CONSTRUCTION METHOD STATEMENT		
Contract/Project name: Herbert Road, Newport	Date of F10 notification:	**Date of assessment:** TBC
Client: Green Hill	Time allowed for planning/preparation: TBC	**Carried out by:** GC
CDM Co-ordinator: Andrew Edwards	Maximum numbers on site any one time: TBC	**Issue:** 1
Designer(s): Green Hill Construction Ltd	Planned site start: april 2014	**Revision: - A**
Principal contractor: Green Hill Construction Ltd	Planned duration Wk's: 12 months	**Rev Date:**

INTRODUCTION

PROJECT DETAILS:

The project comprises the filling of the herbert Road site to an AOD of 9.8m mimum in accordance with Outline Planning Consent No.00/0768. Materials are to be imported into site mainly from the anjacent Herbert Road Depot site. All construction trafffic is to use Herbert road to access the site.

Materails are to be placed in a controlled manner under the supervision of a consulting Geotechnical Engineer. All imported materail is to be tested in accordance with the site remediation strategy – Extant Consent February 2014 Ref 12032/RS-V3

The works will include the diversion of an existing HV cable.

NEW BUILD WORKS

The construction of 169 flats and houses and all associated infrastruture in accordance with approved drawning 5369 TP-01 A.

	ADJACENT PROPERTY, CURRENT/PREVIOUS USE:
	
	The site is situated on eastern bank of the River Usk. The site is currently derelict former industrial land. Last recorded use was as a compound for Vinci Construction during the construction of the adjacent school and prior to that as a cloths factory. Adjoining land uses and accesses include:
	
	1. River Usk
	  a. SSSI
	  b. SAC
	  c. SINC
	2. Reen
	  a. Direct communication with River Usk
	3. Network Rail
	  a. Live lines
	4. Primary school
	  a. Access to school
	  b. Emergency access route
	5. Industrial land
	  a. Currently unoccupied
	6. Public Open Space
	7. Rights of access to be maintained
	  a. NRW access to river bank
	  b. Public right of way
	  c. Emergency access to school
	  d. Access to Sea Cadets

SITE PLAN	In Appendix A is a site plan which indicates the area of land to be filled along with the traffic management routes and management plan. Also included is a Construction Phasing Plan showing the proposed build out of the project and the

	timescales for the works. It is anticipated it will take four years to build out the entire scheme. This will be done in three main phases.		
EARTH WORKS STRATEGY	The following earthworks operations will be undertaken on site: • Importation and stockpiling of fill material • Placement of fill material to areas indicated on site plan (see appendix A) • Installation of vertical band drainage • Monitoring of fill settlement • Monitoring of ground water Above works will be supervised by a consulting Geotechnical Engineer		
SOIL VALIDATION WORKS	Prior to fill material being imported on to the site it will be tested in accordance with the requirements detailed in the Remediation Strategy Extant Consent February 2014 Ref 12032/RS-V3. Fill material will be tested off site before being imported.		
FILLING OPERATION	The purpose of this plan is to define the type of plant required for the works and the likely form of transport to site.		
	EQUIPMENT		
	Type	Number (approx)	Transport to site
	Vertical Drain Platform Rig 360 14 Tonne Excavator Volvo articulated dump truck D6 Dozer Bomag Roller Ridged Tipper Truck Dust Suppression bowser Wheel wash Road sweeper (as required)	1 3 2 1 1 3 1 1 1	Low Loader Transport Low Loader Transport Low Loader Transport Low loader Transport Low loader Transport NA Low loader Transport NA NA
	MANPOWER		
	Role	Number (approx)	
	Consulting Geotechnical Engineer	1	

	Supervising Engineer Foreman Operator Driver Skilled Workers Surveyor Safety Officer	1 1 5 6 5 1 1	
NEW BUILD WORKS PHASE I	The purpose of this plan is to define the type of plant required for the works and the likely form of transport to site.		
	EQUIPMENT		
	Type	Number (approx)	Transport to Site
	Piling Rig 360 Excavator Dumper Truck Teleporter Silos Mobile Crane Bomag asphalt paver Bomag asphelt roller Dust Suppression bowser Wheel wash Road sweeper (as required) Ridged Tipper Truck Materials Deliveries -Ridged bed trucks -Articulated trucks	1 2 2 2 2 1 1 1 1 1 1 3 To be determined (min 1 per day)	Low Loader Transport Low Loader Transport Low Loader Transport Low Loader Transport Transporter NA Low Loader Transport Low Loader Transport Low Loader Transport NA NA NA NA
NEW BUILD WORKS PHASE II	As above	As above	As above
NEW BUILD	As above	As above	As above

WORKS PHASE III			
	PPE		
	Safety Helmet (EN 39730 Type 1, Class B) Hi-Vis vest (EN471:2003) Safety Boots Dust Mask (EN149:2009) Ear Defenders Safety Glasses Safety Cloves		
	SAFETY, HEALTH & ENVIRONMENTAL		
	All staff involved with the operations shall be inducted on the safety, health and environmental issues associated with the site and specific operations by Green Hill Construction Site Management. Only trained personnel with relevant CPCS training and certification shall be allowed to operate plant/machinery Appropriate Safety Signboards, barriers and lighting shall be provided as required by Green Hill Construction. All operations must be carried out in accordance with the safety requirements Site induction and Toolbox talks will be held for all site visitors, staff and subcontractors on the site. Toolbox Talks will be appropriate to the activities staff is engaged in. Environmental Protection toolbox talks will be given to all staff and subcontractors in respect of specific measures to protect the site environment and ecology and prevent pollution of water courses. (see Risk Assessment)		
	METHODOLOGY		
	Phase I 1) Setting Out Prior to any commencement of physical works a suitable qualified engineer shall be appointed to carry out demarcation works and establish bench marks on site. Upon obtaining all necessary obtaining all necessary survey data a joint survey to check existing ground levels		

	including those to surrounding infrastructure (e.g. Network Rail) shall be carried out with consulting engineers. Dilapidation surveys/CCTV Surveys will be undertaken of the following where possible with the agreement and accompaniment of the appropriate authorities: • Network Rail • Welsh Water • Reen • River bank • Jetties • Herbert Road • Access roads identified in the traffic management plan • Foot paths • Underpass • School and school boundaries • Adjacent buildings • Other infrastructure 2) Preparation of the site Site security fencing will be established as per the fencing method statement. This will be followed by: Removal of fly tipped rubbish if appropriate Removal of vegetation, topsoil and site strip General clearing and grubbing up of work areas Installation of concrete manhole rings will be installed to protect ground water monitoring wells and to enable the installation of: Extensometers to monitor actual settlement Piezometers to monitor build up and dissipation of pore water pressure Installation of site haul roads Installation of wheel washing facilities (see appendix A) 3) Imported Fill All imported fill material shall be stockpiled on site in a designated area ready for placement in the fill operation.

	4) Fill The surface of fill areas are to be graded, compacted and benched if required. All earthworks material placed on or below formation level shall be placed, graded, benched and compacted as soon as practically possible. Material is to be placed in layers to the Geotechnical Engineers specification or site instruction. Earthworks shall be placed so as to produce a uniform distribution and gradation of the fill Large rocks etc will not be permitted to be placed in the fill. These are to be crushed on site to a suitable grade as specified by the consulting geotechnical engineer or removed form site Material which has been compacted to a dry density less than required or at a moisture content outside the specified range shall be removed or be reworked and re-compacted. Holes formed for sampling purposes shall be filled, consolidated and compacted in homogeneity with surrounding fill. 5) Vehicle Control All vehicles shall adhere strictly to the site traffic management plan. Pedestrian and vehicle crossing points are to be avoided where possible. All tracked plant is to remain on site at all times and will be delivered and removed by transports. All wheeled vehicles leaving the site shall pass though the wheel wash facility show in appendix A. Where required road brushing will be undertaken on Herbert Road 6) Demobilization Upon completion of the works any excess surcharge material will be removed from site. All plant will be loaded on to transports for removal from site and washed down if required. 7) New Build Works Upon the sign off of a Phase by the geotechnical engineer new build works will commence. Procedures for traffic management, vehicle control, environmental controls and dust suppression will remain in place as per the Fill Works.
	DUST SUPPRESSION, EMISSIONS & WHEEL WASHING
	Important Considerations Dust, emissions and odours arising from a site are very likely to cause annoyance to neighbours and can cause air pollution.

It is proposed to import a significant amount of fill material onto the site. Dust suppression will therefore be an important consideration on the site during dry weather.

The site Investigation Report has also identified contaminates on the site which could be inhaled as dust partials. Although no excavations of the existing ground are proposed this should also be a consideration in any dust suppression strategy

Emissions from plant and generators can cause unpleasant odours and pollution to the atmosphere.

Legislation

Work activities that create dust, emissions and odours

Under the **Clean Air Act 1993** it is an offence to permit the emission of dark smoke from industrial or trade premises. This is generally enforced by the local authority. However, there are exemptions allowing emissions from the burning of timber and most other waste.

Work activities that can be a statutory nuisance

Under Part III of the **Environmental Protection Act 1990** dust, emissions and odours can be classified as a statutory nuisance. The local authority can serve an abatement notice to the person responsible. Breaching an abatement notice is a criminal offence.

Annoyance to Neighbours

Annoyance can be caused when neighbours have to re-clean washing or wash cars, curtains, windows or carpets where dust has been walked into their property. Dust can also affect plants and vegetables in gardens. Wind-blown dust can be unsightly over a large area in scenic areas. The public can also be affected by eye and respiratory problems.

Cost and Programme Impacts

Some contracts may have special conditions such as a requirement to suspend work when the wind speed or direction reaches certain limits. Compliance with these conditions is likely to have cost and/or programme implications. The local authority may also serve an abatement notice if dust is deemed to have caused a statutory nuisance.

Ecological Impacts
If dust blows onto a watercourse it can damage the ecology by affecting plant growth. Alkaline dusts and changes to light levels may also change species composition in some situations. Ash trees can drop their leaves up to 8 weeks early if exposed to high levels of dust.

How to Avoid Problems
The local authority has the power under the **Clean Air Act 1993**, to limit the dust, emissions and odours generated by a site. Failure to comply with these limits can result in abatement notices being served if complaints are made.

Complaints can be avoided by adopting good working practices:

- Identify sensitive receptors and inform the authorities of any likely nuisance that may occur
- Instigate control measures to mitigate any negative impacts
- Develop a daily monitoring regime to record dust conditions while noting weather conditions, construction activities, their location and duration on site

Dust Suppression
A strategy should be developed for each site to minimise the dust being generated. Careful planning of construction operations can reduce dust, for example, speed limits on haul roads, location of stockpiles and batching plants in sheltered areas of the site.

Water Damping
The fine spraying of water is the most effective way of suppressing dust. On larger sites this could be carried out with a water bowser. Spraying should be repeated regularly during warm and sunny conditions. However, spraying should not be allowed to create excessive mud, which could cause run-off into drainage systems or water courses.

Should consider spraying:

- areas of unpaved work subject to traffic or wind
- sand, spoil and aggregate stockpiles

- during the loading and unloading of dust generating materials

If water for damping is to be sourced from a fire hydrant or watercourse, the necessary consents must be obtained first.

Chemical Additives/Binders

A more long-lasting solution to basic water damping may be to mix suitable chemicals or additives to the water. This can often reduce the volume of water required and/or the amount of passes required per day. The additional cost of the additives can be outweighed by the savings to water supply, plant usage and downtime. Advice should be sought from the environmental regulator before any additives are used, and care should always be exercised as over application could result in pollution.

Dust Screening

If the generation of dust cannot be avoided it may be necessary to erect screens to act as wind breaks or dust barriers. These can take the form of permeable or semi-permeable fences, but may have to be designed to resist high wind loads. Permanent features, such as fencing, the planting of trees/shrubs, or formation of landscaping features may serve the purpose, if they can be carried out early in the project. Where possible, existing vegetation or buildings to be demolished could be left to provide screening. Alternatively, site cabins could also form an effective barrier if they can be located to screen neighbours.

Dust Prediction and Monitoring

There are a number of recognised methods for the monitoring of dust on site; these include:

- Exposing microscopic slides, sticky pads, or sticky covers to determine dust direction and deposition rate for a given period.
- High volume samplers which draw air through a filter to measure the volume of dust present in the air. Control samples will need to be taken prior to carrying out activities that generate dust
- The dry Frisbee dust deposit gauge uses a bowl and bottle to collect dust particles which are sent for laboratory analysis at monthly intervals.

However, none of these measures provide definitive evidence of the dust impact and they can be costly. It may be worth

offering to monitor dust as a demonstration of good practice and the results can be used as evidence in the defence of a claim. In some cases the monitoring of dust or emissions may be a condition of the contract. If dust monitoring is to be carried out, further expert advice should be sought.

Emissions and Odours

Any process involving the use of fuels, or the heating and drying of materials is likely to emit fumes, odours or smoke. These emissions should be prevented wherever possible and any works which are likely to create odours, such as work to live sewers, should be carefully phased where possible.

Dark smoke from plant or fires is likely to constitute a statutory nuisance, which could result in the issue of an abatement notice by the local authority.

If plant issues excessive amounts of exhaust emissions, the local authority has the power to prescribe limits on those emissions. Breaching of these set limits will also result in an abatement notice. Plant that is worn, poorly maintained or unsuitable for the purpose is likely to exceed the prescribed limits.

Avoiding Dust Generation

<u>Haul Roads</u>

- Select suitable routes for haul roads away from sensitive receptors where possible
- Minimise the length and width of haul roads to reduce the surface area
- Pave heavily used areas and sweep regularly
- Sweep public roads regularly with a vacuum sweeper
- Limit vehicle speeds – slower speeds generate less dust
- Minimise vehicle movements – larger vehicles where possible
- Damp down

<u>Plant & Vehicles</u>

- Ensure vehicle wheels are cleaned before leaving site
- Exhaust fumes should be directed upwards

	• Tipper lorries should be fitted with retractive sheet covers to contain dust • Plant and vehicles should be maintained in good working order • Drivers must observe site speed limits to minimise dust generation <u>Material Handling & Storage</u> • Locate stockpiles out of the wind (or provide wind breaks) to minimise dust generation • Keep stockpiles to a minimum height and use gentle slops • Compact & bind stockpile surfaces if necessary • Revegetate long-term stockpiles • Minimise the storage time for materials on site • Store dusty materials away from site boundaries, main site access roads and down wind of sensitive receptors • Ensure waste skips are enclosed or covered • Minimise the height of fall of materials • Damp down earthworks during dry weather <u>Concrete Batching</u> • Mix large quantities of concrete or bentonite slurries in enclosed areas to avoid generating dust <u>Cutting/grinding/grouting/packing</u> • Minimise cutting and grinding on site where possible • Use equipment with dust extraction and wet cut where possible • Spray water during cutting of paving slabs • Use block splitters <u>Wheel washing facilities</u> • Provide vehicle washing facilities, including a high pressure water jet at every discernible or designated vehicle exit point; • Pave the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point with concrete, bituminous materials and hardcore; and • Where a site boundary adjoins a road, street, service lane or other area accessible to the public, provide hoarding of not less than 2.4m high from ground level along the entire length of that portion of the site boundary except for a

site entrance or exit

Preventing Emissions and Odours

Plant & Vehicles

- Plant and vehicles should be maintained in good working order
- Control deliveries to minimise queuing
- Ensure engines are switched off when not in use
- Keep refuelling areas away from the public

No Fires on Site

Waste Storage

- Use covered containers for organic waste (e.g. weeds & vegetation) and remove frequently

Chemicals on Site

- Take account of wind conditions when planning activities likely to emit aerosols, fumes, odours or smoke
- Position site toilets with effluent tanks away from residential areas

REFERENCE: The above procedures are concurrent with guidelines set out in the BRE document 'Control of Dust from Construction and Demolition Activities'.

Noise Suppression

To ensure the most effective method of noise suppression is used, Green Hill Construction will be working in line with BS 5228:2009.

Varying site activities will produce shifting noise levels which will be kept to a minimum from neighboring properties. Measures to overcome this will be as the following:

- Avoidance of unnecessary revving of engines
- All Equipment/Plant which is not in use will be switched off or powered down immediately. All Plant/Equipment used on site will be no noisier than the levels quoted in BS 5228-1:2009.

- Internal haul routes will be well maintained.
- Drop heights of materials will be minimized,
- The use of foul language and shouting will be prohibited.

Construction site operations will be restricted to 08:00 – 18:00 Monday to Friday and 09:00 to 13:00 Saturdays so that noise is not audible at noise sensitive premises outside of these times. These hours are principally the hours that neighbouring properties will be out to work. No construction works will take place on Sundays or on Bank Holidays. The site will be securely locked outside of these hours.

Live power from the national grid will be provided as soon as possible so the use of generators will not be required within working hours and more importantly will not be required out of working hours to power such items as security lighting, CCTV etc.

Plant and delivery lorries will be used within the construction period. Noise generated by such machines will be reduced by the proposed hoarding and fencing shown on the enclosed fencing plan and other mitigation strategies previously stated.
All plant/Equipment will be maintained in a suitable condition in line with manufactures recommendations and only used for the purpose it is intended and by trained and competent persons. Care will be taken to site the equipment/machinery away from noise-sensitive areas and where possible, loading and unloading will be carried out away from such areas. Any Large Plant/Equipment will be secured on site overnight and during periods of non-use as far away as possible from occupied dwellings to minimize disturbance during start up and shut down.
Communication with local residents during the works via letter drops at key stages of the project will be carried out.
Site/Project management contact details will be displayed on hoarding on entrance to the site should issues arise.

Records
Records of visual daily monitoring will be carried out by Green Hill Construction.
Records will be kept on site for the duration of the contract

Check List
The attached checklist is a general/non site specific summary of potential dust mitigation procedures.

	TRAFFIC MANAGEMENT PLAN
	See appendix A
	CONSTRUCTION PHASING PLAN
	See appendix A
	TIMESCALE
	Anticipated Timescales – Site Filling and New Build Phases will overlap. Total anticipated time on site 4 years
	Importation of fill material – 3 – 6 months
	Site fill works and settlement – 12 months
	Phase I – 18 Months
	Phase II – 18 Months
	Phase III – 12 Months
	Total – 48 Months Approx

DUST MONITORING

NAME	TIME	ACTIVITY/ LOCATION	VISIBLE DUST LEVEL (Please tick one box below)			CONTROL MEASURES
			LOW	MODERATE	HIGH	

Key

- **Low** (no air-born dust from activity visible) **No action required**
- **Moderate** (some air-born dust visible but not leaving the site boundary) **Spraying with water required urgently**
- **High** (significant amount of air-born dust visible and leaving site boundary) **Activities stop until materials are sprayed**

Greenhill
BUILDING AN AFFORDABLE FUTURE

Date: March 2014	GHC	CMS 01