

**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**

<b>Project Title:</b>	A303 Beacon EB & WB MP 236.5 - 237.1 Core Testing	<b>Kier Highways Job No.:</b>	604473
<b>Project Description:</b>	Design stage : additional core and PAK / PAH testing		
<b>Design Discipline:</b>	Pavement – Design Stage – Additional Cores		
<b>Project Type as determined by GG104 (if applicable)</b>	A	<b>Prepared By:</b>	██████

**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 -

<b>Population 1</b> – People directly employed by the Client and who work on the site e.g. Traffic Officers.	<b>‘Workers’</b>
<b>Population 2</b> – People in a contractual relationship with the client.	
<b>Population 3</b> – 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.	<b>‘Users’</b>
<b>Population 4</b> – 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.	<b>‘Other Parties’</b>



Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
<b>1.</b>	<b>Existing Environment</b>				
1.1	Existing buildings	✓			
1.2	Previous/existing land/ structures	✓			
1.3	Roadways		✓		
1.4	Railways	✓			
1.5	Water course	✓			
1.6	Ground conditions:	✓			
	<ul style="list-style-type: none"> <li>• Contamination</li> <li>• Ground water</li> <li>• Instability</li> <li>• Mineral / mine workings</li> </ul>				
1.7	Access restrictions		✓		Some vehicular farm accesses present, although unlikely to be used at night.
1.8	Adjacent properties		✓		Potential noise disturbance for all properties within 100m of the survey works.
1.9	Concurrent site activities	✓			
1.10	Interface with the public		✓		Fully compliant Chapter 8 TM will be required
1.11	Occupied premises	✓			
1.12	Structural instability	✓			
1.13	Fragile materials	✓			
1.14	Hazardous materials			✓	Historic core log information confirms that TBM material is present within this section of carriageway.
1.15	Land use		✓		Some vehicular farm accesses present
1.16	Traffic		✓		A303 Live carriageway throughout scheme extents.
1.17	Others (insert as necessary)				
<b>2.</b>	<b>Existing Services</b>				
2.1	Underground				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	<ul style="list-style-type: none"> <li>Electrical</li> </ul>			✓	Underground electrical service shown just beyond extent of scheme. Exact location must be determined on site before works begin.
	<ul style="list-style-type: none"> <li>Gas</li> </ul>	✓			
	<ul style="list-style-type: none"> <li>Water (Asbestos pipes?)</li> </ul>		✓		Highway drainage located within scheme extents. However, these are not affected by the survey works.
	<ul style="list-style-type: none"> <li>Telecommunications</li> </ul>			✓	Affected by Core Sampling. The location of all services must be confirmed with the relevant service provider prior to undertaking any survey works.
	<ul style="list-style-type: none"> <li>Others (insert as necessary)</li> </ul>				
2.2	Overhead Services				
	<ul style="list-style-type: none"> <li>Electrical</li> </ul>			✓	11kV Overhead cables < 5 m away from nearest requested cores. Statutory Undertakers plans enclosed.
	<ul style="list-style-type: none"> <li>Telecommunications</li> </ul>	✓			
	<ul style="list-style-type: none"> <li>Others (insert as necessary)</li> </ul>				
<b>3.</b>	<b>Earthworks</b>	✓			
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)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
3.8	Others (insert as necessary)				
<b>4.</b>	<b>Foundations</b>	✓			
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)				
<b>5.</b>	<b>Services Installation</b>	✓			
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)				
<b>6.</b>	<b>Drainage Works</b>	✓			
6.1	Excavations				
6.2	Ground water				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
6.3	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)				
<b>7.</b>	<b>Highways</b>				
7.1	Traffic management			✓	For cores in single lane, TM to be lane closures with traffic light system. For cores in close proximity to centreline, TM to be closures in both directions.
7.2	Adjacent traffic			✓	Live A303 carriageway.
7.3	Construction materials			✓	Historic core log information confirms that TBM material is present within this section of carriageway
7.4	Structural works	✓			
7.5	Adjacent structures	✓			
7.6	Noise				Works at night. Working adjacent to live traffic.
7.7	Vibration				Works at night. Working adjacent to live traffic.
7.8	Coal TAR in pavement				Historic core log information confirms that TBM material is present within this section of carriageway

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
7.9	Others (insert as necessary)				
<b>8.</b>	<b>Steelwork Construction</b>	✓			
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)				
<b>9.</b>	<b>Concrete Construction</b>	✓			
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)				
<b>10.</b>	<b>Masonry Construction</b>	✓			
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)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
<b>11.</b>	<b>Timber Construction</b>	✓			
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)				
<b>12.</b>	<b>Cladding</b>	✓			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
<b>13.</b>	<b>Glazing</b>	✓			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
13.4	Others (insert as necessary)				
<b>14.</b>	<b>Mechanical/Electrical Systems</b>	✓			
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)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
<b>15.</b>	<b>Railway Activities</b>	✓			
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)				
<b>16.</b>	<b>Demolition of Existing Structures</b>	✓			
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials: <ul style="list-style-type: none"> <li>• Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc.</li> <li>• fragile</li> </ul>				
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)				
<b>17.</b>	<b>Future Demolition / decommissioning of new structure/installation</b>	✓			
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)				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
18.	<b>Maintenance and Operation of Facility / Structure etc.</b>	✓			
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.	<b>Use of the structure as a workplace</b>	✓			
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**

<b>Project Title:</b>	A303 Beacon EB & WB MP 236.5 - 237.1 Core Testing		<b>Kier Highways Job No.:</b>	604473
<b>Project Description:</b>	Design stage : additional core and PAK / PAH testing			
<b>Design Discipline:</b>	Pavement – Design Stage – Additional Cores	<b>Prepared By:</b>	██████	<b>Checked By:</b> MRO

**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:

<b>Name</b>	████████████████████
<b>Signature</b>	████████████████████
<b>Position</b>	████████████████████

\* **Persons at Risk: (1) Workers** 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: **
	Existing Services						
2.1	Coring - Extraction	Underground Services: telecommunications.	Workers, Users, Other parties	Prior to any intrusive investigation being undertaken, locations will be checked (in accordance with the	Statutory Undertaker's information may not include privately owned	No further comment	PC



Authorised By: Head of SHE	Page 10 of 13	SHEMS-FOR-HIG-094
Author: Highways CDM Team	Date: October 2018	Version: 1.0
As part of our systems review, this document is valid until April 2021		



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: **
				contractor's methodology), for underground services. 'Permit to dig' must be issued for all intrusive works. Utility drawings must be on site at all times during intrusive works. All locations must be scanned using Radio Detection Cable Avoidance equipment.	supplies or connections. Controlled risk acceptable.		
2.2	Coring - Extraction	Overhead Services: Electrical lines - Severe injury or death	Workers, Users, Other parties	No equipment to come within 2.7m of Overhead Services. Overhead Services to be considered as live at all times. Utility drawings must be on site at all times during intrusive works.	Statutory Undertaker's information may not include privately owned supplies or connections. Controlled risk acceptable	No further comment	PC
	<b>Highways</b>						
1.3, 1.10 7.1	Working within Traffic Management	Collision with traffic or causing traffic to collide with each other, site personnel or pedestrians: Possibility of severe/ fatal injury.	Workers, Users, Other parties	All TM to be designed and established in accordance with Chapter 8. Choice of core locations to take into account TM required and rationalised where appropriate. Installation, maintenance and removal to be undertaken by trained operatives and in accordance with approved RAMS.	Controlled risk acceptable.	No further comment	PC
1.16 7.2	Traffic Working within Traffic Management	Traffic/ plant and machinery on the live carriageway and manoeuvring around the site - Collision with traffic or causing traffic to collide with each other with each	Workers, Users, Other parties	All TM to be designed and established in accordance with Chapter 8. Installation, maintenance and removal to be undertaken by trained operatives and in accordance with approved RAMS.	Controlled risk acceptable.	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: **
		other, site personnel or pedestrians: Possibility of severe/ fatal injury.					
7.3	Pavement – Core hole reinstatement	Construction materials: Cement-based products – when mixed with water or when a strong alkaline solution is produced causing irritation to the skin, damage to nerve endings and resulting in chemical burns. Risk of burning when in contact to the eyes.  Bituminous macadam products – risk irritation when in contact with the skin and eyes. Risk of discomfort during inhalation when exposed to product for long periods of time.	Workers	Activities shall be controlled by the PC's RAMS.	Controlled risk acceptable.	No further comment	PC
7.9	Pavement - Core Drilling	Noise, Vibration, manual handling, equipment failures.	Workers, Other parties	Activities shall be controlled by the PC's RAMS.	Controlled risk acceptable.	No further comment	PC
7.9	Coring - Handling cores	Manual handling – potential for injury	Workers	Activities shall be controlled by the PC's RAMS.	Controlled risk acceptable.	No further comment	PC



Authorised By: Head of SHE	Page 12 of 13	SEMS-FOR-HIG-094
Author: Highways CDM Team	Date: October 2018	Version: 1.0
As part of our systems review, this document is valid until April 2021		



FOR INFORMATION ONLY



Authorised By: Head of SHE	Page 13 of 13	SEMS-FOR-HIG-094
Author: Highways CDM Team	Date: October 2018	Version: 1.0
As part of our systems review, this document is valid until April 2021		

