

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:	M18 Jnc 3 S/B Exit Slip Road	Kier Highways Job No.:	2020030
Project Description:	Hardening of verge to remediate damage caused by vehicle over-running.		
Design Discipline:	Highway construction/maintenance.		
Project Type as determined by GG104 (if applicable)	A	Prepared By:	C.Lucas

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, **Part A should be edited/sections deleted to more accurately reflect the work carried out.***
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	
1.4	Railways	X			
1.5	Water course	X			
1.6	Ground conditions:				
	• Contamination		X		
	• Ground water	X			
	• Instability	X			
	• Mineral / mine workings	X			
1.7	Access restrictions		X		
1.8	Adjacent properties	X			
1.9	Concurrent site activities		X		None known
1.10	Interface with the public			X	
1.11	Occupied premises	X			
1.12	Structural instability	X			
1.13	Fragile materials	X			
1.14	Hazardous materials			X	Potential for Tar in lower pavement layers.
1.15	Land use	X			
1.16	Traffic			X	
1.17	Others (insert as necessary)	X			
2.	Existing Services				
2.1	Underground				
	• Electrical			X	Street lighting cable.
	• Gas	X			
	• Water (Asbestos pipes?)	X			
	• Telecommunications	X			
	• Motorway Comms			X	Genysys drwgs indicate electric cable in verge
2.2	Overhead Services	X			
	• Electrical				
	• Telecommunications				
	• Others (insert as necessary)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
3.	Earthworks				
3.1	Deep excavations	X			
3.2	Slope / ground stability	X			
3.3	Ground water / water courses	X			
3.4	Plant movements		X		
3.5	Interface with services (refer 2)			X	U'gnd electric cables
3.6	Contamination (ground / water) (refer 1.6)		X		
3.7	Adjacent structures (refer 1.8)	X			
3.8	Others (insert as necessary)	X			
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				
	• 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				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
5.6	Lifting operations				
5.7	Adjacent structures / activities				
5.8	Maintenance				
5.9	Contamination				
5.10	Others (insert as necessary)				
6.	Drainage Works	X			
6.1	Excavations				
6.2	Ground water				
6.3	Ground conditions				
6.4	Confined spaces				
6.5	Leptospirosis / Weils disease				
6.6	Existing services (asbestos pipes?)				
6.7	Manual handling				
6.8	Lifting operations				
6.9	Maintenance				
6.10	Sewage				
6.11	Traffic				
6.12	Contamination (ground / water)				
6.13	Hepatitis B / Tetanus				
6.14	Others (insert as necessary)				
7.	Highways				
7.1	Traffic management			X	
7.2	Adjacent traffic			X	
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	Potential in lower pavement layers
7.9	Others (insert as necessary)	X			
8.	Steelwork Construction	X			
8.1	Working at height				
8.2	Lifting operations				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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				
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				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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				
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				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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:				
	<ul style="list-style-type: none"> Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc. 				
	<ul style="list-style-type: none"> 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				
17.1	Unusual sequence	X			
17.2	Pre/post tensioned element	X			
17.3	Materials	X			
17.4	Adjacent/adjoining structure	X			
17.5	Temporary stability	X			
17.6	Contamination during usage of demolition material.	X			
17.7	Others (insert as necessary)	X			
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.				


Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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:	M18 Jnc 3 S/B Exit Slip Road	Kier Highways Job No.:	2020030
Project Description:	Hardening of verge to remediate damage caused by vehicle over-running.		
Design Discipline:	Highway construction/maintenance.	Prepared By:	C.Lucas
		Checked By:	M.Wood

Note: If GG104 applies to your contract, the checklist must be approved by an appropriate person: For a Type A project the Scheme PD must approve, for a Type B projects the Senior Manager must approve and for a Type C project the Kier Highways Service Director must approve.

Reviewed and approved by:

Name	M.Wood
Signature	
Position	Team Leader

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

** **Action by:**

Principal Designer	– Include within the H&S file
Designer	– include in the pre-construction information
Principal Contractor	– manage risk during the construction phase
Other designer	– take into consideration when preparing their designs
Client	– 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: **
1.3 1.10 1.16 7.1 7.2	Construction of verge hardening.	Conflict with public traffic.	1, 2	TTM design does not form part of the design of the verge hardening.	TTM design will be required.	MW (17-01-23)	PC

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: **
2.1 3.5	Construction of verge of hardening.	Contact with underground cables.	1	Presence of cables in verge identified but insufficient time during design to arrange trial holes etc to locate.	Cables known to be in verge.	MW (17-01-23)	PC
1.14 7.8	Excavation of pavement.	Risk of Tar in surfacing materials.	1, 3	Due to limited time available during design it has not been possible to arrange testing of existing carriageway surfacing.	Tar may be present in existing surfacing.	MW (17-01-23)	PC