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, were 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:	291 M5 J26 NB Exit Slip Road MP 218.3 – 217.8	**Kier Highways Job No.:**	570122
Project Description:	Survey Scope of Works – Cores To undertake 10 no. of Cores to determine existing Construction Layers, including PAK marker testing to confirm the likelihood of the presence of Tar Bound Materials (TBM). For locations, please refer to the following VCS Plans: • 570122 291 M5 J26 NB Exit Slip Road-Defect & Treatment Plan PLEASE NOTE, THIS DOCUMENT COVERS THE SURVEY WORKS ONLY		
Design Discipline:	Surveys / Feasibility Stage / Pavement / Cores		
Project Type as determined by GG104 (if applicable)	A	**Prepared By:**	[redacted]

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. **Population 2** – People in a contractual relationship with the client.	**'Workers'**
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:	X			
	• Contamination				
	• Ground water				
	• Instability				
	• Mineral / mine workings				
1.7	Access restrictions		X		
1.8	Adjacent properties		X		Adjacent properties within 100m of works potentially affected by noise disturbance.
1.9	Concurrent site activities	X			No information has been supplied by the client about any proposed concurrent site activities.
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 hazardous materials from coring operations as historical core log information for this section indicates the presence of Coal Tar. If unidentified TBM's are encountered within the scheme extents reference should be made to the Environment Agency Regulatory Position Statement on 'The Use of Treated Asphalt Waste Containing Coal Tar in Construction Operations', Ref.: MWRP RPS 075

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
					Version: 3, Issued July 2012.
1.15	Land use		X		Mainly agricultural, some adjacent properties.
1.16	Traffic		X		Live M5 Carriageway. Traffic Management is to be provided by Highways England with survey works to be carried out under total closure of the Exit Slip Road with diversions. Layout provided to be in accordance with TSM Chapter 8.
2.	**Existing Services**				
2.1	Underground		X		
	• Electrical		X		Located within survey extents. However, not affected by the works.
	• Gas		X		Located within survey extents. However, not affected by the works.
	• Water (Asbestos pipes?)		X		Located within survey extents. However, not affected by the works.
	• Telecommunications		X		Located within survey extents. However, not affected by the works.
	• Oil Pipeline	X			
2.2	Overhead Services				
	• Electrical	X			
	• Telecommunications		X		Located within survey extents. However, not affected by the works.
3.	**Earthworks**	X			
3.1	Deep excavations				
3.2	Slope / ground stability				
3.3	Ground water / water courses				

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

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		**Not Applicable**	**Low- NO Action Required**	**High – Action NEEDED**	
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				
7.	**Highways**				
7.1	Traffic management			X	Live M5 Carriageway. Traffic Management is to be provided by Highways England with survey works to be carried out under total closure of the Exit Slip Road with diversions. Layout provided to be in accordance with TSM Chapter 8.
7.2	Adjacent traffic			X	Live M5 carriageway.
7.3	Construction materials		X		
7.4	Structural works	X			Works are to be undertaken near 1878 Chelston I/C West. However, not affected by the survey works.
7.5	Adjacent structures	X			
7.6	Noise		X		Works at night. Working adjacent to live traffic.
7.7	Vibration		X		Works at night. Working adjacent to live traffic.
7.8	Coal TAR in pavement			X	Potential hazardous materials from coring operations as historical core log information for this section indicates the presence of Coal Tar. If unidentified TBM's are encountered within the scheme extents reference should be made to the Environment

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
					Agency Regulatory Position Statement on 'The Use of Treated Asphalt Waste Containing Coal Tar in Construction Operations', Ref.: MWRP RPS 075 Version: 3, Issued July 2012.
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				
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)				
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				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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				
12.	**Cladding**	X			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
13.	**Glazing**	X			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
14.	**Mechanical / Electrical Systems**				
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				
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				
16.	**Demolition of Existing Structures**	X			
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials:				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		**Not Applicable**	**Low- NO Action Required**	**High – Action NEEDED**	
	• 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				
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				
17.5	Temporary stability				
17.6	Contamination during usage of demolition material.				
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.				
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:	291 M5 J26 NB Exit Slip Road MP 218.3 -217.8	**Kier Highways Job No.:**	570122
Project Description:	Survey Scope of Works – Cores To undertake 10 no. of Cores to determine existing Construction Layers, including PAK marker testing to confirm the likelihood of the presence of Tar Bound Materials (TBM). For locations, please refer to the following VCS Plans: • 570122 291 M5 J26 NB Exit Slip Road-Defect & Treatment Plan PLEASE NOTE, THIS DOCUMENT COVERS THE SURVEY WORKS ONLY		
Design Discipline:	Surveys / Feasibility Stage / Pavement / Cores		
Project Type as determined by GG104 (if applicable)	A	**Prepared By:**	[redacted]

Reviewed and approved by: [redacted]

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

Action by:

ncipal Designer – Include within the H&S file
signer – include in the pre-construction information
ncipal Contractor – manage risk during the construction phase
er designer – take into consideration when preparing their designs
ent – 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 / within live carriageway.	Operatives / plant struck by moving vehicles	Workers	Use of appropriate traffic management to provide safe working zone and enforce lane and/or complete closure of carriageway for duration of works or work element.		No further comment.	PC
2.	Night-time working	Operatives / plant struck by moving vehicles	Workers & users	Where HE restrictions dictate night-time working the scheme steward shall ensure adequate shielded task lighting is provided for the duration of the works and that it does not cause undue glare to residents and road users.		No further comment.	PC
3.	Traffic Management	Alignment. Risk of loss of control accidents due to temporary alignment changes leading to personal injury / fatalities to operatives and motorists.	Workers	Temporary alignment changes are necessary to install TM arrangements cannot be eliminated. The TM design will minimise the risk to road users. Speed restrictions to be in place. Advanced warning signs to be in place prior to the works. TM to be in accordance with TSM Chapter 8.		No further comment.	PC
4.	Statutory Undertakers Returns	Outdated STATS returns	Workers & users	STATS returns become outdated every 3 months. Prior to works, liaison with the relevant utility companies is again necessary to ensure a current STATS plan is produced.		No further comment.	PC
5.	Hazardous materials from coring operations.	Presence of coal tar.	Workers	Contractor to ensure that all workers wear appropriate PPE at all times during construction works and any tar arisings will be disposed off to licensed tips and in line with the Company policy and the requirements for materials containing tar.		No further comment.	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: **
6.	Hand Arm Vibration at Work (HAVS)	Hand Arm Vibration – risk of percussive injury to operatives.	Workers	Working hours for operatives using plant to be restricted as appropriate. Appropriate PPE to be provided and worn. A detailed method statement is to be produced by the Contractor prior to the works and routinely checked during works operations.		No further comment.	PC
7.	Dust	Exposure to excessive dust levels	Workers, Users & other parties	Operations that produce dust, shall control exposure not only for the workforce but also all possible groups and not create an environmental nuisance. Dust exposure shall be limited in line with the COSHH 2002 regulations. Where possible water suppression should be used to reduce dust and the extent of exposure to operatives.		No further comment.	PC
8.	Noise	Excessive noise levels from plant / site activities, damage to operative hearing, nuisance to residents	Workers	Proposed survey works are to be undertaken during night time. Residents are located within 100m of planned activities, hence all plant to be fitted with sound suppression devices. A detailed method statement is to be produced by the Contractor prior to the works and routinely checked during works operations. All plant is to be checked prior to use.		No further comment.	PC