

*Recreation in Aston.  
Proposed Extension to Pavilion.  
Design Risk Register.*



***THE CONSTRUCTION  
(DESIGN & MANAGEMENT)  
REGULATIONS 2015***

***Issue No. Issue 02  
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EKV01773***

# Design Risk Register



## INTRODUCTION

This Design Risk Register (DRR) records the hazards and associated design risks with the project from inception to handover. EKV Design Ltd have been commissioned by Recreation in Aston, to carry out the Principal Designer role up to hand over and close out (RIBA stage 6). The Principal Designer will help to focus the design team's attention on the residual hazards. This DRR is therefore a live document which will be regularly updated with the intention of closing out each item. The Designers should add any residual hazard details to construction issue drawings via Safety, Health and Environmental (SHE) boxes.

We'd politely remind the Designers that it is their responsibility to identify the scheme hazards and the associated risks and apply their risk management processes and procedures. We recommend that the design team meet on a regular basis to discuss and review the design and work through the items on the DRR. The Designers should be able to follow the principles of CDM 2015 and provide the necessary information relating to the design. In order to achieve legislative compliance Designers should take into account the **general principles of prevention** and exercise good design risk management processes and procedures to **eliminate, reduce, isolate and control (eric)** the hazards as appropriate.

**Designers are advised to seek guidance from industry publications such as** CIRIA C662 - Work sector guidance for Designers, CIRIA 663 - Workplace in use guidance for Designers and CIRIA C686 - Safe Access for maintenance & repair. The HSE encourage Designers to consider the use of red, amber, green lists as detailed on the next page.

## Design Risk Register



**RED** - Items that require additional consideration by Designers and information to reduce the hazards as low as is reasonably practicable.

**AMBER** - Further review required to reduce hazard and provide residual hazard information to the Principal Contractor if no further action appropriate.

**GREEN** - Hazard considered to be reduced as low as possible with no further action required. Residual hazard information may still be required.

### Red List - Examples

- Lack of adequate pre-construction information eg detailed ground condition report, services survey, structural survey, Asbestos survey etc;
- Demolition including by hand-held breakers and scabbling of concrete;
- The specification of fragile rooflights and roofing assemblies;
- Processes giving rise to large quantities of dust (dry cutting, blasting etc.);
- On-site spraying of harmful particulates;
- The specification of structural steelwork which is not purposely designed to assist construction and/or accommodate safety nets;
- Glazing that cannot be accessed safely for cleaning/replacement;
- Designing roof mounted services requiring access for maintenance, without the necessary provision for safe access;
- Entrances, floors, ramps, stairs and escalators etc not specifically designed to avoid slips, trips and falls during use and maintenance (include whether affects and spillages);
- Design of environments involving adverse, lighting, noise, vibration, temperature, wetness, humidity, chemical/environmental conditions during use and maintenance;
- Design of structures that do not allow for fire containment during construction.

### Amber List – Examples

- Internal manholes/inspection chambers in circulation areas;
- External manholes in heavy used vehicle access zones;
- The specification of 'lip' details at the top of pre-cast concrete stairs (i.e. trip hazards);
- The specification of shallow steps (i.e. risers) in external paved areas;
- The specification of heavy building blocks & concrete products i.e. those weighing > 20kgs;
- Large and heavy glazing panels;
- The chasing out of concrete/brick/blockwork walls or floors for the installation of services;
- The specification of heavy lintels (the use of slim metal or concrete lintels being preferred);
- The specification of solvent-based paints and thinners, or isocyanides, particularly for use in confined areas;
- Specification of curtain wall or panel systems without provision for the tying of scaffolds;

- Specification of blockwork walls greater than 3.5 M high using retarded mortar mixes;
- Site wide issues;
- Site traffic routes that do not allow for one way systems and/or vehicular/pedestrian traffic segregation;
- Site layout that doesn't allow for adequate room for delivery and/or storage of materials, including specific components;
- Heavy construction components which cannot be handled using mechanical lifting devices (access restrictions/floor loadings);
- On site welding, in particular new structures;
- Using large piling rigs and cranes near 'live' railways and overhead electrical power lines or proximity to obstructions prevents guiding of rigs.

### Green List – Examples

- Adequate access for construction vehicles to minimise reversing requirements (one-way systems and turning radii);
- Provision of adequate access and headroom for maintenance in plant rooms & adequate provision for replacing large components;
- Thoughtful location of mechanical / electrical equipment, light fittings, security devices etc. to facilitate access & away from crowded areas;
- The specification of concrete products with pre-cast fixings to avoid drilling;
- The specification of materials to make handling easier and reduce potential of falling objects;
- Early installation of permanent means of access where possible;
- The provision of edge protection at permanent works where there is a foreseeable risk of falls after handover;
- Practical and safe methods of cleaning glazing and gutters;
- Appointment of a Temporary Works Coordinator (BS 5975);
- Off-site timber treatment if PPA and CCA preservatives are used (Boron or copper salts can be used on cut ends on site);
- Off-site fabrication and prefabricated elements to minimize on site hazards;
- Encourage the use of engineered controls to minimize the use of Personal Protective Equipment.

## Design Risk Register

No.	Activity/Hazard Identified	Persons at Risk	Design Measures to Eliminate/Reduce Hazards. Information on Residual Hazards and Residual Hazards Drawing Number	Action By / Responsibility	Date Raised	Date Actioned
<b>PHASE 1: CONSTRUCTION WORKS</b>						
1.0	Adequate pre-construction information (PCI).	Neighbours, General Public, Client, Site Workers.	The pre-construction Information (PCI) has been provide by the Client and compiled into a single document, available for all to access. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C, PD	13.04.16 27.06.16 24.03.17	
2.0	Demolition / removal of portions of the structure.	Client, Site Workers, Neighbours, General Public.	The Designers will identify which parts of the structure will require removal/altering. In conjunction with the SE the Demolition Contractor will need to provide the sequence of operations. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, C, PC, PD	13.04.16 27.06.16 24.03.17	
3.0	Any Temporary Works required.	Client, Site Workers, Neighbours, General Public.	The SE will need to provide details of any temporary works required. A Temporary Works Designer my need to be appointed. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, C, PC, PD	13.04.16 27.06.16 24.03.17	
4.0	Asbestos Containing Materials (ACM's).	Client, Site Workers, Neighbours, General Public.	Evidence of a structure on the site since 1938. Modifications and refurbishment undertaken in 1970. Extension works and refurbishment undertaken in 2015. Recommend an R&D Asbestos survey under HSG 264. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	
5.0	Site Establishment.	Neighbours, General Public, Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, C, PC, PD	13.04.16 27.06.16 24.03.17	

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6.0	Restrictive site access and neighbouring activities.	Neighbours, General Public, Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, C, PC	13.04.16 27.06.16 24.03.17	
7.0	Security and unauthorized access to the site and existing pavilion.	Neighbours, General Public, Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, C, PC	13.04.16 27.06.16 24.03.17	
8.0	Road and pavement cleaning as befits a semi-rural location.	Neighbours, General Public, Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C, PC	13.04.16 27.06.16 24.03.17	
9.0	Live buried or overhead services - water, gas, electrical, drainage & data.	Site Workers. Neighbours, General Public, Client.	Electrical power is provided by overhead cables supported from a timber pole adjacent to the pavilion. The cable also crosses Shardlow Road overhead. Gas, water and drainage services are evident to the rear of the pavilion. Drainage and data services run in the pavement along Shardlow Road. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, M&E, SE, C, PC	13.04.16 27.06.16 24.03.17	
10.0	Environmental hazards inc sharps.	Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, C, PC	13.04.16 27.06.16 24.03.17	
11.0	Existing service voids/penetrations within the structure.	Visitors, Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, M&E, SE, C, PC	13.04.16 27.06.16 24.03.17	

### Key:

C - Client; A - Architectural Designer; SE - Structural Engineer; M&E - Mechanical & Electrical Designer; LA - Landscape Architect; PC - Principal Contractor; PD - Principal Designer.

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12.0	Construction works within an occupied building.	Visitors, Client, Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, PC, C	13.04.16 27.06.16 24.03.17	
13.0	Excavation/under pinning works; - incs foundations and services trenches.	Site Workers.	SE to advise the details of what is required. 27.06.16 Issued for Tender. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	SE, PC, C,	13.04.16 27.06.16 24.03.17	
14.0	Erection of Structural Steelwork	Visitors, Client, Site Workers, Neighbours.	SE to advise the details of what is required. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	SE, PC, C,	13.04.16 27.06.16 24.03.17	
15.0	Access into drainage systems - Leptospirosis.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, M&E, SE, C, PC	13.04.16 27.06.16 24.03.17	
16.0	Vehicle movements and separation of pedestrians in and around the site.	Site Workers, Neighbours.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, C, PC	13.04.16 27.06.16 24.03.17	
17.0	Creation of noise, dust and vibration.	Site Workers, Neighbours.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C, PC	13.04.16 27.06.16 24.03.17	
18.0	Any imported materials.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, C, PC	13.04.16 27.06.16 24.03.17	
19.0	Cranage, hoist, lifting and materials handling.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, C, PC	13.04.16 27.06.16 24.03.17	

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20.0	Working at height during construction.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, C, PC	13.04.16 27.06.16 24.03.17	
21.0	Objects falling from height during construction.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	PC	13.04.16 27.06.16 24.03.17	
22.0	Confined spaces working.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	M&E, SE, PC	13.04.16 27.06.16 24.03.17	
23.0	M&E temporary supplies, LV switchgear & emergency supplies.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	M&E, C, PC	13.04.16 27.06.16 24.03.17	
24.0	M&E plant & equipment to be installed within the building. ie water tanks, ventilation/extract, boilers and pumps etc.	Site Workers.	27.06.16 Issued for Tender. Re-commissioned 24.03.17. 18.05.17 Ventilation system details queried and addressed by M&E consultant.	A, M&E, C, PC M&E, PC	13.04.16 27.06.16 24.03.17 18.05.17	
25.0	Lightning Strike.	Site Workers, Client.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, C, PC	13.04.16 27.06.16 24.03.17	
26.0	Site wide fire risk for any hot works incs site accommodation and pavilion.	Site Workers, Client.	Note: currently the pavilion appears to have no manual call points, detection or sounders in accordance with BS5839 and Part B of Building Regulations. Currently the store room off the new community room contains paint, white spirit, cardboard and timber. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, SE, M&E, C, PC	13.04.16 27.06.16 24.03.17	

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27.0	Disturbance of wildlife; Wildlife and Countryside Act (1981); Countryside and Rights of Way act (2000). Natural Environment and Rural Communities Act (2006); Conservation of Habitats and Species Regulations (2010).	Site Workers, Client.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, PC, C	13.04.16 27.06.16 24.03.17	
28.0	Test and commissioning works.	Site Workers, Client.	27.06.16 Issued for Tender. Re-commissioned 24.03.17.	A, M&E, C, PC	13.04.16 27.06.16 24.03.17	
<b>Phase 2: BUILDING IN USE - CLEANING &amp; MAINTENANCE</b>						
29.0	Maintenance of the drainage system and service ducts.	Client, Maintenance Staff.	PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	
30.0	Maintenance of roofs, guttering, downpipes, high level vents. Alarms and overflows etc.	Client, Maintenance Staff.	PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	27.06.16 24.03.17	

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31.0	Maintenance of installed plant and equipment: water tanks, ventilation/extract, boilers and pumps etc.	Client, Maintenance Staff.	PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	
32.0	Maintenance of the first floor windows, alarms, security and lighting.	Client, Maintenance Staff.	PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	
33.0	Maintenance of the sanitary wear, showers and cubicles.	Client, Maintenance Staff.	PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	
34.0	Maintenance of the fire doors, firefighting equipment, alarms, detectors & emergency lighting.	Client, Maintenance Staff.	PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	
35.0	Storage and use of Substances Hazardous to Health (COSHH).	Client, Maintenance Staff.	Currently the store room off the new community room contains paint and white spirit. PC to include information within the Operation and Maintenance (O&M) Manuals. PD to include within the H&S File. 27.06.16 Issued for Tender. Re-commissioned 24.03.17.	C	13.04.16 27.06.16 24.03.17	

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