

Document title:**Construction, Design & Management**

Designer's Hazard Identification and Risk Reduction Register

Form No.6

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 applicable, details how these hazards have been eliminated or reduced.

It is recognised that not every hazard can be ‘designed out’ and therefore the checklist will also be used to record the residual risks associated.

Part A: Designer's Hazard Checklist

Project Title:	The Campus, Welwyn Garden City	Confirm / Scheme no:	352
Project Description:	Traffic Signal Detailed Design		
Prepared by:	Terry Bedding		
Revision No.	-	Revision Date.	23/05/22

Notes:

1. This section of the document includes a list of potential hazards. *Part A - categories that do not apply should be edited / deleted to ensure an accurate account.*
2. An individual item or a whole section (by ticking the heading) can be noted as not applicable to indicate it has been considered though deemed not applicable.
3. The list of potential hazards is not exhaustive and should be edited as applicable to reflect the project hazards.
4. All items considered by the designer as ‘high risk’ must be addressed on the ‘Hazard Elimination Management Register’. Low risk activities can also be included if considered appropriate.

Ref:	Potential Hazards Arising From:	Risk (without designer's elimination / management measures)			Comments
		Not Applicable	Low- NO Action Required	High – Action NEEDED	
1.0	Existing Environment				
1.1	Existing buildings / adjacent walls / structures		x		Nearby structures should not be affected
1.2	Adjacent Land uses / property types		x		Residential and police station
1.3	Verges / hedges / ditches / overhanging trees			x	Trees on both approaches and foliage on central reservation should be reduced
1.4	Adjacent roads / junctions / rdbts etc		x		
1.5	Levels of illumination (street lighting)			x	Street Lighting should be reviewed
1.6	Impaired visibility (geometry / furniture etc)		x		
1.7	Cellars / basements / subways etc	x			
1.8	Traffic				
	• Volume (tidal / shift orientated)		x		
	• Type (buses / HGVs etc)		x		
	• Speeds		x		Speed survey indicates 85%ile under 35mph

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Ref:	Potential Hazards Arising From:	Risk (without designer's elimination / management measures)			Comments
		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	• Bus Route / wide load route / EDR		X		
	• Accident 'hot-spots'	x			
1.9	Pedestrians				
	• Crossing points (type of crossing)			x	uncontrolled crossing
	• School hazard patrol	X			
	• Footway availability		X		
	• Disabled facilities / access arrangements		X		
1.10	Access restrictions				
	• One way / Prohibited movements	X			
	• Weight / width / height	X			
	• Geometry / Layout restrictions	X			
	• On-street Parking / driveways	X			
	• Deliveries	X			
1.11	Railways (level crossings / bridges etc including underground trains)	X			
1.12	Bridleways / Public Rights of way	X			
1.13	Watercourse, Lakes, Rivers and Streams etc	X			
1.14	Ground conditions:	x			
	• Contamination				
	• Ground water				
	• Instability				
	• Archaeology / SSSI / reserve				
	• Mineral / mine workings				
	• Previous land uses				
1.15	Working with others (i.e. sharing site)	X			
1.16	Hazardous / Fragile materials	X			
1.17	Restricted working hours (nights etc)	X			
1.18	Concurrent site activities	X			
1.18	Others (insert as necessary)				
2.0	Existing Services				
2.1	Underground				
	• Electrical (EDF & private)			X	HV & LV
	• Gas (low and medium pressure)			x	Cadent & GTC LP & MP
	• Fuel Pipelines / High pressure Gas Mains	x			

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
	• Water			x	Affinity & Thames
	• Telecommunications			x	BT, Virgin, Colt
	• Other (insert as necessary)			x	EU Fibre Network, Street Lighting
2.2	Overhead Services	X			
	• Electrical				
	• Telecommunications				
	• Other (insert as necessary)				
3.0	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		Standard procedures to be adhered to
3.6	Contamination (ground / water) (refer 1.6)	X			
3.7	Adjacent structures (refer 1.8)	X			
3.8	Others (insert as necessary)	X			
4.0	Foundations				
4.1	Adjacent buildings/structures	X			
4.2	Deep excavations	X			
4.3	Plant movements	X			
4.4	Interface with services	X			
4.5	Contamination (ground / water)	X			
4.6	Ground water	X			
4.7	Confined spaces	X			
4.8	Piling:	X			
	• Noise				
	• Vibration				
	• Contamination				
	• Plant				
4.9	Grouting:	x			
	• Drilling work				
	• Dust				
	• Pollution				
4.10	Stability of structure	x			

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
4.11	Others (insert as necessary)	x			
5.0	Services Installation				
5.1	Excavations		x		Herts CC standard details to be adhered to
5.2	Ground water	X			
5.3	Ground conditions	X			
5.4	Existing services		x		See section 2
5.5	Testing operations	X			
5.6	Lifting operations	X			
5.7	Adjacent structures / activities	X			
5.8	Maintenance	X			
5.9	Contamination	X			
5.10	Others (insert as necessary)	X			
6.0	Drainage Works				
6.1	Excavations	X			
6.2	Ground water	X			
6.3	Ground conditions	X			
6.4	Confined spaces	X			
6.5	Leptospirosis / Weils disease	X			
6.6	Existing services (asbestos pipes?)	X			
6.7	Manual handling	X			
6.8	Lifting operations	X			
6.9	Maintenance	X			
6.10	Sewage	X			
6.11	Traffic	X			
6.12	Contamination (ground / water)	X			
6.13	Hepatitis B / Tetanus	X			
6.14	Others (insert as necessary)	X			
7.0	Carriageway Surfacing				
7.1	Adequate safety zones (centre line working)	X			
7.2	Coal Tar	X			
7.3	Surfacing Materials (hot materials)	X			
7.4	Dust / noise / vibration	X			
7.5	Hot Materials (bitmac / thermo / tack coat)	x			
7.6	Temporary road surfaces	X			

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
7.7	Haul routes	X			
7.8	Holding / storing of lorries on site	X			
7.9	Delivery / storage of plant / offices on site etc	X			
7.10	Separating Public from the works	X			
7.11	Impeding visibility (plant / stores / offices etc)	X			
7.12	Joints / vertical level differences	X			
7.13	Removal of rd markings / studs / A.skid	X			
7.14	Raised ironwork / increased kerb up-stands	X			
7.15	Cold milling / Planing out signal / detector loops	X			
7.16	Skid resistance of new surfaces	X			Appropriate skid resistance on approach to crossing points (+65PSV) to be adhered to
8.0	Steelwork Construction				
8.1	Working at height	X			
8.2	Lifting operations	X			
8.3	Temporary stability	X			
8.4	Connections	X			
8.5	Unusual sequence	X			
8.6	Materials, e.g. paints	X			
8.7	Consideration of future maintenance	X			
8.8	Others (insert as necessary)	x			
9.0	Concrete Construction				
9.1	Working at height	X			
9.2	Plant restrictions	X			
9.3	Lifting operations	X			
9.4	Noise	X			
9.5	Vibration	X			
9.6	Temporary instability	X			
9.7	Pre/post tensioning	X			
9.8	Materials	X			
9.9	Maintenance	X			
9.10	Joints (scabbling should not be undertaken)	x			
9.11	Others (insert as necessary)	X			

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
10.0	Masonry Construction				
10.1	Manual handling	X			
10.2	Lifting operations	X			
10.3	Materials	X			
10.4	Temporary stability	X			
10.5	Working at height	X			
10.6	Dust	X			
10.7	Durability	X			
10.8	Catastrophic collapse	X			
10.9	Others (insert as necessary)	X			
11.0	Timber Construction				
11.1	Materials	X			
11.2	Working at height	X			
11.3	Temporary stability	X			
11.4	Lifting operations	X			
11.5	Manual handling	X			
11.6	Fire	X			
11.7	Dust	X			
11.8	Others (insert as necessary)	X			
12.0	Cladding				
12.1	Lifting operations	X			
12.2	Manual handling	X			
12.3	Maintenance / cleaning	X			
12.4	Others (insert as necessary)	X			
13.0	Glazing				
13.1	Manual handling	X			
13.2	Lifting operations	X			
13.3	Cleaning / maintenance	X			
13.4	Others (insert as necessary)	X			
14.0	Mechanical/Electrical Systems				
14.1	Access		X		Asbestos survey should be undertaken Standard equipment being used
14.2	Existing services (asbestos?)		x		
14.3	Manual handling		x		
14.4	Materials / substances		X		

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
14.5	Confined spaces	X			
14.6	Pressure systems	X			
14.7	Testing operations		x		Standard HCC Traffic Signal testing procedures to be adhered to
14.8	Fixings		x		
14.9	Working at height		x		Standard traffic signal poles
14.10	Maintenance		x		HCC maintenance agreement in place once taken into maintenance
14.11	Others (insert as necessary)	X			
15.0	Railway Activities				
15.1	Train movements	X			
15.2	Overhead lines	X			
15.3	Electrified track	X			
15.4	Underground services	X			
15.5	Adjacent structures	X			
15.6	Ground stability	X			
15.7	Contamination	X			
15.8	Others (insert as necessary)	X			
16.0	Demolition of Existing Structures				
16.1	Services	X			
16.2	Adjacent / adjoining structures	X			
16.3	Materials:	X			
	• Hazardous i.e. asbestos in permanent shuttering, waterproofing to bridge decks, joints etc.				
	• fragile				
16.4	Working at height	X			
16.5	Temporary stability	X			
16.6	Pre/post tensioning	X			
16.7	Noise	X			
16.8	Vibration	X			
16.9	Dust	X			
16.10	Effect on usage of demolition materials	X			
16.11	Others (insert as necessary)	x			

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
17.0	Kerbing / Footways				
17.1	Manual handling	X			
17.2	Excavation (refer to 3)	X			
17.3	Services (refer to 2)	X			
17.4	Cutting operations / noise / dust	X			
17.5	Maintaining access	X			
17.6	Pedestrian management (refer to 8)	X			
17.7	Existing constraints (refer to 1)	X			
17.8	Temporary surfaces / raised ironwork etc	X			
17.9	New / altered geometry	X			
17.10	Location of storage areas	X			
17.11	Materials (weight of kerbs)	x			
18.0	Street Lighting, electrical, signs, signals etc				
18.1	Positioning of columns/posts		x		Signal poles positioned appropriately
	• Buried services (refer 2.1)			x	See section 2
	• Overhead / adjacent obstructions (refer 2.2)	X			
	• Excavations (refer 3)		X		
	• Reducing footway widths / clearances			x	Appropriate pedestrian TM to be provided during construction to provide min 1m walkway
	• Impeding access / visibility		X		Sign post to be removed from zig zag area
	• Nuisance / obtrusive lighting		X		
	• Future Maintenance		X		HCC term maintenance contract
18.2	Column erection / removal	X			
	• column condition				
	• column type / material				
	• Attachments / fittings				
18.3	Cable installation		X		
18.4	Electrical works		X		
18.5	Levels of illumination			x	To be reviewed by as separate contractor
18.6	Testing operations		X		
18.7	Type of equipment specified		x		Standard equipment specified – RMS to be compatible with HCC Dynniq system

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
18.8	Working at height (location? Fold downs?)		x		Installation company procedures to be followed
18.9	Chemicals / COSHH / Jointing materials		X		
18.10	Animal excretions		X		
18.11	Insect / rodent infestations		X		
18.12	Poly chloro benzoates (PCB's) and/or asbestos (in old installations)			x	Asbestos survey should be undertaken prior to start of scheme
19.0	Structural Inspections				
19.1	Working at height	X			
19.2	MEWPS	X			
19.3	Temporary platforms	X			
19.4	Ladders	X			
19.5	Working in / over water	X			
19.6	Confined spaces	X			
19.7	Uneven ground	X			
19.8	Restricted access	X			
19.9	Statutory Authority Apparatus attached to Structures	X			
19.10	Temporary Works	X			
20.0	Traffic and pedestrian Management				
20.1	Maintaining access (i.e. programme works)	X			
20.2	Controlling access (gatemen etc)	X			
20.3	Safety Zones available	X			
20.4	Barrier types / positioning of signs etc	X			
20.5	Setting up equipment / signs etc	X			
20.6	Maintenance of equipment / signs etc	X			
20.7	Separating pedestrians from works (refer 1.9)	X			
20.8	Separating vehicles from the works.	X			
20.9	Site generated traffic (also see 1.8)	X			
20.10	Temporary restrictions (one-way, speeds, signals etc)	X			
20.11	Road closures (diversion routes)	X			
20.12	Site generated local congestion	X			
20.13	Emergency vehicle access	X			
20.14	Altering existing signals / road layouts	X			
20.15	Phasing / amending traffic management	x			

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		Not Applicable	Low- NO Action Required	High – Action NEEDED	
20.16	Level crossings	X			
20.17	Interaction with the public	X			
21.0	Site Welfare / Compound				
21.1	Location / suitability of office / welfare facilities	X			
	• Buried services				
	• Overhead obstructions				
	• Parking for workforces				
	• Power supply / temporary services				
	• Security of compound / barrier type				
	• Delivery access				
21.2	TM for establishment / removal of compound	X			
22.0	Future Demolition / decommissioning of new structure/installation				
22.1	Unusual sequence		X		
22.2	Pre/post tensioned element	X			
22.3	Materials		X		
22.4	Adjacent/adjoining structure	X			
22.5	Temporary stability	X			
22.6	Contamination during usage of demolition material.	X			
22.7	Others (insert as necessary)	x			
23.0	Maintenance and Operation of Facility / Structure etc.				
23.1	Access		x		Sufficient parking within Guesson Rd
23.2	Safety equipment		X		
23.3	Testing / inspection		x		Standard yearly PFI as per HCC Term maintenance contract
23.4	Procedure		X		
23.5	Contamination during usage of demolition material.	X			
23.6	Others (insert as necessary)	X			
24.0	Use of the structure as a workplace				
24.1	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	X			
24.2	If yes; the design and materials used must take in to account the provisions of the Workplace (Health, Safety and Welfare) Regulations	x			

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Part B: Hazard Elimination Checklist (* D- Design C- Construction)

Project:		The Campus	Confirm / Scheme no:		Doc ref:	1	Issue no:	-
Prepared by:		Terry Bedding	Date:	23/05/22	Reviewed by:		Date:	23/05/22
No.	Phase D/C*	Activity	Hazards	Persons at Risk	Design Measures to eliminate or reduce the hazard	Information on the Residual Risk	Principal Designer Review	Drawing ref
1	D	1.3	Trees obscuring signal heads and encroaching on footway	Public	Foliage to be reduced for maximum visibility	Regular maintenance to be undertaken		N/A
2	D	1.5, 18.5	Low levels of illumination on crossing carpets	Public	Street Lighting review should be undertaken by 3 rd party	Appropriate design to be undertaken		N/A
3	D	Section 2, 18.1	STATS – HV power cables	Public / workforce	Appropriate pedestrian TM Competent contractor and appropriate RAMS	STATS still present		STATS Plans
4	C	18.1	Pedestrians during construction	Public / workforce	Appropriate pedestrian TM required during construction	Pedestrians still present		N/A
5	D	18.12	Asbestos	Workforce	Asbestos survey should be undertaken to determine presence of asbestos	Asbestos may still be present		N/A

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