



UNDERPINNING AND REBUILDING WORKS  
AT 33 THE CRESCENT, BRIMINGTON,  
CHESTERFIELD S43 1AZ

DESIGNER'S RESIDUAL  
RISK ASSESSMENT



**Project**

Propping, Underpinning and Rebuilding Works at 33 The Crescent

**Current Design Stage**

RIBA 4

Ref	Activity\Element	Hazard Specific Details	Risk Assessment		Number of People Exposed (3)	Risk Rating (4)	Action\Controls
			P (1)	S (2)			
1.0	Excavations	Buried/Crushed/Trapped, due to collapse of excavations undermining adjacent structures	High	Fatal	5	High	No-one to enter trenches without trench support unless assessed by a competent person. No vehicles or materials to be allowed near any open trench. As defined by a competent person.
1.1	Excavations	Falls – People, objects, supports, plant machinery, materials, unauthorised access	High	Fatal	5	High	Site to be secured when not occupied by contractor. All excavations to be marked and trench stops used.
1.2	Excavations	Plant & Machinery - Crushed/Trapped/Hit by plant. Falling/running into excavations. Fumes e.g. Carbon Monoxide	High	Fatal	5	High	No vehicles to be allowed near open trenches or near embankment. Banks person to control operations.
1.3	Excavations	Intrusive occurrences – Groundwater, Sewage, Flooding, Fire, Explosion, Smoke, Gas Leakage, Methane	Medium	Fatal	5	High	Trenches to be inspected regularly by competent person. Test for gases beginning of every working day.
1.4	Excavations	Health Hazards – Contaminated Ground/Water. Toxic Chemicals, Asbestos, Microbiological Diseases, Dust & Allergies, Skin Irritation	Low	Serious	5	Medium	Correct PPE to be worn. High standards of personal hygiene to be maintained on site (wash hands before eating).

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1.5	Foundations	Buried/Crushed/Trapped – Collapse of unretained material. Collapse of incomplete and temporarily unstable walls. Inadequate working space behind wall	High	Fatal	5	High	Provide Adequate Working Spaces. Keep all stored materials away from working areas.
1.6	Foundations	Falls - Into base of excavations. Into water filled excavation or temporarily retained water	High	Fatal	5	High	Provide fencing and plant stops around open trenches
1.7	Foundations	Plant and transport - Site Traffic. Slewing of concrete skip, shutters etc. work adjacent embankment	Medium	Fatal	5	High	Provide plant stops adjacent embankment. Bankspersons to control movement of all vehicles around site.
1.8	Foundations	Services - Electrocutation, gas pipeline, sewage and process effluents. Emergency communications	High	Fatal	5	High	Locate and protect all services on site prior to commencement.
1.9	Foundations	Ground movements – Subsidence of adjacent structures and embankment, fractured services and waste pipes	Low	Fatal	5	High	Competent person to inspect site regularly as well as existing buildings.
1.10	Foundations	Health Hazards – Noise/Vibration, Dust Inhalation, Fumes, Water-borne Diseases, Manual Handling	High	Serious	5	High	Wear correct PPE – Provide dust extractors and noise bafflers. Seal existing School Buildings to protect occupants.
2.0	Insitu Concrete	Falls from height – Accessing or working on scaffolding. Preparing for or placing insitu concrete. Access. Working on formwork	High	Fatal	5	High	Provide suitable temporary access and suitably designed formwork. Only competent people to be involved in workings.
2.1	Insitu Concrete	Noise, Vibration – Working with Vibrators, scabblers, saws etc.	High	Serious	5	High	Do not exceed recommended times for using equipment (Refer to manufacturer).

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2.2	Insitu Concrete	Collapse – Formwork/Falsework Permanent Structure. Collapse under loading from fresh concrete. Excessive spans, large sections	Medium	Fatal	5	High	Use only suitably designed temporary supports – Refer to Specialist Engineer.
2.3	Insitu Concrete	Moving Plant – Collision with moving machines (Concrete Trucks)	High	Fatal	5	High	Use minimum amount of plant on site as possible. Wear correct reflective PPE. Provide bankspersons to control plant. Instigate safe traffic system/controls around site.
2.4	Insitu Concrete	Health Hazards – Inhalation of dust from cement, modifiers or scabbling concrete for surface preparation and blowing out pours.	High	Serious	5	High	Wear correct PPE (dust mask, goggles, gloves etc). Use all equipment in accordance with manufacturers recommendations.
2.5	Insitu Concrete	Irritants – Concrete constituents, materials, mould oils, - Skin, eye irritation - Caustic burns	High	Serious	5	High	Wear correct PPE (gloves, goggles, overalls etc).
3.0	Piling	Plant Instability – Inadequate working platform, insufficient bearing capacity, excessive gradients, ground instability, slope instability.	High	Fatal	5	High	Provide suitable access and trained banksperson to direct operations. Provide plant stops adjacent high risk areas of site.
3.1	Piling	Crushed / Trapped – Manoeuvring and slewing of heavy plant and equipment.	High	Fatal	5	High	Only qualified personnel to operate plant..
3.2	Piling	Working Environment – Noise, vibration, fumes, asphyxiation (eg. nitrogen), high pressure lines and hoses	High	Fatal	5	High	Provide correct PPE.

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3.3	Piling	Services – Buried underground and overhead services including gas, electricity, water. Damage by drilling, driving, impact, vibration and settlement.	High	Fatal	5	High	Check for services before any works and clearly mark out over the site.
3.4	Piling	Health Hazards – Contact with contaminated arisings / ground water. Dust and irritation from materials (eg. cement and pulverised fuel ash).	High	Serious	5	High	Provide correct PE and maintain high levels of personnel hygiene.
3.5	Piling	Falls from plant and machinery tilted by uneven / soft ground.	High	Serious	5	Medium	Trained operatives to assess site prior to works. Qualified banksperson to be used.
3.6	Piling	Mine Gases – Explosive (ie Methane) and asphyxiating ( carbon dioxide)	High	Serious	5	High	Test for gas before and during works.
4.0	Masonry	Handling – Weight, shape, transportation of units, working space, hoists, manual handling at height	High	Serious	10	High	Provide suitable lifting equipment where weights exceed HSE recommendations.
4.1	Masonry	Hazardous substances – Cement handling, lime and mortar mixing, chemical grouts, additives, dust	Medium	Serious	10	Medium	Wear suitable PPE including dust masks, gloves, goggles etc.
4.2	Masonry	Access – Delivery/offloading plant on site, obstruction by other building elements, working space restrictions	Medium	Serious	10	High	Keep area of delivery as clear of people as possible. All vehicle movements to be controlled by bankspersons.
4.3	Masonry	Crushing – placement of units, insufficient space for storage/working, falling objects, vehicle movements	High	Serious	10	High	Keep areas as clear as possible – Use suitable lifting equipment. Bankspersons to control vehicles.

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4.4	Masonry	Collapse – Unpropped construction elements being overloaded, movement joints, storage/stacking irregular units, horizontal chases, DPC debonding	Medium	Fatal	5	High	Provide temporary support to masonry under construction. Erect only in accordance with the approved method statement..
4.5	Masonry	Abrasion / cuts – masonry texture, wall ties, metal lathing, sheet metal, insulation (glass fibre)	Low	Medium	5	Low	Wear correct PPE (Gloves / goggles) at all times.
5.0	Timber	Falls from height – Erection sequences during installation, edge protection, platforms, access	High	Fatal	10	High	Provide safe, suitable temporary access platform and/or crash mats/netting as required.
5.1	Timber	Collapse – Temporary stability, inadequate staging/support. Ground support for cranes, stacked materials	High	Fatal	10	High	Bankspersons to control vehicles. Ground to be inspected to ensure stability for purpose by competent person.
5.2	Timber	Health Hazards – Wood preservatives, adhesives, resins, treated timber, wood dust.	Low	Medium	10	Low	Use only specified water - based solvents and wear correct PPE (Gloves / Goggles / Dust Mask).
5.3	Timber	Access – Site layout, delivery routes, storage, crange, erection sequences	High	Fatal	10	High	Bankspersons to control vehicles. Do not lift objects over occupied existing site buildings. Construct in accordance with the method statement.
5.4	Timber	Mobile Plant – Delivery lorries, site transport, cranes, dumpers, inadequate working space, erection sequences	High	Fatal	10	High	Use suitable lifting equipment. Bankspersons to control vehicles. Trusses designed small to allow manual handling with suitable numbers of people and/or suitable lifting equipment.

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5.5	Timber	Handling – Offloading. Stacking and Erecting components (Manual and use of crane). Metal connectors/cleats – Cuts and splinters	Medium	Fatal	5	High	Wear suitable PPE, gloves, goggles etc. Trusses designed small to allow manual handling with suitable numbers of people and/or suitable lifting equipment.
6.0	Working on site	Building instability. Cracks have developed in the properties due to subsidence; the contractor is to ensure that the underpinning works do not further destabilise the properties.	High	Fatal	10	High	Contractor to assess the current extent of the damage to the properties and install any temporary works, as required. Monitor the cracks as the works progress; if they become enlarged, stop work and contact the CBC Structural Engineer.
6.1	Working on site	Break-ins / theft of plant / materials / fixtures and fittings from the house. Danger to the operatives if they are present at the time, danger to persons accessing the site / compound who are not supposed to, danger to residents if they encounter persons stealing items / contractor's vehicles.	High	Fatal	5	High	The contractor is to ensure that the property is kept secure during the works and maintain insurance to cover break-ins and the theft of their equipment and fixtures and fittings from the house.

Passed for inclusion in the Pre-Tender Health and Safety Plan

Prepared by



Checked by

Print Name

Print Name

John Muddiman

Print Name

Date

Date

22.12.23

Date

(1) Potential of Causing Harm	(2) Severity of Injury	(3) Number of People Exposed	(4) Risk Rating
1. Low 2. Medium 3. High	1. Minor 2. Serious 3. Fatal		1. Low 2. Medium 3. High