

# HOUSE LIFTING PROTOCOL

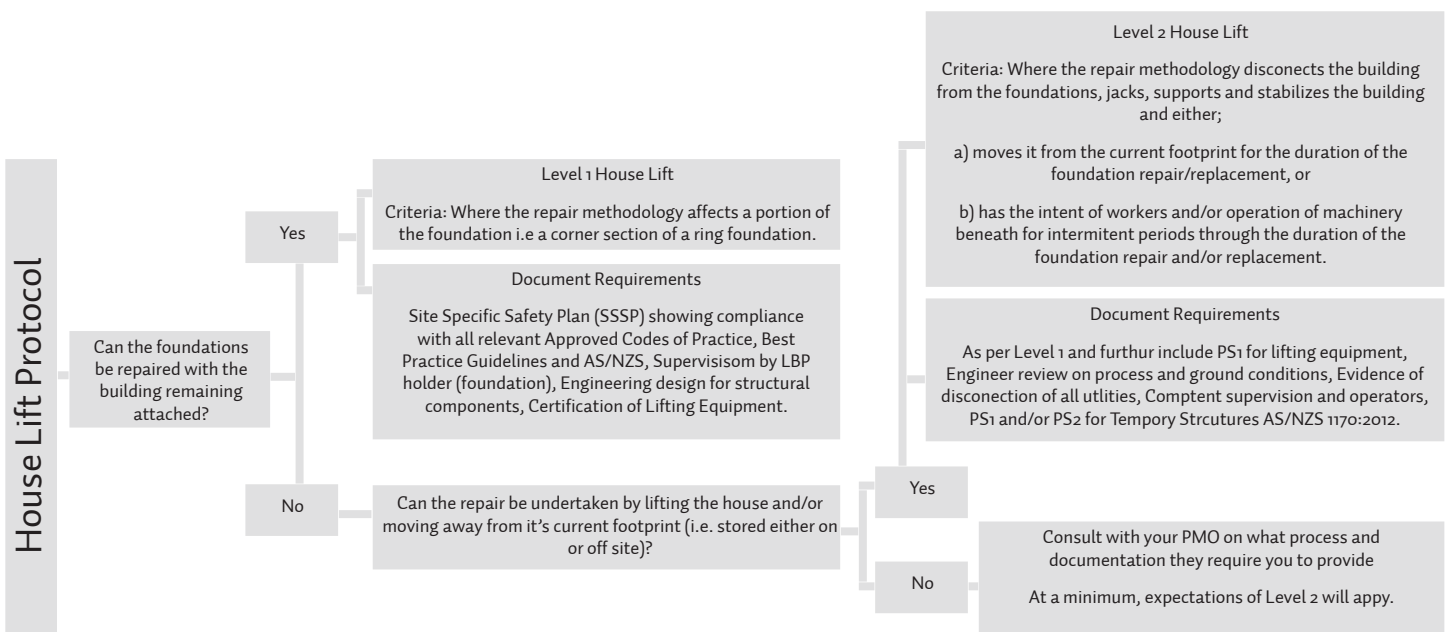
This document is intended to provide guidance as to the methodology and documentation requirements involved in lifting a house for foundation repair.

In accordance with ‘A Principles Guide to Contracting to Meet the Health and Safety in Employment Act 1992’ it is imperative that the correct engagement process is followed given this specialised area of work.

There are a number of Approved Codes of Practice, Best Practice Guidelines, AS/NZS and fact sheets that describe some of the hazards associated with lifting a house. When referencing these documents, you’ll need to align them with geotechnical and structural engineering reports to ensure the viability of your proposed methodology and the safety of workers throughout the job.

Significant consideration should be given to the possibility of moving the house to another location on or off-site so that workers are not required to be underneath the building. Some known risks in this type of work include gravity, earthquakes and wind. These risks must be controlled in accordance with other hazard management.

The flow chart provided below can be used to determine contractor suitability and specific areas that may require workplace monitoring.



## House Lifting – Levels 1 and 2

It’s important to remember that there’s no generic method for a house lift because every situation will be different – the nature of the ground conditions and individual building design are factors that will affect your methodology.

It is possible, however, to categorise house lifting methodologies based on a number of criteria. This will help reduce the risk of failure and will also increase control methods in order to reduce the risk of serious harm. These two levels are detailed below.

In order to better understand the risks associated with various methodologies two levels have been identified that may help better identify and control hazards in the workplace.

# LEVEL 1 HOUSE LIFT

## Criteria:

Where the repair methodology affects a portion of the foundation, for example, replacement of a corner section of a ring foundation.

## Documentation:

Site Specific Safety Plan (SSSP) including:

1. Registers (hazard/hazardous substances/Incident & Incident).
2. Evidence that accident/incident reporting will occur.
3. Task analysis for significantly hazardous work (the lift and confined space)
4. Detailed training and competency register (including years experience, LBP No (Foundation Trade License Class) and NZQA Certification (Confined Space).
5. Emergency Evacuation Plan.
6. Certified lifting equipment engineered for purpose with evidence of annual service records.
7. Erosion and Sediment control plan in accordance with Environment Canterbury requirements.

In circumstances where a subcontractor has been engaged to undertake work the subcontractor must provide a complete SSSP for approval prior to work being started.

Note: Tender documents should include the SSSP to form part of the contract agreement and engagement process.

## Relevant Reference Documents (including however not limited to):

- Health and Safety in Employment Act 1992
- A Principles Guide to Contracting to Meet the Health and Safety in Employment Act 1992
- Approved Code of Practice for Manual Handling
- Approved Code of Practice for Noise in the Workplace Approved Code of Practice for Excavations Shafts and Trenches
- Any relevant New Zealand Legislation, subsequent amendments and Regulations that apply to the construction industry
- AS2865: 2009 Confined Spaces
- Confined Spaces – planning entry and working safely – Department of Labour
- The Guide for Canterbury Builders for Below - Floor Work (April 2013 – Department of Building and Housing)
- Fact Sheet: Lifting Earthquake Affected Buildings in Christchurch (Document: not controlled) Fact Sheet: Disaster Recovery – Health Risks from Biological Agents (Oct 2012)
- Fact Sheet: Advice for Working with Sewage – Contaminated Silt and Soil (June 2012) Fact Sheet: Disaster Recovery – Confined Spaces (Jan 2012)
- Fact Sheet: Health Issues for Christchurch Construction & Demolition Workers (Nov 2102) Fact Sheet: Disaster Recovery – Working in Structurally Affected Buildings (Jan 2012) ECan: Builders Pocket Guide ([www.bpg.co.nz](http://www.bpg.co.nz))

## Monitoring:

Foundation LBP holder is required to supervise the work. Therefore control or direction and oversight of the building work to an extent that it is sufficient to ensure that the building work is performed competently and complies with the building code.

The Principal(s) throughout the period of repair should monitor the site at suitable intervals.

# LEVEL 2 HOUSE LIFT

## Criteria:

Where the repair methodology disconnects the building and either moves it from the current footprint or jacks, supports and stabilises the building, with the intent of workers and/or operation of machinery beneath for the duration of the foundation repair/replacement. NB: If the house breaches the recession plane during the lift it requires resource consent from the Council.

## Documentation:

Site Specific Safety Plan (SSSP) as in a Level 1 Lift and including:

1. Evidence that services have been disconnected
2. Evidence that the work complies with AS/NZS 1170:2002
3. PS<sub>1</sub> and/or PS<sub>2</sub> for temporary structures based on design, lifting equipment being used and geotechnical information specific to the property and site
4. Detailed evidence of competency in relation to house lifting
5. Detailed evidence of competency in relation to plant operation
6. CCC Consent (if the building breaches the recession plane)
7. Regulation 26 Notification (if excavation is deeper than 1.5m)

## Relevant Reference Documents (including however not limited to):

- All documents listed in a Level 1 Lift Best Practice Guideline for Heavy Haulage
- Approved Code of Practice for Operator protective structures on self-propelled mobile mechanical plant

## Monitoring:

Daily/weekly inspection records for structure by suitably competent person, for example, an Engineer, and immediately following an earthquake magnitude 5 or greater.

## Explanatory Notes:

- Site Specific Safety Plan (SSSP) – This document outlines the intent of a main contractor and their sub-contractors with regard to safety on-site. An SSSP should state hazards on-site and work procedures for significantly hazardous tasks. This document further provides a contractor with tools to communicate and monitor staff, visitors, activities, responsibilities and expectations on-site. Every job where a house lift occurs must have a SSSP with suitable detail to manage the level of risk that is expected on-site.
- Task Analysis – Task Analysis/Job Safety Analysis is a systematic (step by step) process used to enable workers on-site to understand the workflow process and hazards they are likely to encounter at each stage of the task or job. When significantly hazardous work is identified this should be broken down into 6-8 steps. In smaller sub-tasks (steps) it is easy to identify tools, products and work methods. Once this is established individual hazards can be identified for each sub-task and controls can be put in place to make it safe. All staff involved in the Task/Job must be trained in the process, hazards and controls and sign-off to say that understand and will follow the work method. This allows for supervision and monitoring by the site foreman and project managers.
- Training and Competence – Staff working on-site must be trained, competent and supervised. The Training Competency Register will provide evidence of years experience in the industry, LBP numbers & Licenses, NZQA Unit Standards, H&S training and evidence of a qualified First Aider who will be on-site
- Emergency Evacuation Plan – This plan details where to go in a site evacuation and must cover the procedures for any rescues required. These include falls from height in a harness, confined space rescue (under floor work) etc.

Explanatory notes continue...

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- Certification of Lifting equipment – A certificate of all lifting equipment that will be used in a house lifts must comply with AS/NZ Standards. Evidence may include a signed Test Certificate or PS1.
- A Principles Guide to Contracting to Meet the Health and Safety in Employment Act 1992-- If your job involves engaging a sub-contractor to do some of the work then this guide will apply to you. The guide sets out a broad process for building health and safety into contract management, which can then be adapted to specific contractual situations or industries. It was developed in response to submissions received by the 2007 Quality Regulation review.
- Approved Code of Practice (ACOP) for Manual Handling – If your work involves a person undertaking a lift, carry, push or pull, this ACOP will apply to you. This code of practice sets a process that may be used to identify, assess and control hazards associated with manual handling. It is reasonable to expect that by applying this process in the workplace the number and severity of injuries relating to manual handling will be reduced. This is likely to include serious back injuries, acute low back pain and other work-related musculoskeletal disorders such as disorders of the neck, shoulders, knees, arms and hands.
- Approved Code of Practice (ACOP) for Noise in the Workplace – If your work involves using machinery or doing tasks that have noise above 85dB this ACOP will apply to you. The main objective of this code is to reduce the incidence and severity of hearing loss resulting from excessive noise exposure in workplaces. The most effective and reliable way to prevent and control this significant hazard is to eliminate, or at least reduce the sources of noise to which employees are exposed. Suitable PPE may also be used to reduce the risk of exposure.
- Approved Code of Practice (ACOP) for Excavations Shafts and Trenches – If your work involves removing any soil for foundation repairs this ACOP will apply to you. There is particular concern around soil being removed in areas close to sty's, propping or stabilisation of the lifted building. This Code promotes good working practices, and sets out practicable steps that may be taken for compliance with the Health and Safety in Employment Act 1992 and the Health and Safety in Employment Regulations 1995 as they relate to excavation work and piling work.
- Approved Code of Practice (ACOP) for Operator Protector Structures on Self-Propelled Mobile Mechanical Plant: If you are operating a self-propelled mobile machine on-site (for example, digger or similar) this ACOP will apply to you. It is important to note Section 4, which outlines qualifications required for operation of machinery.
- This ACOP provides best practice measures for employers to consider when managing mechanical plant roll over hazards in a way that meets the requirements of the Health and Safety in Employment Act and Regulations. All the code's requirements are based on standards produced by the International Organisation for Standardisation (ISO) or joint Australian/ New Zealand Standards. All referenced Standards are listed in Appendix A.
- Best Practice Guideline for Heavy Haulage: If your work involves lifting a house then this guideline applies to you. A summary of this guideline was developed in to a fact sheet however it would be expected that suitably competent house lifter would be familiar with the detail contained in the guideline rather than relying solely on the fact sheet.
- AS2865: 2009 Confined Spaces – If you work involves any area that is not intended for human occupancy (e.g. under a floor or house), has limited access or has the potential for containing a toxic or oxygen deficient atmosphere this standard will apply to you. This standard applies to all confined spaces and should be used in conjunction with the confined space fact sheet from Work Safe NZ.
- AS/NZS 1170:2002 – If your work involves disconnecting the house from the foundations/piles then this standard will apply to you. This standard applies to Structural Design of a building and details minimum requirements for a temporary structure. Particular attention should be made to Section 2 and Section 3.
- WorkSafe NZ Canterbury Fact Sheets: A series of fact sheet have been published to provide further information to contractors and workers during the Canterbury rebuild. The information in these fact sheets should be applied to any work being undertaken in the region.