

General Note:

During the design stages of a project, designers are required to maintain a "**Hazard Elimination Checklist**" (part B of this document). The 'checklist' records the various significant (high risk) hazards identified by the designer(s) and, where they have been able, details of how they have been eliminated.

It is recognised that not every hazard can be 'designed out' and therefore the checklist will also be used to record the residual risks of which the designer(s) are aware.

The checklist provides an audit trail of the design process and may also be used as evidence in the event that a designer is required to defend his or her actions in any HSE investigation.

Copies of parts A and B should be passed to all members of the project team, especially the Principal Designer. Reference must also be made to GG104 Requirements for safety risk assessment.

Part A: Designer's Hazard Checklist

Project Title:	A46 NB SB Sixhills Geotech – Water Erosion	Kier Highways	Job No.:	
Project Description:	Topo survey, drainage survey and GI for Earthwork and Drainage Renewal			
Design Discipline:	Geotechnics and Drainage			
Project Type as determined by GD04 (if applicable)	A			

Notes:

1. This section of the document includes a list of potential hazards pertaining to a wide range of situations which may occur across Kier Highways' activities. *Where particular categories do not ordinarily affect the scheme.*
2. An individual item or a whole section (by ticking the heading) can be noted as not applicable showing you have considered the hazard area and judged it to be not applicable.
3. The list of potential hazards is not exhaustive, and all sections can be added to, or additional sections added, as required. Reference to the Approved Code of Practice may be helpful.
4. All items considered by the designer as having a potential high risk must be addressed on the 'Hazard Elimination Management Schedule'. Low risk activities can also be included if considered appropriate.
5. Consideration must be given to all populations that may be affected as follows -

Population 1 – People directly employed by the Client and who work on the site e.g. Traffic Officers.	'Workers'
Population 2 – People in a contractual relationship with the client.	
Population 3 – Other parties, including road users, the police and emergency services and non-motorised 'Users' such as equestrians, cyclists and pedestrians, as well as those others not in a contractual relationship with the client, such as privately contracted vehicle recovery and vehicle repair providers.	'Users'
Population 4 – Third parties includes any person or persons who could be affected by the works, but who are neither using it, nor working on it, i.e. living or working adjacent to the site.	'Other Parties'

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
1.	Existing Environment				
1.1	Existing buildings	X			
1.2	Previous/existing land/ structures	X			
1.3	Roadways			X	A46
1.4	Railways	X			
1.5	Water course			X	Has been noted and considered throughout reporting process
1.6	Ground conditions:		X		Variable ground underfoot
	• Contamination		X		
	• Ground water		X		
	• Instability			X	Earthwork instability reported
	• Mineral / mine workings	X			
1.7	Access restrictions			X	Access via A46 NB and SB lane 1
1.8	Adjacent properties		X		
1.9	Concurrent site activities			X	Surveys and GO to be carried out simultaneously
1.10	Interface with the public	X			
1.11	Occupied premises	X			
1.12	Structural instability		X		Undermined culvert headwall
1.13	Fragile materials	X			
1.14	Hazardous materials		X		Asbestos cannot be discounted
1.15	Land use	X			
1.16	Traffic			X	A46
1.17	Others (insert as necessary)	X			
	Ecological		X		An Ecological Clerk of Works should be present for vegetation clearance, see ecological survey for more info.
2.	Existing Services				
2.1	Underground				
	• Electrical		X		Underground electrics

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	• Gas	X			
	• Water (Asbestos pipes?)	X			
	• Telecommunications			X	SSE Telecoms/ virgin media
	• Others (insert as necessary)		X		Drainage / pipework and catch-pits
2.2	Overhead Services		X		
	• Electrical			X	11kV Overhead cable
	• Telecommunications	X			
	• Others (insert as necessary)	X			
3.	Earthworks	X			
3.1	Deep excavations				
3.2	Slope / ground stability				
3.3	Ground water / water courses				
3.4	Plant movements				
3.5	Interface with services (refer 2)				
3.6	Contamination (ground / water) (refer 1.6)				
3.7	Adjacent structures (refer 1.8)				
3.8	Others (insert as necessary)				
4.	Foundations	X			
4.1	Adjacent buildings/structures				
4.2	Deep excavations				
4.3	Plant movements				
4.4	Interface with services				
4.5	Contamination (ground / water)				
4.6	Ground water				
4.7	Confined spaces				
4.8	Piling:				
	• Noise				
	• Vibration				
	• Contamination				
	• Plant				
4.9	Grouting:				
	• Drilling work				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	• Dust				
	• Pollution				
4.10	Stability of structure				
4.11	Others (insert as necessary)				
5.	Services Installation	X			
5.1	Excavations				
5.2	Ground water				
5.3	Ground conditions				
5.4	Existing services				
5.5	Testing operations				
5.6	Lifting operations				
5.7	Adjacent structures / activities				
5.8	Maintenance				
5.9	Contamination				
5.10	Others (insert as necessary)				
6.	Drainage Works				
6.1	Excavations	X			
6.2	Ground water	X			
6.3	Ground conditions	X			
6.4	Confined spaces	X			
6.5	Leptospirosis / Weils disease		X		Drainage survey
6.6	Existing services (asbestos pipes?)		X		Drainage survey
6.7	Manual handling	X			
6.8	Lifting operations	X			
6.9	Maintenance	X			
6.10	Sewage	X			
6.11	Traffic	X			
6.12	Contamination (ground / water)	X			
6.13	Hepatitis B / Tetanus	X			
6.14	Others (insert as necessary)	X			
7.	Highways				
7.1	Traffic management			X	
7.2	Adjacent traffic			X	

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
7.3	Construction materials	X			
7.4	Structural works	X			
7.5	Adjacent structures	X			
7.6	Noise	X			
7.7	Vibration	X			
7.8	Coal TAR in pavement	X			
7.9	Others (insert as necessary)				
8.	Steelwork Construction	X			
8.1	Working at height				
8.2	Lifting operations				
8.3	Temporary stability				
8.4	Connections				
8.5	Unusual sequence				
8.6	Materials, e.g. paints				
8.7	Consideration of future maintenance				
8.8	Others (insert as necessary)				
9.	Concrete Construction	X			
9.1	Working at height				
9.2	Plant restrictions				
9.3	Lifting operations				
9.4	Noise				
9.5	Vibration				
9.6	Temporary instability				
9.7	Pre/post tensioning				
9.8	Materials				
9.9	Maintenance				
9.10	Joints (scabbling should not be undertaken)				
9.11	Others (insert as necessary)				
10.	Masonry Construction	X			
10.1	Manual handling				
10.2	Lifting operations				
10.3	Materials				
10.4	Temporary stability				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
10.5	Working at height				
10.6	Dust				
10.7	Durability				
10.8	Catastrophic collapse				
10.9	Others (insert as necessary)				
11.	Timber Construction	X			
11.1	Materials				
11.2	Working at height				
11.3	Temporary stability				
11.4	Lifting operations				
11.5	Manual handling				
11.6	Fire				
11.7	Dust				
11.8	Others (insert as necessary)				
12.	Cladding	X			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
13.	Glazing	X			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
13.4	Others (insert as necessary)				
14.	Mechanical/Electrical Systems	X			
14.1	Access				
14.2	Existing services (asbestos?)				
14.3	Manual handling				
14.4	Materials / substances				
14.5	Confined spaces				
14.6	Pressure systems				
14.7	Testing operations				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
14.8	Fixings				
14.9	Working at height				
14.10	Maintenance				
14.11	Others (insert as necessary)				
15.	Railway Activities	X			
15.1	Train movements				
15.2	Overhead lines				
15.3	Electrified track				
15.4	Underground services				
15.5	Adjacent structures				
15.6	Ground stability				
15.7	Contamination				
15.8	Others (insert as necessary)				
16.	Demolition of Existing Structures	X			
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials:				
	Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc.				
	fragile				
16.4	Working at height				
16.5	Temporary stability				
16.6	Pre/post tensioning				
16.7	Noise				
16.8	Vibration				
16.9	Dust				
16.10	Effect on usage of demolition materials				
16.11	Others (insert as necessary)				
17.	Future Demolition / decommissioning of new structure/installation	X			
17.1	Unusual sequence				
17.2	Pre/post tensioned element				
17.3	Materials				
17.4	Adjacent/adjoining structure				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
17.5	Temporary stability				
17.6	Contamination during usage of demolition material.				
17.7	Others (insert as necessary)				
18.	Maintenance and Operation of Facility / Structure etc.	X			
18.1	Access				
18.2	Safety equipment				
18.3	Testing / inspection				
18.4	Procedure				
18.5	Contamination during usage of demolition material.				
18.6	Others (insert as necessary)				
19.	Use of the structure as a workplace	X			
19.1	Does the proposed use of the structure / premises include the intention for it to be made available to any person as a place of work				
19.2	If yes; the design and materials used must take in to account the provisions of the Workplace (Health, Safety and Welfare) Regulations 1992				

Part B: Hazard Elimination Checklist

Project Title:	A46 NB SB Sixhills Geotech – Water Erosion			
Project Description:	Topographic and drainage survey and GI for Earthwork remediation			
Design Discipline:	Geotechnics	Prepared By:	Kier Highways	

Reviewed and approved by:

*

Persons at Risk: (1) Workers**(2) Users****(3) Other parties**

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Action by:

Principal Designer
 Designer
 Principal Contractor
 Other designer
 Client

– Include within the H&S file
 – include in the pre-construction information
 – manage risk during the construction phase
 – take into consideration when preparing their designs
 – pass information to designers / Principal designer

Ref.	Activity	Hazard	Persons at Risk *	Design Measures taken, or being taken to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Action Req'd by: **
1	Working adjacent to live traffic.	RTC resulting in injury	1,2,3	The works to be undertaken during TM. Road space planning will be needed to limit traffic flow impacts. Expect reduction to single lane working and may involve night time working. Liaise with TM coordinator	Risk of RTC remains. Principal Contractor to highlight suitable method of site access/egress within RAMS, to be reviewed and agreed with designer/ client.		Designer & Principal Contractor
2	Drainage survey	Manual handling, Weil's disease and asbestos	1,2	Manual handling: the contractor should review their risk assessment to ensure that all members of the team who are manual handling are appropriately trained. Disease: leptospirosis and weils disease risk is increased when carrying out drainage surveys. Welfare will be provided by the TM or Contractor to allow for washing facilities. Asbestos: Asbestos pipes may be present on site, though not anticipated. Contractors are not required to break ground so risk will be minimal.	Principal Contractor to highlight issues within RAMS, to be reviewed and agreed with designer/ client.		Designer & Principal Contractor
3	Topographic Survey	Slope instability, plant movement and interface with services.	1,2	The defects on the slope have been identified and are not expected to deteriorate further as they have been in their current state for >5 years. No heavy machinery is being used during surveys and is therefore not a risk. A services plan has been provided outlining the location of all known services above and below ground.	Though all known services have been provided in a drawing, there is always the risk that underground cabling that has not been noted is present. Ground is not anticipated to be broken however.		Designer & Principal Contractor

Ref.	Activity	Hazard	Persons at Risk *	Design Measures taken, or being taken to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Action Req'd by: **
4	Survey and subsequent construction	Disturbance / loss of habitat of species	N/A	Vegetation removal requires production of an Appropriate Assessment Screening Matrix (AASM). An Ecological Clerk of Works should be present for vegetation clearance and the works are to be conducted under a precautionary method of works, see ecological survey.			Designer & Principal Contractor
5	Survey and subsequent construction	Buried cables	1,2	Utilities Plans provided.	Be aware that utilities are not always in the recorded location and that un-recorded utilities may also exist.		Contractor
6	Overhead Cables	11kV overhead cabling at southern extent of site	1,2	Utilities Plans provided.	Overhead utilities are visible on site and should be taken into consideration when carrying out on site activities.		Contractor