

KGA (UK) Ltd

Chartered Building Services Consulting Engineers



Health and Safety Document CDM Regulations

Project:-

National Museums Liverpool Sea Galleries

Trinity Chambers
10 Ivy Street
Birkenhead
Merseyside
CH41 5EF

Telephone 0151 647 5021
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Date: July 2019



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EXISTING ENVIRONMENT

(use continuation sheets if required)

PROJECT	National Museums Liverpool – Sea Galleries	Client	National Museums Liverpool
		Architect	
JOB NO.	5003	Quantity Surveyors	
DATE	23 July 2019	Services Eng	KGA (UK)

	LAND USES AND RESTRICTIONS (general description, with ref, to any potential/actual hazards)	Dwg/doc ref.
	ADJACENT LAND (existing and previous uses - if known, e.g. school, hospital etc. Commercial Premises and Docks	
	PROPOSED SITE (existing and previous uses, if known, including landfill, railways, foundry etc.) Existing Museum and former warehouse	

	PLANNING RESTRICTIONS (noise, smoke, dust, mud on roads, hours of working etc.)	Dwg/doc ref.
Existing Building, Listed Building, Building Regulations Approval.		



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EXISTING ENVIRONMENT

(use continuation sheets if required)

	EXISTING STRUCTURES (record hazardous substances, pre-stressed/post tensioned construction, demolition methodology, proximity of existing buildings, instability problems, removal of large components/plant requiring cutting or heavy lifting equipment etc.)	Dwg/doc ref.
	Existing Building, currently in use.	

	GROUND CONDITIONS (survey existing, site, trial/bore holes, presence of petrol/diesel tanks, boiler rooms/ generators etc. fuelled by petrol/diesel. Record soil/water contamination, specify precautions to be taken and method statements required from Principal Contractor)	Dwg/doc ref.
	To Be Established by Survey	



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EXISTING ENVIRONMENT

(use continuation sheets if required)

	EXISTING TRAFFIC SYSTEM AND RESTRICTIONS (restrictions on road width, bridge heights, car parking, skip location, delivery/ disposal times etc)	Dwg/doc ref.
	Local Parking and Access Required to the Building.	

	EXISTING SERVICES (underground/overhead cables on and adjacent to site, live/disused sewers and drains, gas pipes, hazardous substances within existing equipment, e.g. PCB's, insulation oils, refrigerant gases etc.)	Dwg/doc ref.
	Electricity, Gas, Telecoms, Water	



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DESIGNER'S HAZARD IDENTIFICATION

Project: Sea Galleries		Designer: M Davies	
Stage of Work: Electrical Services Installation			
Date: 23 July 2019			
Ref	Hazard	Action	Inform
1.	Site Access, Mobile Plant	Personal awareness Demarcation and control by Main Contractor	
2.	Site Deliveries	As above and off loading precautions	
3.	High Structures - Fall	Restraint barriers, hats, scaffolding	
4.	High Structures - Falling Objects	As above	
5.	Masonry	As above	
6.	Mineral Fibres	Personal protection Area isolation Ventilation	
7.	Confined Spaces	Ventilation, awareness of location	
8.	Timber	Protective clothes and headgear	
9.	Stairs	Barriers, protective clothes, fire extinguisher	
10.	Electrical Installation	Protective workwear, isolation, earthing, marking	
11.	Lighting Installation	As above	



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RISK ANALYSIS SHEET

Sheet No.

A

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
1A, 1B, 1D Pedestrian Route Site Access Site Deliveries	Struck by plant Struck by moving object Contact with moving machine

RISK ASSESSMENT					
SEVERITY	[3] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD	[] H	CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY		[] M	REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS		[3] L	VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD					
H / H AVOID WHENEVER POSSIBLE L / L MAY BE IGNORED					
ALL OTHER VALUES : CONTROL OR MINIMISE RISK					

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
<ol style="list-style-type: none">1. Collective alertness and observation.2. Clear access and mobility space.3. Banksman provision.4. Manual handling, gloves and protection.5. Boots or protective footwear.6. Protective helmet.	



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RISK ANALYSIS SHEET

Sheet No.

B

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
2B, 2C, 2E, 2F, 2K High structures, steelwork, masonry, concrete, mineral fibres	Fall from height Moving object Hazardous substance

RISK ASSESSMENT					
SEVERITY	[3] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD	[] H	CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY		[] M	REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS		[3] L	VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD					
H / H AVOID WHENEVER POSSIBLE L / L MAY BE IGNORED					
ALL OTHER VALUES : CONTROL OR MINIMISE RISK					

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
1. Helmets. 2. Harness. 3. Mask. 4. Gloves. 5. Boots.	



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RISK ANALYSIS SHEET

Sheet No.

C

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
3A, 3D Foundations	Trip

RISK ASSESSMENT							
SEVERITY	[] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD	[] H	CERTAIN OR NEAR CERTAIN TO OCCUR		
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY		[] M	REASONABLY LIKELY TO OCCUR		
	[] L	OTHER INJURY OR ILLNESS		[3] L	VERY SELDOM OR NEVER OCCURS		
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD							
H / H		AVOID WHENEVER POSSIBLE		L / L		MAY BE IGNORED	
ALL OTHER VALUES :							CONTROL OR MINIMISE RISK

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
<ol style="list-style-type: none">1. Tapes.2. Ventilation.3. Boards.4. Shoring.5. Fencing.	



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RISK ANALYSIS SHEET

Sheet No.

D

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
5G, 6A, 6B Timber Insitu concrete stairs Pre-cast concrete stairs	Fall from height Trip Manual handling

RISK ASSESSMENT			
SEVERITY	[] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD [] H CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY	[] M REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS	[3] L VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD			
H / H AVOID WHENEVER POSSIBLE L / L MAY BE IGNORED			
ALL OTHER VALUES : CONTROL OR MINIMISE RISK			

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
1. Protective gloves and clothes. 2. Helmet. 3. Warning markers. 4. Tapes.	



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RISK ANALYSIS SHEET

Sheet No.

E

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
7A Welding	Metal splash Electricity Gas explosion Fire

RISK ASSESSMENT			
SEVERITY	[] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD [] H CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY	[] M REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS	[3] L VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD			
H / H AVOID WHENEVER POSSIBLE L / L MAY BE IGNORED			
ALL OTHER VALUES : CONTROL OR MINIMISE RISK			

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
1. Protective mask. 2. Helmet. 3. Gloves. 4. Boots. 5. Earthing. 6. Electricity insulation.	



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RISK ANALYSIS SHEET

Sheet No.

F

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
16A, 16B, 16D, 16G, 16J, 16L Electrical Distribution 17A, 17B, 17C, 17D Lighting Installation 19 Lightning Installation	Confined spaces Electric shock Fire Manual handling cuts Trip, fall from height

RISK ASSESSMENT					
SEVERITY	[3] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD	[] H	CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY		[3] M	REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS		[3] L	VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD					
H / H		AVOID WHENEVER POSSIBLE		L / L MAY BE IGNORED	
ALL OTHER VALUES : CONTROL OR MINIMISE RISK					

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
<ol style="list-style-type: none">1. Shock protection.2. Insulation.3. Protective gloves.4. Boots.5. Helmet.6. Harness.7. Rails.8. Warning signs.9. Fuse and switch protection.	



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RISK ANALYSIS SHEET

Sheet No.

G

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
20A Lift installation 25C, 25D, 25F, 25B Fans	Confined space Fall from height Electric shock Contact with moving machines

RISK ASSESSMENT					
SEVERITY	[3] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD	[] H	CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY		[] M	REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS		[3] L	VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD					
H / H		AVOID WHENEVER POSSIBLE		L / L	
				MAY BE IGNORED	
ALL OTHER VALUES : CONTROL OR MINIMISE RISK					

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
1. Protective clothes. 2. Harness. 3. Scaffolding. 4. Rails. 5. Boots. 6. Helmets. 7. Insulation. 8. Guards.	



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RISK ANALYSIS SHEET

Sheet No.

H

Client : National Museums of Liverpool

Project :	Sea Galleries	Checklist Sheet Ref :	
Job No :	5003	Analysis By :	M Davies
Dwg Ref :		Date :	23 July 2019

Activity/Element of Design	Identify Hazard
Heating Plant 26A, Boiler Plant 26C, Pipework 26D, Emitters 26E, Controls 26H, Commissioning	Metal splash Manual handling Electricity Fire Hazardous substances Explosion

RISK ASSESSMENT					
SEVERITY	[] H	FATALITY, MAJOR INJURY OR ILLNESS CAUSING LONG TERM DISABILITY	LIKELIHOOD	[] H	CERTAIN OR NEAR CERTAIN TO OCCUR
	[3] M	INJURY OR ILLNESS CAUSING SHORT TERM DISABILITY		[] M	REASONABLY LIKELY TO OCCUR
	[3] L	OTHER INJURY OR ILLNESS		[3] L	VERY SELDOM OR NEVER OCCURS
TICK ASSESSMENT OF SEVERITY & LIKELIHOOD					
H / H		AVOID WHENEVER POSSIBLE		L / L	
				MAY BE IGNORED	
ALL OTHER VALUES : CONTROL OR MINIMISE RISK					

PRINCIPLES OF PROTECTION :	SUGGEST METHODS/PROCEDURES REQUIRED TO AVOID/MINIMISE HAZARD
<ol style="list-style-type: none">1. Proper illumination.2. Test instrumentation.3. Protective hand barrier cream.4. Gloves.5. Boots.6. Clothes.7. Insulation.8. Earth bonding.9. Assisted lifting.	



Sheet No. 1

[illegible]



Sheet No. 2

[illegible]



Sheet No. 3

[illegible]



Sheet No. 4

[illegible]



Sheet No. 5

[illegible]



HAZARD IDENTIFICATION CHECKLIST

(to be read in conjunction with Risk Analysis Sheets)

Sheet No. 6

ACTIVITY		HAZARD (tick the relevant hazards)														
		Rads, Chems & Metal Splash	Confined Spaces	Fall From Height	Struck by Mobile Plant	Trip	Collapse	Manual Handling	Moving Object	Electricity	Contact with Moving Machine	Fire	Hazardous Substances	Noise and Vibration	Explosion	Other
E	CULVERTS															
F	OTHER															
G	OTHER															
H	OTHER															
16	ELECTRICAL DISTRIB'N															
A	HV SWITCHGEAR		✓							✓		✓				
B	LV SWITCHGEAR		✓							✓		✓				
C	STANDBY GENERATOR															
D	TRANSFORMERS									✓						
E	POWER FACTOR CORRECTION EQUIPMENT															
F	UPS EQUIPMENT															
G	CABLE INSTALLATION					✓		✓		✓						CUTS
H	CABLE SUPPORT SYSTEM															
J	CABLE CHAMBERS		✓													
K	CABLE TRENCHES															
L	TESTING/COMMISSIONING									✓						
M	OTHER															
N	OTHER															
P	OTHER															
17	LIGHTING INSTALLATION															
A	LUMINAIRE			✓						✓						
B	REMOTE CONTROL GEAR			✓						✓						
C	LAMPS			✓						✓						
D	EXTERNAL LIGHTING			✓						✓						



Sheet No. 7

[illegible]



Sheet No. 8

[illegible]



HAZARD IDENTIFICATION CHECKLIST

(to be read in conjunction with Risk Analysis Sheets)

Sheet No. 9

ACTIVITY		HAZARD (tick the relevant hazards)														
		Rads, Chems & Metal Splash	Confined Spaces	Fall From Height	Struck by Mobile Plant	Trip	Collapse	Manual Handling	Moving Object	Electricity	Contact with Moving Machine	Fire	Hazardous Substances	Noise and Vibration	Explosion	Other
23	FIRE PROTECTION															
A	SPRINKLERS															
B	PIPEWORK															
C	TANKSET															
D	PUMP															
E	HOT WORKING															
F	OTHER															
G	OTHER															
24	GAS DISCHARGE															
A	PIPEWORK INSTALLATION															
B	GAS															
C	TESTING/COMMISSIONING															
D	OTHER															
E	OTHER															
	MECHANICAL INSTALLATION															
25	AIR SUPPLY/ EXTRACT SYSTEM															
A	CENTRAL PLANT															
B	FANS									✓	✓					
C	DUCTWORK															
D	CONTROL DEVICES									✓						
E	FILTERS															
F	TESTING/COMMISSIONING									✓						



Sheet No. 10

[illegible]



Sheet No. 11

[illegible]