

ASUC | Guidelines on
SAFE AND EFFICIENT STRUCTURAL
REPAIRS TO DOMESTIC BUILDINGS



ASUC

Underpinning & Subsidence Repair Techniques | Engineered Foundation Solutions | Retro Fit Basement Construction

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ASUC

ASUC is an independent trade association formed by a number of leading contractors to promote professional and technical competence within the underpinning industry. Members offer a comprehensive range of specialist domestic services in: underpinning and subsidence repair techniques, engineered foundation solutions and retrofit basement construction. Any contractor wishing to join ASUC must first undergo a technical; health & safety, insurance and financial audit and make a commitment to prescribed safety procedures.

It publishes a number of useful documents on underpinning and related activities and a comprehensive directory of members all of which are freely available to download via the website. ASUC members offer 10 or 12 year, depending on the nature of the works, insurance backed latent defects guarantees.

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Photographs and Diagrams

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1. EXECUTIVE SUMMARY

- 1.1 The Association of Specialist Underpinning Contractors (ASUC) is publishing these guidelines to improve the safety of structural repairs on domestic building to reduce negative impact on others, especially people living or working near to these projects.
- 1.2 The objective of these guidelines is to enable clients, designers, engineers and others involved in Structural repairs on domestic building works projects to instruct safe and efficient work.
- 1.3 Structural repairs on domestic building works can be a complex operation including health and safety expertise that even those with significant construction experience may not have encountered previously.
- 1.4 The single leading principle throughout these guidelines is the absolute priority that health and safety has over all other aspects of a project.
- 1.5 Temporary works (support to existing buildings) is critical and is often overlooked or addressed superficially.
- 1.6 The main construction techniques used for Structural repairs on domestic building works structures are:
 - 1.6.1 Brick Stitching
 - 1.6.2 Resin Bonding
 - 1.6.3 Reinforced Brickwork methods
 - 1.6.4 Anchors with cementitious grouting
 - 1.6.5 Lateral Restraint Techniques
- NB In respect of insurance funded works it is common place that the source of the subsidence or heave to be removed i.e leaking drains fixed , tree removal or lopping and after a period of monitoring to ensure stability for repairs to be undertaken. These repairs need to be commensurate with the damage encountered , but typically if a structure has been placed under stress and therefore cracked to subsidence or heave related issues it will always be necessary to affect a structural repair of some description. Merely filling cracks with proprietary filler will not produce a lasting repair. The Financial Ombudsman has stated to insurers that repairs need to be lasting and durable and this is generally achieved by using an efficient structural repair as outlined in this document.
- 1.7 Temporary works in Structural repairs on domestic building works are used to support the existing structure either by needles or temporary stools in some cases Temporary support to full facades can be necessary.
- 1.8 Temporary works should be designed by a suitably qualified and experienced engineer called the Temporary Works Engineer (TWE). In addition to the TWE a Temporary Works Coordinator (TWC) must be appointed who has overall responsibility for the temporary works on site.
- 1.9 Structural repairs on domestic building works can have a significant negative impact on people not involved with the work, especially local residents. The main negative impacts come from:
 - Damage to surrounding building and structures
 - Noise, vibration and dust
 - Traffic
- 1.10 There will always be some negative impact but this should be minimized through early engagement, imaginative planning and considerate execution.
- 1.11 In addition to health and safety, which is the single most important priority, the other main factors to consider when choosing the construction technique and sequence are
 - Occupier's desire to live in the existing building during the works
 - Structure and condition of the existing building
 - Party wall matters
 - Surrounding structures
 - Site access

- Impact on others
- 1.12 Structural repairs on domestic building works has a high level of construction hazard .Collapse of existing building and falls from height, are the safety hazards most likely to lead to death or serious injury. Exposures to asbestos and to dust containing silica are the two health hazards most likely to cause death or serious injury.
- 1.13 Business clients, designers and contractors all have extensive duties under the Construction (Design and Management) Regulations 2015 (CDM 2015). Domestic clients also have specific duties under CDM 2015, which is different responsibility to that under the old regulations CDM 2015. Designers and contractors must manage risk by:
- Completing risk assessments
 - Avoiding risk where possible preferably by design
 - Reducing risk throughout
 - Developing safe methods and systems of work
 - Managing and monitoring risk throughout
 - Using only suitably trained and experienced personnel
 - Having effective emergency plans and procedures
- 1.14 Only responsible, competent and experienced designers and contractors should be appointed.
- 1.15 Comprehensive first party indemnity latent defects insurance provides the best form of guarantee cover. The cover for the ASUC Structural repairs on domestic building works Insurance Guarantee (DIG) is this type of guarantee.
- 1.16 The composition of the project team will vary by project. Apart from the Client the project team can include a Structural or Design Engineer, Temporary Works Engineer, Temporary Works Coordinator, Principal Contractor, Party Wall Surveyor, Quantity Surveyor, Principle Designer and others. A Structural or Design Engineer will always be needed in the design team. The Structural or Design Engineer can be an independent consultant or can be retained by a design and build contractor.
- 1.17 Structural repairs on domestic building works work can be procured by any of the four main procurement methods: traditional design then tender design and build management or integrated. There is no single best method and they each have advantages and disadvantages. It is important to choose a form of procurement that incentivizes safe and efficient construction.
- 1.18 The right insurances should be in place to protect all parties. The main insurances are: Professional Indemnity (PI), Employer’s Liability (EL), Public Liability (PL), Contractors All Risks (CAR), non-negligent for third party property (JCT 21.2.1 / 6.2.4 / 6.5.1 insurance), existing buildings, and non-negligent damage to the client's property. Insurance cover for Structural repairs on domestic building works projects is complex and advice from experienced parties should usually be sought.
- 1.19 Guarantees for building work, like many guarantees, often promise much but deliver little. The detailed wording for each guarantee must be understood in order to know the true level of protection. The main types of guarantees are: company, product, insurance backed, latent defects insurance and indemnity latent defects insurance. The best protection is provided by a comprehensive indemnity latent defects insurance underwritten by a financially strong insurance company. The ASUC Structural repairs on domestic building works Insurance Guarantee (DIG) is this type of indemnity latent defects insurance guarantee.
- 1.20 Structural repairs on domestic building works could probably be the most complex structural work that a domestic property owner will undertake other than a major extension The main areas for a domestic owner to consider at the outset are:
- Property rights and rights of access
 - Listed building consent if relevant
 - Building regulations
 - Health and safety
 - Impact on neighbours

- The option of living in the building during the construction work
 - Party wall matters
 - Legal responsibilities and liabilities
 - Choosing whether to instruct designers, or to move forward with a design and build contractor
- 1.21 Structural repairs on domestic building works is complex and should only be undertaken by suitably qualified and experienced teams.
- 1.22 The following items can be identified as problems to look out for:
- 1.22.1 The main causes of problems in buildings and structures are age and lack of routine building maintenance. Problems may also result from poor design detailing and not allowing for maintenance access;
 - 1.22.2 use of poor quality building materials;
 - 1.22.3 poor quality construction standards;
 - 1.22.4 settlement or other types of foundation failures
 - 1.22.5 accidental impact damage to the structural fabric due to moving plant;
 - 1.22.6 persistent ingress of rainwater causing rot and other damage;
 - 1.22.7 Damage to the structure due to misuse. for example overloading ;
 - 1.22.8 damage due to particularly hot or corrosive atmospheres;
 - 1.22.9 in timber structures, damage due to wood boring insects;
 - 1.22.10 change of use of the building or structure leading to overloading or loss of strength in the structure;
 - 1.22.11 flooding;
 - 1.22.12 high winds;
 - 1.22.13 vibration damage due to transport or quarry blasting activities ;
 - 1.22.14 Deleterious interaction of materials.
- 1.23 Instructing an ASUC member to undertake a project should increase confidence that the work will be completed safely and efficiently and in accordance with these guidelines.

2. INTRODUCTION

2.1 OUTLINE

In the Domestic Structural repairs on domestic building works activity there have been several health and safety problems including fatalities, injuries, partial building collapses and other damage to structures. There has also been significant negative impact on people not involved in the works notably residents living near Structural repairs on domestic building works projects. The Association of Specialist Underpinning Contractors (ASUC) is publishing these guidelines in order to support efforts to:

- Improve the safety and efficiency of Structural repairs on domestic building works below or near to existing structures
- Reduce negative impact on others, especially people living or working near to Structural repairs on domestic building works projects

2.2 SCOPE

Structural repair projects vary in size from the smallest repair on a front bay to a complete propping or façade retention – this document will consider the fundamentals of all schemes. In general the document is written for domestic projects but the same principles apply for light commercial contracts also.

2.3 OBJECTIVE

The objective of these guidelines is to enable clients, designers, engineers and others involved in Structural repairs on domestic building works projects below or near to existing structures to instruct safe and efficient work.

2.4 OVERVIEW

Structural repairs on domestic building works are a complex form of building and involve a combination of structural works, and health and safety. Even those with many years of above ground construction experience may not have faced the issues that are met when carrying out Structural repairs on domestic building works

This document is intended to be used as an outline guide by property owners, developers, architects, engineers, and contractors, quantity surveyors, building surveyors, insurers and their agents and anyone else involved in Structural repairs on domestic building works. It should provide a basis of understanding of the techniques used in Structural repairs on domestic building works and assist the informed consideration of the many factors and issues faced when considering Structural repairs on domestic building works project.

A summary of these factors is given below.

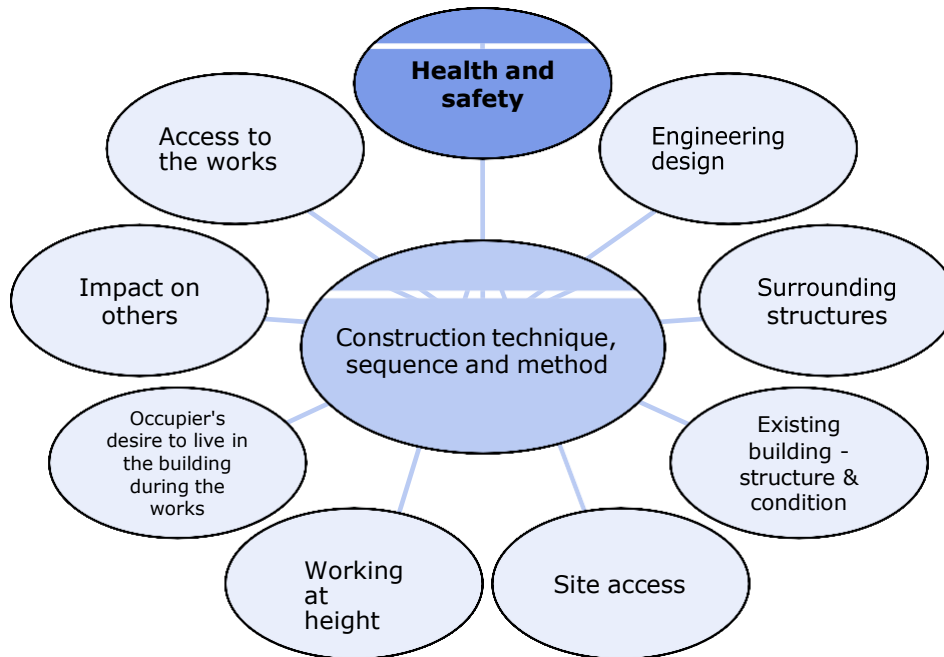


Fig 1: Main factors for consideration

The guide has been set out in a logical order however all of the areas covered are heavily interrelated so, to some extent, they cannot be viewed in isolation and need to be considered collectively.

This guideline is not intended as a code of practice, set of design rules, engineering specification or building code and does not provide a single answer for the complex question of what design or method is best for any individual project.

2.5 HEALTH AND SAFETY

The single leading principle throughout these guidelines is the absolute priority that health and safety has over all other aspects of a project. Health and safety is covered in a dedicated section later in the document but at all times it is a fundamental consideration.

2.6 KEY POINTS

The key points in the guideline are:

- Health and Safety is paramount
- Temporary works (support to existing building) are critical and is often overlooked or addressed superficially
- Environmental consequences and any negative impact on others should be minimized
- A well-managed safe project will be an efficient project - this applies both to the design and to the implementation of the works
- Structural repairs on domestic building works design and construction is complex - all of the interdependent factors need to be considered at the design stage. Involving an

experienced contractor as early as possible reduces the risk that early design choices will have subsequent negative safety and cost consequences

- The property owner will always bear some risk from third parties - involving an experienced team early will help to minimize these risks
- Proper risk management is not the same as wholesale risk transfer to the contractor - risks, both physical and commercial, should be considered early and each risk addressed appropriately
- Designers and contractors involved in the complicated business of Structural repairs on domestic building works should have relevant competence, qualifications and experience
- All parties involved in Structural repairs on domestic building works need to understand their own responsibilities and the responsibilities of the other parties
- Members of the Association of Specialist Underpinning Contractors (ASUC) are committed to working in accordance with these guidelines

2.7 ASUC

ASUC (The Association of Specialist Underpinning Contractors) is a trade association founded in 1992 by a group of specialist contractors whose main business was foundation repair by underpinning and piling. The association's intention was to raise standards of health, safety and quality across the sector.

Standards in the foundation repair industry were improved by ASUC members being audited on health and safety, technical competence, financial strength and the completeness of their insurance cover. The increase in standards achieved by ASUC members enabled the association to introduce an insurance-backed latent defects guarantee scheme in 2002. This cover is provided by a major insurance company directly to the homeowner and covers any problem with the foundation repair work. An ASUC guarantee is now frequently demanded by insurers and other client as a prerequisite for repair work.

2.8 SUMMARY

It is hoped that these guidelines will assist those involved in Structural repairs on domestic building works to achieve the best possible outcome for their project with the work completed safely, efficiently and with the minimum negative impact on others.

In respect of insurance funded works it is common place that the source of the subsidence or heave to be removed i.e leaking drains fixed, tree removal or lopping and after a period of monitoring to ensure stability for repairs to be undertaken. These repairs need to be commensurate with the damage encountered, but typically if a structure has been placed under stress and therefore cracked to subsidence or heave related issues it will always be necessary to affect a structural repair of some description. Merely filling cracks with proprietary filler will not produce a lasting repair. The Financial Ombudsman has stated to insurers that repairs need to be lasting and durable and this is generally achieved by using an efficient structural repair as outlined in this document.

In conclusion it is suggested that a property owner will increase the likelihood of achieving a safe and successful project by inviting an ASUC member, who will operate in line with the spirit of these guidelines, to be involved at the earliest opportunity

3. DEFINITIONS

For the purposes of this document the terms listed below can be assumed to have the given meanings.

Client

This means any person or organisation for whom a project, which includes construction work, is carried out.

Contractor

For the purposes of this document, 'contractor' means a member of the ASUC

Engineer

A competent and qualified person in Structural or Civil Engineering tasked to provide calculations to support any scheme and to engineer a practical solution that a contractor can implement on site.

Competent

A person or company can be regarded as being competent to undertake any particular job when they have gained sufficient qualifications, knowledge, experience and expertise to be able to do it efficiently and safely with a minimum degree of waste. In being so competent they will be able to recognise foreseeable difficulties, dangers or problems involved in undertaking their own specialist underpinning operation and will be able to plan, instigate, monitor and review all control measures necessary for dealing with the risks associated with the work.

Needles

Inserts into a structure or material against which props or jacks may exert thrust in order to support the load of that structure or material.

Waste

The loss, or unnecessary deployment of, labour, plant or materials. This definition includes losses through injuries because of lost time, disrupted works programme, remedial measures and administrative work by managers and supervisors.

Design

In relation to any structure this includes drawings, details, specification and bills of quantities which relate to that structure. Refer to C.D.M. Regulations – see Annex E

Construction Phase Health and Safety Plan

A plan which sets out the arrangements that will be made by the Principal Contractor to successfully manage the construction phase of any project.

4. REPAIRS TO DOMESTIC BUILDINGS**4.1 GENERAL**

A full inspection of the property is essential as no repair should be carried out in isolation without due regard for the property as a whole. Remember the reason repairs will be necessary is because the structure has been weakened in some way, whether by water ingress, general deterioration, subsidence, heave or other reasons. If any part of the building is unsafe, it should be cordoned off from the public and specific care and risk assessment made before repairs are carried out. In some cases controlled demolition maybe necessary or essential.

4.2 TYPES OF STRUCTURAL REPAIRS ON DOMESTIC BUILDINGS

Structural repairs on domestic buildings can be classified in multiple ways. In these guidelines the following classification will be used:

- Brick Stitching
- Resin Bonding
- Reinforced Brickwork methods
- Anchor with cementitious grouting
- Lateral restraint techniques

Insurance funded works:

In respect of insurance funded works it is common place that the cause of the subsidence or heave be mitigated i.e leaking drains repaired , trees removal or pollarded. After a period of monitoring to check that stability has returned, repairs may then be undertaken. These repairs need to be commensurate with the damage encountered. Typically if a structure has been placed under stress and has cracked to subsidence or heave related issues, it will usually be necessary to affect a structural repair of some description. Merely filling cracks with proprietary filler will not produce a lasting repair. The Financial Ombudsman has stated to insurers that repairs need to be lasting and durable and this is generally achieved by using an efficient structural repair as outlined in this document .

5. BRICK STITCHING

Often these days overlooked, but the traditional brick stitching and repair approach can often be the most sympathetic and effective repair to old buildings.

Depending on the circumstances, arch repair to both brick and stone work can be achieved seamlessly as demonstrated by the photographs below showing before and after repairs



Left:
Weathered and aged arch and corbel detail.

Right:
Reconstructed arch and corbel, with new lead flashings

Traditional repairs include the rebuilding of brick arches, restoration of stonework, reconstruction of bay windows, renewal of timber windows and mouldings and reforming decorative cornices.

Stonework Repairs

Skill and expertise is required to repair decorative stonework to a polished finish.



Left
Damaged decorative stonework

Centre
During repair

Right
Repaired stonework

Subsidence Repairs



Left: Damaged masonry prior to repair

Right: Completed crack repair.

6. RESIN BONDING TECHNIQUES

The use of resins in repairing fractured brickwork is well established as an effective and economic repair technique. Resin bonding is often combined with the installation of resin anchors which are used to strengthen any identified weak spots in a structure.

The purpose of resin bonding is to restore the structural integrity of failed brickwork, blockwork or masonry and return it to a stable condition. The technique avoids the necessity for excessive disturbance which is often caused by traditional “stitching” and can provide a more aesthetically pleasing and economic repair.



Left: Before work

Right Finished repair

In structures built using soft mortar, it is usually necessary to drill and chase out the loose materials ensuring that all dust and debris is thoroughly cleaned out. A thixotropic resin is then pumped into the crack until all voids are filled. The repair is cosmetically finished to match to the surrounding surfaces as closely as is possible.

Resin anchors may be used in conjunction with resin bonding to repair severe cracks and to tie together unbonded

sections of brickwork, blockwork or masonry. The anchors consist of lengths of high-yield galvanised or stainless steel rebar of varying diameters which are bonded into the substrate using cementitious, polyester or epoxy anchor grouts depending on the requirements of each application. Anchors may be strength tested using pull-out testing equipment and are often tested to failure to determine appropriate safe working loads.

7. REINFORCED BRICKWORK METHODS

Masonry Bed-joint Reinforcement

Movement in masonry structures may occur for a variety of reasons. The result is often cracking at the weakest points. Strength may be restored by the installation of masonry reinforcement.

Masonry reinforcement consists of deformed stainless steel bar or helical stainless steel wire which is set into epoxy or cementitious grout. The helical wire is generally used in brickwork repair and may be 6mm or 8mm in diameter. Solid deformed bar is available from 6mm diameter upwards for more major repairs.



Left: Preparing bed joint using dust-free cutter

Right: Resin grout installed to receive stainless steel reinforcement



Helical reinforcement being installed in bed joint



Reinforcement bedded in resin grout

The reinforcement may be installed in short lengths to stitch across cracks, or may be used in continuous lengths to form virtual “beams” in the brickwork. It is important to ensure that there is sufficient bond of the reinforcement into stable sections of the structure.

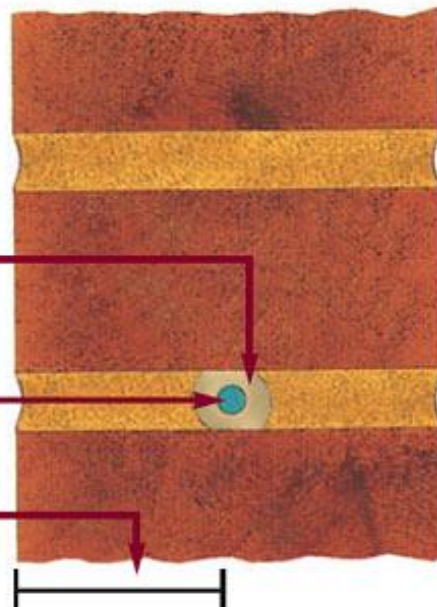
In order to preserve the aesthetic appearance of the building Falcon pay particular attention to making good the surface of the brickwork, pointing or render to match as closely as possible to the surrounding surfaces.

Flexible Bar In Brickwork

Resin/grout

6mm diameter bar

50mm



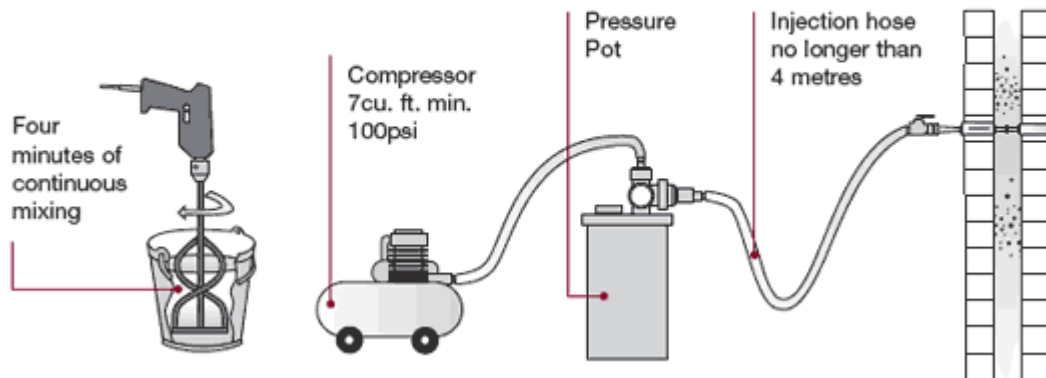
8. ANCHORS AND CEMENTITIOUS GROUTS

8.1 CEMENTITIOUS SOCK ANCHORS

In many older buildings and structures, long term movement and deterioration often cause localised Weakness and failure

Cementitious sock anchors offer a sympathetic repair solution. The sock expands into the voids whilst retaining the injected cementitious grout, creating an effective bond and key in irregular or voided masonry.

Installing the Anchor



Installed Anchors with Patress Plates

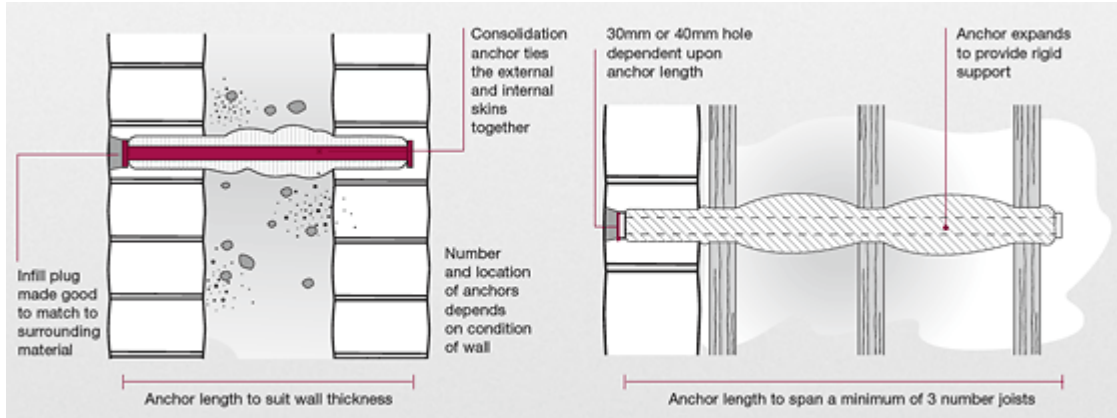


Cementitious Anchor

This is an adaptable system for effective structural repairs. It has proven particularly effective when utilised to repair listed buildings and older structures of special interest. Engineers and specifiers appreciate the adaptability of the system and its ability to provide an effective structural repair using a cementitious grout.

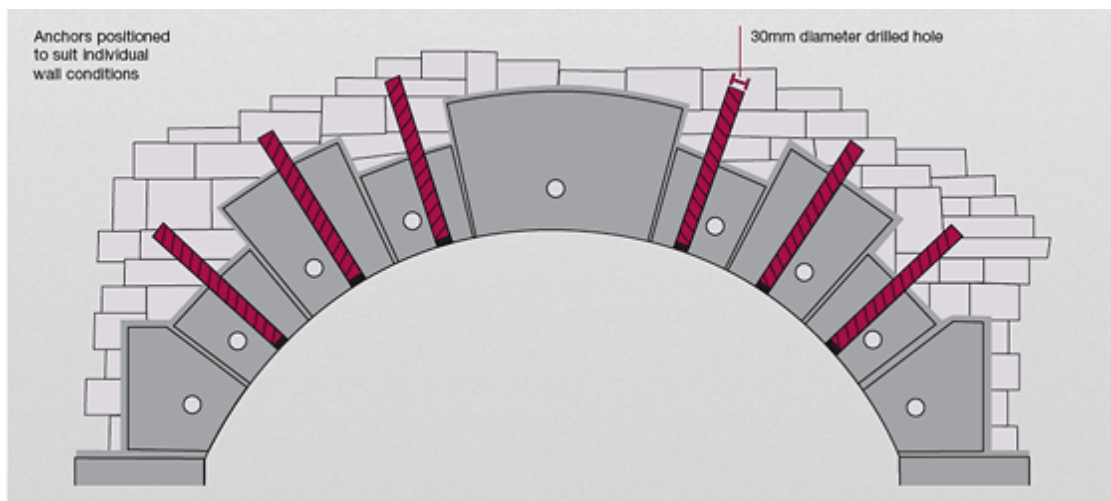
8.1.1 TYPICAL APPLICATIONS

There are numerous applications to which this versatile anchor system is ideally suited. Some examples are shown below.



Left:
Stabilisation of Rubble Filled Walls

Right:
Solid Wall Restrained to Floor Joists



Arch Consolidation

9. LATERAL RESTRAINT TECHNIQUES

9.1 TIE BARS AND STRAPS

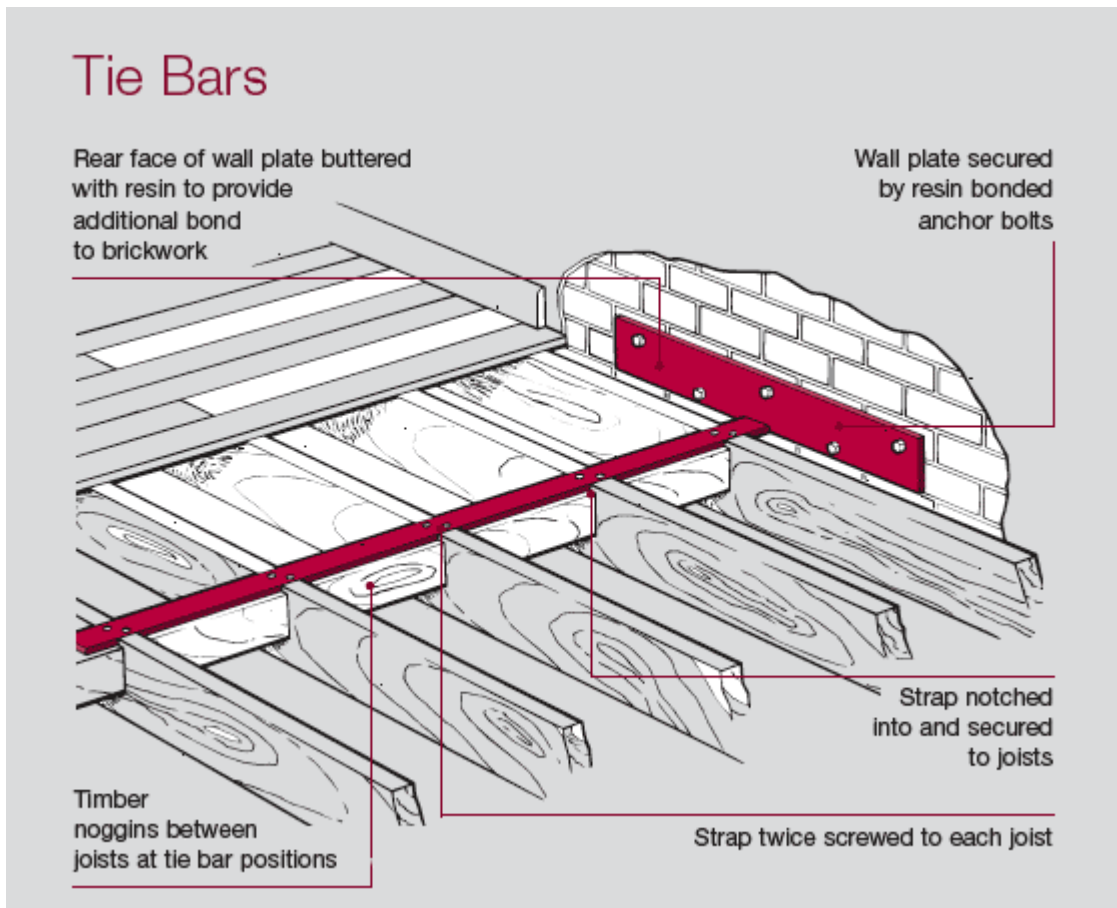
Many older buildings suffer from bulging brickwork and leaning walls, particularly those constructed with internal floors and walls providing no lateral restraint.



*Traditional methods can look unsightly, but methods are available now to “hide” the visible effects.
Traditional methods with pattress plates can be unsightly .*

9.2 TYING BACK AFFECTED WALLS

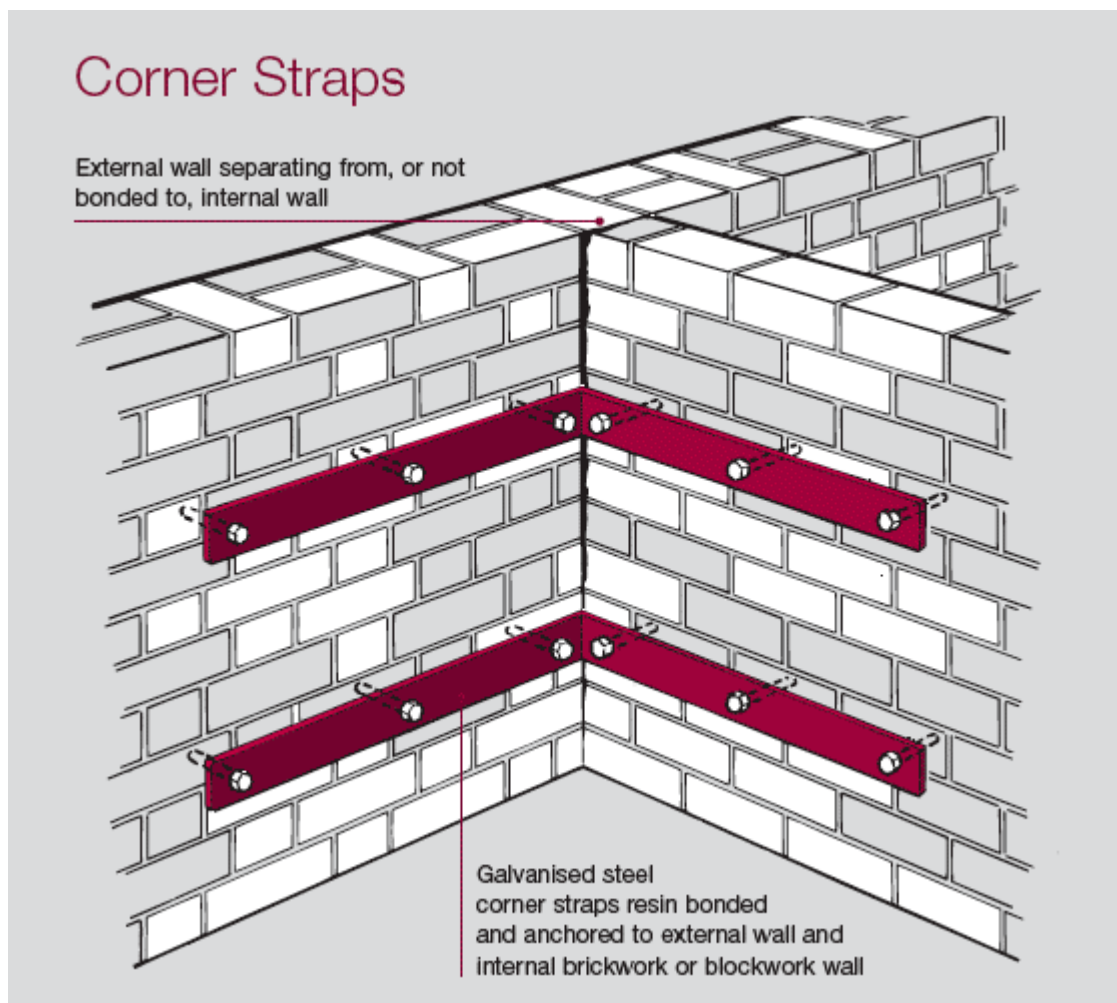
Tie Bars and Straps offer an effective solution to such problems by tying back affected walls. The bars and straps are secured to the internal face of the wall using Resin Anchors and are then notched into and securely screwed to the floor joists. Alternatively, they can be spanned right across the internal floors and secured to another stable internal or external wall.





Corner Straps fixed to stone walling with resin anchors

Corner Straps are designed to provide a bond between walls which were either constructed with no bond, or have debonded due to structural movements.



9.3 REMEDIAL METHODS

These remedial methods are highly adaptable to suit most domestic situations, and are completely concealed both internally and externally. Scaffolding is not required and little disturbance is caused during installation. If required, installation of traditional tie bars can offer a range of pattern type plates or features which can be fixed externally, but see above picture and note.

Similarly but not featured here reinforced concrete elbows can be installed within the thickness of the brickwork – this is more time consuming in terms of curing times and also because of concrete shrinkage will need dry packing or wedging into the existing structure. The fitting of remedial steel straps gives instant restraint to the corner once the resin bolts have cured.



Installation of Tie Bar

1. *Lateral movement of the flank wall has resulted in gaps between the skirting and the floor boards, and between the flank and partition walls.*
2. *Once the floor boards are lifted and skirting boards removed, the floor joists are notched to receive the Tie Bar, and timber noggins are secured under the bar.*
3. *The flank wall is then drilled to receive the resin anchor fixings and the Tie Bar is twice screwed to each joist.*
4. *The holes are then vacuumed to remove all loose material and debris before being injected with thixotropic anchor grout ready to receive the anchor bolts. The anchor bolts are then installed and any gaps between the tie bar plate and the wall are filled with resin anchor grout.*
5. *The Tie Bar is held in position with timber wedges whilst the anchor grout cures before the anchor bolts are tightened. Once tightened, original profile skirting boards and floor boards can be fitted.*

10 TEMPORARY WORKS

10.1 INTRODUCTION

Temporary works are the parts of the works that allow or enable construction of, protect, support or provide access to the permanent works. They might or might not remain in place at the completion of the works. Temporary works include vertical support to existing structures. Temporary works will often consist of proprietary propping systems such as Slimshore Soldiers or Maybey Props, and smaller scale Acrow props.

All Structural repairs on domestic building works projects require temporary works. They are often complex with a mixture of horizontal and vertical temporary works in place at the same time and with different elements of the temporary works being installed, adjusted or removed concurrently.

A major cause of health and safety problems associated with Structural repairs on domestic building works is poor temporary works especially vertical temporary works and part built Structural repairs on domestic building works structures. The temporary works on projects with problems are often:

- Missing
- Poorly or not designed
- Installed incorrectly
- Inadequate
- Not controlled
- Uncoordinated
- Removed prematurely or out of sequence

Possibly the most critical factor in avoiding serious health and safety problems on Structural repairs on domestic building works projects is the correct understanding of the function of the temporary works and how they should be installed.

Temporary works must be designed, installed, checked and supervised correctly. A sound process to ensure that nothing is missed must be in place.

10.2 TYPES

10.2.1 OUTLINE

Temporary works in Structural repairs on domestic building works can be divided into the following main areas:

- Structures - support to the existing building or adjoining building and to the permanent works in the temporary condition
- Equipment and plant - equipment and plant that has been brought onto site as part of the works
- Site facilities - hoarding and welfare facilities

10.2.2 EXISTING STRUCTURES

Existing structures must be correctly supported at all times. Generally this support will be vertical but can also be horizontal where side support is being removed or replaced, for example when a facade is to be retained or where a semi-detached house is being demolished.

Vertical temporary works will often be used in Structural repairs on domestic building works where structural steelwork is being installed into or under existing walls or columns.



Fig Temporary works - support to existing structure



Fig: Temporary works - support to existing structure

10.3 EQUIPMENT AND PLANT

Equipment and plant can be used in Structural repairs on domestic building works projects. Ground conditions should always be assessed to ensure plant is not vulnerable to overturn and will not overload adjacent structures.

Typical plant includes hoists and platforms, lorry loader cranes these can all require temporary works such as temporary foundations, firm bases, anchors or rigging to provide support.

These sorts of temporary works are not frequently needed in standard Structural repairs on domestic building works projects but for larger and more complex Structural repairs on domestic building works projects they are often required.

10.4 SITE FACILITIES

Temporary works also covers the stability of site fencing, welfare facilities, access scaffolds, temporary roofs and the use of either the existing or new permanent works to carry construction or temporary loads. Examples include support to suspended floors or Structural repairs on domestic building works roof slabs to allow plant to move across or work from them, and support to floors to allow material storage.

The risk posed by all of these must be assessed and suitable temporary works designed and installed.

10.5 DESIGN

All temporary works must be designed, reviewed and approved by a qualified engineer and must be accompanied by risk assessments, drawings, method statements, instructions for installation and ongoing checks, and if required a removal sequence.

The engineer responsible for the design of the temporary works is called the Temporary Works Engineer (TWE). The TWE is often a different person from the structural engineer responsible for the main permanent design. The TWE will often work directly for the Contractor.

10.6 CONTROL OF THE TEMPORARY WORKS

In addition to a Temporary Works Engineer a Temporary Works Coordinator (TWC) must be appointed. The Temporary Works Coordinator has overall responsibility for the temporary works on site.

The specific responsibilities of the TWC are:

- Co-ordinating all temporary works activities
- Ensuring that various responsibilities have been allocated and accepted (for example designers, design checkers, erectors and site supervisors)
- Ensuring that risks identified at design stage, as well as assumed construction methods and loading constraints, are incorporated into the temporary works design brief
- Ensuring that the temporary works design is satisfactory

- Ensuring that a design check is carried out that covers concept, structural adequacy and compliance with the design brief
- Ensuring that the design is made available to relevant parties
- Maintaining a register or record of all drawings, calculations and other relevant documents relating to the final design
- Ensuring that those responsible for on-site supervision receive full details of the design, including any limitations and guidance notes
- Ensuring that risk assessments and guidance notes are prepared covering the safe erection and dismantling sequence
- Making checks at appropriate stages during construction of temporary works
- Issuing the permit to load after a final physical check
- Monitoring and inspecting the temporary works while they are loaded
- Ensuring that appropriate maintenance is carried out to temporary works for example to facade retention or vertical propping
- Issuing formal permission to dismantle the temporary works and specify any relevant sequence once the permanent works have attained adequate strength

10.7 SUMMARY

The Health and Safety Executive report that a frequent cause of major structural failure with Structural repairs on domestic building works projects is the failure of the contractor to appoint a Temporary Works Engineer and a Temporary Works Coordinator, relying instead on their own perceived experience and an 'it's always worked before' mentality. In particular excavations must be correctly supported.

Contractors must appoint a Temporary Works Engineer and a Temporary Works Coordinator. The temporary works must be designed, installed, checked, monitored, coordinated and controlled correctly.

11 IMPACT ON OTHERS

11.1 INTRODUCTION

Structural repairs on domestic building works can have a significant negative impact on neighbours, local residents, other road users and other members of the public. Minimising negative impact on others needs to be considered at an early stage in the project to avoid high impact methods being locked in by the design.

The main negative impacts on others are:

- Damage to surrounding building and structures.
- Noise, vibration and dust.
- Traffic congestion.

Early communication and consultation with local residents will go some way to reduce negative construction impact.

11.2 DAMAGE TO SURROUNDING BUILDING AND STRUCTURES

11.2.1 INTRODUCTION

There will always be some risk of damage to surrounding building when any construction work takes place, be it Structural repairs on domestic building works above ground work. The risk of damage should always be minimised.

In the majority of cases there should be no noticeable structural damage. Damage should usually be limited to superficial cosmetic damage. The table for categorisation of damage to building is at appendix B.

In nearly all cases where there is greater damage than this the root cause is either poor design or workmanship. Instructing a competent and experienced contractor is probably the most critical factor in avoiding damage to surrounding building and structures.



Fig 23: To be avoided at all costs!

11.2.2 PARTY WALL ACT

The Party Wall Act provides a legal framework under which work can be completed on, to or underneath party walls or alongside property boundaries. The Act was not written with retro-fit Structural repairs on domestic building works in mind and so there are various parts of the Act where the wording is open to interpretation. One of these is the section on special foundations consent that has already been mentioned.

The intention is that no damage is caused however the Act allows that damage may occur. In this instance the Building Owner remains fully liable to make good or pay compensation to the Adjoining Owner for any damage. This remains the case even if the damage is non-negligent. Non-negligent damage is classed as damage that occurs despite everything having been done correctly.

Under the Act Building Owners have a responsibility to notify Adjoining Owners of their intention to work under or close to any party wall or, usually, along any boundary line. Work should not usually be started until party wall agreements are in place. Adjoining Owners have the right to appoint a surveyor and a checking engineer to act on their behalf. The reasonable costs for these are paid by the Building Owner.

The Act is not perfect but does give a workable framework that balances the rights of property owners to undertake work while providing a level of security to neighbours.

RICS guide to Party Wall Legislation and procedure has fine examples at Appendix C

<http://www.rics.org/uk/knowledge/professional-guidance/guidance-notes/party-wall-legislation-and-procedure-6th-edition/>

11.3 NOISE, VIBRATION AND DUST

Noise, vibration and dust can be caused by:

- Construction work on site
- Spoil removal
- Materials stored on the road or on the site

The worst noise, vibration and dust on site are generally produced by:

- Breaking out concrete especially reinforced concrete
- Cutting steel reinforcement and structural steel
- Drilling into concrete
- Use of large plant
- Delivery and collection vehicles
- Above ground demolition works

Actions that can be taken to reduce construction site impact include:

- Keeping doors and windows closed where possible
- Using muffled or silenced compressors and other plant

- Using, where practical, electrically powered tools rather than air powered tools - electrical tools do not need a compressor unit
- Using relatively low power handheld breaking tools for removing existing foundations
- Using, where practical, non-percussive methods for removing concrete, including using diamond saws, diamond drills, concrete bursters and concrete crunchers
- Using sound shielding around noisy work areas
- Using non-percussive piling methods
- Informing and communicating with local residents on the best times to complete very noisy works
- Informing local residents of the times of very noisy works in advance
- Agreeing non-noisy working times
- Stopping site operatives from shouting or raising their voices unnecessarily
- Banning the use of radios, other than communication radios, on site
- Using good quality suppliers with modern delivery vehicles
- Ensuring conveyors are well maintained and lubricated
- Making sure materials are fully enclosed by waterproof and dustproof coverings especially cement and ballast

11.4 TRAFFIC CONGESTION

The main causes of traffic congestion around sites are:

- Delivery and collection vehicles, notably spoil removal vehicles and ready mix concrete delivery lorries
- Hoardings, skips and welfare facilities on the highway

Use of the highway for skips, materials storage and the like should generally be minimised. It is not always possible to store everything on site and in this instance the most efficient use of space should be employed.

Possible actions that could be considered are:

- Implementing a Construction Traffic Management Plan (CTMP)
- Limiting vehicle delivery, collection and spoil removal operations to low traffic volume times, say between 9.30am and 4pm
- One way approach and departure route plan
- Ensuring an adequate system of vehicle call up to avoid having multiple vehicles on site at the same time
- Positioning banksmen and traffic marshals at sensible places to give local traffic the option of using alternate routes before they are committed to the road past the project
- Providing the traffic marshals with communication radios
- Moving the delivery or collection vehicle when local traffic wants to pass
- Using the lowest impact method for spoil collection - possibly vehicles waiting under a conveyor for loading or grabs lorries rather than skips on exchange
- Communicating with local residents to gain feedback on the effectiveness of the measures being taken
- Avoiding deliveries and collections at times when the local refuse collection takes place
- Avoiding routes past local traffic generators such as schools, especially at their expected busy traffic times
- Coordinating deliveries and collection with any other nearby construction sites
- Organising the site efficiently to minimise the need for storage on the highway

11.5 SUMMARY

Structural repairs on domestic building works projects can cause significant negative impact on others especially if poorly planned and executed. There will always be some negative impact but this should be minimised through early engagement, imaginative planning and considerate execution.

12 FACTORS AFFECTING CHOICE OF CONSTRUCTION TECHNIQUE AND METHOD

12.1 INTRODUCTION

Health and safety considerations will override all other considerations. However health and safety excepted the remaining main factors that affect the choice of construction technique and sequence are:

- Occupier's desire to live in the existing building during the works
- Existing building
- Party wall matters
- Surrounding structures
- Site access
- Impact on others

12.2 OCCUPIER'S DESIRE TO LIVE IN THE EXISTING BUILDING DURING THE WORKS

The property owner may wish to live in the building during the works. This will generally only be possible if the repairs can be accessed externally. In general for insurance related works if the property has to be without a kitchen and/or bathroom facility insurers will consider paying for relocation whilst that section of the works is completed. The property in effect becomes a building site and there are many Health and Safety implications of working on an occupied property.

Where the upper floors only remain in use during the work it may be necessary to provide additional temporary works in the form of an external stairway and secured opening into the building. Internally the original stairway can then be blocked off.

There is a trade-off to be considered that balances the costs of renting alternative accommodation, replacing any floors that will be removed and any making good and decorative work against the additional cost of the structural work and construction duration if completed by tunnelling.

12.7 SURROUNDING STRUCTURES

The stability of surrounding structures must be fully considered. The following points should be noted:

- Where a party wall is being repaired there will be a point, usually at the front or rear elevation, where the repair stops and the adjacent wall remains supported on its existing foundations.
- Owners of any surrounding building or structures, known as the Adjoining Owner in the Party Wall Act, should be notified of the works in advance. Adjoining Owners have the right to instruct a party wall surveyor and a structural engineer to check the permanent and temporary works designs and method of work.

12.8 SITE ACCESS

Site access can make a significant difference to how a project may be undertaken. In particular poor access will usually mean:

- The overall project duration will increase due to the difficulty of moving material onto site and spoil off site - extremely poor access may limit the size of some projects either because of unacceptable project duration or high cost

12.9 IMPACT ON OTHERS

Some construction methods may cause greater noise, vibration, dust and traffic movement than others.

These include:

12.10 SUMMARY

Health and safety is the most important single factor to be considered when choosing the construction technique and method.

All of the factors, together with health and safety, need to be considered for each project.

13 HEALTH AND SAFETY

13.1 INTRODUCTION

Structural repairs on domestic building work under or near existing structures has a high level of inherent construction hazard. In order that this work can be undertaken safely all members of the construction team, most notably the contractors, must be suitably experienced and qualified as well as being committed to safe working practices. It is critical that Clients only appoint individuals and companies who meet this high benchmark.

All Structural repairs on domestic building works projects must have in place appropriate health and safety management with arrangements including access to competent health and safety advice on general and construction matters.

13.2 OUTLINE

This section will cover:

- Safety hazards
- Health hazards
- Responsibilities
- Health & safety of others
- Designing to mitigate risk
- Planning for risk management
- Managing and supervising
- Competence, training, and induction
- Welfare arrangements
- Emergency planning and procedures

13.3 SAFETY HAZARDS

There are numerous serious safety hazards involved in Structural repairs on domestic building works directly below or near to existing buildings.

These hazards include:

- Collapse of existing building and structures
- Access to work areas
- Falls from height
- Scaffolding and ladder safety
- Existing services
- Electrical handheld power tools
- Mobile plant safety
- Confined spaces
- Fire and means of escape
- Dangerous substances
- Lifting operations
- Lighting
- General site order and slips, trips and falls on the same level

Collapse of the existing building and falls from height, including into excavations, are the three hazards most likely to lead to death or serious injury both to site workers and members of the public.

All temporary works associated with excavations and support to existing building must be undertaken in line with section 5 of this document, Temporary works.

Mitigating actions for all of these safety hazards are given at appendix C.

13.4 HEALTH HAZARDS

In addition to the safety hazards there are also significant health hazards associated with Structural repairs on domestic building works projects. The main health hazards are:

- Asbestos
- Hazardous substances and processes
- Respiratory disease especially from dust containing silica
- Carbon monoxide and other noxious gases
- Dermatitis
- Damage to eyes
- Noise
- Hand arm vibration
- Manual handling and musculoskeletal disorders
- Inclement weather

Work related stress and alcohol and drug abuse are also serious health issues affecting the wider construction industry.

Mitigating actions for these health hazards are given at appendix D.

13.5 RESPONSIBILITIES

13.5.1 OUTLINE

Individuals with health and safety responsibilities are called duty holders. The main duty holders are:

- Clients – the person or organisation instructing the work who is either business or domestic
- Designers - usually architects and structural engineers but designers include anyone contributing to the design of the work including those altering the design or designing temporary works
- Contractors – the people on site physically managing and carrying out the work

The Health and Safety at Work etc. Act 1974 (HSW Act 1974) and Construction (Design and Management) Regulations 2015 (CDM 2015) set out the main statutory duties on clients, designers, contractors and others involved in Structural repairs on domestic building works projects. See appendix G.

Other health and safety regulations cover specific relevant hazards such as work at height, use of plant and equipment, lifting operations, hazardous substances, fire and explosion, confined spaces, and noise and vibration.

13.5.2 CLIENT

Where a Structural repair on domestic building works project is carried out in furtherance of a business the client has responsibilities under CDM 2015. CDM 2015 applies to Domestic Clients as well for the first time - see appendix G for full details.

Business clients (for example a developer or landlord or commercial premise owner or occupier) have extensive duties including the requirements to check contractor competence, appoint a Principle Designer and principal contractor plus making arrangements for managing the health and safety for the project.

Domestic clients now have specific CDM 2015 duties. Domestic clients are those who either live in the premises or will live in it once the work is complete and who do not run a business from the premises see appendix G

13.5.3 DESIGNERS

CDM 2015 duties apply to all projects, including non-notifiable and domestic works.

Designers must seek to avoid, so far as is reasonably practicable, construction risk whilst preparing or modifying the design. This is achieved by eliminating hazards and reducing risk from remaining hazards for example using shorter beam spans or lighter beam components and in-situ assembly to

reduce manual handling risks.

Designers must also provide information likely to be needed to identify and manage the remaining construction risks.

13.5.4 CONTRACTORS

Contractors must ensure, as far as is reasonably practicable, the control of hazards to health and safety during the works.

The contractor’s duties involve:

- Planning: minimising risk and establishing precautions
- Managing: implementing and maintaining precautions
- Monitoring: checking and reviewing precautions

The Contractor must do all three activities throughout the project.

13.6 HEALTH AND SAFETY OF OTHERS

The health and safety of building occupiers, visitors and the general public is of paramount importance on Structural repairs on domestic building works projects. Work must not be carried out unless the structural integrity of the building being extended and those nearby has been ensured and until work areas have been secured to prevent access by unauthorised people.

Safe areas and safe means of access and egress must be established and maintained through affected public areas with particular care being provided where elderly people or children may be involved.

Site security and access restrictions	Reasonable steps must be taken to prevent access by unauthorised persons to the project site. Only people who are explicitly authorised must be allowed access. Authorised people must have relevant site rules explained to them, wear the required Personal Protective Equipment (PPE) and undertake any necessary site induction. It must not be possible for members of the public, especially children, to wander onto site at any time. A common fault for Structural repairs on domestic building works projects occurs where workers are moving materials onto site and the main site door is left open and unattended. This must not be allowed.
Warning signs	Warning signs should be highly visible and be located where they are most likely to be seen by someone entering the site.
Works access	Safe means of access and egress must be established and maintained to all areas of work. Special attention should be taken when work is in a restricted area and all reasonable efforts should be made to ensure multiple exit points. Access points for emergency service vehicles must be clear at all times. On larger sites, where possible, separate pedestrian and vehicle entrances should be designated. Vehicle access to site should avoid hazardous situations, for example being close to overhead power lines or causing obstructions to road users. Steps must be taken to prevent dirt, mud or dust being carried out of the site onto public highways.

13.7 DESIGNING TO MITIGATE RISK

13.7.1 OUTLINE

The design team must mitigate risk as far as reasonably practical. It is usually preferable if experienced specialist contractors and engineers are part of the design team at an early stage in order to identify the main risks.

The main areas for consideration are:

- Stability of existing structures
- Temporary works
- Avoiding risks from other hazards

13.7.2 STABILITY OF EXISTING STRUCTURES

The design must prevent the collapse and minimise the movement of existing or nearby structures.

Loads and their distribution must be calculated with particular attention to ensure that loads are transferred to the new Structural repairs on domestic building works structure through elements of the building that have sufficient load bearing capacity. All load paths must be identified and checked.

Elements showing signs of distress or weakness must be strengthened to allow the safe transfer of load with a suitable factor of safety allowed to ensure that unintentional redistribution of the buildings' load in the building fabric does not cause problems.

The strength and condition of any existing structures must be assessed to ensure that any zones of failure or separation can be predicted.

Wind loads should be calculated with full recognition given to any localised effects such as funnelling or that might result in uplift of structures such as temporary roofs.

13.7.3 STABILITY OF THE WORKS IN THE TEMPORARY CONDITION

Temporary works must be used to ensure the stability of the ground and existing building during the works. All temporary works must be designed, installed, monitored and removed correctly.

A Temporary Works Engineer (TWE) and a Temporary Works Coordinator (TWC) must be appointed. Both the TWE and TWC must be suitably qualified and experienced individuals.

Further detail on the correct process and responsibilities for temporary works are given in section 5 of this document.

13.7.4 AVOIDING RISK FROM OTHER HAZARDS

In addition to designing for structural safety all designers must seek to avoid construction risk whilst preparing or modifying the design.

In particular hazards from working at height, manual handling, confined spaces, generation of noise, vibration, and dust, and the use of hazardous and dangerous substances should be avoided in the building design as far as possible.

An example of designing to reduce risk from manual handling is designing structural steelwork beams with a splice or as composite beams in order to reduce the size and weight of each piece of steel

A practical action that helps design that avoids unnecessary construction risk is to involve the Structural repairs on domestic building works contractor (who will often instruct or control the TWE and TWC) and the Structural Engineer early in the design process. Property owners frequently desire large open spaces with minimal support. These are generally possible but there are limitations and trade-offs which include health and safety considerations. Health and safety pitfalls can largely be avoided if the Structural repairs on domestic building works contractor and Structural Engineer are involved early.

13.8 PLANNING FOR RISK MANAGEMENT

13.8.1 OUTLINE

The project must be planned to manage risk effectively. This requires:

- Gathering the required information
- Assessing the significant risks
- Developing methods and safe systems of work

13.8.2 GATHERING THE REQUIRED INFORMATION

All relevant information should be gathered as early as practically possible in order to allow the significant hazards to be identified and assessed. The breadth and amount of information required should be appropriate for the scale and complexity of the project.

A client is required to provide designers and contractors with pre- construction information consisting of all information which is relevant to the health and safety of those engaged in or

affected by the work, or who will use the structure as a future workplace. This should include local knowledge of the site and the information in any relevant existing building health and safety file.

The relevant information may include:

- Site investigations.
- Existing and adjoining building and structures.
- Adjacent underground structures.
- Location of services.
- Asbestos.
- Site access.

Additional detail on the relevant information that may be needed to enable planning for risk management is given in appendix E.

13.8.3 ASSESSING THE SIGNIFICANT RISKS

The Structural repairs on domestic building works project main or principal contractor must ensure that a suitable and sufficient assessment of the risks to the health and safety of employees and others who may be affected by the works is carried out by all employers working on the project.

Risk assessments must be site and work specific. It is not adequate to use generic risk assessments, they must relate to a specific project and the activities to be undertaken on that job.

Risk assessments should be practical and provide actions that will avoid or mitigate risk. Historically risk assessments have often been overly complicated paper exercises that are then not used to implement simple actions. This approach should be avoided and straight forward risk assessment that identify the likely hazards and provide practical actions should be used instead.

In the first instance the assessment helps the main parties select the method of construction, the construction sequence, the system of work and the plant, equipment and workforce that is needed. This selection process may be reworked several times before the right mix becomes clear. Once the main decisions are in place the assessment can be refined to help ensure the work will proceed smoothly with minimal risk to workers and others.

A full structural assessment must always be completed. This should identify any limitations on the proposed works and the need for any temporary or permanent works to stabilise structures prior to the main work commencing and during the works.

13.8.4 DEVELOPING METHODS AND SAFE SYSTEMS OF WORK

Risk assessments should promote the preparation of site specific method statements detailing, with sketches, diagrams or photographs where possible, how the significant hazards will be managed.

Method statements should set out how the operation or activity will be carried out safely and describe the scope and sequence of works.

Specific temporary works designs will often be included as part of a method statement and will need to be available for use before structural or excavation work commences on site. However not all of the temporary works designs are needed before work starts, they can be added and amended throughout the project as required in consultation with the project temporary works engineer.

13.9 MANAGING AND MONITORING

13.9.1 GENERAL

Once the project has been designed and planned from a health and safety perspective work on site can start. The work must then be adequately managed and supervised.

Ensuring that the work is managed and monitored correctly starts with senior management and works down.

13.9.2 DIRECTOR OR OWNER REVIEWS

Directors or company owners must take a keen interest in health and safety during all site visits and conduct a formal review of health and safety arrangements and performance during meetings with project managers and engineers.

The company director responsible for health and safety should arrange for a review of the effectiveness of the company health and safety policy, organisation and arrangements at least every twelve months or following any incident, accident or dangerous occurrence.

13.9.3 MANAGEMENT SYSTEM

A practical health and safety management system must be in place and be used. There is no point in having a system that is not effective because it is overly complex and difficult to operate.

Typical elements of an effective health and safety management system are:

- Health and safety plan presentation by the project manager to senior site management before the start of all jobs
- Health and safety plan presentation by the person directly responsible for the site, for example the Contracts Manager, to the company director responsible for health and safety
- Regular health and safety site visits by a company director or senior manager to each project
- Health and safety site visits by an external health and safety consultant
- Regular health and safety reports on each job to senior management covering risk assessments and methods for current and future phases of work
- Staff inductions are completed where it is made clear that health and safety is a business critical priority and that staff are never expected to take undue health and safety risks, and must report all concerns and any near misses or incidents to site management
- Site management reports and reviews of all accidents, near-misses and instances of non-compliance with lessons learned being communicated out across the company and workforce
- End of job health and safety report with lessons learned being recorded and disseminated

In this context regular may mean weekly or fortnightly.

13.9.4 MONITORING

Health and safety must be continuously monitored. Project managers and engineers should take a keen interest in health and safety during all site visits and conduct formal health and safety inspections at established intervals with inspection reports provided to the managing director. Project managers should monitor for health and safety compliance on all site visits, which would usually be completed on or near to a daily basis.

Site managers and Foremen are expected to monitor health and safety on a continuous basis.

13.9.5 SUPERVISOR CHECKS

Contractors must have procedures in place to check, throughout the working day, that the required safety precautions are being implemented. As a minimum these should ensure that:

- Temporary works are in place, secure and installed in line with instructions
- Access to the site and for all work areas is fit for purpose
- Ladders are secure and correctly installed
- Edges are protected, including edges to excavations
- PPE is available and being used, especially safety boots, head protection, and eye and hearing protection
- Operators are not being exposed to hand arm vibration (HAV) risk from using power tools for extended periods
- Work platforms are safe and secure
- The correct equipment is available and in good working order
- Exposure to dust is being minimised
- Fuels and oils are stored correctly

- Banksmen are being used to control deliveries and collections
- Welfare facilities are available and serviceable Checklists are an effective tool to guide these ongoing checks.

13.9.6 REPORTING HEALTH AND SAFETY RISKS

All staff should be briefed that reporting health and safety concerns and non-compliance up the management chain is their individual responsibility and that doing so is part of the company health and safety plan.

Reporting health and safety problems allows supervisors and managers to take corrective actions to avoid accidents and injuries.

13.10 PERSONNEL

13.10.1 OUTLINE

Everyone involved in Structural repairs on domestic building works, from site operatives to company directors, must be competent and adequately trained in health and safety. The Structural repairs on domestic building works contractor needs to take the lead in this area.

13.10.2 COMPETENCY

The competence of site workers and supervisors is crucial for the safe completion of Structural repairs on domestic building works. The lack of competent site management is a main cause of major problems on site according to the Health and Safety Executive.

To this end all managers and site foremen must have received appropriate training in site safety management and supervision.

In addition on-site operatives must be able to receive and clearly understand the written and verbal instructions from their immediate supervisor.

The level of supervision and the number of persons on site, their aptitude, experience and training, must be appropriate.

13.10.3 TRAINING

There are no absolute rules over the training requirements for different roles however there are several widely accepted training courses and schemes aimed at different levels of responsibility.

COURSE	TARGET LEVEL
Site Management Safety Training Scheme (SMSTS)	Five day course aimed at Site Managers
Site Supervisor Safety Training Scheme (SSSTS)	Two day course for Site Supervisors
Construction Skill Certification Scheme (CSCS)	A card scheme for health and safety competency covering all levels from site operator to management. Individuals are issued a level specific card with personal photograph after passing the test for each level
Construction Plant Competence Scheme (CPCS)	A registration card scheme for those involved in machine operations
Institution of Occupational Safety and Health (IOSH)	The IOSH is the chartered body for health and safety professionals. Membership levels range from Affiliate Member up to the level of Chartered Fellow
IOSH "Managing Safely Course"	4 day course aimed at Senior Managers.
VQ's	Vocational Qualifications (VQs) are work based awards in England, Wales, Scotland and Northern Ireland that are achieved through assessment and training. In England, Wales and Northern Ireland they are known as a National Vocational Qualification (NVQ). In Scotland they are known as a Scottish Vocational Qualification (SVQ). To achieve a Vocational Qualification, candidates must prove that they have the ability (competence) to carry out their job to the

COURSE	TARGET LEVEL
	<p>required standard. Vocational Qualifications are based on National Occupational Standards that describe the 'competencies' expected in any given job role.</p> <p>Cskills Awards L3 NVQ Diploma in Occupational Work Supervision (Construction)</p> <p>A vocational qualification can be gained through the On Site Assessment Training (OSAT) route. A vocational qualification assessor will determine if the candidate is at the required competent level to award a vocational qualification. All assessment is carried out on site.</p> <p>The National Occupational Standard will shortly include a standard for Temporary works as an option.</p>
SUPS	<p>Specialist Up-skilling Programmes (SUP) are designed for operatives with existing knowledge and skills, but without the relevant occupational Vocational Qualification to allow them to up-skill or cross-skill within a specialist occupation of the construction industry. The programme combines short intensive and structured off -the-job training and assessment for the relevant vocational qualification.</p> <p>The structured short intensive training element means operatives can put their new skills into practice as quickly as possible. This will improve how they do the job, resulting in increased available skills and productivity for the employer, with less lost time from the workplace for the employer and the individual gaining the qualification.</p> <p>Available Specialist Up-skilling Programme (SUP) available for this sector:</p> <p>ASUC have developed a Level 3 SUP for Supervisors - on the successful completion of the programme an Occupational Work Supervision L3 NVQ can be awarded.</p> <p>The programme has 5 days class room training, followed by an OSAT (On Site Assessment Training) assessment.</p> <p>CITB Specialist Up-skilling Programmes grants are available for CITB in-scope registered employers.</p> <p>Contact ASUC for further information on vocational qualification assessment, the Occupational Work Supervision SUP course and other training.</p> <p>For further information about the CITB and CITB grants available, please use the following website link: http://www.asuc.org.uk/training.html</p>
Minimum level of training expected	<p>Health and safety awareness</p> <p>Asbestos awareness above and below ground</p> <p>Working at height including in a basement</p> <p>PASMA</p> <p>Confined spaces</p> <p>First aid 1 day</p> <p>First aid 3 day</p> <p>Abrasive wheels</p> <p>Manual handling</p> <p>Temporary works co-ordinator</p> <p>Behavioural training</p> <p>Location of services and CAT scanning</p>

COURSE	TARGET LEVEL
	Working with concrete including mould oil and formwork Health and safety for Directors. Plant operators Fire Marshall and fire awareness Banks man - including lifting operations

Companies should conduct internal training to augment external courses and schemes.

ASUC members have a written commitment to training to the best possible levels and continuously work with the CITB and others to provide this for members. There is a full training link on the ASUC website <http://www.asuc.org.uk/training.html>

This link was funded by a CITB growth fund bid.

13.10.4 INFORMATION AND INDUCTION

Employees and others under the control of the main contractor must be provided with all information, instruction and training needed for the work to be carried out safely and without risk to health.

This should include:

- A site induction
- Information on risks and precautions required
- Any site rules and procedures to be followed in the event of serious and imminent danger

New starters must be instructed on the specific company arrangements in place to deal with health and safety matters and their personal responsibilities.

Trainees and apprentices should develop their knowledge and skills before being asked to work in confined areas or to install complex support. Some workers new to this type of work may find it difficult to work. If they are not progressing and cannot be switched to other work there may be health and safety grounds for terminating employment.

On a site where several trades are working in close proximity a daily briefing or hazard board can help inform about planned activities or changes.

13.10.5 SITE BRIEFINGS AND TOOLBOX TALKS

Site briefings and tool box talks must be carried out to ensure those at risk are familiar with site procedures and that they are aware of all relevant points in the method statements and risk assessments as well as other construction related health and safety issues.

A health and safety section should be included as part of the daily site brief.

Toolbox talks are short periods of instruction on a specific area of site health and safety, and are often completed on a weekly basis. A record of completion of toolbox talks received by each individual should be kept.

13.10.6 CONSULTATION

Contractors must consult employees on day-to-day health and safety conditions so that lessons can be learnt from those dealing first hand with the hazards arising from the works. Lessons learnt should be communicated to the workforce across all sites.

13.10.7 SUB-CONTRACTORS AND THE SELF-EMPLOYED

A competence questionnaire should be issued to and completed by all new contractors and consultants prior to their appointment. Appointments should only take place after a reply has been received and assessed by the main contractor.

Sub-contractors must be judged competent to undertake the tasks for which they are appointed and have suitable procedures to manage their risks and cooperate with others.

The health and safety performance of sub-contractors should be reviewed during their work to ensure that they maintain the required standards.

13.11 WELFARE ARRANGEMENTS

Structural repairs on domestic building works often takes place under harsh working conditions, frequently cold, wet and muddy.

Arrangements for the welfare of those working on site must be determined and available before work starts on site.

The arrangements may change as the project progresses but must include:

- Clean and working toilets
- Washbasins with hot and cold running water
- Soap and a means of drying the hands, arms and face
- Sinks large enough to wash face, hands and forearms
- Somewhere to change, dry and store clothing
- Drinking water and cups
- A rest area to sit
- Facilities for making hot drinks and for heating food

Shower facilities may need to be provided if the work is particularly dirty.

The facilities must be kept warm and well ventilated with lighting as necessary.

13.12 EMERGENCY PLANNING AND PROCEDURES

13.12.1 SERIOUS OR IMMINENT DANGER

Procedures must be in place to be followed in the event of serious and imminent danger. These procedures must be communicated to all staff during site induction. The arrangements should also cover the immediate public, especially if occupied building is vulnerable to structural incidents or the spread of fire.

13.12.2 FIRST AID

A first aid risk assessment must be undertaken to ensure adequate and appropriate first aid equipment, facilities and trained personnel are provided so those working on site can be given immediate help if they are injured or taken ill at work.

As a minimum each project work site must be provided with:

- A stocked first-aid box including eye wash and wound dressings
- A first aid trained operative
- Information for those working on site about first aid arrangements
- Contact details and a map showing directions to the nearest accident and emergency department

13.12.3 ACCIDENTS AND NEAR-MISSES

Accidents and near misses must be reported to site controllers and management. As a minimum injuries must be reported in line with Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) October 2013 (subject to Parliamentary approval).

13.13 SUMMARY

Structural repairs on domestic building works projects have significant health and safety considerations which if not effectively planned and managed will cause high health and safety risk to construction site operatives and members of the public. They are among the highest risk construction activity that most clients will undertake and will generally involve major structural work undermining existing structures. The health and safety effort needed to undertake these projects safely is significant and requires training, experience and commitment.

In order that Structural repairs on domestic building works projects are completed safely it is critical that clients understand that this is the case and that they only appoint responsible, competent and experienced designers and contractors.

14 THE PROJECT TEAM

14.1 INTRODUCTION

The foundation of a safe and efficient project is an excellent team with the right knowledge, competency and experience.

There is no set composition for a Structural repair on domestic building works project team and not all of those covered in this section will be included in every project probably with the exception of the design or structural engineer who will always be needed. The best results will be achieved by a positive, cooperative approach with each team member being responsible for their own fields and looking to support other team members.

The project team may include some or all of the following:

- Client
- Structural or Design Engineer - always needed
- Temporary Works Engineer (TWE)
- Temporary Works Coordinator (TWC)
- Principal Contractor
- Party Wall Surveyor
- Quantity Surveyor
- CDM Principle Engineer
- Others

14.2 CLIENT

The client is the person for whom the work is being undertaken. They can be either a business client or a domestic client. It should be remembered that clients have specific health and safety responsibilities under CDM 2015. See appendix G for details.

Structural repairs on domestic building works projects are most efficient when the design remains the same throughout the project especially once construction has started. This requires the client and the whole team to think through the project in reasonable detail at the beginning. Failure to do this will often be the root cause of costly and frustrating changes and compromises later in the project. In general the later those changes happen during a project the greater the increase in cost and delay.

Clients may assign their own Project Manager or someone to act as their representative, usually called the Client's Representative. This can be effective but requires that the Project Manager or Client's Representative either has decision making authority or can get decisions from the client quickly.

Responsible, practical and imaginative clients can make a significant positive contribution to the safe and effective construction of their Structural repairs on domestic building works projects.

14.3 STRUCTURAL OR DESIGN ENGINEER

The Engineer is responsible for the permanent structural design of the works. The structural design must:

- Create a structurally sound new building
- Provide adequate support to minimise damage to existing buildings

Avoid or minimise risk during construction

It is important that the Engineer or someone who has a good knowledge of the likely structural limitations is involved early in the project as practical engineering trade-offs are frequent especially in more demanding Structural repairs on domestic building works designs.

The structural design of any piles will often be completed by an engineer working directly for the piling contractor. The structural engineer and the pile design engineer will need to coordinate on matters including pile loadings, lateral strength and allowable horizontal movement.

Some engineers will not be experienced in Structural repairs on domestic building works under or near to existing buildings. In this instance it may be useful to seek input from an experienced specialist contractor.

14.4 TEMPORARY WORKS ENGINEER (TWE)

The Temporary Works Engineer (TWE) is responsible for designing the temporary works that will maintain structural stability from the start of the project until the permanent works are completed.

In some instances the Structural Engineer may also be the TWE but the TWE will often be an independent consulting engineer or may work for the Structural repairs on domestic building works contractor.

A TWE should be appointed in all but the most straight forward cellar extension.

Further details on the responsibilities of the TWE are given in section 5 Temporary works.

14.5 TEMPORARY WORKS COORDINATOR (TWC)

The Temporary Works Coordinator (TWC) is responsible for overseeing all aspects of the temporary works on site except for their design. The TWC will often work for the Structural repairs on domestic building works contractor.

Further details on the responsibilities of the TWC are also given in section 5 Temporary works.

14.6 PRINCIPAL CONTRACTOR

The Principal Contractor is responsible for managing the works on site in a safe and productive manner. The Principal Contractor during the structural and waterproofing Structural repairs on domestic building works could be the Structural repairs on domestic building works contractor.

The Principal Contractor's main responsibilities usually include:

- Health and safety
- Risk assessments
- Construction sequence and method statements
- Safe systems of work
- Plan for reduction of impact on others
- Programme
- Site layout
- Traffic management
- Site set-up
- Detailed work plans
- Supervision of labour and subcontractors on site
- Installation and monitoring of temporary works
- Materials ordering and storage
- Excavation and spoil removal
- Construction
- Quality assurance

The contractor's overarching priority should be health and safety and this should be core to all activities.

The number of contractors involved in a project will vary from one contracting firm being responsible for all aspects of the work through to multiple contractors working either for one main contractor or directly for the client. In general a good result will be achieved from having one contractor responsible for the Structural repairs on domestic building works and waterproofing work, though this contractor may use subcontractors.

14.7 PARTY WALL SURVEYOR

A Party Wall Surveyor (PWS) is usually appointed to deal with putting in place party wall awards with the owners of nearby structures as required by the Party Wall etc. Act 1996 (the Act). Anyone can do this and no qualification or training is legally required however party wall matters for basements are complex and have certain nuances that make it advisable to appoint a building surveyor who has experience with party wall awards for Structural repairs on domestic building works.

It should be remembered that the Adjoining Owner has the right to appoint their own PWS and an independent structural engineer to check the permanent design and the proposed construction method as it affects their building.

14.8 QUANTITY SURVEYOR

Clients will sometimes appoint a Quantity Surveyor (QS). Quantity Surveyor's main responsibilities are related to costs and contracts.

14.9 SUMMARY

A good team is fundamental to a safe and efficient project. Choosing the right team will be one of the client's most critical tasks. Involving an experienced and competent contractor as part of this team early in the process will always be beneficial.

15. PROCUREMENT

15.1 INTRODUCTION

There are four main recognised procurement methods for construction work.

- Traditional
- Design and build
- Management
- Integrated

There is no single best method and they each have advantages and disadvantages.

15.2 TRADITIONAL

15.2.1 OUTLINE

In the traditional method the design process is separate from the construction work. Full design drawings and documentation is usually prepared by the design team for the client. The design information will be issued and contractors will provide a competitive price on this basis. A contractor will then be selected to complete the work.

There are three broad types of traditional contract.

- Lump sum
- Measurement
- Cost reimbursement

15.2.2 LUMP SUM

With lump sum contracts the contract sum is determined before the construction work starts. Lump sum contracts are usually priced using the design drawings and supporting documents such as specifications and work schedules. Firm bills of quantities may sometimes be used. Variations in price will occur only if:

- The client instructs a design change, or
- An unexpected condition is encountered, such as a previously unknown obstruction underground. The possible unexpected conditions should usually be raised at some point prior to the start of the works.

Lump sum contracts based on drawings and additional information are common in Structural repairs on domestic building works projects.

15.2.3 MEASUREMENT

The contract sum for measurement contracts is not finalised until completion of the project, where it is assessed on remeasurement to a previously agreed basis. Bills of quantities are a list of work items with a price per unit for each work item. Bills of quantities are often used in measurement contracts.

This type of contract is usually used where the works to be carried out by the contractor cannot be measured accurately before tender.

One form of measurement contract will have an initial set of drawings and a bill of quantities. The drawings are used as a guide to the expected quantities but a measure will be completed at the end of the works and the contract sum confirmed.

Structural repairs on domestic building works projects are generally accurately designed before work commences so measurement contracts are not usually the most appropriate contract type.

Sometimes clients or their quantity surveyors look to use a bill of quantities to price variations caused by design changes. This can work but may not always be appropriate because the cost of completing a set amount of a certain type of work can vary markedly at different places and times on one project. For example completing one linear metre of underpinning at five metres below ground level and below the water table will take more effort and be more costly than completing one linear metre of underpinning above the water table and at ground level.

15.2.4 COST REIMBURSEMENT

The contract sum for cost reimbursement contracts is not known at the start of the work on site. These contracts are sometimes called 'cost-plus' or 'prime cost' contracts.

In this type of contract the contract sum is determined by calculating the costs of labour, plant and material used and adding an agreed amount to cover overheads and profit. The overhead and profit might be a fixed sum, percentage or be calculated by some other agreed method. Some form of incentive fee may make sense for cost reimbursement contracts.

Cost reimbursement contracts are not common for Structural repairs on domestic building works projects. They may be appropriate where the complexity, likely design changes and unknowns make other forms of contract impractical.

15.3 DESIGN AND BUILD

In design and build procurement the contractor is responsible for undertaking both the design and construction work for an agreed contract lump sum price. The client will need to specify their requirements in sufficient detail to allow the design and build contractor to prepare their proposal.

METHOD	ADVANTAGES	DISADVANTAGES
Traditional	<p>Allows competitive tender based on the design information</p> <p>Client has control of design through their design professionals</p>	<p>Design and construction are sequential processes - usually increasing the overall duration of the project</p> <p>No certainty over construction cost until initial design work has been completed</p> <p>Construction cost may be higher than the best achievable due to cost inefficient design - in the order of 30% higher than the most efficient design - the cost advantage from the competitive tender may be illusory</p> <p>Redesign after the first round of tendering may incur additional professional design fees</p> <p>Designers may not be incentivised during the project to alter the design in order to achieve cost savings</p> <p>Can lead towards adversarial relationships between the members of the project team</p> <p>Contractor is incentivised to complete work as quickly as possible even if this involves increasing health and safety risks</p>
Lump sum:	<p>Reasonable cost certainty before work starts on site - price change should be limited to variations*</p>	<p>Requires that the design is largely complete before tendering can start and well before work on site can start</p> <p>Minor design confirmations, detailing or variations will lead to cost increases</p>

Measurement:	Allows contract works to start when it is not possible to complete the design with certainty	Contract sum is not fixed leaving client with some commercial risk. Bills of quantities can be inappropriate for use in Structural repairs on domestic building works projects where the difficulty and cost of the same work item on one project can vary significantly depending on location and point of time in the works
Cost reimbursement:	Allows work to take place where the extent, difficulty, likely design changes and unknowns make other forms of contract impractical	Contract sum is not fixed leaving client with commercial risk Can lead to perverse incentives for the contractor if the method of determining the overhead and profit amount is not considered fully
Design and build	Likely that the design will be cost efficient - cost savings of 30% or more can be achieved over traditional method Design and construction work can be carried out in parallel allowing reduced overall programme time Lump sum price gives reasonable certainty of contract sum before design work starts* Health and safety are more likely to be considered inherently Contractor can retain a client's initial design team to maintain project continuity	Clients can perceive that they do not get best value without having a traditional tender process based on completed design drawings Client needs to have determined the project requirements at the start in sufficient detail to allow the design and build contractor to prepare their proposal Design and quality risk if the client's requirements are not properly recorded or if the contractor's proposal was not fully understood or articulated Contractor is incentivised to complete work as quickly as possible even if this involves increasing health and safety risks
Management	Client has good control of design and quality Design can proceed in parallel with construction Specialist design related to a specific sub package does not need to be completed before appointment of the main contractor and start of work on site Client appoints the package contractors and so has good control of who is employed and full knowledge of package costs Design changes are possible during the works provided they do not affect work on packages already instructed Completion on time is an obligation of the contractor; extensions of time can only be granted by the contract administrator	No certainty over cost at the start of the project - the cost plan is not generally part of the management contract Splitting the various work elements of a waterproof structural repairs on domestic building works between different contractors would increase the likelihood of defects Instructing a general main contractor to manage a Structural repairs on domestic building works contractor responsible for the full Structural repairs on domestic building works package may add an unnecessary level of management cost, depending on the project Contractor may be incentivised to complete work as quickly as possible even if this involves increasing health and safety risks
Integrated	Leads to collaborative and productive relationships between project team	Some construction professionals may not be familiar with this relatively recent

	<p>members</p> <p>Project team should focus on delivering project on time, to budget and to quality</p> <p>Formal disputes are significantly reduced</p>	<p>form of procurement</p> <p>Requirement to agree incentives that align project team members</p> <p>Needs intelligent, responsible and professional project team</p>
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Once the contract is agreed the design passes to the contractor and the client has no direct control over the contractor's detailed design. The contractor will appoint their own consultants or use their own in house team to complete the design.

The client can continue to instruct overall design changes for example an increase in size or Structural repairs on domestic building works depth. The contractor should provide a price for the change and obtain an instruction from the client before proceeding with the design change.

The contractor is obliged to complete the project for the agreed contract sum. Variations to the price should apply in the same way as for a traditional lump sum contract.

15.4 MANAGEMENT

In the management procurement method a main or principal contractor is appointed to manage the project while the work is completed using a series of separate works or trade contracts. The main contractor is responsible for managing the project through the various works packages.

The client will usually start by appointing design consultants and a contract administrator to prepare drawings, a project specification and a cost plan. The client will have direct control of the design throughout the project through their professional team.

The contractor is appointed by negotiation or tender and interview. The works packages are usually let by competitive tender.

The main contractor is paid for managing the project through the various works packages.

15.5 INTEGRATED

Integrated procurement, sometimes known as collaborative procurement or partnering, emerged in the 1990s in response to the often adversarial situations encountered in major construction projects which used the three existing procurement methods.

The intention of the integrated procurement method is to focus all the project participants on the mutual objectives of delivering a project on time, to budget and to quality. It is about working as a team, regardless of organisation or location, to meet a client's needs. A central tenet is that risk and reward are shared by all parties in a way that aligns their actions with a successful project outcome.

The UK government's 1994 Latham Report 'Constructing the Team' started the thinking behind integrated procurement. One of the main recommendations of the report was compulsory inclusion of latent defects insurance on all construction projects in order to overcome the tension that exists in construction work caused by it not being possible to know at the time of completion if there are any problems with the works that are not apparent at that time.

Latent defects insurance is covered in more detail in the Insurance section however it is worth noting at this point that the ASUC Structural repairs on domestic building works Insurance Guarantee (BIG) Scheme is a latent defects insurance in line with the Latham Report and supports collaborative, integrated procurement.

Integrated procurement has been recognised as fundamental in the success of major construction projects like the London 2012 Olympics. There are several forms of contract which support integrated procurement for major works. The most well-known is the New Engineering Contract (NEC), or NEC Engineering and Construction Contract.

15.6 COMPARISON OF PROCUREMENT METHODS

Note: * In construction contracts a fixed or lump sum price will still change based on variations. Variations can be either as a result of client instructed design changes or due to other conditions occurring such as meeting unexpected obstacles in the ground or unexpected ground water.

15.7 SUMMARY

Structural repairs on domestic building works projects are complex and have an unavoidable element of uncertainty before and during the work on site. In addition they place the client's and the property of others at risk. These factors make it particularly important to choose the most appropriate form of procurement that incentivises safe and efficient construction.

16 INSURANCE

16.1 INTRODUCTION

Structural repairs on domestic building works projects are major works involving various hazards which can lead to problems ranging from injury to a member of the public through to a structural failure. It is important that the right insurances are in place to protect all parties.

This section outlines the various types of insurance that either should or could be put in place.

- Professional Indemnity insurance (PI)
- Employer's Liability insurance (EL)
- Public Liability insurance (PL)
- Contractors All Risks (CAR)
- Non-negligent insurance (JCT 21.2.1 / 6.2.4 / 6.5.1 insurance)
- Existing building insurance
- Insurance for client's property for non-negligent damage

All insurance cover depends on the wording of the specific policy. Proper checks should be completed before appointing contractors or designers, and before the start of work.

16.2 PROFESSIONAL INDEMNITY INSURANCE

Professional indemnity insurance (PI) provides cover for professional error, omissions or negligence. All designers, notably architects and engineers, should have professional indemnity insurance in place at a level appropriate for the value and scope of the works. In particular the person designing the temporary works, who may well not be the main structural engineer, should have PI insurance.

Design and build contractors and any party involved in updating, changing or amending any design element, no matter how small, should have adequate PI cover.

16.3 EMPLOYER'S LIABILITY INSURANCE

Employer's Liability (EL) insurance provides cover for the employer in the event that an employee or former employee makes a claim against the company. Employers have a legal responsibility for the health and safety of their staff while they are at work. Employees may be injured at work or they may become ill while at work or at some time later as a result of work activities.

Employer's Liability insurance is a legal requirement for companies that employ any staff. The minimum legal level of EL insurance is £5 million. This is a minimum and in practice £10 million cover for Structural repairs on domestic building works contractors would be a sensible level.

16.4 PUBLIC LIABILITY INSURANCE

Public Liability insurance (PL) provides cover for a company against claims from third parties. The building owner and family, neighbours and other members of the public would usually count as third parties. Any claims would usually be due to physical injury to the third party or to damage to property owned by the third party.

PL claims require that the claimant demonstrate that the Contractor has acted negligently. For example a PL claim against a contractor by the building owner would require the building owner to demonstrate that the contractor had acted negligently and that this negligence had led to loss, say, damage to the existing building.

It is very important that the contractor's PL insurance provides cover for:

- The activity which the contractor is undertaking – so excavating and construction down to the depth below ground of the proposed project. It can be quite common that contractors undertaking deep excavations do not have cover for the depth at which they are working. This should be checked.
- Damage to the existing building above the works. The existing building above the works, often

called Existing Buildings/Structure or the Superstructure or similar, is often specifically excluded from the cover provided by a PL policy. In this instance the contractor would not be covered for negligent damage caused to the existing building and so, in the event of a major structural failure to the existing building, the building owner would probably not be able to recover the full amount of the loss from the contractor. Again the existence of superstructure cover should be confirmed before appointing a contractor.

Public liability insurance is not a legal requirement however it would be extremely foolhardy to have works undertaken by a contractor without adequate PL insurance.

16.5 CONTRACTORS ALL RISKS

Contractors All Risks (CAR) insurance is specific to the construction industry and provides broad cover on site for the contractor. Usually CAR is used to provide cover for:

- Damage to the works themselves including temporary works, or
- Theft of materials or plant from the site.

16.6 NON-NEGLIGENT INSURANCE (JCT 21.2.1 / 6.2.4 / 6.5.1 INSURANCE)

Non-negligent insurance provides cover for damage to adjacent or surrounding property where the contractor has not been negligent. The insurance cover is only to the benefit of the building owner or client and is not to the benefit of the contractor.

This is an unusual type of insurance and is specific to construction works that have a risk of causing damage to other structures, usually works under or close to the foundations of other buildings.

Non-negligent insurance is often referred to as JCT 21.2.1 insurance or sometimes as JCT 6.2.4 or JCT 6.5.1. These names come from the difference paragraphs of various forms of standard Joint Contracts Tribunal (JCT) contract which state the requirement for non-negligent insurance.

An example may help to illustrate the cover provided by non-negligent insurance.

In the example the contractor has done everything correctly but there has still been damage to the adjoining property. While rare this can happen. The adjoining property owner will probably make a claim against the building owner who would be liable under the Party Wall Act.

However the building owner would have no claim against the contractor as the contractor has not been negligent and has no liability. In this instance the building owner would have to pay the adjoining owner but would not have a claim against the contractor. The building owner would therefore suffer a loss.

Non-negligent insurance generally covers for the following eventualities where the contractor has not been negligent but there has been damage to an adjacent or surrounding property:

- Subsidence
- Heave
- Landslip
- Collapse
- Vibration
- Lowering of ground water
- Weakening or removal of support

Non-negligent insurance always excludes cover where damage is inevitable.

Non-negligent insurance can be taken out by the building owner, in joint names by the Structural repairs on domestic building works contractor on behalf of the building owner or in joint names by a main contractor on behalf of the building owner. In all cases the cover is only for the benefit of the building owner and not the main or Structural repairs on domestic building works contractor.

Policies generally have an excess of several thousand pounds so that minor decorative repair to adjoining building will not be covered.

16.7 EXISTING BUILDING INSURANCE

The existing building's insurer must be notified that works are being undertaken. Not to do so would almost certainly cause the existing cover to be invalid.

It is critical to confirm with the building's existing insurer prior to the works how existing cover is affected by the works and to ensure that adequate cover for the building and its contents is in place.

16.8 INSURANCE FOR CLIENT'S PROPERTY FOR NON-NEGLIGENT DAMAGE

An often overlooked risk that is left uninsured by accident is that of non-negligent damage caused by the contractor to the client's own building.

JCT 21.2.1 non-negligent insurance does not provide cover for the building owner's property. The building owner's existing standard building insurance may suspend cover for the duration of the structural repairs on domestic building works. Even if the building owner's insurance remains in force it may not provide cover for damage caused by the contractor.

This means that the building owner's property will not be insured by anyone for non-negligent damage caused by the contractor. This gap in cover can be significant and is often overlooked.

Building owners must contact their insurer prior to the works and confirm the cover that the existing insurer will provide during the work.

There are several specialist insurance products that the building owners' broker or the contractor should be able to suggest in the event that the existing cover is suspended.

16.9 INSURANCES SUMMARY TABLE

TYPE OF INSURANCE	TAKEN OUT BY	COMMENTS
Professional Indemnity (PI)	All designers including temporary works designers	Provides cover for negligence in design
Employer's Liability (EL)	Contractor	Legal requirement for companies employing any staff Provides cover for claims by employees or former employees against the company
Public Liability (PL)	Contractor	Provides cover for companies against claims from third parties including the client Claimant is required to demonstrate negligence
Contractor's All Risks (CAR)	Contractor	Provides broad cover for the contractor Usually covers for damage to the works or for theft of plant or materials from site
Non-negligent (JCT 21.2.1)	Building Owner (client) Contractor (either Main Contractor or Structural repairs on domestic building works Contractor) on behalf of Building Owner	Provides cover for the building owner against claims by owners of neighbouring properties where damage has been caused but where no one has been negligent The benefit of the insurance is for the client/Building Owner and not the contractor
Existing building	Client / Building Owner	Client must inform their existing building insurer about the works Cover provided by the existing building insurance during construction work will be specific to the policy Cover may be suspended so the cover remaining must be confirmed by the Building Owner with their insurer

TYPE OF INSURANCE	TAKEN OUT BY	COMMENTS
Building owner's property for non-negligent damage	Client / Building Owner	<p>Provides cover for the building owner's property – this is separate to JCT 21.2.1 non-negligent insurance which specifically does not provide cover for the building owner's property</p> <p>Needs to be arranged by the Client / Building Owner to bridge any gap in cover for the existing building</p> <p>The benefit of the insurance is for the Client/Building Owner and not the contractor</p>

16.10 SUMMARY

It is vital to have the right insurances in place during any Structural repairs on domestic building works. Contractors and designers all need to have appropriate and adequate insurance whilst the building and surrounding building should also all be properly covered.

Insurance cover for Structural repairs on domestic building works projects is complex and advice from experienced parties should be sought. The contractor, the contractor's insurance broker and the building owner's insurance broker are probably the right start points for checking that appropriate cover is in place.

17. GUARANTEES

17.1 INTRODUCTION

Guarantees for building work, like many guarantees, often promise much but deliver little. There are multiple types of guarantees available and to some extent each guarantee is different from the next. The detailed wording for each guarantee must be understood in order to know what true level of protection is provided.

This section will give an outline of the various types of guarantees that are often provided.

- Company guarantees
- Product guarantees
- Insurance backed guarantees
- Latent defects insurance

17.2 COMPANY GUARANTEES

Contractors will usually provide some sort of company guarantee or warranty. The wording of the guarantee should be read carefully and any areas of doubt clarified. There will often be exclusions that will limit significantly the cover provided. The wording will often be ambiguous or unclear in favour of the contractor.

Guarantees should provide security over and above that provided by law. Companies cannot avoid their legal liabilities.

It is worth remembering that a company guarantee is only as sound as the company that stands behind it. If a company no longer exists then the guarantee is worthless.

17.3 PRODUCT GUARANTEES

Several specific product guarantees will often be provided from the product manufacturer notably for waterproofing membranes and pumps for ground water and foul water removal. In each case the guarantee wording needs to be read carefully to confirm the cover provided.

Consequential damages – damage to property resulting from a failure in the product – will usually be excluded. This is an important limitation on a guarantee. Also the workmanship involved in the installation of the product will not be covered by a suppliers' product guarantee.

17.4 INSURANCE BACKED GUARANTEES

Insurance backed guarantees (IBGs) are usually provided by contractors to clients. They are insurance products which should provide cover to the client in the event that the contractor ceases to trade during the period of either the contractor's:

- Company guarantee, or

- Legal liability

There are two significant points that need to be considered regarding insurance backed guarantees:

- The insurance backed guarantee will only provide cover to the same extent as if the contractor were still trading. If the building owner would have had to demonstrate negligence by the contractor originally then the same requirement for the building owner to demonstrate negligence will be required by the insurer. The IBG is not a broad, comprehensive cover for any defects with the work.
- The underwriters providing insurance backed guarantees can be based in offshore jurisdictions. Proceeding with a claim against an unwilling underwriter who is not directly subject to UK law may be difficult. Some underwriters may also have limited balance sheets and will not have funds available to pay claims. It is worth confirming the name and financial strength of any insurer underwriting a guarantee.

It is important to read and understand fully the terms and cover for any insolvency guarantees as they can appear to provide broad cover which sometimes may not be the case.

17.5 LATENT DEFECTS INSURANCE

Latent defects are problems with the work that are not evident when the works are completed but come to light at a later stage.

Latent defects insurance provides cover for loss as a result of a latent defect. They can be thought of as a guarantee for the contract works. They only come into effect once the contract works have been completed, they do not provide cover during the works.

The insurer is the primary party responsible for dealing with any claim rather than the original contractor even if the contractor is still actively trading.

Important advantages of latent defects insurance over other guarantees are:

- The building owner should not need to demonstrate that the contractor has been negligent
- Cover should remain in place even if the contractor is no longer trading

The cover provided can also be indemnity cover which means that the cover is based on economic loss or compensation and is not limited to correction of the problem.

The ASUC Structural repairs on domestic building works Indemnity Guarantee (DIG) is an indemnity latent defects insurance specifically tailored to Structural repairs on domestic building works projects. All of the Structural repairs on domestic building works, so design, workmanship and materials, completed by an ASUC member will be covered under the DIG (Defects Insurance Guarantee).

The main points of the cover provided by the DIG scheme are:

- Defective works cover – there is no need to demonstrate liability; if something is defective then cover should be provided for any of the work completed by the ASUC member
- Cover will remain in place for 12 years irrespective of the ASUC contractor continuing to trade
- Cover is provided up to the gross contract value with cover increasing on an index linked basis
- Up to 25% of the contract sum is insured for consequential losses
- Alternative accommodation is covered for up to 26 weeks
- Can be passed to any subsequent owner of the property
- The schemes' underwriters are major insurers with a minimum of Grade A credit ratings by the major agencies

17.6 GUARANTEES SUMMARY TABLE

TYPE OF GUARANTEE	COMMENTS
Company guarantees	Only as valuable / sound as the company providing the guarantee Cannot limit the company's legal liability Need to be read and understood as the cover provided may be limited by the wording of the guarantee

Product guarantees	<p>Guarantee wording needs to be read carefully to confirm the cover provided</p> <p>Will usually exclude installation of the replacement produce and any workmanship involved in installation</p> <p>Damage to property resulting from a failure in the product will usually be excluded – the cover is often limited to supply of a replacement for the failed product only. So for a failed section of waterproof membrane this might cover only for supply and repair of one piece of waterproof membrane.</p>
Insurance backed guarantees (IBGs)	<p>Usually only comes into effect when the contractor is no longer trading</p> <p>Will usually be limited to providing the cover that the contractor would have provided if they were still trading</p> <p>Usually requires that the claimant demonstrates negligence by the contractor</p> <p>Only as valuable as the underwriter providing the cover - tendency for the underwriter to be an offshore company with low financial strength</p>
Latent defects insurance	<p>Provides by far the most comprehensive cover / protection</p> <p>Should provide cover for any problems – design, workmanship or material – with the contract works</p> <p>The insurer should deal with the claim directly rather than having to involve the contractor</p> <p>Does not require negligence to be demonstrated</p> <p>Usually provides indemnity cover – so covers for the economic or consequential loss resulting from any failure e.g. damage to interiors or full cost of repair</p> <p>Underwriter should be a major insurance company with a strong balance sheet and good credit ratings</p>

17.7 SUMMARY

There are multiple types of guarantees that can be associated with Structural repairs on domestic building works however the level of cover provided is often confusing and sometimes misleading. Time spent understanding the cover provided by the available guarantees will be time well spent in the hopefully unlikely event that a problem occurs.

A comprehensive indemnity latent defects insurance underwritten by a financially strong insurance company with good credit ratings will provide the best possible level of protection.

It is always sensible to ensure that comprehensive guarantees are in place to provide cover for major building works under or close to existing buildings.

17.8 COMMITMENT

ASUC has a commitment to its clients that in the unlikely event one of our members ceases to trade during the construction of a project we will always try and ensure another member company negotiates to complete the works and provides continuity of contract and warranties.

18. DOMESTIC PROPERTY OWNER CONSIDERATIONS

18.1 INTRODUCTION

Structural repairs on domestic building works developments are significant construction projects and are generally the most complex structural work that a domestic property owner will undertake. Historically home owners tended to instruct architects to design and manage major construction work however it has become more common for home owners to instruct specialist Structural repairs on domestic building works contractors directly on a design and build basis. Insurance related projects may well have the scope of the underpinning determined by the insurer and or their agents with the detailed design being carried out by the contractor’s engineers. In this case the scope of the works is the specifiers responsibility and no liability as to how much of the property requires underpinning can be attached to the contractor.

This section will outline the following main areas that a property owner might consider when carrying out the

initial assessment of building a basement.

- Property rights and rights of access
- Trees
- Listed building consent
- Building regulations
- Health and safety
- Impact on neighbours
- Economics of the project
- Living in the building during the project
- Party Wall Agreements
- Legal and liabilities
- Choosing how to proceed

18.2 PROPERTY RIGHTS AND RIGHTS OF ACCESS

Most property owners have the legal right, planning law excepted, to build underneath their own property and have a right of access from the highway to their property. However this is not always the case and a property owner should check that they do have the legal property right to build Structural repairs on domestic building works and have rights of access.

Instances where this may not be the case are where:

- Another party, such as a major estate owner, owns the freehold or has some other right directly over the property. Major estate owners in London include the Crown Estate, the Grosvenor Estate, the Cadogan Estate, the Howard de Walden Estate and the Wellcome Trust.
- A restrictive covenant has been put in place on a property
- Access to the property is only possible across another party's private property

In the event that the property owner does not have the legal right to build and own the Structural repairs on domestic building works or the right of access for construction then in order to proceed with the project an agreement must be reached with the party having the rights.

In addition it is important that property owners know the extent of their land and do not accidentally build outside their curtilage. Building on or under another party's property is likely to have negative consequences with the other party being able to demand financial compensation or the removal of the trespassing Structural repairs on domestic building works structure. The latter would usually entail a significant cost.

18.4 LISTED BUILDING CONSENT

A listed building is a building, object or structure that has been judged to be of national importance in terms of architectural or historic interest and is included on a special register, called the List of building of Special Architectural or Historic Interest.

Listed building control is a type of planning control which protects building of special architectural or historical interest. These controls are in addition to any planning regulations which would normally apply. Listing prevents the unrestricted demolition, alteration or extension of a building without the express consent of the local planning authority or the Secretary of State.

Listed building consent is obtained via the local planning authority following a similar process to that for obtaining a standard planning permission. In addition to the standard planning application information a historic building appraisal by an appropriate specialist is required as part of the application.

It is an offence to carry out work which needs listed building consent without obtaining it beforehand.

18.5 BUILDING REGULATIONS

Building regulation approval is always required when creating any habitable space. The Building Control department of the local authority oversee building works to ensure compliance with building regulations. Building regulations are particularly pertinent for new Structural repairs on domestic building works space where fire safety, light and ventilation must be considered.

All habitable space needs adequate:

- Light
- Ventilation
- Fire safety measures

Natural light is preferable for living space but it is not a requirement under building regulations.

Habitable rooms can be ventilated by natural or mechanical means so this should not be restrictive but it does need to be considered.

Fire safety measures include escape routes to prevent occupants being trapped in the event of fire. This is particularly important in Structural repairs on domestic building works design where access can be restricted.

There must usually be at least two routes in and out. Often the second route will be an emergency only route via steps or ladders in a light well.

Measures such as internal fire suppression (sprinklers designed for residential use) and emergency fire curtains can be used where only one route in and out is possible.

The fire safety plan must be approved by Building Control. The plan should be thought through early and outline approval gained from Building Control as making changes once construction has started can be difficult and expensive.

18.6 HEALTH AND SAFETY

A property owner is not expected to oversee directly or be responsible for health and safety on site. However the employer sets the tone for how the project is undertaken. The most important decision taken by the home owner is to instruct responsible and competent designers and contractors.

Instructing the lowest cost contractor will often mean instructing the contractor with the least care for health and safety including a disregard for correct temporary works and the structural stability of existing buildings.

It is reasonable to expect the contractor to explain how they will approach the various items that have been covered in the health and safety section of this document as well as going to one or two of their current live construction phase sites to assess how health and safety aspects are approached.

18.7 IMPACT ON NEIGHBOURS

Structural repairs on domestic building works projects are likely to have a negative impact on neighbours even when well managed. Activities like breaking out concrete or brickwork and cutting steel are noisy. Demolition will create some dust and vibration.

A good neighbour should consider measures to reduce negative construction impact possibly including:

- Giving advance notice of the start date and duration of work
- Communicating with neighbours during the project
- Asking contractors to communicate directly with neighbours
- Notifying in advance periods of particularly noisy work
- Agreeing the timing of the project with neighbours to suite periods when neighbours may be away or delaying a project start to allow children's exam periods to be finished
- Limiting noisy working hours

It should be remembered that anything that causes work to be slowed will increase project duration and cost.

There are unfortunately no perfect answers to this matter and each situation needs to be considered specifically. In general early communication with neighbours will be better received and have a better outcome for all rather than moving forward without any interaction.

19. LIST OF APPENDICES

Appendix A - Building damage classification

Appendix B - Safety hazards and mitigating actions

Appendix C - Health hazards and mitigating actions

Appendix D - Planning for risk management - detail on information required

Appendix E - ASUC Structural repairs on domestic building works Indemnity Guarantee (DIG) policy

20. APPENDIX A - BUILDING DAMAGE CLASSIFICATION

RISK CATEGORY	DESCRIPTION OF DEGREE OF DAMAGE	DESCRIPTION OF TYPICAL DAMAGE AND LIKELY FORM OF REPAIR FOR TYPICAL MASONRY BUILDINGS	APPROXIMATE CRACK WIDTH (MM)
0	Negligible	Hairline cracks.	
1	Very slight	Fine cracks easily treated during normal redecorations. Perhaps isolated slight fracture in building. Cracks in exterior brickwork visible upon close inspection.	0.1 to 1
2	Slight	Cracks easily filled. Redecoration probably required. Several slight fractures inside building. Exterior cracks visible; some repointing may be required for weather-tightness. Doors and windows may stick slightly.	1 to 5
3	Moderate	Cracks may require cutting out and patching. Recurrent cracks can be masked by suitable linings. Repointing and possibly replacement of a small amount of exterior brickwork may be required. Doors and windows sticking. Utility services may be interrupted. Weather tightness often impaired.	5 to 15 or a number of cracks greater than 3
4	Severe	Extensive repair involving removal and replacement of sections of walls, especially over doors and windows required. Windows and door frames distorted. Floor slopes noticeably. Walls lean or bulge noticeably, some loss of bearing in beams. Utility services disrupted.	15 to 25 but also depends on number of cracks
5	Very severe	Major repair required involving partial or complete reconstruction. Beams lose bearing, walls lean badly and require shoring. Windows broken by distortion. Danger of instability.	Usually greater than 25 but depends on number of cracks

Notes:

Table is based on the work of Burland et al (1977).

Crack width is only one aspect of damage and should not be used on its own as a direct measure of it.

21. APPENDIX B - SAFETY HAZARDS AND MITIGATING ACTIONS

HAZARD	ACTIONS
Collapse of existing buildings	<p>There is always the hazard of complete or partial building collapse in Structural repairs on domestic building works near to existing structures. The hazard is often heavily related to the collapse of excavations.</p> <p>The main hazards are from:</p> <p>Vertical loads in existing structures acting down new load paths after partial demolition or being undermined by excavations or</p> <p>Horizontal loads in existing structures not being fully supported especially where there has been some demolition of the existing structure</p> <p>In each case the following</p> <p>Risk assessment</p> <p>Safe system of work including a temporary works design</p> <p>Management system</p> <p>The risk assessment must consider the existing load paths in the building, how these will be affected by the temporary works and the temporary condition, and whether any parts of the existing building will be required to support additional load.</p> <p>As with all temporary works there should be a:</p>

HAZARD	ACTIONS
	<p>Temporary Works Engineer Temporary Works Coordinator</p>
<p>Access to work areas</p>	<p>Access points often pose a falls from height hazard. In addition in Structural repairs on domestic building works they are nearly always the emergency escape route. There must always be safe access and exit for personnel, plant and excavated material.</p> <p>Personnel access should, where possible, be by temporary stairs rather than by ladders.</p> <p>Multiple points of access and exit should be established where possible.</p> <p>Safe access to all active working areas must be maintained at all times. The safe access must be sufficient to allow the movement of a casualty.</p>
<p>Falls from height</p>	<p>Falls from height are a major cause of serious injury and death in construction. The HSE report that, at site visits, insufficient attention to preventing falls from height is a frequent reason for halting operations on Structural repairs on domestic building works projects.</p> <p>Falls from upper levels and falls into excavations must be prevented. This applies to access routes and work areas. Falls from open edges and falls through weak materials or openings must be considered. As excavation progresses the situation changes continually and must be checked and the protection adjusted. This often needs to be carried out several times each day.</p> <p>Areas where fall protection will be needed include the open edges of:</p> <ul style="list-style-type: none"> Vertical excavations Stepped or battered excavations - unless it is possible to walk down the sides of the excavation Floor slabs with open edges or holes Stair wells with stairs removed or incomplete Light wells Scaffold or other access platforms <p>Access to plant and to lorries to assist with unloading should also be considered.</p> <p>Falls through weak or fragile material also needs to be prevented including:</p> <ul style="list-style-type: none"> Rotten timber floors Partially supported existing or new incomplete structures Old unreinforced concrete floors Arched or vaulted floors in delicate condition <p>There is no legal height limit above which fall protection must be provided. But there is a duty to prevent fall injuries. This means in essence that if a worker can step down onto flat ground from a platform, should they lose their balance, then protection is not required. However if any stumble or slip while at height would result in a fall, then protection must be in place. If the ground below is not flat, or has protruding reinforcing bars or contains standing water, is poorly lit or similar then fall protection may be required whatever the height.</p> <p>Many contractors have set a limit of one metre potential unobstructed fall height. Above this their procedures require fall protection.</p> <p>Note that for public areas fall protection standards should be limited to a much lower height equivalent to a road kerb or stair riser height before barriers or other edge protection is required. ASUC regards this approach as sensible.</p> <p>Standard methods of protection for open edges include:</p> <ul style="list-style-type: none"> Access restriction - access to the area is prevented by secure fencing, signs, briefing

HAZARD	ACTIONS
	<p>and supervision</p> <p>Edge protection – sturdy guard rails and toe boards - this is the preferred and most common method where access to the edge is needed. It may be fixed to the structure or be part of an independent scaffold, scaffold tower or the enclosed cage of plant, for example a mobile elevating work platform.</p> <p>Crash matting – usually air safety mats or bean bags that provide a soft landing system for low falls - often used for short duration work, for example at the leading edge where precast concrete floor planks are laid and around delivery flatbed lorries during access onto the vehicle for unloading.</p> <p>Fall arrest nets fitted just below the work area. These are not common in Structural repairs on domestic building works but on other jobs are often used following steel erection to protect following trades installing items such as permanent steel formwork or timber joists and floors. The net needs to be lashed to or hung from secure anchors. It will sag if fallen on so the area below must be clear of obstructions.</p> <p>Fall protection harness systems used in restraint mode (to prevent access to the open edge) and fall arrest systems (which stop a person after they start to fall) may also need to be used at times. These rely on sturdy anchor point/s being designed and provided. However harness systems need each individual user to be trained and to understand the limitations of the equipment. They should only be used if other methods are not suitable. And the area will still need to be fenced off so that only authorised workers using the harness system can enter. Typical use includes work at suspended slab level during false work and formwork installation.</p> <p>Standard methods of preventing falls through weak materials include:</p> <p>Preventing access to suspect areas by fencing or other secure barriers</p> <p>Reducing loads on floors by, for example, removing stored materials</p> <p>Propping to prevent overload collapse - this can be very tricky where arched or vaulted existing structures are involved</p> <p>Boarding over rotten floorboards, provided the joists below are adequate or securely propped</p> <p>Preventing access onto adjacent flat roofs and never allowing access onto fragile roofs such as corrugated asbestos cement or roofs containing roof lights or glazed panels</p> <p>Access by stairs or temporary stair tower is preferred. Where the area available does not permit this then ladder access may be needed. An inclined ladder (1:4) is easier to climb than a vertical ladder but in some shafts there may only be room for a vertical ladder. Most tower scaffold systems have a built-in vertical ladder that is adequate so long as it has been correctly assembled.</p> <p>An inclined ladder must be secured to the top platform and project above the landing - three or four rungs or an alternative secure handhold is needed. Ladders are very vulnerable to damage and need to be regularly checked and replaced if damaged. They also need to be kept clean in muddy conditions.</p> <p>For some vertical ladder shaft work it can help to use a fall arrest harness and an inertia reel attached to a secure anchor point near the top of the ladder. This can often be combined with the confined spaces procedure.</p> <p>Ladders and step ladders are not ideal as work platforms and are involved in numerous construction accidents each year. Tower scaffolds and access platforms provide a much more secure work area and allow faster progress. Ladders should only be used for carrying out work where other means of access are not possible or where the ladder needs to be moved every couple of minutes. If the ladder cannot be tied at the top to prevent it slipping, a second person will be needed to 'foot' it - which is inefficient. As a general rule - if both hands are needed for the work, then</p>

HAZARD	ACTIONS
	<p>a ladder is not suitable. And if the work involves pushing horizontally, for example non pneumatic drilling, or resisting sudden forces, for example core drilling, then a ladder is not suitable.</p> <p>All temporary works and especially those that affect the structure will need input from the project structural engineer and temporary works engineer/designer. The person responsible for coordinating temporary works on site should lead this process and advise on the sequence of carrying out the work as there may be ways of reducing the risk of a structural incident as well as simplifying the number of areas where fall protection is needed.</p> <p>More information on preventing falls from height in construction can be found in the HSE publication <i>Health & Safety in Roofwork</i> which contains information that is relevant to areas such as garden Structural repairs on domestic building works structures with a suspended slab roof and explains the different types of fall protection that are available and the main benefits and issues.</p> <p>http://www.hse.gov.uk/pubns/books/hsg33.htm</p> <p>The Work at Height Regulations 2005 can be viewed at: http://www.legislation.gov.uk/ukxi/2005/735/contents/made</p>
Scaffolding and ladder safety	<p>Scaffolding and ladders have an inherent hazard of falls from height.</p> <p>Ladders should be avoided where possible as they cause the greatest risk compared to other options including scaffold towers.</p> <p>Key ladder safety issues include:</p> <ul style="list-style-type: none"> Condition Positioning Use Stability <p>Where ladders are used they should be:</p> <ul style="list-style-type: none"> Secured or be held in position by another person Extend an appropriate distance above the top level usually at least four rungs above the uppermost access level or have an alternative secure handhold above the upper platform level Be protected at the access point to prevent a fall from height ideally with a sprung gate <p>Ladders can be used to work from if more suitable work equipment is not justified because of the low risk and short duration of the work. Short duration is normally seen as being between 15 and 30 minutes.</p>
	<p>Key tower scaffold safety issues are:</p> <ul style="list-style-type: none"> Erection and dismantling Stability Precautions and inspection <p>Using and moving Tower use requires:</p> <ul style="list-style-type: none"> That the tower be suitable for the work Be erected and dismantled by people who have been trained and are competent to do so Users to know the potential dangers Users to know the appropriate safety precautions required <p>Proper management and rigorous scaffold inspection Tube and fitting scaffold should be installed by a reputable scaffolding company who use trained operatives. Once installed the scaffold should be inspected and maintained regularly.</p>

HAZARD	ACTIONS
Existing services	<p>Existing services present a major hazard and can cause explosions, fire, flash fires, and burns. Each year damage to services during construction work is responsible for severe injuries and fatalities.</p> <p>Existing services (gas, electricity, water, sewer, telecom, other) must be located and precautions established to prevent damage and avoid danger.</p> <p>Plans of the main services should be obtained from the relevant utility companies.</p> <p>On site:</p> <p>Use of locating devices prior to excavation: Hum detectors, radio frequency detectors, transmitter-receiver instruments, metal detectors and ground probing radar should be considered</p> <p>Services should be assumed as live unless confirmed otherwise</p> <p>Careful hand excavation (not using hand power tools and not using pointed tools) should be used to prove the location of existing services in line with HSE HGS 47</p>
	<p>Other tools and plant should not be used within 500mm of service locations</p> <p>Services encased in concrete will need to be disconnected or at least isolated whilst being exposed</p> <p>Safe methods of excavation around services include water jetting or high-velocity air jets should be considered</p> <p>Unknown services should be treated as follows:</p> <p>Black - electrical</p> <p>Yellow - gas</p> <p>Iron and steel pipes - gas</p> <p>Operatives should know the modern national colour coding system for buried services</p> <p>Black - electricity</p> <p>Red - electricity; some high voltage cables</p> <p>Orange - street lighting in England and Wales</p> <p>Yellow - gas</p> <p>Blue - Water</p> <p>Grey or white - telecommunications</p> <p>Green - cable television and some telecommunications</p> <p>Overhead power lines should also be identified and the risk assessed. Collection and delivery vehicle sizes should be noted as well as the likely range of movement of the grab arms of muck away lorries.</p>
Electrical handheld power tools	<p>Electrical power creates hazard from burns and shocks.</p> <p>230 / 240 volt mains power should be discouraged and should not be used directly for tools on site. Where 230 volt power is used, for example in welfare facilities and site offices, residual current or 'trip' devices (RCDs) must be installed.</p> <p>Cordless or 110 volt tools should be used where possible as they are unlikely to cause a fatal shock. The 110 volt transformer should connect to a dry 230 volt supply well away from the work area.</p> <p>High power tool batteries must be kept in dry conditions. Immersion can lead to sudden discharge, overheating and explosion.</p>
Mobile plant safety	<p>Mobile plant can cause serious injury or death by collision, crushing and overturning. The hazard is to site operatives and to members of the public.</p> <p>Plant most often used are:</p> <p>Scaffold and towers</p>

HAZARD	ACTIONS
	<p>Dump trucks and barrows</p> <p>Telescopic handlers</p> <p>Common general control measures are:</p> <p>Segregation of vehicles and pedestrians; movement routes and exclusion zones</p> <p>Maintenance of clear 360^o visibility</p> <p>Use limited to trained and competent staff</p> <p>Use of signallers and banksmen</p> <p>Use of well-maintained machines that are regularly inspected, serviced and maintained</p> <p>Speed limits</p> <p>Levelling of ground to reduce risk of overturning</p> <p>Use of stop blocks at edges</p> <p>Use of load spreading pads or a designed platform for high centre of gravity plant</p>
Confined spaces	<p>A confined space is any area of an enclosed nature where there is a risk of death or serious injury from hazardous substances or dangerous conditions.</p> <p>Dangers in confined spaces can arise from:</p> <p>Lack of oxygen</p> <p>Poisonous gas, fume or vapour</p> <p>Liquids and solids which can suddenly fill the space or release gases into it when disturbed</p>
	<p>Fire and explosions</p> <p>Dust present in high concentrations</p> <p>Hot conditions leading to a dangerous increase in body temperature</p> <p>The hazard is high in below ground areas with poor natural ventilation such as tunnels, excavations as well as in any enclosed space. Air quality may be reduced by a slight reduction in proportion of oxygen or by the presence of a harmful gas. This can affect people without warning – i.e. no smell, taste or unwell feeling.</p> <p>There is a history of multiple deaths where one person goes into a confined space to rescue someone who has collapsed. The rescuer is also overcome and others attempt to assist.</p> <p>Assessment, planning and strict procedures are needed to ensure this scenario cannot happen. Work in confined spaces should be designed out where possible.</p> <p>A ground survey, a check for contamination, and knowledge of the site history and local area may help identify sites at risk.</p> <p>The best control measure is to have good natural ventilation. This may need to be supplemented by forced ventilation. In some cases fresh air may need to be ducted into remote areas.</p> <p>In the extreme – e.g. below ground live sewer connections - it may be necessary to use confined space trained workers equipped with breathing apparatus and rescue equipment. In these cases the working person will be attached to a lifeline with means to pull/lift a person to fresh air and with an outside team always present.</p> <p>Tunnel working may require air monitoring equipment in the tunnel that will alarm if a specified gas is detected or the oxygen level drops. Underground workers on tunnelling projects should also carry a rescue set that provides enough oxygen to allow them to escape if the air monitoring alarm goes off.</p> <p>All work areas must be assessed to decide if the area is to be regarded as a 'confined space'. For all confined spaces a system of work for entry, exit and work in the space must be established. Fume extractors, clean air, and multiple access and</p>

HAZARD	ACTIONS
	<p>egress points should be considered. An emergency rescue plan must be developed, communicated to all relevant persons and practiced on site including a safe system of recovery.</p> <p>Only trained and competent operatives should work in confined spaces.</p>
Fire and means of escape	<p>Fire on a Structural repair on domestic building works site has a high hazard of serious injury or death with the likely causes being asphyxiation, choking or burns.</p> <p>The causes of fire must be managed including:</p> <p>Minimising the amount of flammable material on site including any solvent based paints and thinners, petrol, LPG, oxyacetylene sets, etc. These are all particularly high fire hazards.</p> <p>Minimising the amount of combustible material on site at any one time - especially combustible foam, cardboard, thin timber sheet materials etc.</p> <p>Fuels being stored outside the fire risk areas</p> <p>Control of hot works and other ignition sources such as grinding steel</p> <p>All sites must have a fire plan and arrangements covering:</p> <p>Fire alarms</p> <p>Firefighting equipment, generally fire extinguishers, at each level or in each working area</p> <p>Safe means of escape</p> <p>Completed regular fire plan drills</p> <p>Flammable materials should be stored outside where possible in a ventilated cabinet or cage.</p> <p>The risk of fuel fumes that are heavier than air collecting in excavations should be remembered</p>
Dangerous substances	<p>Dangerous substances cause a hazard of explosion, burns, asphyxiation, choking and poisoning.</p> <p>All dangerous substances such as fuels, paints, solvents, foam filler with flammable propellant, gas welding sets, LPG heaters and bottles etc. must be risk assessed and appropriate precautions be taken to protect people and the environment.</p> <p>Safe methods must be established and enforced covering:</p> <p>Storage - solvents should be kept separately from combustibles. LPG and acetylene should be kept completely separately.</p> <p>Refuelling of petrol equipment including hand held tools must be carried out outside in open air</p> <p>The risk from the collection or movement of heavier than air gases and fumes should be remembered</p>
Lifting operations	<p>Mobile crane operations have a hazard of overturning and dropping of loads. The hazard is to operatives and to members of the public especially during deliveries and collections.</p> <p>All mobile crane operations, including lorry loader crane deliveries, must be properly planned and have a lifting plan in place before the work starts. The work must be supervised to ensure proper implementation of the lifting plan.</p> <p>For larger lifting operations a temporary works engineer will need to advise on ground conditions to ensure that any crane is not vulnerable to overturn.</p>
Lighting	<p>Poor site lighting increases the likelihood of injury across multiple other areas.</p> <p>All work areas, access and egress walkways and passageways must be adequately and safely lit at all times.</p>

HAZARD	ACTIONS
	<p>Provision of torches or automatic back up lighting should be made to cover for a failure in the main works lighting. Where the site requires temporary lighting this should include battery backup emergency lighting particularly on emergency exit routes.</p>
<p>General site order and slips, trips and falls on the same level</p>	<p>Sites in a poor general condition create an increased hazard for general injuries such as cuts, bruises and impalement.</p> <p>Mitigating actions include:</p> <p>Use of protective caps on exposed reinforcement ends to prevent impalement</p> <p>Use of continuity reinforcement strips to reduce the amount of open-ended reinforcement exposed to reduce impalement hazard</p> <p>Removal of nails and screws from timber including from dismantled formwork</p> <p>Marking the ends of steelwork, temporary works, props or similar protruding elements with high visibility material or paint</p> <p>Removing the sharp edges of scaffold, steel, temporary works, edge protection and scaffold gates to reduce the likelihood of cuts and abrasions</p> <p>Slips, trips and falls on the same level may appear minor hazards but can lead to serious injury or in some circumstances to fatalities.</p> <p>Common occurrences on construction sites which cause slips, trips and falls include:</p> <p>Poorly stacked or located equipment and waste materials</p> <p>Uneven surfaces</p> <p>Obstacles created during the construction or demolition process</p> <p>Trailing cables</p> <p>Wet or slippery surfaces</p> <p>Changes in level</p> <p>Anyone in control of a construction site must manage work so that people can move safely around the site. The site must be kept in a clean and orderly condition in order to reduce the chance of injury through slips, trips and falls.</p> <p>Clear walkways are essential in order to maintain safe movement.</p>

22. APPENDIX C - HEALTH HAZARDS AND MITIGATING ACTIONS

HAZARD	ACTIONS
<p>Asbestos</p>	<p>Exposure to asbestos is the single largest cause of death in the construction industry.</p> <p>Exposure to asbestos is a serious health hazard with exposure to tiny amounts of asbestos being able to cause death or serious injury.</p> <p>An intrusive asbestos survey should be carried out prior to the main works, including any soft strip, on building built before about 1990. Practically this cannot be completed to areas that are to be excavated but where possible checks should be made under suspended ground or lowest floors which should consider whether there are any subfloor ducts etc. or whether concrete floors have been cast onto asbestos containing formwork.</p> <p>The survey should identify and locate any asbestos containing materials (ACMs). In the event that ACMs are identified then all work must be undertaken in line with asbestos work regulations.</p> <p>Asbestos containing materials that are bound in a matrix, for example asbestos cement such as corrugated roof sheeting and plasterboard coated in textured coatings such as Artex can, legally, be removed by general contractors. Anyone who is asked to remove these items must know the correct methods of removing</p>

HAZARD	ACTIONS
	<p>and handling the product, which is mainly based on damping down and removing whole with minimal breakage.</p> <p>Many asbestos containing materials can only be removed by a contractor licensed to work with asbestos.</p> <p>In the event that a licensed contractor is required to remove asbestos then an asbestos clearance certificate and the original survey must be obtained from the specialist asbestos contractor before general construction work starts and the clearance certificate and original survey must be made available to all parties.</p> <p>All staff that might come across asbestos in the course of their work is required to complete asbestos awareness training. It is a legal requirement that workers know about the health risks from asbestos, how to identify asbestos and what to do if they uncover or damage asbestos.</p> <p>Once construction work is finished, information may need to be communicated about the location and condition of any asbestos that is still within the premises. This is so that the client can comply with their duty to manage asbestos in non-domestic premises.</p>
<p>Hazardous substances and processes</p>	<p>Hazardous substances and processes both present a hazard to health and must be managed.</p> <p>All substances with the potential to be hazardous to health or those that can have significant environmental impacts must be assessed and appropriate precautions established.</p> <p>This includes hazardous substances already present on site, those generated on site and those brought to site as part of the work and include:</p> <ul style="list-style-type: none"> Powder cement Lime Wet concrete Paints Solvents Plant exhaust fumes <p>And substances that are already on site:</p> <ul style="list-style-type: none"> Asbestos Dust containing silica Chemical contaminants Sewage Pigeon droppings Rat urine and droppings <p>The assessment should cover the storage and use of the chemical and identify any issues that may occur when more than one chemical are combined.</p> <p>Again the priority should be:</p> <ul style="list-style-type: none"> Avoidance – lower risk alternatives should be used if possible Action – taken to reduce risk Information – those involved must be provided with all relevant information on the substances, the associated risks and the appropriate mitigating actions <p>Use of PPE, while often necessary, alone should only be used when all other practical alternatives have been considered.</p>
<p>Respiratory disease especially from dust containing silica</p>	<p>Respiratory diseases are a significant hazard in the construction sector with the most common being:</p> <ul style="list-style-type: none"> Silicosis - silicosis is second only to asbestos in the number of deaths caused in the

HAZARD	ACTIONS
	<p>construction industry. The health risk is from lung damage leading to cancer.</p> <p>Chronic obstructive pulmonary disease</p> <p>Occupational asthma</p> <p>Concrete dust is generally caused by disc cutters and angle grinders. All concrete cutting that produces dust should be completed wet. Suitable respiratory protection will probably still need to be worn during and after the work.</p> <p>The problem is made worse in an enclosed area.</p> <p>Exposure to substances that can cause respiratory disease or breathing difficulty if inhaled must, by law, be minimised.</p> <p>The means of control in priority are:</p> <p>Elimination of the hazard</p> <p>Suppression or extraction of the dust</p> <p>Use of PPE - PPE use on its own is a last resort</p> <p>All workers who might be exposed should receive clear information, instruction and appropriate training.</p>
Carbon monoxide and other noxious gases	<p>Site equipment using internal combustion engines as well as inadequately ventilated liquefied petroleum gas (LPG) equipment can produce carbon monoxide gas leading to low oxygen levels or to the presence of flammable gases. Other common asphyxiant gases are ethane, helium, hydrogen, methane and nitrogen. In addition inert gases such as argon, helium, nitrogen or carbon dioxide are sometimes deliberately used on site for activities such as welding purposes or in fire suppression equipment.</p> <p>Underpin excavations are particularly prone to becoming oxygen depleted.</p> <p>There is also a hazard from leaking underground gas mains. A mains gas leak can quickly lead to a dangerous atmosphere.</p> <p>The main mitigations are:</p> <p>Awareness</p> <p>Good ventilation</p> <p>Plant and equipment in good condition and properly maintained</p> <p>Gas bottles stored outside and valves closed at end of shift</p> <p>Gas detectors and alarms used</p> <p>Generators must only be run outdoors and completely in open air</p>
Dermatitis	<p>Contact dermatitis is inflammation of the skin that can arise from contact with a range of materials commonly used in Structural repairs on domestic building works. The main signs and symptoms are dryness, redness, itching, swelling, flaking, cracking and blistering. Dermatitis can be painful and can require medical treatment</p> <p>Dermatitis usually affects the hands and forearms, though the face, neck, chest, and legs can also be affected.</p> <p>The main products that cause dermatitis are:</p> <p>Wet cement</p> <p>Epoxy resins and hardeners</p> <p>Acrylic sealants</p> <p>Bitumen or asphalt</p> <p>Solvents in paints, glues or other surface coatings</p> <p>Petrol</p> <p>Diesel, oils and greases</p>

HAZARD	ACTIONS
	<p>The use of products known to cause dermatitis must be strictly controlled on site with adequate washing and if necessary decontamination facilities available at all times.</p> <p>Correct Personal Protective Equipment (PPE) should always be used.</p>
Damage to eyes	<p>Activities on site including breaking of concrete, grinding and cutting timber all have significant hazard of damage to eyes. While the likelihood of injury from one work action is low the damage caused to an eye from even a single minor impact can cause permanent blindness.</p> <p>Correct eye protection should be worn at all times for any work activity that has a possibility of material being moved at speed into the eye.</p>
Noise	<p>High noise levels are a hazard to hearing.</p> <p>Prolonged exposure to high noise levels will cause reduction in hearing levels and eventually permanent deafness. As a guide a noise level which requires the voice to be raised in order to be heard is sufficiently loud to cause damage to hearing.</p> <p>Site operatives generally do not fully appreciate the hazard and must be instructed to use correct ear protection.</p> <p>Noise hazard must be assessed and any required mitigating actions identified and implemented. Where possible this should be by reducing the level and duration of noisy operations. Noise sources should, where possible, be located away from populated work areas and in particular be conducted away from welfare facilities.</p> <p>Ear protection must be used by everyone in an area where there is noise at a level that might cause damage to hearing.</p> <p>Noise is also an environmental issue which can have a serious impact on neighbours and the local community.</p> <p>High levels of noise from the work can be a Statutory Nuisance (as defined in the Environmental Protection Act 1990) to the surrounding community, and in this case the local authority can limit or stop work.</p> <p>Under section 60 of the Control of Pollution Act (COPA) 1974, authorities have powers to control noise (and vibration) from building sites.</p> <p>Control is implemented by serving a notice on the person responsible for the construction operations. The notice can specify types of plant and machinery, permitted hours of operation, boundary noise levels and the use of 'best practicable means' to keep all noise to a minimum. For example plant and machinery used on the site shall be properly silenced and radios or other amplified music shall not be played.</p>
Hand arm vibration	<p>Hand-arm vibration (HAV) is the health hazard associated with using handheld power tools. HAV causes serious long term health problems and disability in the hands and arms.</p> <p>Hand held power tools are the main culprit - especially jack hammers, scabblers, and similar tools. Pokers, disc cutters and masonry drills can also cause HAV.</p>

HAZARD	ACTIONS
	<p>Methods of work that avoid the use of powered hand tools should be used wherever practical. For example concrete could be removed by diamond sawing or drilling and bursting to reduce the use of hand held breakers.</p> <p>The system of work selected can reduce exposure to HAV. Precise formwork can reduce the need for trimming or tidying of new concrete work.</p> <p>All tools used on a project should be the lowest vibration rating alternative possible with companies encouraged to adopt a low vibration purchasing policy when hiring or replacing equipment.</p> <p>All operatives must be educated on the risks and symptoms of HAV and know the method and rules used to reduce HAV damage. HAV exposure should be recorded and monitored as a means of control.</p> <p>All operatives should complete a pre-employment medical history questionnaire and, before working with vibrating hand tools, complete a HAV's initial screening questionnaire.</p> <p>Further screening of operatives may be required should they be identified as being susceptible to HAV or if their specific job has a high potential HAV exposure.</p>
Manual handling and musculoskeletal disorder	<p>Construction activities that involve manual handling present a significant hazard of musculoskeletal disorders (MSDs) and must be considered fully with action taken on three fronts:</p> <p>Avoidance - manual lifting must be avoided by good design and by use of alternate systems of work such as mechanical lifting means</p> <p>Action – where avoidance is not possible a system of work that minimises risk must be employed</p> <p>Information – those people who carry out the manual handling must be provided with adequate information on the weight of each load, including if necessary the heaviest side of any load whose centre of gravity is not central</p> <p>Staff must undertake regular appropriate training including instruction on safe handling to minimise the risk of strains and sprains.</p>
Inclement weather	<p>Structural repairs on domestic building works often involves working in exposed conditions.</p> <p>Suitable and sufficient measures should be taken to protect the works and the workers from both:</p> <p>Inclement weather - rain, low temperatures and high wind</p> <p>Strong sunlight and high temperatures</p> <p>In general open sites should have temporary roofs built to provide adequate protection and to avoid the ground becoming waterlogged and increasing the risk of collapse during excavation and construction.</p> <p>It is important that operatives have the ability to:</p> <p>Dry themselves and their clothes whilst on site</p> <p>Heat food</p> <p>Make hot drinks</p> <p>Have a supply of clean, drinking water</p> <p>Sit down in a sheltered, warm environment during breaks</p>
Work related stress	<p>Work related stress can be a major cause of illness and unhappiness leading to absence from work and further complications.</p> <p>The HSE has identified six major aspects of work that can be causes of stress across all jobs:</p> <p>Work demands.</p>

HAZARD	ACTIONS
	<p>Control over work.</p> <p>Lack of support from others.</p> <p>Relationships at work.</p> <p>Role of the individual.</p> <p>The effect of change.</p> <p>The top five most stressful aspects of construction work are:</p> <p>Having a dangerous job.</p> <p>Excessive travelling or commuting</p> <p>Being responsible for the safety of others at work</p> <p>Working long hours</p> <p>Having too much work to do in the time available</p> <p>Factors such as personal relationships, financial concerns, domestic issues and bereavement can also affect peoples' ability to cope with pressure at work.</p> <p>It is important that work related stress is discussed openly on site and is effectively managed if it is identified in an individual.</p>
Alcohol and drug abuse	<p>Historically alcohol and drug abuse have been problems in the construction sector.</p> <p>All companies should have a policy relating to alcohol and drug abuse. As a minimum people found or believed to be suffering from the effects of drugs or alcohol should be excluded from the site.</p> <p>In some circumstances, if a problem persists, it may be necessary to carry out random drugs or alcohol tests. This should be done by specialists using the appropriate testing equipment and only after prior formal notification to all at risk of being tested.</p>

23. APPENDIX D: PLANNING FOR RISK MANAGEMENT – DETAIL ON INFORMATION REQUIRED

AREA	DETAIL
Site investigation	<p>Site investigation work is intended to provide information to enable safe and effective design and construction planning.</p> <p>It will usually involve:</p> <p>Desk top work</p> <p>Site work</p> <p>Desk top surveys can also identify hazards such as areas of high risk of unexploded ordnance, contaminated ground from previous use or of underground rivers or water.</p> <p>Site investigation work usually includes boreholes, trial pits, and laboratory tests on soil samples to confirm particle size, cohesion and contamination.</p> <p>Further information on site investigations is give at appendix A.</p>
Existing and adjoining building and structures	<p>As much information on the existing and adjoining structures as is reasonably available should be sought. This will usually come from others and from site visits or investigations.</p> <p>Information on the existing and adjoining building and structures can be obtained from various sources including:</p> <p>Property owners</p> <p>Local authority planning departments</p> <p>Local authority building control departments</p>

AREA	DETAIL
	<p>Architects, engineers and contractors who have previously worked on the properties involved</p> <p>A site visit should be completed to identify and investigate to an appropriate level. Intrusive works may be required though a balance will often need to be struck if a property is occupied between the level of damage caused and the importance of knowing specifics at that stage.</p>
Adjacent underground structures	<p>Nearby underground structures need to be identified. These can include neighbouring basements, railways, canals or road tunnels - either in use or abandoned, shallow mine workings, air raid shelters, retaining walls, wells, water storage or treatment tanks and sewers.</p> <p>A combination of checking large scale maps, old maps, local authority records and local knowledge may be needed to find out if there are features that may affect a project.</p> <p>Transport for London and London Underground will provide information to confirm that proposed developments will not conflict with their assets. There is a fee for this service.</p> <p>The contact e mail for the service is - railwaysearches@tfl.gov.uk</p>
Services	<p>Existing underground services include gas, electric, water, waste water and communications pipes and cables.</p> <p>The main utility companies can be contacted directly to obtain information on their assets. This information will usually only include the main pipes and cables and will not include the locations of individual supplies to properties.</p> <p>Local investigations with underground detection devices or careful excavation may be needed to identify services within the footprint of the property</p> <p>Occasionally a Structural repair on domestic building works scheme may need to be limited due to the presence of existing services. Waste water pipes that serve properties up stream can be particularly difficult to relocate given their reliance on gravity to operate and the essentially fixed positions of inflow and outflow points of the pipes.</p>
Asbestos	<p>Asbestos, if present, is a major health risk. Exposure to airborne asbestos fibres is the main cause of occupational death in construction workers.</p> <p>Prior to the late 1990s asbestos was commonly used. Checks must always be carried out for asbestos in areas that could be disturbed by the works.</p> <p>In the event that the presence of asbestos is suspected all further investigative work should stop and a specialist licensed contractor should be contacted.</p> <p>All asbestos that could be disturbed by the works needs to be removed under controlled conditions by a licensed contractor. There are very few types of asbestos containing material that a general contractor is allowed to remove using their own asbestos trained workers.</p>
Site access	<p>Any physical or regulatory limitations on site access must be identified usually using scale maps and a site visit. Access restrictions may limit the size and weight of delivery vehicles or mobile plant.</p> <p>Restrictions may be caused by weight limits imposed to protect old roads, narrow roads, tight road corners, hospitals, pedestrian road crossings, parking restrictions, Several local authorities now require traffic management or construction plans to be approved prior to the start of works. Site hoardings or temporary structures that will cross or be located on the road or footpath will usually require a licence from the council, schools and children's play areas.</p>

24. APPENDIX E: ASUC STRUCTURAL REPAIRS WORKS INDEMNITY GUARANTEE (DIG) POLICY

The following is the text of version 8 of the ASUC DIG POLICY and may be subject to change, please check on line for latest edition.

1. INFORMATION

The Policyholder is requested to read the Policy and Certificates. These are important documents. If any information is not clear please contact the Scheme Administrator.

This Policy consists of:

- 1) **INFORMATION** on the **Defects Insurance Guarantee**;
- 2) **DEFINITIONS** detailing all definitions applicable to the Policy;
- 3) **INSURING AGREEMENT** giving precise details of the cover subject to variation by endorsement;
- 4) **WARRANTIES** detailing warranties that apply to the whole Policy;
- 5) **EXCLUSIONS** detailing exclusions that apply to the whole Policy;
- 6) **CONDITIONS** defining the terms that apply to the whole Policy;
- 7) **CLAIMS NOTIFICATION PROCEDURES** detailing the procedures that should be followed when notifying a claim under the Policy.

This Policy sets out the insurance cover provided by the **Defects Insurance Guarantee**.

This insurance cover is subject to a number of definitions, conditions, exclusions and financial limits as detailed in the Policy.

The **Defects Insurance Guarantee** is only available to members of ASUC Plus. The ASUC member who has carried out the work at the **Premises** has applied for insurance on your behalf. The **Certificate of Insurance** enclosed with this policy details the extent of the works insured.

It is a Policy of indemnity and does not provide any cover for any legal liabilities that the **Policyholder** may have to third parties arising out of the use or ownership of the **Premises**.

The policy insures the **Building Works** identified in the **Certificate of Insurance** and consequential damage and costs, as specified in this policy document, for a period of 12 years from completion.

The **Limit of Indemnity** for the **Defects Insurance Guarantee** is the value of the **Building Works** as detailed on the **Certificate of Insurance**. The **Policyholder** may increase the **Limit of Indemnity** on application to the **Scheme Administrator**. An additional premium will be charged. The maximum **Limit of Indemnity** available under the **Defect Insurance Guarantee** is £2,000,000.

Law applicable to this Policy

The parties to a contract covering a risk in the United Kingdom are free to choose the law applicable to that contract. In the absence of any written agreement to the contrary the law applicable to this contract shall be law of England and Wales.

INTERPRETATION

Where any word or expression is given a specific meaning then such word or expression shall, unless the context otherwise requires, have the same meaning wherever it appears.

NOTES:

- For this Policy to be binding there should be a signed Certificate of Insurance. Please look carefully at the Certificate issued to ensure that the details have been correctly entered. This should be filed with the Policy.
- Extensions in cover at the time of issue of the Policy and subsequent alterations will be confirmed by separate Endorsements, which should be filed with the Policy. The Policyholder should refer to these Endorsements and the Policy to ascertain the precise cover in force at any time.
- This Policy is transferable to future owners of the Premises provided that such owners contact the Scheme Administrator to notify their details.

NOTICE TO THE POLICYHOLDER

As a **Policyholder** you have a number of options for making complaints about your **Defects Insurance Guarantee** policy. These are listed below. Before making any enquiry or complaint please consider carefully the most suitable option to address your concern.

In all cases the Policy/Certificate number appearing in the **Certificate of Insurance** should be quoted.

- You may have received advice on the cover provided by the **Defects Insurance Guarantee** prior to taking out the policy. This advice may have been given by MD Insurance Services Ltd.

If you wish to make a complaint please contact:

The Complaints Officer

MD Insurance Services Ltd

2 Shore Lines Building, Shore Road, Birkenhead CH41 1AU

Telephone: 0151 650 4300

MD Insurance Services Ltd is authorised and regulated by the UK Financial Conduct Authority.

A copy of the MD Insurance Services Ltd Complaints Procedure will be provided on request.

- MD Insurance Services Ltd also acts as the **Scheme Administrator** for the **Defects Insurance Guarantee**. If you have any complaint about the way in which MD Insurance Services Ltd has performed the duties as the **Scheme Administrator** please contact:

The Complaints Officer

MD Insurance Services Ltd, 2 Shore Lines Building, Shore Road, Birkenhead, CH41 1AU

Tel: 0151 650 4300

A copy of the MD Insurance Services Ltd Complaints Procedure will be provided on request.

- If you have any enquiry or complaint about the insurance provided by the **Defects Insurance Guarantee** this should in the first instance be addressed to:

MD Insurance Services Ltd, 2 Shore Lines Building, Shore Road, Birkenhead, CH41 1AU

Tel: 0151 650 4300

or

The Complaints Department, AmTrust Europe Limited, Market Square House, St James's Street, Nottingham NG1 6FG

AmTrust Europe Limited is authorised and regulated by the UK Financial Conduct Authority

Note:

- A.** If after following the procedures set out in 1 to 3 on Pages 1 and 2 of this Policy, your complaint has not been resolved to your satisfaction, and you are an eligible complainant you have the right to refer the matter to the Financial Ombudsman, at the following address:-

Financial Ombudsman Service, South Quay Plaza, 183 Marsh Wall, London, E14 9SR.

The Financial Conduct Authority definition of an eligible complainant is:

- A consumer;
- A micro-enterprise which has a group turnover of less than £1 million;
- A charity with an annual income of less than £1 million;
- A trustee of a trust with a net asset value of less than £1 million.

- B.** The **Underwriter** and the **Scheme Administrator** are covered by the Financial Services Compensation Scheme. As a **Policyholder** you may be entitled to compensation from the Financial Services Compensation Scheme if the **Underwriter** and/or **Scheme Administrator** are unable to meet their obligations.

Further information about compensation scheme arrangements is available from the Financial Services Compensation Scheme. Their address is:

Financial Services Compensation Scheme, 7th Floor Lloyds Chambers, Portsoken Street, London E1 8BN

YOUR RIGHT TO CANCEL

You have the right to cancel cover under the **Defects Insurance Guarantee**. If you wish to cancel the cover you must do so within 14 days starting on the day after you receive the **Defects Insurance Guarantee** policy documents. Your cancellation must reach the **Scheme Administrator** by letter or email. Contact details are:

Scheme Administrator

MD Insurance Services Ltd, 2 Shore Lines Building, Shore Road, Birkenhead, CH41 1AU

Tel: 0151 650 4300

Please quote your **Defects Insurance Guarantee** policy number when cancelling. If you choose to cancel the premium will be returned. Any return of premium will only be made to the party that has paid the premium. The **Scheme Administrator** reserves the right to charge an administration fee.

All **Defects Insurance Guarantee** policy documents should be returned to the **Scheme Administrator** with the cancellation request.

2. DEFINITIONS

2.1 BUILDING WORKS

The works carried out at the **Premises** under a contract or agreement between the **Contractor** and the **Policyholder** or any other party who has entered into an agreement or contract for the **Building Works** and who is named in the **Certificate of Insurance**.

2.2 CERTIFICATE OF INSURANCE

The Certificate issued by the **Scheme Administrator** on behalf of the **Underwriter** to signify acceptance of the **Building Works** for insurance hereunder.

2.3 CONTRACTOR

Any member of ASUC with whom the **Policyholder** or any other party has entered into an agreement or contract for the **Building Works** and who is named in the **Certificate of Insurance**.

2.4. DAMAGE

Any defect in the design, specification, workmanship, materials or components of the **Building Works** affecting or causing physical loss, destruction or damage and/or affecting or causing imminent instability to a **Premises** which is first discovered during the **Period of Insurance**.

2.5 DEFECTS INSURANCE GUARANTEE

The policy containing the insurance cover provided by the **Underwriter**.

2.6 LIMIT OF INDEMNITY

The liability of the **Underwriter** shall not exceed during the **Period of Insurance** the amount shown as the **Limit of Indemnity** on the **Certificate of Insurance**. The **Limit of Indemnity** is index linked in accordance with Condition 5 of the Policy.

2.7 MINIMUM CLAIM VALUE

The amount relating to each and every loss in respect of the **Premises** below which the **Underwriter** has no liability under this Policy. If the loss is greater than the **Minimum Claim Value** the **Underwriter** will be responsible for the full amount of the **Policyholder's** claim covered by this Policy.

A separate **Minimum Claim Value** shall apply to each separately identifiable cause of loss or damage for which a claim is made under the Policy.

2.8 PERIOD OF INSURANCE

The period as detailed in the **Certificate of Insurance**.

2.9 POLICYHOLDER

The owner or any other party having a financial interest in the **Premises** which is the subject of this insurance or their successor in title and whose interest has been noted under the Policy.

2.10 PREMISES

property described in the **Certificate of Insurance** including the structure, all non-load bearing elements and fixtures and fittings for which the **Policyholder** is responsible. **Premises** shall be deemed to include the **Building Works** which are the subject of this Policy.

2.11 SCHEME ADMINISTRATOR

MD Insurance Services Ltd, 2 Shore Lines Building, Shore Road, Birkenhead CH41 1AU
Tel: 0151 650 4300

2.12 UNDERWRITER

AmTrust Europe Limited

3. INSURING AGREEMENT

The **Underwriter** will indemnify the **Policyholder** against all claims discovered and notified to the **Underwriter** during the **Period of Insurance** in respect of the cost of complete or partial rebuilding or rectifying work to the **Building Works** which has been affected by **Damage**.

This insurance is only for works carried out by the **Contractor** and does not provide cover for parts of the **Premises** not underpinned.

Provided always that the liability of the **Underwriter** does not exceed the reasonable cost of rebuilding the **Building Works** to its original specification.

The Minimum Claim Value shall be as specified in the Certificate of Insurance.

In the event of a claim under this Policy the **Underwriter** has the option either of paying the cost of putting right any **Damage** or itself arranging to have such **Damage** corrected.

3.1 ADDITIONAL EXTENSIONS

In addition, in the event of a claim, the Underwriter will with its consent pay:

A. ADDITIONAL COSTS

Such additional costs and expenses as are necessarily incurred by the **Policyholder** in repairing, replacing or rectifying any part of the **Premises** other than the **Building Works** which has been affected by **Damage** provided always that the liability of the **Underwriter** does not exceed 25% of the **Limit of Indemnity** for the **Building Works** as stated in the **Certificate of Insurance**.

B. ALTERNATIVE ACCOMMODATION COSTS

All reasonable additional costs and expenses that are necessarily incurred by the **Policyholder** for a period not exceeding 26 weeks in respect of removal, storage and alternative accommodation whilst the **Premises** are uninhabitable.

C. FEES

Such Architects', Surveyors', Legal, Consulting Engineers' and other fees as are necessarily and reasonably incurred in relation to the complete or partial rebuilding or rectifying work to the **Premises** which has been subject to **Damage**, but shall not include costs or fees incurred by the **Policyholder** in preparing a claim.

D. REMOVAL OF DEBRIS

For each **Premises** the costs and expenses necessarily incurred by the **Policyholder** in respect of:

- a) removal of debris
- b) dismantling or demolishing
- c) shoring up the **Premises**.

The liability of the **Underwriter** during the **Period of Insurance** for any one claim in respect of Extensions **B** and **C** shall not exceed £10,000 indexed as per the provisions of Condition 5 herein.

4. WARRANTY

It is hereby warranted that the **Policyholder** shall comply with all recommendations stipulated by the Structural Engineer appointed in respect of the **Building Works**, in so far as such recommendations are applicable to the maintenance and or removal of trees at the **Premises** or adjoining properties.

The compliance by the **Policyholder** of such recommendations shall be deemed to be a Condition Precedent to this Policy.

5. EXCLUSIONS

The Underwriter shall not be liable to the Policyholder for any:

5.1 ALTERATIONS

Loss or damage to the **Building Works** due to or arising from any alteration, modification or addition to the **Premises** after the issue of the **Certificate of Insurance** unless the **Underwriter** has been informed, the **Certificate of Insurance** endorsed, and any applicable additional premium paid to the **Underwriter**.

5.2 CHANGE IN COLOUR

Any change in colour, texture, opacity or staining or other ageing process to any element of the **Building Works**.

5.3 CONSEQUENTIAL LOSS

Consequential loss of any description except as expressly provided for in this Policy.

5.4 DEFECTS IN EXISTING WORKS

Loss or damage due to or arising out of any defect in the design, workmanship, materials or components of the **Premises** which do not form part of the **Building Works**.

5.6 HUMIDITY

Loss or damage caused by or consequent upon humidity in the **Premises** that is not the direct result of the ingress

of water caused by a defect in the design, workmanship, materials or components of the waterproofing elements of the **Building Works**.

5.7 MAINTENANCE AND USE

Inadequate maintenance of **Building Works** or the imposition of any load greater than that for which the **Building Works** were designed or the use of the **Premises** for any purpose other than that for which it was designed.

5.8 PERSONAL INJURY

Any costs, losses, expenses or damages for death, bodily injury, disease, illness or injury to mental health.

5.9 PRIOR KNOWLEDGE

Anything which would constitute a valid claim under the Policy and about which the **Policyholder** was aware prior to purchasing the **Premises** and as a consequence agreed a reduction in the purchase price for the **Premises** or other contractual remedy.

5.10 PROPERTY NOT INSURED

Loss or damage to temporary structures, free-standing household appliances, floors, tiles, carpets or other floor coverings and all other contents other than as provided for within Extension A of the Insuring Agreement.

5.11 RADIOACTIVE CONTAMINATION, CHEMICAL, BIOLOGICAL, BIO-CHEMICAL AND ELECTROMAGNETIC WEAPONS

In no case shall this insurance cover loss damage liability or expense directly or indirectly caused by or contributed to by or arising from

- i) ionising radiations from or contamination by radioactivity from any nuclear fuel or from any nuclear waste or from the combustion of nuclear fuel.
- ii) the radioactive, toxic, explosive or other hazardous or contaminating properties of any nuclear installation, reactor or other nuclear assembly or nuclear component thereof.
- iii) any weapon or device employing atomic or nuclear fission and/or fusion or other like reaction or radioactive force or matter.
- iv) the radioactive, toxic, explosive or other hazardous or contaminating properties of any radioactive matter. The exclusion in this sub-clause does not extend to radioactive isotopes, other than nuclear fuel, when such isotopes are being prepared, carried, stored, or used for commercial, agricultural, medical, scientific or other similar peaceful purposes.
- v) any chemical, biological, bio-chemical, or electromagnetic weapon.

5.12. REASONABLENESS

In the event of a valid claim under the Policy the **Underwriter** shall only be responsible for costs and expenses that a reasonable person would incur if spending their own money. Whenever possible if items can be found to match existing items at a reasonable cost the **Underwriter** will endeavour to facilitate this. However the **Underwriter** will have no liability and will not be responsible for any additional costs if a similar match is not possible at a reasonable cost.

5.13 SEEPAGE

Loss or damage caused by seepage of water into the **Premises** below ground floor slab level.

5.14 SETTLEMENT

Loss or damage caused by or consequent upon normal settlement or bedding down of the **Building Works**.

5.15 SONIC BANGS

Loss or damage directly occasioned by pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds.

5.16 SPECIAL PERILS

Loss or damage caused by or consequent upon fire, lightning, explosion, typhoon, hurricane, cyclone, volcanic eruption, earthquake, storm, tempest, flood, subterranean fire or other convulsion of nature, aircraft or other aerial devices or articles therefrom, escapes of water from tanks, apparatus or pipes, malicious persons, theft, attempted theft, impact or any accidental cause.

5.17 SUBSIDENCE

Loss or damage caused by or consequent upon subsidence, heave or landslip unless such loss or damage is as a result of a defect in the design, workmanship, materials or components of the **Building Works**.

5.18 THIRD PARTY DESIGN

Loss or damage caused by failure by a third party (i.e. not the **Contractor**) to properly design the Building Works.

5.19 TOXIC MOULD

Loss, damage or bodily injury arising out of any pathogenic organisms regardless of any other cause or event that contributed concurrently or in any sequence to that liability.

Pathogenic organisms means any bacteria, yeasts, mildew, viruses, fungi, mould or their spores, mycotoxins or other metabolic products.

5.20 TREES

Loss or damage due to or arising from trees planted after the completion of the **Building Works** that cause damage to the **Premises** during the **Period of Insurance**.

5.21 VERMIN

Loss or damage caused by or consequent upon the actions of rodents, vermin or insect infestation.

5.22 WAR RISKS

Notwithstanding anything to the contrary contained herein this Policy does not cover Loss or Damage directly or indirectly occasioned by, happening through or in consequence of war, invasion, acts of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation or nationalisation or requisition or destruction of or damage to property by or under the order of any government or public or local authority.

5.23 WATER TABLE

Loss or damage resulting solely from a change in the water table level. This exclusion shall not however apply to any seasonal change in the water table level.

5.24 WEAR AND TEAR

- a) wear and tear;
- b) normal dampness, condensation or shrinkage;
- c) normal deterioration whether caused by neglect or otherwise.

5.25 WILFUL ACTS

Any wilful neglect or criminal act of the Policyholder or any other party.

6. CONDITIONS

6.1. ARBITRATION

If any difference shall arise as to the amount to be paid under this Policy (liability being otherwise admitted) such difference shall be referred to an arbitrator to be appointed by the parties in accordance with the statutory provisions then in force. Any making of an award shall be a condition precedent to any right of action against the **Underwriter**.

6.2. AUTOMATIC REINSTATEMENT OF THE LIMIT OF INDEMNITY

In consideration of the **Limit of Indemnity** not being reduced by the amount of any loss, the **Policyholder** agrees to pay if required by the **Underwriter** the pro-rata additional premium on the amount of such loss from the date of notification of claim to the date of expiry of the **Period of Insurance**.

6.3. CONTRIBUTION

If at any time of any occurrence giving rise to a claim under this Policy:

- i) there is, or would but for the existence of this insurance, be any other insurance applicable, or;
- ii) the **Policyholder** has entitlement to any statutory damages or compensation;

this Policy shall be limited to any amount in excess of such insurance, damages or compensation and shall not be called into contribution.

6.4. FRAUD

If any claim under this Policy shall be in any respect fraudulent, or if any fraudulent means or devices are used by the **Policyholder**, or anyone acting on its behalf, to obtain benefit under this insurance, all benefit hereunder shall be forfeited.

6.5. INDEXATION

The **Limit of Indemnity** and **Minimum Claim Value** referred to within the **Certificate of Insurance** will be increased by 5% per annum compound on each anniversary of the commencement of the **Period of Insurance**. For the pur-

pose of settlement of any claim hereunder the **Limit of Indemnity**, as adjusted in accordance with the foregoing provisions, shall be regarded as the **Limit of Indemnity** at the time of discovery by the **Policyholder** of such claim.

6.6. UNDERWRITER'S RIGHTS

In the event of any occurrence which may give rise to a claim under this Policy, the **Underwriter** and its agents shall, with the permission of the **Policyholder**, be entitled to enter the **Premises** in order to carry out rectification works or the complete or partial rebuilding of the property. If such permission is unreasonably withheld the **Policyholder** shall be responsible for any additional costs caused by the delay in carrying out such works.

6.7. MISREPRESENTATION

This Policy will be voidable from inception in the event of misrepresentation, misdescription, error, omission or non-disclosure by the **Policyholder** with intention to defraud.

6.8. RECOVERIES FROM THIRD PARTIES

The **Underwriter** is entitled to and the **Policyholder** gives consent to the **Underwriter** to control and settle any claim and to take proceedings at its own expense in the name of the **Policyholder** to secure compensation from any third party in respect of any loss or damage covered by this Policy.

6.9. THIRD PARTY RIGHTS

A person who is not a party to this Policy has no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of this Policy but this does not affect any right or remedy of a third party which exists or is available apart from the Act.

For the purpose of this Condition any third party shall not be deemed to include the **Contractor** who is named in the **Certificate of Insurance**.

6.7. CLAIMS NOTIFICATION PROCEDURES

Notification of a claim

On discovery of any occurrence or circumstance that is likely to give rise to a claim under the Policy the **Policyholder** shall as soon as reasonably possible:

- i) give written notice to the Scheme Administrator;
- ii) take all responsible steps to prevent further loss or damage;
- iii) submit in writing full details of the claim and supply all correspondence, reports, plans, certificates, specifications, quantities, information and assistance as may be required.

MD Insurance Services Ltd, 2 Shore Lines Building, Shore Road, Birkenhead CH41 1AU

Tel: 0151 650 4300

MD Insurance Services Limited is authorised and regulated by the Financial Conduct Authority

APPENDIX F: CONSTRUCTION (DESIGN AND MANAGEMENT) REGULATIONS 2015 – CDM 2015

The new Construction (Design and Management) Regulations 2015 (CDM Regs) come into force on 6 April 2015 and apply to all building and construction projects, regardless of the size, duration and nature of the work.

This document on behalf of ASUC and its members seeks to provide clarification around the domestic market which is predominantly where our members operate.

Full guidance on CDM 2015 is available from the links in the appendix at the end of this guidance note. These include HSE and industry guidance, the latter organised and hosted by the CITB.

The main changes, outlined in general by the Health & Safety Executive, are as follows:

- Principal designer. The replacement of CDM co-ordinator (under CDM 2007) by principal designer. This means that the responsibility for coordination of the pre-construction phase – which is crucial to the management of any successful construction project – will rest with an existing member of the design team. *(Note that the pre-construction phase can overlap considerably with the construction phase)*
- Client. The new Regulations recognise the influence and importance of the client as the head of the supply chain and as the party best placed to set standards throughout a project
- Competence. By splitting 'competence' into its component parts of skills, knowledge, training and experience, and - if they are an organisation - organisational capability, provides clarity for the industry to assess and demonstrate that construction project teams have the right attributes to deliver a healthy and safe project.
- The technical standards set out in Part 4 remain essentially unchanged from CDM 2007 and HSE's targeting

and enforcement policy, as a proportionate and modern regulator, also remains unchanged.

Transitional changes - When CDM 2015 comes into force on 6 April 2015, there will be a transitional period that will run for six months from 6 April 2015 to 6 October 2015.

For projects starting before 6 April 2015, where the construction phase has not yet started and the client has not yet appointed a CDM co-ordinator, the client must appoint a principal designer as soon as it is practicable.

If the CDM co-ordinator has already been appointed, a principal designer must be appointed to replace the CDM co-ordinator by 6 October 2015, unless the project comes to an end before then.

In the period it takes to appoint the principal designer, the appointed CDM co-ordinator should comply with the duties contained in Schedule 4 to the new CDM 2015 Regulations. These duties reflect the existing requirements under CDM 2007 for the CDM co-ordinator rather than requiring CDM co-ordinators to act as principal designers, a role for which they may not be equipped.

DOMESTIC CLIENTS

Domestic clients – are people who have construction work carried out on their own home, or the home of a family member. CDM 2015 extends the management parts of the legislation so they apply to projects for domestic clients. This is to ensure that the work is better organised and better controlled, especially where several contractors are on site at the same time. In all cases the arrangements for managing the project must be proportionate to the project size, complexity and level of risk.

Local authorities, housing associations, charities, landlords and other businesses may own domestic properties, but they are not a domestic client for the purposes of CDM 2015. If the work is in connection with a business attached to domestic premises, such as a shop, the client is not a domestic client.

Domestic clients are in scope of CDM 2015, but their duties as a client are normally transferred to the contractor, on a single contractor project or; the principal contractor, on a project involving more than one contractor which is not done as part of a business, whether for profit or not.

However, the domestic client can choose to have a written agreement with the principal designer who will then carry out the client duties.

What should a domestic client do?

A domestic client is not required to carry out the duties placed on commercial clients in regulations 4 (client duties for managing projects), 6(Notification) and 8 (General duties) - Where the project involves:

- a) Only one contractor, the client duties must instead be carried out by the contractor. The contractor must then carry out the client duties as well as the duties they already have as contractor for the project. In practice, this should involve doing little more to manage the work to ensure health and safety;
- b) More than one contractor, the client duties must instead be carried out by the principal contractor as well as the duties they already have as principal contractor. If the domestic client has not appointed a principal contractor then the duties of the client will be carried out by the contractor in control of the construction work.

In many situations, domestic clients wishing to extend, refurbish or demolish parts of their own property will, in the first instance, engage an architect or other designer to produce possible designs for them. It is also recognised that construction work does not always follow immediately after design work is completed. If they so wish, a domestic client has the flexibility of agreeing (in writing) with their designer that the designer coordinates and manages the project, rather than this role automatically passing to the principal contractor. Where no such agreement is made, then the principal contractor will automatically take over the project management responsibilities.

Working for a domestic client - The role of designers, principal designers, principal contractors and contractors when working on a project for a domestic client, is normally no different to their role when working for a commercial client. They have the same duties and should carry them out in the same way as they would for a commercial client. However, the effect of regulation 7 is to transfer the client duties to other duty holders when working for domestic clients.

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-clients.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-designers.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-principal-contractors.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-principal-designer.pdf>

Insurance Claims – the role of insurers and /or their agents in procuring repair contractors and paying them directly for that work on behalf of a householder (the premium payer) makes them a commercial client and therefore the role of a Principal Designer will be required in all circumstances.

Pre-Construction Information – Information is key to ensuring the permanent works and the temporary works designs are suitable and that a suitable workforce, plant, system of work, sequence and timescale is selected. For all projects the amount and detail of information needed should be assessed by all parties working together. This applies to projects for both commercial and domestic clients.

Construction Phase Plan – Under CDM 2015 this is a requirement for all construction projects whatever their size or complexity. However the plan needs to be proportionate to the nature of the work and the site.

Health and Safety File – It is vital that the client is given sufficient information at the end of a construction project to enable them to safely operate, maintain and carry out future building works on the new facility. Under CDM 2015 this information must be provided to commercial and domestic clients on all construction projects that involve more than one contractor.

Notification changes – A project is notifiable if the construction work on a construction site is scheduled to—

(a) Last longer than 30 working days and have more than 20 workers working simultaneously at any point in the project; or

(b) Exceed 500 person days. (*Note that 500 person days is easily achieved even with a relatively small workforce – e.g. 5 persons x 100 days*)

Where a project is notifiable, the client must give notice in writing to the Executive as soon as is practicable before the construction phase begins. The notice must—

(a) contain the particulars specified as under

1. The date of forwarding the notice.
2. The address of the construction site or precise description of its location.
3. The name of the local authority where the construction site is located.
4. A brief description of the project and the construction work that it entails.
5. The following contact details of the client: name, address, telephone number and (if available) an email address.
6. The following contact details of the principal designer: name, address, telephone number and (if available) an email address.
7. The following contact details of the principal contractor: name, address, telephone number and (if available) an email address.
8. The date planned for the start of the construction phase.
9. The time allocated by the client under regulation 4(1) for the construction work.
10. The planned duration of the construction phase.
11. The estimated maximum number of people at work on the construction site.
12. The planned number of contractors on the construction site.
13. The name and address of any contractor already appointed.
14. The name and address of any designer already appointed.
15. A declaration signed by or on behalf of the client that the client is aware of the client duties under these Regulations.

(b) Be clearly displayed in the construction site office in a comprehensible form where it can be read by any worker engaged in the construction work; and

(c) If necessary, be periodically updated

The easiest way to notify any project is to use the electronic F10 notification form on HSE's website. Further information on how to notify construction work is on HSE's construction web pages www.hse.gov.uk/construction

References:

<http://www.hse.gov.uk/pubns/priced/draft-1153.pdf> - This is the main HSE guidance that also contains the full text of the Regulations. The document is free to download. At time of writing this is still in draft form and the weblink will be updated before the Regulations come into force. By April 2015 additional summaries, explanation and frequently asked questions/answers will be available on the HSE website.

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-clients.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-contractors.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-designers.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-principal-contractors.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-principal-designer.pdf>

<http://www.citb.co.uk/Documents/CDM%20Regs/industry-guidance-workers.pdf>

<http://www.hse.gov.uk/pubns/cis63.pdf> (running a small construction site)

<http://www.hse.gov.uk/pubns/cis64.pdf> (excavations)

<http://www.hse.gov.uk/pubns/cis66.pdf> (basement construction)

ASUC guidelines on both Basement Construction and Underpinning and mini-piling can be downloaded for free from:

http://www.asuc.org.uk/specialist_underpinning_subsidence_publications.html

Temporary works guidance is also available from the ASUC website from:

http://twforum.org.uk/media/58911/twf2014.02_client_guide_26_january_2015_final.pdf

25. GLOSSARY OF TERMS

Banksman

A trained operative who oversees the loading, unloading and movement of materials, plant and construction items safely on and around site.

Bearing capacity

The measure of the capability of a soil to support a foundation load.

Bulb of influence

The theoretical shape and size of the ground pressure bulb exerted by the foundations of a building or structure

Chemical grouting

A process of injecting the ground with a non-cementitious product such as polyurethane resin, acrylic resin or sodium silicate solution.

Cold bridging

This is the potential effect created by an object or product which can conduct cold external temperatures through to internal space

Façade retention

The process of temporarily supporting the façade of a building whilst the remainder of the structure is renewed.

Ground relaxation

This is the effect on the soil of the reduction in confining pressure as a result of excavation.

Hand Arm Vibration (HAV)

This is the potentially harmful effect on fingers, hands and arms of using vibrating tools such as percussive drills and breakers.

Hydrophilic

A substance which has an affinity for water, will absorb it, or dissolve in it.

Hydrophobic

A substance which repels and tends not to absorb or dissolve in water.

Hydrostatic Pressure

The pressure exerted on a structure by groundwater

Mansard

A type of near-vertical walled roof structure on a building which forms the top storey.

Soil stabilisation

The process of introducing a suitable product into the soil to increase the strength or load carrying capacity of the ground.

Superstructure

The part of a building or structure above the foundations.

Surcharge

An external load exerted on an underground structure from outside the footprint of the building.

26. REFERENCES

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 - Guidelines on safe and efficient Basement Construction directly below or near to existing structures - ASUC October 2013.
 - Guidelines on safe and efficient Underpinning and mini Piling published March 2015.
 - ICE (Institution of Civil Engineers) Specification for piling and embedded retaining walls 2nd edition 2007. ISBN 978 0 7277 3358 0
 - Recommended minimum site investigation for typical domestic 1, 2 and 3 storey building Technical Guidance Note 01: ASUC July 2011 ISBN: 978- 0-9545370-2-9
 - BRE Good Building Guide Providing temporary support during work on openings in external walls : GBG 15 Rehabilitation November 1992 CI/SfB 81 (W7) (X7) CAWS C40
 - BS 5975:2008 and supplement A1:2011. Code of practice for temporary works procedures and the permissible stress design of falsework: BSI 2008 ISBN 978 0 580 66644 5
 - The management of temporary works in the construction industry: Health and Safety Executive SIM 02/2010/04
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 - Fire safety in construction Guidance for clients, designers and those managing and carrying out construction work involving significant fire risks: Health and Safety Executive HSG168 ISBN 978 0 7176 6345 3
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 - Structural repairs on domestic building works waterproofing: Site guide. British Cement Association (BCA). 1994
 - BS 8102: The code of practice for the protection of below ground structures against water from the ground.
 - BS 8007:1987 - Code of practice for design of concrete structures for retaining aqueous liquids
 - BS 8110 British Standard for the design and construction of reinforced and prestressed concrete structures - superseded by EN 1992 (Eurocode 2) although parts of the standard have been retained in the National Annex of the Eurocode.
 - The Party Wall etc. Act 1996: Explanatory Booklet. Communities and Local Government. <http://www.communities.gov.uk/partywall-1996>
 - Protected trees. A guide to tree preservation procedures. Communities and Local Government. April 2012. ISBN 978-1-4098-3443-4
 - BS 5930:1999 amended 2007. The code of practice for site investigations.
 - BS 1377-2 August 1990. Methods of test for soils for civil engineering purposes. Classification tests.
 - HSG47. 2000. Avoiding danger from underground services. ISBN: 9780717617449
 - HSG33. 2012. Health & Safety in Roofwork. ISBN: 9780717665273
 - 2005 No. 735. Health and Safety. The Work at Height Regulations 2005. ISBN:0-11-072563-8
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