

Designer Risk Workshop Pack



Design Risk Assessment Guide

FIRST EDITION

Guidance Statement

This document provides typical examples of Designer Risk Assessments (DRA).

Every project is different, and risks will vary depending on the site, design, and construction methods.

This document is therefore intended to be used as guidance only to support design discussions and CDM risk workshops. Designers must undertake project-specific risk assessments for each individual project in accordance with the CDM Regulations 2015.

Below is a sample of our Designer Risk Register.

Project Health and Safety Project Designer Register Register PROJECT NAME											
Risk Heading			Risk Score			Project Ref		Title			
1	Construction workers	High	Risk not tolerable or extra management may be required			Project Ref	Project Ref	Add Project Number			
2	Members of the Public	Medium	Risk to be further reviewed			Review	Review	Add Date Issued			
3	Maintenance workers	Low	Risk tolerable								
4	In use PUS Risks	Closed	Risk avoided/no further action unless circumstances change								
5	Project/Commercial										
6	Individual Risk										
<p>Click on the dropdown arrow to see the risk score</p> <p>Construction Phase Hazards</p> <p>Click cell drop down low/med/high listing risk before designer measure</p> <p>Click cell drop down low/med/high after design measures</p> <p>Name who is responsible for the design measure normally the Designer Risk Officer who manages the ongoing risk normally the client or contractor</p>											
Person at risk	Risk Description	Risk Score	Category Activity	Originator	Design measures taken, or being taken to eliminate or reduce the hazard	Risk Score	Responsible	Date Closed	Risk Over	Design Closed	Construction Closed
1		Medium				Low	Designer		contractor		
2											
3											
4											
5											

Architect – Typical Design Risks

- Façade maintenance access systems
- Window cleaning strategy
- Balcony fall protection
- Glass balustrade failure risk
- Podium deck edge protection
- Roof edge fall hazards

- Solar panel access routes
- Roof hatch access safety
- External lighting maintenance access
- Cleaning façade materials
- Cladding installation safety
- Cladding fire performance

- Window replacement access
- Green roof maintenance
- External signage maintenance
- Façade inspection access
- Podium landscape maintenance
- Refuse store vehicle interaction
- Rooflight fragility

Structural – Typical Design Risks

- Deep basement excavation collapse
- Temporary works stability
- Retaining wall failure
- Groundwater ingress
- Tower crane base loading
- Heavy precast lifting operations
- Movement joints integrity

- Structural frame stability during build
- Wind loading during partial construction
- Progressive collapse prevention
- Balcony cantilever loading
- Transfer slab construction risk
- Facade support brackets

- Core wall stability
- Steel frame erection sequencing
- Concrete pour stability
- Formwork collapse
- Roof plant structural loading
- Solar PV wind uplift
- Structural penetrations for services

Mechanical & Electrical – Typical Design Risks

- Roof plant maintenance access
 - Solar PV electrical isolation
 - Inverter fire risks
 - Basement plant room ventilation
 - Confined space hazards
 - AHU maintenance clearance
 - Electrical meter rooms
- Cooling tower access
 - Electrical switch room fire risk
 - Cable riser fire spread
 - Smoke ventilation maintenance
 - Sprinkler plant rooms
 - Pump maintenance access
 - Drainage access chambers
- Water tank inspection access
 - Heat pump noise/vibration
 - Plant lifting and replacement
 - Electrical shutdown procedures
 - Generator exhaust hazards
 - BMS maintenance access

Interior Design – Typical Design Risks

- Point loads from heavy fitting and equipment
 - Fragile or poorly marked internal glazing
 - Balustrade and guarding safety
 - Stair design and safe use
 - Fire performance of internal finishes and linings
 - Combustible materials in wall, ceiling or decorative finishes
 - Fixing failure of wall-mounted panels, mirrors or joinery
 - Stability of tall furniture, shelving and fitted units
- Heavy or oversized ceiling features
 - Suspended light fittings and feature installations
 - Access for cleaning, maintenance and replacement of fittings
 - Unsafe access to high-level decorative features
 - Manual handling risks from large or heavy bespoke elements
 - Access and maintenance for MEP items concealed within the design
- Ventilation provision around enclosed appliances or equipment
 - Water leakage risks from planting, irrigation or water features
 - Moisture and mould risk in wet rooms, spas or wellness areas
 - Acoustic panels or ceiling features becoming loose or falling
 - Maintenance access to smoke detectors, sensors and other ceiling-mounted systems

Residual Risks to be Managed by Client / Building Management Company

- Façade cleaning strategy
 - Solar panel maintenance
 - Roof plant maintenance access
 - Internal lighting maintenance at height
 - Lift maintenance access
 - Fire system maintenance
- Smoke ventilation servicing
 - Water tank inspections
 - Maintenance of atrium lighting
 - Replacement of heavy roof plant
 - Access to façade inspection systems

The following is a typical Designer Hazards Checklist:

DESIGNER HAZARD CHECKLIST

The list of potential hazards is not exhaustive and is intended as a guide.

POTENTIAL HAZARDS ARISING FROM:		RISK (WITHOUT DESIGNER'S ELIMINATION / MANAGEMENT MEASURES) ✓ AS APPLICABLE			
REF:	ITEMS - ISSUES	N/A	LOW – NO ACTION	HIGH - ACTION NEEDED	COMMENTS
1.0	EXISTING ENVIRONMENT				
1.1	Existing buildings				
1.2	Previous/existing land/ structures				
1.3	Roadways				
1.4	Railways				
1.5	Water course				
1.6	Ground conditions:				
	• Contamination				
	• Ground water				
	• Instability				
1.7	Mineral / mine workings				
1.8	Access restrictions				
1.9	Adjacent properties				
1.10	Concurrent site activities				
1.11	Interface with the public				
1.12	Occupied premises				
1.13	Structural instability				
1.14	Fragile materials				
1.15	Hazardous materials				
1.16	Land use				
1.17	Traffic				
1.18	Others (insert as necessary)				
2.0	EXISTING SERVICES				
2.1	Underground				
	Electrical				
	Gas				
	Water				
	Telecommunications				
	Others (insert as necessary)				
2.2	Overhead Services				
	• Electrical				
	• Telecommunications				
	• Others (insert as necessary)				
3.0	EARTHWORKS				
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)				
3.8	Others (insert as necessary)				

4.0	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)				
5.0	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				
5.9	Contamination				
5.10	Others (insert as necessary)				
6.0	DRAINAGE WORKS				
6.1	Excavations				
6.2	Ground water				
6.3	Ground conditions				
6.4	Confined spaces				
6.5	Leptospirosis / Weills disease				
6.6	Existing services				
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)				
7.0	HIGHWAYS				
7.1	Traffic management				
7.2	Adjacent traffic				
7.3	Construction materials				
7.4	Structural works				
7.5	Adjacent structures				
7.6	Noise				
7.7	Vibration				
7.8	Dust				
7.9	Manual Handling				
7.10	Others (insert as necessary)				

8.0	STEELWORK CONSTRUCTION				
8.1	Working at height				
8.2	Lifting operations				
8.3	Temporary stability				
8.4	Connections				
8.5	Unusual sequence				
8.6	Materials, eg paints				
8.7	Consideration of future maintenance				
8.8	Others (insert as necessary)				
9.0	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)				
10.0	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)				
11.0	TIMBER CONSTRUCTION				
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)				
12.0	CLADDING				
12.1	Lifting operations				
12.2	Manual handling				
12.3	Maintenance / cleaning				
12.4	Others (insert as necessary)				
13.0	GLAZING				
13.1	Manual handling				
13.2	Lifting operations				
13.3	Cleaning / maintenance				
13.4	Others (insert as necessary)				

14.0	MECHANICAL/ELECTRICAL SYSTEMS				
14.1	Access				
14.2	Existing services				
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)				
15.0	RAILWAY ACTIVITIES				
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)				
16.0	DEMOLITION OF EXISTING STRUCTURES				
16.1	Services				
16.2	Adjacent / adjoining structures				
16.3	Materials:				
	• Hazardous ie asbestos				
	• 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)				
17.0	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)				
18.0	MAINTENANCE AND OPERATION OF FACILITY / STRUCTURE ETC				
18.1	Access				
18.2	Safety equipment				
18.3	Testing / inspection				
18.4	Procedure				
19.0	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 If yes; the design and materials used must take in to account the provisions of the Workplace (Health, Safety and Welfare) Regulations 1992.				