

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:	A1 NB & SB Wothorpe to South Witham Pavement study	Kier Highways Job No.:	2210037
Project Description:	To carry out technical surveys as part of a pavement value management scheme to the A1 NB & SB Wothorpe to South Witham which will progress into major pavement remedial works. The surveys will include cores / dynamic cone penetrometer (DCP) / deflectograph surveys. The surveys will include static lane closures and slip road closures.		
Design Discipline:	Pavement		
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.	‘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’



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As part of our systems review, this document is valid until: April 2020		



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	Technical surveys proposed to be carried out to A1 mainline carriageway and slip roads
1.4	Railways		X		
1.5	Water course		X		
1.6	Ground conditions:		X		
	• Contamination		X		
	• Ground water	X			
	• Instability		X		
	• Mineral / mine workings		X		
1.7	Access restrictions		X		To be accessed via carriageway / slip roads under appropriate TM
1.8	Adjacent properties		X		There are a few on site businesses such as a fuel station
1.9	Concurrent site activities	X			
1.10	Interface with the public			X	Works will be carried out under lane closures and slip road closures. Appropriate TM to be in place to separate works from live traffic
1.11	Occupied premises	X			
1.12	Structural instability	X			
1.13	Fragile materials	X			
1.14	Hazardous materials			X	Cores may contain coal tar
1.15	Land use		X		
1.16	Traffic			X	Works to be carried out under lane closures with live traffic running close by and slip road closures.
1.17	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	
2.	Existing Services				
2.1	Underground				Cores could strike underground services
	• Electrical			X	
	• Gas			X	
	• Water (Asbestos pipes?)			X	
	• Telecommunications			X	
	• Others (insert as necessary)				
2.2	Overhead Services				Coring activities could strike overhead services
	• Electrical			X	
	• Telecommunications			X	
	• Others (insert as necessary)	X			
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	Cores could strike services that cross carriageway / slip roads
3.6	Contamination (ground / water) (refer 1.6)		X		
3.7	Adjacent structures (refer 1.8)		X		
4.	Foundations	N/A			
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:				

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

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
6.13	Hepatitis B / Tetanus				
6.14	Others (insert as necessary)				
7.	Highways				
7.1	Traffic management			X	Works to be carried out under lane closures – TM to be to chapter 8 standards
7.2	Adjacent traffic			X	At least 1 lane will remain live during works
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	Deep pavement layers could contain coal tar
7.9	Others (insert as necessary)				
8.	Steelwork Construction	N/A			
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	N/A			
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				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
9.8	Materials				
9.9	Maintenance				
9.10	Joints (scabbling should not be undertaken)				
9.11	Others (insert as necessary)				
10.	Masonry Construction	N/A			
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	N/A			
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	N/A			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
13.	Glazing	N/A			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
13.4	Others (insert as necessary)				
14.	Mechanical/Electrical Systems	N/A			
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	N/A			
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	N/A			
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials: Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc.				
	<ul style="list-style-type: none"> fragile 				
16.4	<ul style="list-style-type: none"> Working at height 				
16.5	Temporary stability				
16.6	Pre/post tensioning				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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	N/A			
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.				
17.7	Others (insert as necessary)				
18.	Maintenance and Operation of Facility / Structure etc.	N/A			
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	N/A			
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:	A1 NB & SB Wothorpe to South Witham Pavement Study	Kier Highways Job No.:	2210037
Project Description:	To carry out technical surveys as part of a pavement value management scheme to the A1 NB & SB Wothorpe to South Witham which will progress into major pavement remedial works. The surveys will include cores / dynamic cone penetrometer (DCP) / deflectograph. Surveys will include static lane closures, and slip road closures.		
Design Discipline:	Pavements	Prepared [Redacted]	Checked By: [Redacted]

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	[Redacted]
Signature	[Redacted]
Position	[Redacted]

* **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 /1.1 6	Carrying out Technical surveys to A1 mainline carriageway and slip roads	Workers hit by errant vehicle	1 & 2	Agree allowable working times, TM & phasing with Highways England. Confirm working times and TM suitable for works with survey contractor	To take cores, workers must enter A1 mainline to take core samples. Works will be carried out utilising L1 + L2 and Slip Road closures, 1 lane to remain open at all times one lanes will remain open	Confirmed working times and TM constraints in PCI and Works Information	D, PC



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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: **
					at all times on main carriageway		
1.14 / 7.8	Taking and disposing of cores	Encountering coal tar in deep layers of the pavement	1	Construction cores throughout scheme to attempt to detect coal tar within pavement and to what depth. Cores to be further tested and or disposed of as per the contract requirements.	Important to identify extent of coal tar within cores for pavement renewal stage of scheme for fore warning of potential large amounts of hazardous waste. Due to age of pavement there is a risk of tar in lower surfacing layers	Risk of Tar to be established following Coring, Pak marker testing and subsequent testing.	D, PC
1.16	Deflectograph	Collision from other road users	1	Deflectograph surveys shall be conducted under static lane closures. In areas where the deflectograph passes slip roads, the slips will be closed to prevent impact from high speed vehicles merging onto main carriageway.	Where Deflectograph is working within closures it should only travel in a sterile area, with no other activities being undertaken, plant or men present on its route.		PC
2.1 / 2.2	Dynamic Cone Penetrometer	Stats damage or strikes	1	No cores or DCP's have been proposed over / under any known underground / overhead stats.	Possibility of unmarked Stats, areas should be CAT scanned prior to coring and undertaking DCP's all areas should be checked again against the Stats Drawings to prevent any possible clash. No GS6 measurements required due to no coring / DCP works near overhead cables.		PC