

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:	M4 BD MP123.5+50m to 126.4 Coate Water Catchment	Job No.:	570124
Project Description:	Jetting and CCTV of all drainage assets, with associated vegetation clearance for access		
Design Discipline:	Drainage		
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 the activities. *Where particular categories do not ordinarily affect the scheme, **Part A may 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	NA			
1.2	Previous/existing land/ structures	NA			
1.3	Roadways			Yes	SRN / Trunk Road
1.4	Railways	NA			
1.5	Water course	NA			
1.6	Ground conditions:	N/A			
	• Contamination	N/A			
	• Ground water	NA			
	• Instability	NA			
	• Mineral / mine workings	NA			
1.7	Access restrictions		Yes		Hard shouder closure, lane closures and slip road closures as required
1.8	Adjacent properties	NA			
1.9	Concurrent site activities	NA			
1.10	Interface with the public		Yes		Travelling public
1.11	Occupied premises	NA			
1.12	Structural instability	NA			
1.13	Fragile materials	NA			
1.14	Hazardous materials	N/A			
1.15	Land use	NA			
1.16	Traffic			Yes	SRN / Trunk Road
1.17	Others (insert as necessary)	NA			
2.	Existing Services				
2.1	Underground		Yes		Refer to M4 Coate Water TST Model Works Info cctv for Statutory Undertaker plant and also Statutory Undertaker C2 returns
	• Electrical		Yes		
	• Gas		Yes		
	• Water		Yes		
	• Telecommunications		Yes		
	• Foul water sewer	N/A			

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
2.2	Overhead Services				<i>Refer to M4 Coate Water TST Model Works Info cctv for Statutory Undertaker plant and also Statutory Undertaker C2 returns</i>
	• Electrical		YES		
	• Telecommunications		Yes		
	• Others (insert as necessary)	N/A			<i>Refer to M4 Coate Water TST Model Works Info cctv for Statutory Undertaker plant and also Statutory Undertaker C2 returns</i>
3.	Earthworks				
3.1	Deep excavations	N/A			
3.2	Slope / ground stability	N/A			
3.3	Ground water / water courses	N/A			
3.4	Plant movements	N/A			
3.5	Interface with services (refer 2)	N/A			
3.6	Contamination (ground / water) (refer 1.6)	N/A			
3.7	Adjacent structures (refer 1.8)	N/A			
3.8	Others (surface water)	NA			
4.	Foundations				
4.1	Adjacent buildings/structures	NA			
4.2	Deep excavations	N/A			
4.3	Plant movements	N/A			
4.4	Interface with services	N/A			
4.5	Contamination (ground / water)	N/A			
4.6	Ground water	N/A			
4.7	Confined spaces	N/A			
4.8	Piling:				
	• Noise	NA			
	• Vibration	NA			
	• Contamination	NA			
	• Plant	NA			
4.9	Grouting:				
	• Drilling work	N/A			
	• Dust	NA			
	• Pollution	N/A			

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
4.10	Stability of structure	N/A			
4.11	Others (insert as necessary)	N/A			
5.	Services Installation	N/A			
5.1	Excavations	N/A			
5.2	Ground water	N/A			
5.3	Ground conditions	N/A			
5.4	Existing services	N/A			
5.5	Testing operations	N/A			
5.6	Lifting operations	N/A			
5.7	Adjacent structures / activities	N/A			
5.8	Maintenance	N/A			
5.9	Contamination	N/A			
5.10	Others (insert as necessary)	N/A			
6.	Drainage Works				
6.1	Excavations	N/A			
6.2	Ground water	N/A			
6.3	Ground conditions	N/A			
6.4	Confined spaces			Yes	Asphyxiation, loss of consciousness, rising water levels, release of toxic or harmful gas, contact with contaminated sediments or sludge, poor lighting and visibility, slips trips and falls, access and egress issues. Temperature variations, hyper/hypothermia
6.5	Leptospirosis / Weils disease			Yes	Existing natural and highway surface water drainage pipework likely habitat for rats. Fields may contain livestock excrement. Contact through cuts etc. illness.
6.6	Existing services		Yes		As per points 2 above.
6.7	Manual handling			Yes	Muscular skeletal injuries, cuts / grazes from lifting materials.

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
					Slips, trips and falls, falling objects.
6.8	Lifting operations			Yes	Falling objects, struck / crushed by machinery or materials, failure of lifting equipment, toppling of lifting equipment
6.9	Maintenance	NA			
6.10	Sewage	NA			
6.11	Traffic			Yes	As per point 1.3
6.12	Contamination (ground / water)	N/A			
6.13	Hepatitis B / Tetanus			Yes	Contact with disease carrying substance, illness. All staff to have up to date inoculations
6.14	Surface water		Yes		
7.	Highways				
7.1	Traffic management			Yes	Hard shoulder closure, lane closures and slip road closures as required
7.2	Adjacent traffic			Yes	As per point 1.3
7.3	Construction materials	N/A			
7.4	Structural works	N/A			
7.5	Adjacent structures		Yes		<ul style="list-style-type: none"> Burderop Wood Viaduct MP125.3+37m Over bridge (Height TBC)
7.6	Noise			Yes	Ear defenders to be worn for noisy operations
7.7	Vibration			Yes	HAVS recording
7.8	Dust	N/A			
7.9	Moving Plant / concurrent activities			Yes	Control of plant movements with working area
7.10	Reversing vehicles			Yes	In accordance with PC reversing vehicle policy.
7.11	Night working	N/A			
7.12	Weather			Yes	Poor visibility for workforce.
7.13	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	
8.	Steelwork Construction	NA			
8.1	Working at height	NA			
8.2	Lifting operations	NA			
8.3	Temporary stability	NA			
8.4	Connections	NA			
8.5	Unusual sequence	NA			
8.6	Materials, e.g. paints	NA			
8.7	Consideration of future maintenance	NA			
8.8	Others (insert as necessary)	NA			
9.	Concrete Construction	NA			
9.1	Working at height	NA			
9.2	Plant restrictions	NA			
9.3	Lifting operations	NA			
9.4	Noise	NA			
9.5	Vibration	NA			
9.6	Temporary instability	NA			
9.7	Pre/post tensioning	NA			
9.8	Materials	NA			
9.9	Maintenance	NA			
9.10	Joints (scabbling should not be undertaken)	NA			
9.11	Others (insert as necessary)	NA			
10.	Masonry Construction	NA			
10.1	Manual handling	NA			
10.2	Lifting operations	NA			
10.3	Materials	NA			
10.4	Temporary stability	NA			
10.5	Working at height	NA			
10.6	Dust	NA			
10.7	Durability	NA			
10.8	Catastrophic collapse	NA			
10.9	Others (insert as necessary)	NA			

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	NA			
11.1	Materials	NA			
11.2	Working at height	NA			
11.3	Temporary stability	NA			
11.4	Lifting operations	NA			
11.5	Manual handling	NA			
11.6	Fire	NA			
11.7	Dust	NA			
11.8	Others (insert as necessary)	NA			
12.	Cladding	NA			
12.1	Lifting operations	NA			
12.2	Manual handling	NA			
12.3	Maintenance / cleaning	NA			
12.4	Others (insert as necessary)	NA			
13.	Glazing	NA			
13.1	Manual handling	NA			
13.2	Lifting operations	NA			
13.3	Cleaning / maintenance	NA			
13.4	Others (insert as necessary)	NA			
14.	Mechanical/Electrical Systems	NA			
14.1	Access	NA			
14.2	Existing services	NA			
14.3	Manual handling	NA			
14.4	Materials / substances	NA			
14.5	Confined spaces	NA			
14.6	Pressure systems	NA			
14.7	Testing operations	NA			
14.8	Fixings	NA			
14.9	Working at height	NA			
14.10	Maintenance	NA			
14.11	Others (insert as necessary)	NA			
15.	Railway Activities				
15.1	Train movements	NA			
15.2	Overhead lines	NA			

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
15.3	Electrified track	NA			
15.4	Underground services	NA			
15.5	Adjacent structures	NA			
15.6	Ground stability	NA			
15.7	Contamination	NA			
15.8	Others (insert as necessary)	NA			
16.	Demolition of Existing Structures	NA			
16.1	Services	NA			
16.2	Adjacent / adjoining structures	NA			
16.3	Materials:	NA			
	• Hazardous i.e. asbestos	NA			
	• fragile	NA			
16.4	Working at height	NA			
16.5	Temporary stability	NA			
16.6	Pre/post tensioning	NA			
16.7	Noise	NA			
16.8	Vibration	NA			
16.9	Dust	NA			
16.10	Effect on usage of demolition materials	NA			
16.11	Others (insert as necessary)	NA			
17.	Future Demolition / decommissioning of new structure/installation	NA			
17.1	Unusual sequence	NA			
17.2	Pre/post tensioned element	NA			
17.3	Materials	NA			
17.4	Adjacent/adjoining structure	NA			
17.5	Temporary stability	NA			
17.6	Contamination during usage of demolition material.	NA			
17.7	Others (insert as necessary)	NA			
18.	Maintenance and Operation of Facility / Structure etc.	NA			
18.1	Access	NA			
18.2	Safety equipment	NA			
18.3	Testing / inspection	NA			
18.4	Procedure	NA			
18.5	Contamination during usage of demolition material.	NA			
18.6	Others (insert as necessary)	NA			

Potential Hazards Arising From:		Risk (without designer's elimination / management measures)			Comments
Ref:		Not Applicable	Low- NO Action Required	High – Action NEEDED	
19.	Use of the structure as a workplace	NA			
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	NA			
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	NA			

FOR INFORMATION ONLY

Part B: Hazard Elimination Checklist

Project Title:	M4 BD MP123.5+50m to 126.4 Coate Water Catchment	HE Job number:	570124
Project Description:	Jetting and CCTV of all drainage assets, with associated vegetation clearance for access		
Design Discipline:	Drainage	Prepared By:	Checked By:

Reviewed and approved
by:



- | | | | |
|----|-------------------------------------|--|--------------------------|
| * | 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 | |

FOR INFORMATION ONLY

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 6.11 7.1 7.2	Working in live lanes	Live traffic in work area	1/2	Motorway hard shoulder closure, full PPE to be used, vehicles to full chapter 8 compliance.	Greatly reduced risk due to these measures		Contractor
1.7	Access restrictions	Exposed work area	1/2	Motorway hard shoulder closed to public, access for work vehicles only	Prevent unauthorised or accidental entry		Contractor
1.10 1.16	Traffic	Live traffic near to works	1/2	Motorway hard shoulder closure, full PPE to be used, vehicles to full chapter 8 compliance.	Will greatly reduce risk		Contractor
2.2	Services	Coming into contact with services	1/2	Obtain C2 plans/check verge for markers/look overhead. Competent and trained person to carry a full CAT and visual survey, mark out services before any work commences.	Overheads within the works area, cable heights to be determined by a competent person prior to works start		Contractor

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: **
6.4, 6.5, 6.6, 6.11, 6.13, 7.5, 6.14	Drainage Works	<p>Contact with potentially contaminated highway sediments, runoff and organic materials in existing system.</p> <p>Blood Bourne Viruses (BBV's) and leptospirosis.</p> <p>Crushing hazards, slips trips and falls, third party tampering with equipment and plant left on site.</p> <p>Confined spaces.</p> <p>Contamination / pollution.</p> <p>Culverts.</p> <p>Confined spaces and ground conditions and stability – deep excavations.</p> <p>Existing services - buried.</p> <p>Ground water levels. .</p> <p>Construction materials.</p> <p>Surface water flow into open excavation</p>	1/2	<p>Contractor to make all site personnel aware of the risks and the symptoms of Blood Bourne Diseases such as leptospirosis and ensure suitable PPE and welfare facilities are present for site personnel.</p> <p>Confined spaces to only be entered by competent personnel using safe systems of work.</p> <p>Chambers to be dewatered prior to entry.</p> <p>Water treated in accordance with CEMP procedures prior to discharge.</p> <p>No plant to be left on site.</p> <p>Over pumping the surface water upstream prior to excavation or not carry out works in extreme weather.</p>	<p>Unable to avoid complete contact with construction materials & potentially contaminated highway sediments or organic materials.</p> <p>Contractor to ensure that all site personnel have appropriate PPE including suitable eye protection and waterproof gloves.</p> <p>Appropriate over pumping/dewatering kit for chambers to be kept available.</p>		Contractor
6.7, 6.8	Manual handling & lifting operations	<ul style="list-style-type: none"> • Slips, trips and falls • Muscular skeletal injuries • Reversing vehicles • Falling objects or materials • Overhead collision hazards 	1	<ul style="list-style-type: none"> • Design proposals aim to reduce the weight of materials and therefore risk posed due to manual handling or lifting operations. Specifications are appropriate for the scope of the design and not oversized or over-engineered. 	<ul style="list-style-type: none"> • Manual handling and lifting operations remain unavoidable. Contractor to ensure that all site personnel have suitable PPE, lifting equipment and training. 		Contractor

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: **
		<ul style="list-style-type: none"> Crushing under load and impact hazards 		<ul style="list-style-type: none"> Preliminary site surveys undertaken to identify overhead and trip hazards. To protect operatives mechanical or shared lifting to be adopted. All lifting operations to have an appointed lift supervisor to coordinate lifts. Lifting plans to be submitted for approval. Lifting Operations and Lifting Equipment Regulations 1996 apply. Good 'housekeeping' and site cleanliness to be controlled by the contractor to reduce the risks of manual handling injuries, slips, trips and falls. 	<ul style="list-style-type: none"> Appointed person to approve lift plans. Residual risk acceptable. 		
7.1 7.2	Traffic management	Live traffic near to works	1/2	Motorway hard shoulder closure, full PPE to be used, vehicles to full chapter 8.	Appropriate TM safety zones should protect work force and travelling public.		Contractor
7.6	General working	Noise	1/2	Turn off machinery if not being used, use correct hearing protection if necessary	Noisy operation, keep record of exposure. Ensure PPE is worn.		Contractor
7.7	General working	Vibration	1/2	Obtain tools the lowest possible vibration ratings, check HAVS limits and make sure operatives stay within them.	Monitor & keep HAVS records		Contractor
7.9	Moving Plant	Plant moving around site	1/2	Site access and egress to be clearly signed. Banksmen to be used where appropriate to direct site traffic within work area.	Works need to be planned so that risk to workers is reduced.		Contractor

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: **
7.10	Reversing vehicles	Vehicles reversing within site	1/2	All reversing vehicles to follow Principal Contractors reversing vehicle policy. Task lighting to assist with visibility at night.	Site movements should be planned to reduce the need for reversing vehicles		Contractor
7.12	Weather	Poor visibility from rain/steam on freshly laid tarmac	1/2/3	Only carry out works in suitable weather conditions. Forecast to be checked	Monitor weather forecast		Contractor

FOR INFORMATION ONLY