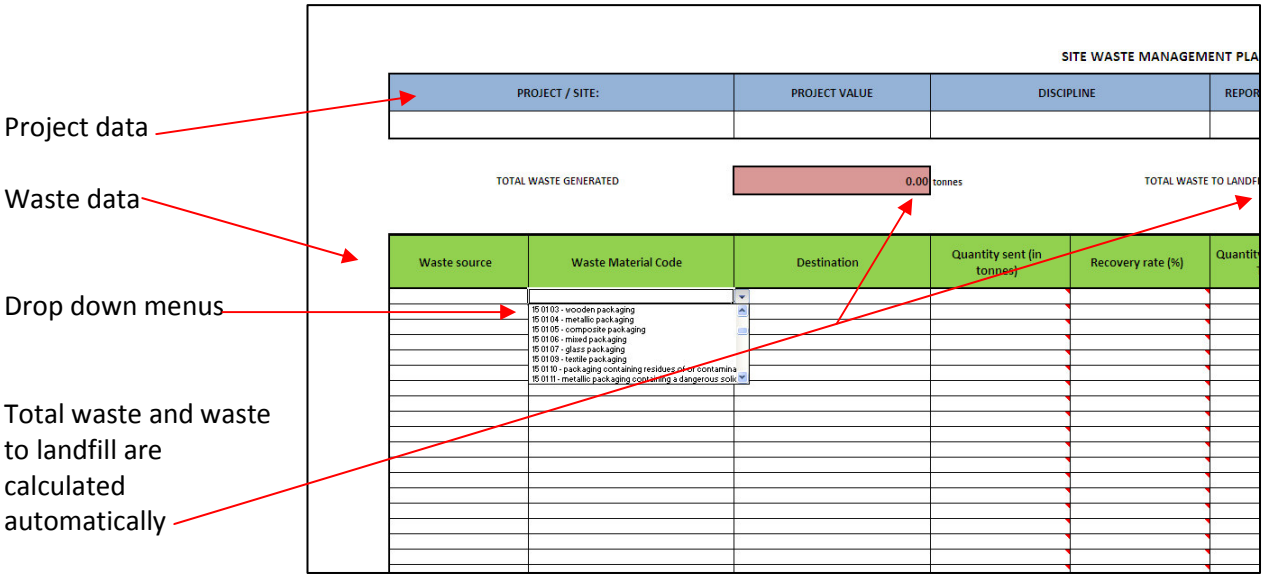


Summary

- Use the excel spreadsheet (SWMP data sheet) to record waste arisings. This is sent out (for return) each quarter by the SHEQ department and is also available on livelink by following the link below:

http://gks.graham.co.uk/Livelink/livelink.exe?func=ll&objaction=overview&objid=2731307

- Use the drop down menus (where available) to input project data (headings in blue) and waste data (headings in green). The red boxes will then automatically calculate the total waste and waste to landfill.



- Record ALL construction, demolition and excavation wastes – including that generated by subcontractors (where this is part of the main contact of works).
- Record wastes in Tonnes only. Volumes of waste should be converted using standardised conversion factors.
- For skip wastes – find out from your waste management contractor, the total tonnage of waste generated and the percentage that has been recycled and record this within the spreadsheet.
- Record ALL reuse of wastes on site e.g. reuse of topsoil in landscaping.

New Guidance

- New guidance from the Department of Communities and Local Government identified that List of Waste **17 05 04 (soil and stones not containing dangerous substances)** is non-exempt and when sent to landfill should be allocated a 50% recovery rate. All sites should therefore ensure that where excavation waste classified under European Waste Code 17 05 04 is taken to landfill, that it is allocated a 50% recovery rate.

  Where EWC 17 05 04 is "beneficially reused" e.g. used as capping as part of a landfill closure or restoration or sent to an "exempt" site, it should be allocated a 100% recovery rate.

For further information please contact a member of the SHEQ department.

Appendix D.2 - SITE WASTE MANAGEMENT PLAN DATA SHEET

PROJECT / SITE:	PROJECT VALUE	DISCIPLINE	REPORTING PERIOD	LOCATION

TOTAL WASTE GENERATED		Tonnes	TOTAL WASTE TO LANDFILL		Tonnes

Waste source	Waste Material Code	Destination	Quantity sent (in tonnes)	Recovery rate (%)	Quantity recovered (in tonnes)	Name of waste carrier	Carriers registration number	Expiry date of carriers licence	Licence/ exemption number for receiving site	Have checks been carried out to check receiving site

Appendix D.3 Expectations in Relation to Subcontractors Waste Removal

Only authorised vehicles will be used to remove waste from the project for prompt transport to an appropriately licensed facility. All relevant waste, environmental, and safety legislation must be adhered to. A full copy of a Waste Carriers Licence and a Waste Management Licence or Exemption must be submitted to the Site/ Project Manager for *each* waste type BEFORE it is removed from site.

1. WASTE REMOVAL COMPANY DETAILS			
Company Trading Name(s):			
Postal Address			
Sales Contact:		**Mobile No.**	

2. WASTE REMOVAL & DESTINATION DETAILS

List each type of waste for removal, e.g. Rubble, Inert Soil, Non Hazardous Soil, Steel, Timber, Plastic, Cardboard, Plasterboard, Mixed Construction & Demolition, Mixed Canteen, Canteen Dry-Recyclables, Print Cartridges, Office Paper, Asbestos, Oily Rags, Oily Sand, Absorbent, Aerosol Cans, Mastic Tubes, Paint, Batteries, Oily Liquid, Sewage. Enter **ALL** waste collection companies and **ALL** destination facilities as appropriate for EACH waste.

Waste Types To Be Collected From Site	**Full Name of Waste Collection Company**	**Waste Carriers Licence Number**	**Full copy submitted**	**Company Name of Facility to Where Waste is First Offloaded**	**Full copy of licence submitted**	**Address of Facility to Where Waste is First Offloaded**	**Waste Route (tick 1 only)**	
			X		**X**			**X**
							Reuse	
							Recycle	
							Recovery	
							Landfill	
							Reuse	
							Recycle	
							Recovery	
							Landfill	
							Reuse	
							Recycle	
							Recovery	
							Landfill	
							Reuse	
							Recycle	
							Recovery	
							Landfill	
							Reuse	
							Recycle	
							Recovery	
							Landfill	

The Site Manager must be notified in advance of any changes to the initial offloading destination of waste.

I have read and understood this document and confirm that _________________________ *(waste company name)* will fulfil the expectations as outlined therein.

Name(BLOCK CAPS): ____________________	**Signed:** _________________________	**Date:** _____________

Appendix D.4 – Log of waste removed from site

It is mandatory to record the identity of the person removing the waste (i.e. waste management contractor), types of waste removed and where the waste is being taken to and if it has a waste management license or exemption and the waste carrier registration number.

Please use the table to log relevant details:

Date waste removed	Type of waste	Who removed the waste	Site the waste has gone to	Does the site have a license or an exemption?	Waste Carrier License Number	Evidence e.g. waste transfer note location/reference

Appendix E.1 - Identification of waste & proposals for reuse and recycling

The table below illustrates the types of C & D wastes/ material surpluses that we anticipate will arise throughout the project.

Waste type	EWC code	Source	Qty (T)	Proposed Route for Reusing/ Recycling
Soil and stones	170504	Generated as a result of bulk excavation/ earthworks/ drainage works	4000t	Reused on site as selected backfill and for re-grading during landscape activities. Where this is not possible the materials will be removed off site for infilling in accordance with relevant waste management licences and exemptions
Concrete	070101	Material Surpluses and washout	20m^3	Concrete washout area will be constructed and concrete broken up and reused on site as hardcore and fill.
Stone sub-bases, subsoil rock etc	170904	Generated as a result of excavation		Reuse on site as Hardcore and fill.
Bricks/ blocks	070102	Material Surpluses and off-cuts	N/A	Reused on site as fill or segregated for recycling off site
Mixed metals e.g., bar and mesh reinforcement/ structural steel/ partition material studs	070407	Material Surpluses and off-cuts	5t	Separated and recovered off site by scrap merchant
Wood	170202	Off cuts and material surpluses including formwork plywood & bracing	2t	Removal to recycling facility where it will be shredded into plant mulch
Plastics	170203	Surplus pipework, polythene, etc	1t	Removed off-site by Waste Management Contractor for separation and recovery
Packaging	150106	Building products	1t	Returned to supplier where possible
Hazardous Materials	Various	Used engine oil, batteries, fluorescent tubes, chemicals, and chemical containers, batteries (lead acid, Ni-Cd and mercury), some printer toner cartridges and waste	0.1t	Remove off-site for appropriate disposal at a properly authorised facility

		paint and thinners including empty tins		
General Waste	200301	From site canteens	50t	Removed off-site by Waste Management Contractor for separation and recovery
Aluminum cans	200140	From site canteens	50kg	Removed off-site by Waste Management Contractor for separation and recovery
Paper waste	200101	As a result of office administration	500kg	Removed off-site by paper recycling company for reprocessing off site

Appendix F.1 DUTY OF CARE; WASTE TRANSFER NOTE

Section A – Description of Waste

1. Type of Waste (*delete as appropriate*) (CONTROLLED) OR (SPECIAL / HAZARDOUS)
   Note in the case of Hazardous/Special waste a receipt of acceptance must be obtained from the recipient at the destination.
2. Please describe the waste being transferred;
3. Give the six digit European Waste Catalogue Reference Number [ ] [ ] [ ] eg. 17 01 01
4. How is the waste contained?

Loose Sacks Skip Drum Other Please describe

5. What is the quantity of the waste? (Number, weight, volume, etc.)

Section B – Current holder of the waste (Transferor)

1. Name GRAHAM Construction/ GRAHAM Projects (*delete as appropriate*)
2. Address

3. Which of the following are you? (Please tick one or more boxes)

Producer of the Waste
Importer of the Waste
Registered Waste Carrier

4. Please state how has the waste been treated

Delete as appropriate (Segregation/ separate collection/ screening/ hand picking/ thermal)

5. What percentage of the total waste has been sent for recycling?
6. If treatment has not been carried out please state why this is not considered necessary. (E.g. The waste is inert waste which cannot be treated because it is not technically feasible to do so)

Section C – Person collecting the waste (Transferee)

1. Full Name (BLOCK CAPITALS)
2. Name and Address of Company;
3. Which of the following are you? (Please tick one or more boxes)

Authorised for transport purposes -> Specify which of those purposes:
Waste Collection authority Holder of waste disposal or waste management license
-> Licence Number;
-> Issued by;
Waste disposal authority Exempt from the requirement to have a waste management licence
-> Give reason:
Registered waste carrier -> Registration number:
Exempt from requirement to register -> Give reason;

Section D

1. Address of place of transfer/collection point (SITE);
2. Date of transfer

(**For multiple consignments/"Season Tickets" give "between" dates**)

3. Time(s) of transfer;
4. Destination of Waste, give address (BLOCK CAPITALS)

5. Name and address of broker who arranged this waste transfer (if applicable)

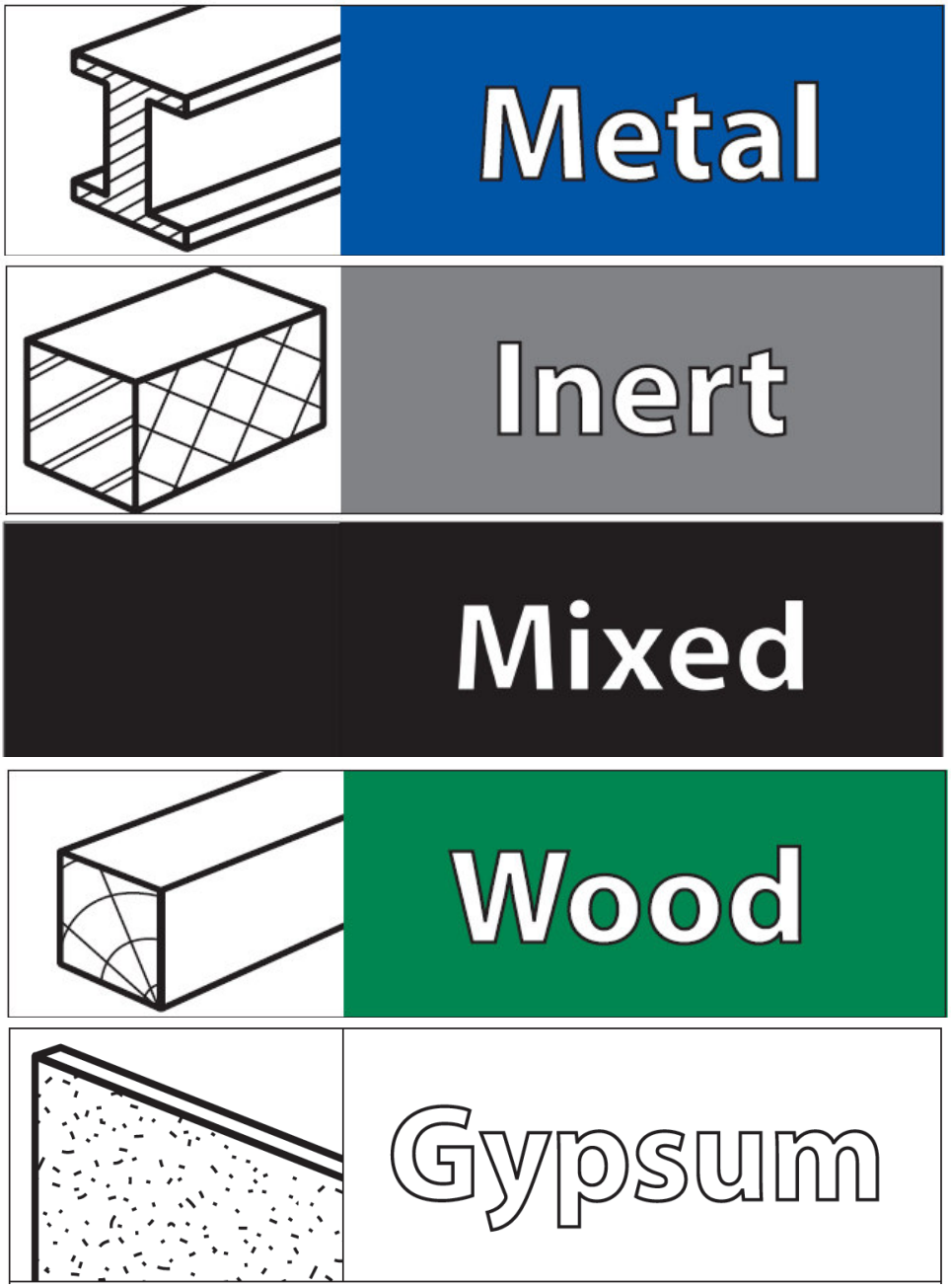
6. Signed for Transferor; Signed for Transferee
   Full Name Full Name
   (BLOCK CAPITALS) (BLOCK CAPITALS)
   Representing Representing

REMEMBER
SEGREGATE WASTE

Use the correct skip

REMEMBER
SEGREGATE WASTE

Follow the colour coding system to identify the correct skip



Appendix H.1 - Typical Hazardous Waste Streams

Typical hazardous waste streams occurring on site will include:

Activities	Hazardous Inputs	Hazardous Outputs
Site clearance and demolition	N/A	Asbestos, treated wood, electrical and electronic items containing hazardous components (including cables and switches); refrigerants and foams; drums of hazardous materials, potentially fly-tipped hazardous materials
Excavation	N/A	Potentially contaminated soils, asphalt containing tar products from paving and driveways
General construction works (including cementing, grouting etc.)	Grout, cement, resins, hardeners, various COSHH materials	Spent resins and hardeners, concrete and grout wash-out, un-set cement/grout, contaminated shuttering, spent COSHH materials and contaminated packaging
Building installation (e.g. electrical wiring and fittings, insulation, plumbing)	Fluorescent tubes/bulbs, electrical and electronic equipment and cabling	Spent fluorescent tubes and bulbs, off-cuts of electrical wiring etc.
Floor and wall covering (including plastering)	Adhesives, solvents, coatings, polishes, varnishes, resins, treated wood, plasterboard	Spent coatings and adhesives, empty containers containing residue, contaminated packaging, spent solvents, asbestos, plasterboard off-cuts, plaster washout
Painting (including paint preparation)	Solvent-based paints, paint thinners, enamels, lacquers, epoxies, primers, acrylics, brush cleaners	Spent solvent-based paints, empty solvent-based paint tins containing residue, spent solvent cleaners
Asphalting (roofing, paving)	Asphalt	Unused asphalt containing tar products, contaminated containers and equipment
General maintenance and power generation	Oils, greases, degreasers, batteries	Oily rags, oil filters etc. from maintenance of plant and machinery; waste oil; spent batteries; greases and lubricants; spent COSHH materials; oil contaminated absorbent spill material; contaminated PPE; oil contaminated water from bunds etc.

Appendix H.2 - Hazardous Waste Minimisation Plan

Eliminating the use of hazardous materials will eliminate the generation of hazardous waste from these products. Therefore it is important that designers and architects are involved in any plan to reduce hazardous waste as they may specify materials which we (as a contractor) are bound by. However Graham also have an element of choice in the products we purchase, and we also have further opportunities to reduce the amount of hazardous waste produced through better handling, segregation and identification of re-use and recycling options.

The following table is a list of potential opportunities that may be applied to the construction project in order to reduce the generation

Hazardous waste management/ minimisation measures

	Material	***Measure***	***Indicative Cost***	***Anticipated Benefits***
1.	Solvents	Purchase only low-VOC paints, solvents and adhesives	Low	Reduced VOC emissions to atmospheres, less residual solvent in containers, easier disposal
2.	Various	Brief all site workers on likely hazardous wastes. Identify and clearly mark recovery & disposal storage arrangements	Low	Less cross-contamination, increased hazardous waste segregation, raised levels of awareness, reduced disposal costs
3.	Paints & Solvent	Increase level of accountability for hazardous materials – single point of issue, with nominated person responsible	Low	Less hazardous raw materials used, greater accountability and control/understanding of material usage (benchmarking).
4.	Packaging	Clean and sort packaging to reduce hazardous component prior to disposal	Low - Medium	Reduced volume of packaging being consigned as hazardous (disposal costs reduced)
5.	Treated wood	Reduce disposal of treated waste wood to landfill – minimise off-cuts and increase re-use where applicable.	Low - Medium	Increased level of beneficial wood re-use (or energy recovery), reduced landfill, potential future revenue source
6.	Oils, fuels & lubricants	Ensure all materials are stored in bunded areas and allocate central accountancy for oil wastes	Low - Medium	Reduce the frequency of spills to ground, increase collection of waste oils/rags.