

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:	A36 Wilton BD MP 59.1-61.7 DF WQ&F Survey Works			Kier Highways Job No.:	566149
Project Description:	Carry out additional surveys along the scheme extents as following: - Asbestos survey to identify any asbestos containing material in drainage assets not previously surveyed. - Topographical survey to produce an adequate design for this scheme. - Core Sampling, PAK testing and further laboratory analysis if PAK testing is positive to determine the full extent of Tar Bound Materials. - GDPR survey to locate buried services throughout the scheme. <u>PLEASE NOTE, THIS DOCUMENT COVERS THE SURVEY WORKS ONLY</u>				
Design Discipline:	Drainage				
Project Type as determined by GG104 (if applicable)	A	Prepared By:			

Notes:

- 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.***
- 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.
- 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.
- 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.
- 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		✓		Surveys will be in vicinity of existing residential and commercial buildings.
1.2	Previous/existing land/ structures	✓			
1.3	Roadways		✓		Live carriageway
1.4	Railways	✓			
1.5	Water course	✓			
1.6	Ground conditions:				
	Contamination		✓		Soil and Core Sampling surveys being carried out to identify contaminated ground conditions.
	Ground water	✓			
	Instability	✓			
	Mineral / mine workings	✓			
1.7	Access restrictions			✓	Access to residential properties needs to be maintained
1.8	Adjacent properties			✓	Residential properties within scheme extents
1.9	Concurrent site activities	✓			No information has been supplied by the client about any proposed concurrent site activities.
1.10	Interface with the public	✓			
1.11	Occupied premises	✓			
1.12	Structural instability	✓			
1.13	Fragile materials	✓			
1.14	Hazardous materials	✓			
1.15	Land use		✓		Residential, commercial and agricultural.
1.16	Traffic		✓		Programme duration, traffic management and diversion route details TBC.
1.17	Others (insert as necessary)				.
2.	Existing Services				
2.1	Underground				
	Electrical			✓	Affected by Core Sampling. The location of all services must be confirmed with the relevant service

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
					provider prior to undertaking any survey works.
	Gas			✓	Affected by Core Sampling. The location of all services must be confirmed with the relevant service provider prior to undertaking any survey works.
	Water (Asbestos pipes?)			✓	Presumed ACMs in drainage features as shown on drawing HE566149-KIER-HDG-A36_59.1_61.7_Z-DE-CD-0000-07-11. Foul water pipes and Water pipes affected by Core Sampling. The location of all services must be confirmed with the relevant service provider prior to undertaking any survey works.
	Telecommunications			✓	Affected by Core Sampling. The location of all services must be confirmed with the relevant service provider prior to undertaking any survey works.
	Others (insert as necessary)			✓	Traffic Loop cabinet and Street Lighting Columns to be surveyed for Asbestos Containing Materials
2.2	Overhead Services				
	Electrical		✓		OH cables within scheme extents as shown on drawing HE566149-KIER-HDG-A36_59.1-61.7-Z-DE-CD-0000-02-06
	Telecommunications	✓			
	Others (insert as necessary)				
3.	Earthworks	✓			
3.1	Deep excavations				

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

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
5.9	Contamination				
5.10	Others (insert as necessary)				
6.	Drainage Works	✓			
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		✓		Road closures and diversions refer to Indicative Construction Programme
7.2	Adjacent traffic		✓		Live carriageway
7.3	Construction materials		✓		Hot applied bituminous material when refilling core sample holes.
7.4	Structural works	✓			
7.5	Adjacent structures	✓			
7.6	Noise		✓		Works at night
7.7	Vibration		✓		Work at night. Working adjacent to live traffic.
7.8	Coal TAR in pavement			✓	Previous core samples returned positive PAK result, further core sampling required to undertake PAH testing.
7.9	Others (insert as necessary)				
8.	Steelwork Construction	✓			
8.1	Working at height				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
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	✓			
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	✓			
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	✓			
11.1	Materials				
11.2	Working at height				
11.3	Temporary stability				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
11.4	Lifting operations				
11.5	Manual handling				
11.6	Fire				
11.7	Dust				
11.8	Others (insert as necessary)				
12.	Cladding	✓			
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
13.	Glazing	✓			
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
13.4	Others (insert as necessary)				
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				
14.11	Others (insert as necessary)				
15.	Railway Activities	✓			
15.1	Train movements				
15.2	Overhead lines				
15.3	Electrified track				
15.4	Underground services				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
15.5	Adjacent structures				
15.6	Ground stability				
15.7	Contamination				
15.8	Others (insert as necessary)				
16.	Demolition of Existing Structures	✓			
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	✓			
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.	✓			
18.1	Access				
18.2	Safety equipment				
18.3	Testing / inspection				
18.4	Procedure				

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
18.5	Contamination during usage of demolition material.				
18.6	Others (insert as necessary)				
19.	Use of the structure as a workplace	✓			
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:	A36 Wilton BD MP 59.1-61.7 DF WQ&F Survey Works			Kier Highways Job No.:	566149
Project Description:	Carry out additional surveys along the scheme extents as following: - Asbestos survey to identify any asbestos containing material in drainage assets not previously surveyed. - Topographical survey to produce an adequate design for this scheme. - Core Sampling, PAK testing and further laboratory analysis if PAK testing is positive to determine the full extent of Tar Bound Materials. - GDPR survey to locate buried services throughout the scheme. <u>PLEASE NOTE, THIS DOCUMENT COVERS THE SURVEY WORKS ONLY PLEASE NOTE, THIS DOCUMENT COVERS THE SURVEY WORKS ONLY</u>				
Design Discipline:	Drainage	Prepared By:	██████████	Checked By:	

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	██████████
██████████	
██████████	██████████

*

Persons at Risk: (1) Workers

(2) Users

(3) Other parties

**

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 / 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 significant residual risk	No further comment.	PC
2.	Night-time working	Operatives / plant struck by moving vehicles	Workers & users	Where HE restrictions dictate night-time working the Route Manager / HE PM 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 significant residual risk	No further comment.	PC
3.	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 significant residual risk	No further comment.	PC
4.	Asbestos Survey	Encounter asbestos containing material.	Workers & other parties	Request information on all asbestos surveys completed near the works. Indicate likelihood of presence of asbestos containing material in CDM and H&S documents and drawings. Asbestos refurbishment survey to be carried out by Cat B trained persons in accordance with CAR 2012.	Presumed ACM present within traffic loop cabinet.	No further comment.	PC
5.	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	No significant residual risk	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: **
				to the works and routinely checked during works operations.			
6.	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.	Limited dust exposure	No further comment.	PC
7.	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 significant residual risk	No further comment.	PC
8.	Core Sampling	Striking buried / overhead services	Workers / Users / Other parties	Request information on all services near the works and issue with construction package. Construction team to ensure information is most current prior to commencement of works. Areas to be CAT scanned as	Pre-Contract Information and Specification. Any unchartered services to be recorded on As Built drawings.	No further comment.	D / 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: **
				appropriate prior to works commencing.			
9.	Hazardous materials from Core Samples.	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.	The risk is reduced but still a residual risk remains and shall be conveyed to contractor(s) via design information pack.	No further comment.	D / PC