



KILCLOONY CASTLE, MILLTOWN, CO GALWAY

CONSERVATION REPAIRS PHASE 2

Conservation Methodology & Specification

AUGUST 2022

1. PREAMBLE

The following conservation methodology is prepared in advance of the second phase of conservation works to repair the ruined tower house at Kilcloony, close to Milltown, Co Galway. It follows the recommendations of the Conservation Management Plan for the site prepared by the same team in 2020.

Location	Kilcloony, Milltown, Co Galway
Grid Coordinates	542272; 760557
Local Authority	Galway County Council
Statutory Protection	SMR ref: GA016-062001
Rating	National
Special Interest	Architectural, Archaeological, Historical, Artistic, Social
Principal Dimensions	9 X 10M (plan of tower house)
Inspection Dates	November 2020 & August 2021
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2. DESCRIPTION

Kilcloony Castle is located within 200m of the N17, the principal route linking Galway to Sligo. The ruined tower house is set within a medieval settlement landscape that includes 25 recorded monuments including a church site and burial ground. A recent study undertaken by Prof. Elizabeth FitzPatrick of NUIG identifies the site as being a bardic school of the Uí hUiginn learned family, although the precise site of the school building itself has not yet been determined.

The castle bawn is set on a natural promontory, and it enjoys views to the south, west and north over the plains to the east of Lough Corrib and Lough Mask. It is rectangular in form, just over 32m in width and 37m in length. The tower house survives to a height of approximately 6m, having been reduced to a vaulted room at ground level and first floor levels. Much of its stone has been taken away, although more recent falls can be found strewn around its base and to its interior. While it has retained some of its facing stone, it remains vulnerable to collapse where almost all the bedding mortar has eroded away, voids and missing quoins have left the surviving stones in a precarious state.

There are few known surviving bardic school sites surviving in Ireland, making Kilcloony potentially a site of national interest. Should this attribution to a bardic school strengthen through further investigation, Kilcloony Castle and its medieval settlement landscape would be worthy of consideration for statutory protection as a national monument.

3. CURRENT CONDITION

Of most concern for the conservation of the tower house is its advanced state of decay. This gradual process will continue unless the structure is stabilized and weathered, its surviving floor vault that weathers what remains of its interior being at risk of collapse.

Kilcloony Castle requires urgent repair to arrest its continued erosion, exacerbated by historical robbing out of its finely dressed facing stone and carved stone windows and doorways. While at an advanced state of ruination, urgent action to consolidate its structure and improve weathering of the stonework should allow it to be conserved in close to its current state.

Fortunately, the walls of the tower appear to have been thoroughly mortared, to the extent that the loss of the facing stone has not led to immediate destabilisation. However, the remaining facing stone is at risk, not least due to the loss of the quoins at low level leaving large, dressed stones with distinctive rounded arrisses at immediate risk of collapse.

The first-floor vault has long been exposed to the elements, and now have a thick covering of grassy turf. While this insulated the wickerwork vault below, a hole has formed in the centre of the vault, and the gable walls to either end had become so thin due to gradual loss due to erosion that voids have opened-up at high level. A sequence of works and phasing was devised to allow the works to proceed safely and to minimise the risk of accidental damage to the monument.

In 2021, the first phase of works concentrated on the north and east walls, and the stabilisation of the main floor vault. Exposed wall core to north and east sides consolidated and pointed up in lime and sand mortar. The floor vault was repaired and capped, with a soft capping installed. Internal walls were consolidated where necessary for structural stability using stone rubble salvaged from the site and supplemented using quarried limestone in less visible areas. Vulnerable corners and main entrance were propped ready for Phase 2, with piers installed to support vaults to all sides of entrance.

4. CONSERVATION METHODOLOGY

A summary of the necessary repairs and works in Phase 2 is as follows:

- To protect and maintain the existing built and archaeological heritage of the monument and setting known as Kilcloony Castle, ensuring repairs do not adversely impact on this heritage.
- Works to be notified to the National Monuments Service under Section 12 (3) of the National Monuments Act.
- To carry out specialist repairs to the existing walls to assist in their preservation as well as the security of the site and the safety of the public making guided visits to the site and livestock in the surrounding fields.
- Repairs to be overseen by a conservation structural engineer along with a RIAI Grade 1 Conservation Architect and monitored by a licensed archaeologist.
- Repairs to be carried out using lime mortars and specialist masonry repair techniques by contractors who have extensive experience in working in historic masonry structures in their repair, especially where they are in poor condition or unstable.
- Pinning and pointing of the surviving facing stonework to the south and west sides, and low down to east and north sides using lime and sand mortar. Salvaged stone pinnings to be used to all areas where joints exceed 20mm.
- Stones left around the wall base and to the interior to be used for this purpose, identified by the archaeologist in association with the design team, to ensure that there is no further loss or obscuring of archaeological heritage.
- Stripping of grass turf and overburden to mezzanine vault under archaeological supervision, and infilling with salvaged stone set in a hot lime mix gauged with NHL 3.5.
- Backfilling of exposed section of mezzanine vault using lime grout.
- Installation of lime mortar capping to mezzanine vault to seal and form layer to throw off rainwater. To be laid to fall over edges and gaps in surviving walls exposed by grass removal.
- Installation of soft capping to top of mezzanine floor.
- Consolidation of south door and quoins where robbed out to all sides using Irish Blue Limestone with smooth sanded finish, with 5mm joints to follow existing courses, to approved sample. New stone to be set back 25-50mm from existing wall surfaces.
- Miscellaneous voids evident to the walls to be infilled with suitable salvaged facing stone rubble bedded in lime and sand mortar.
- Disturbed wall heads to be consolidated and capped using flat salvaged limestone to follow existing profiles or rough racked using flat stones bedded in lime mortar. NHL3.5 is to be used to the wall tops due to increased exposure.

5. SPECIFICATIONS

PROTECTION OF HISTORIC FABRIC

- Site access should be controlled, and the site area secured for the duration of the works.
- Access to the rear is through a farm gate with the permission of the owner.
- Note that the castle is accessed directly off a busy national route and within farmland. Road users and the public are to be warned of the construction works and the necessity for safety and security, and all precautions taken to prevent harm to livestock due to the works.
- Care must be taken to ensure that adjacent areas are protected from accidental damage, fenced off or boxed out in plywood as necessary. Special care should be taken of propping the wickerwork centering.
- Existing Heras fencing on site is to be reinstated to secure the structure at completion.
- Removals of unstable masonry are to be carefully sequenced, after assessment of the risk of consequential damage, rather than pulled out using mechanical means.
- Temporary propping of walls, vaults, openings required in advance of repairs commencing, and to remain in place in advance of Phase 2.
- Care shall be taken not to damage the bawn and surrounding farmland during works. Contractor to limit access to areas undergoing works, and protect the ground from contamination by builder's refuse or from tyre damage.
- Works involving excavation or retrieval of material to be carried out under archaeological supervision.
- Any damage to the ground shall be repaired and the site cleared and made good to the satisfaction of the CA at the expense of the contractor prior to handover.
- The method statement for the specific design and construction of the protection must be agreed with the CA.
- Hoarding (framework/sheeting) shall be constructed using non-ferrous screw fixings to facilitate ease of alteration/inspection. Nails shall not be used.
- The form, construction and materials used must be sufficiently robust to protect historic features from falling items/debris.
- Under no circumstances shall the protection measures fix into the historic fabric.
- The contractor shall facilitate the opening and closing of hoarding/protection as directed by the CA for the purposes of inspection.
- Protection measures are to be inspected by the site supervisor on a daily basis and maintained/repaired as necessary.

SAMPLES

Trial testing shall be carried out in 1sqm panels in locations to be agreed with the CA. Prior to commencing works the following site trials will be carried out for the approval of the conservation architect:

- Raking-out of joints
- Repointing using lime-based mortar – to facing stone
- Replacement facing stonework including door and window jambs and heads
- Flaunching of wall cappings

REMOVAL OF IVY & TREATMENT OF WOODY STEM GROWTH

- Clearance of plant growth around the structure should include both ground cover, shrubs and embedded ivy that would impede the repair works.
- All vegetation cutting / removal should occur within the period 1st September to 28th February (dates inclusive) to comply with the Wildlife Act 1976 (Amendment) 2000.
- All the plant growth growing from the sides or top of the walls should be clipped back hard. The vegetation may be mechanically trimmed initially but then carefully cut close to the wall by hand. Tendrils shall be removed by hand and using a soft bristled brush. Particular care must be taken not to damage carved areas or friable stone during removal of ivy.
- All vegetation waste should be chipped on site and a place for disposal preferably in the nearby vicinity agreed with the Council. Note waste must be disposed of correctly and in accordance with the Waste Management Acts 1996 to 2008, under which parties disposing of the waste must be licensed.
- Extreme care must be taken when removing plant growth at high levels to reduce the risk of injury from falling masonry. The operatives removing the plant growth should work in pairs and make an assessment as to what sort of access may be required.
- Leave all growth in place and spray apply several coats of a root killer. This should be left for as long as possible – approximately two weeks- before any removal of growth. This will serve to kill all embedded root systems deep in the fabric of the masonry. It may be necessary to repeat the injection of biocide on a regular basis until the plantlife has died.
- After removal of plant growth, by hand, the entire structure should be sprayed with a suitable biocide (Funcosil Algae Rem) in conjunction with a turbo and

nozzle steam wash. This will kill and remove all small surface growth and also remove all soil from the joints.

- Pre-drill all areas of open joints where there are heavy roots present. Insert copper piping at a 90-degree angle into the pre-drilled hole as far as possible. Attach $\frac{3}{4}$ inch clear heavy-duty flexible tubing onto the copper pipe and fill with a very strong solution of a specialist root killer.
- The tubing will act as a reservoir to allow the solution to slowly penetrate deeply into the fabric of the stonework where it can work over a period of time to kill and eradicate all root systems. Return at intervals to top up reservoirs as required.

WALL REPAIRS

At the outset of the project, with the benefit of scaffold access where required, the masonry walls should be inspected by the design team in detail in order that the scope of the repairs are agreed and any adjustment on the schedules made in advance of work being put in hand. Scope of repairs to be assessed include – extent of raking out; extent of re-pointing; lime mortar repairs; consolidation of stone; crack repairs.

Stone should only be replaced where it has lost its structural integrity due to erosion causing serious fracture or spalling, or where it is no longer performing the weathering function for which it was designed and is putting surrounding areas of the exterior and interior at risk.

Repointing should also be carried out where mortar has been lost, leaving open or deeply recessed joints that are vulnerable to further water penetration. This will introduce moisture into the walls causing damage to historic finishes, and also cause damage to surrounding stonework due to freeze/thaw action, or provide opportunities for plant growth that can cause mechanical damage to the stone walls or prevent them from drying out sufficiently.

Other areas of concern are where the joints are soft having lost their structural integrity, or where hard cement repointing is cracked and causing damage to surrounding stones. These are to be carefully raked or cut out using hand tools to prepare them for repointing.

Prior to commencement, trial works for each stage will be satisfactorily executed in the presence of the design team. All specified areas will be carried out to the same standard as the agreed trial panels.

RAKING OUT OF JOINTS

- The raking out of joints must be carried out using small manual hand tools (pointed masonry chisels/quirk). The

diameter of the part of the chisel which enters the joint is to be less than the width of the joint.

- Fine joints will be raked out with a narrow instrument such as a hacksaw blade. Under no circumstances must the use of power tools be permitted for use of raking out joints.
- Raking out will commence mid-joint and work outward toward the arises.
- Joints shall be raked out to a minimum depth of 25 mm or 2 times the width of the joint, whichever is greater.
- All debris and dust are to be removed from the raked joints using compressed air or a stiff bristled brush (ferrous metal brushes must not be used under any circumstances).
- All joints must be squared and not 'V'-shaped to ensure a good contact between the re-pointing mortar and surrounding stone.

RE-POINTING OF OPEN JOINTS

- The bedding and pointing mortar shall be a 3:1 sand: lime NHL 2 mix for larger joints and a lime putty for finer joints.
- The aggregate shall be one third the joint size (normally 1mm down to dust) quartz sand free of - soil, organic matter, soluble salts and other impurities.
- The colour of the new mortar shall be approved by the Design Team. It will be necessary to colour match some mortars for use in particular circumstances.
- The lime will be a hydrated lime free from any impurities and which meets the relevant Irish or European Standards.

MORTAR

- The use of Portland Cement shall not be permitted for this work. All mortars for repairs to the historic masonry including rebuilding of new sections of traditionally constructed walls will be lime and sand mixes as specified in this section.
- Lime for structural repairs should be Naturally Hydraulic Lime NHL or indigenous quicklime.
- There may be instances such as work in areas where a quick set is desirable because of the inherent wet conditions and the need to work in times outside of the ideal temperatures for lime because of the programme.
- Prompt Natural Cement may be sourced for these situations with the approval of the CA.
- Metastar 501 pozzolan will be permitted for situations such as exposed wall tops.
- Hot Mixed Lime mortars using indigenous quicklime as manufactured by Clogrennane, Co. Carlow should be considered for rebuilding. For masonry wall re-building it is proving a much quicker, more robust way of rebuilding rubble stone masonry.

- All lime mortars should be prepared and mixed as recommended in manufacturer's printed guidelines.
- Bags of lime hydrate, natural cement, etc. must be stored off the ground in a clean, dry place and not used outside of the dates recommended on the bags.
- Quicklime should be stored in weatherproof airtight bags/containers.

MIX PROPORTIONS

Hydraulic Mortar: For wall tops

Mix proportions may need to vary depending on the lime + sand but are to be in the range:

- Structural repairs: 1 part NHL 3.5 lime to 2.5 - 3.0 parts graded sharp sand.
- Wall tops and slopes as above but gauge the NHL3.5 with Metastar according to manufacturer's instructions

Gauged Hot Mix Mortar: For exposed wall core face work such as rebuilding sections of stonework, repointing and for pouring into voids

- 1 part Hydraulic lime (NHL5 St Astier or NHL3.5 Roundtower grey):
1 part quicklime (Clogrennane kibbled or powder):
- 5 parts coarse sand (If a silica sand as opposed to a calcareous sand is to be used then substitute 0.5 part for limestone dust). Gauging by (level) bucket including addition of up to 10% 10mm aggregate pebble

Lime Grout to Voids: For exposed top of vault to fill voids between voussoirs

- Coulinex by St. Astier lime grout with fine sand and clean water

MIXING

- The mix shall be prepared using a mortar mill however a conventional cement mixer may be used.
- Measuring of material must always be with a gauging box or bucket.
- Start with an empty mixer, add the dry materials and mix for at least five minutes.
- After five minutes slowly add water until the desired consistency is reached. It is very important not to drown the mix by adding too much water.
- Once the desired consistency is reached, mix for a further 20 minutes. In general lime mortar requires a longer mixing time than cement-based counterparts.

- The mix, to begin with, shall appear rather dry but as mixing time increases the render will become much 'fattier' – the desired mix shall be stiff but workable. If too much water is added the risk of shrinkage will increase and the final strength reduced. Keep the aggregate dry to ensure accurate control of water.
- The use of plasticisers will not be permitted.
- The mortar must be used within two hours, but can be 'knocked back' for re-use.

RE-POINTING

- All debris and dust are to be removed from the raked joints immediately prior to re-pointing using compressed air. Brushing out shall commence at the top of the elevation and work down.
- All raked joints shall be dampened prior to re-pointing using hand sprays. Care shall be taken to dampen the mortar joints not the stone face. A relatively small amount of water is needed for fine joints.
- Where the masonry becomes too wet, then wait until this has sufficiently dried. In warm weather it may be necessary to constantly dampen joints as work progresses using hessian sheets as necessary to provide shelter from the elements.
- Masking tape shall be applied over the joint to prevent staining of the masonry for ashlar work. The joint shall then be slit open with a knife before application of the mortar.
- The re-pointing mortar is to be well compacted into the joints using a suitably fine pointing iron or a flat plastering hawk (the blade of a knife may be used for particularly fine joints).
- The joint is to be finished flush, to agreed sample.
- After a period of time (ranging from a few hours to a day depending on the lime and environmental conditions) the joint shall be beaten with a stiff bristled brush to consolidate the mortar (closing any shrinkage cracks).
- The masking tape is to be removed when the mortar has hardened sufficiently and the faces of the stone shall be left clean and free from any mortar or cement stains. No traces of mortar shall be left anywhere on the exterior of the stone and the mortar shall not exhibit any signs of shrinkage or cracking.

PROTECTION & AFTERCARE OF LIME

- The area/s must be covered with hessian and allowed to dry out slowly over a period of three weeks. The drying temperature shall be controlled and drying must not be forced by introducing excessive heating.
- In hot weather it will be necessary to regularly re-wet the sacking.

- Lime products must not be used in temperatures of 5 degrees or falling.
- Once opened the exposure to air will start to weaken the hydraulic set. Any opened bags left at the end of the day shall be carefully folded over at the top and put into a dry store. In this state the lime will remain useable for a further 2 or 3 days.
- All materials (lime/sand/aggregates) are to be stored in a clean, dry environment where there is no risk of contamination or damage.

RESIN REPAIRS TO CRACKS/FRACTURES

- Fractures will be injected with an approved resin to seal these from the elements. Stone dust to match existing will be used to finish the repair. Under no circumstances must the resin be allowed to come into contact with the outer surfaces of the stone.
- The product shall be a proprietary epoxy resin approved by the CA.
- The surface to be treated is to be sound and free from dust, dirt, oil grease, free water and all other contaminants. The interior of the crack is to be cleaned using a blast of compressed air.
- Mixing of the resin shall be carried out in accordance with the manufacturer's instructions.
- Deep cracks shall be filled using a syringe with inert proprietary filler suitable for use with stone up to within 3-4 mm of the surface.
- Fill crack with crushed stone (to match existing) in epoxy. It will be the responsibility of the contractor to source appropriate matching stone for specific situations (limestone/sandstone etc.).
- When the resin has cured tone repair to match the colour of the surrounding stonework.
- No resin is to come into contact with the outer surfaces of the stone at any stage in the repair process. If this shall occur, then it is to be immediately removed and the area cleaned with an appropriate solvent.
- Finish the repair with crushed stone (to match existing) in epoxy.

STONE REPLACEMENT

Areas of damaged/weathered stone which have been identified shall be replaced as per the following.

- Replacement stone and mortars shall match in terms of species, colour and texture.
- Any variations in the inherent characteristics of the replacement stone or brick shall be brought to the attention

of the CA, and samples demonstrating their range submitted for approval.

- The stone shall not contain inclusions, fissures or bedding structure that will cause excessive differential weathering or cracks to develop.
- Where cutting out is required, this is to be carried out to a depth of at least 100 mm for indents and to the total depth of the block for replacements. The cutting out of the edges may be required to provide an undercut/dovetail key for the repair. It may also be necessary to undercut pockets to provide additional key where the repair tapers.
- Adjacent surrounding stone faces are to be protected from accidental damage.
- Cutting out starts at the centre of the defect and works out towards the edges.
- All original ferrous cramps are to be carefully removed.
- Replacement stonework shall comply with the relevant requirements of BS 5390, BS 8298, BS EN 711-1:2011.
- Stone replacements and indents are to be cut exactly to size off site allowing for a perfect match to the measurements of existing producing a fine interface joint (approximately 1mm). Stones shall be dry fitted and trimmed accordingly prior to installation.
- Replacement stone must faithfully replicate original detailing. Where the original surface was finished by hand chisels, this shall be replicated. Where saw cut blocks are to be used these shall be oversized to allow the face to be worked/dressed back by hand. Weathering of the surface can be achieved by gently rubbing clean sharp sand in a circular motion on the face of the stone.
- All stone faces shall be moistened prior to bedding and the mortar shall be laid evenly on the faces of the stonework.
- The position of the original block is to be maintained.
- The thickness of joint is to match that of adjacent blocks.
- The stone shall be orientated in the correct bedding planes.
- Joints are to be finished neatly to a flush finish with no mortar stains left on the faces of the stones or brick.
- Where the edges of stones are eroded, pointing should be stopped at the right location to ensure that the original joint width is maintained.

DELIVERY & STORAGE OF STONE

- Where available, only stone that has been displaced and salvaged from the site should be used, after its original location and placement is identified. Dressed stone should be properly labelled and stored on pallets for identification.
- Where these are not available, or supply is short, suitable local stone should be sourced, or from the wider region. Imported stone should never be used.

- Where applicable stone is to be dispatched from the quarry or from the yard/ factory only when needed to reduce double handling.
- Stone shall be stored in clean, dry conditions. It shall be stored clear of the ground to prevent the leaching of soil salts and moisture staining.
- The pallets shall be loosely covered using polythene sheeting to protect the stone and brick from wet conditions. This shall be placed over the more normal coverings such as straw or hessian.
- Each stone shall be checked on delivery and marked off on a copy of the fixing schedule, carefully examined for damage and, if undamaged, stacked in the correct sequence for fixing and in such a manner that its identification letter and number are clearly visible.

STORAGE OF FRAGMENTS

- Stone fragments shall be relocated to a suitable area of the site to be identified by the Design Team.
- Two separate areas shall be identified – 1) storage of worked/carved stone, 2) storage of unworked stone suitable for re-use in repair of the historic walls.
- The contractor shall allow for transportation of the fragments within the site (by hand and wheel barrow) and the laying of a weed suppressing membrane to receive the fragments.
- The contractor shall number carved stones using a water based medium as per a pre-agreed recorded system (tbc with the Design Team) and shall record these in simple excel spreadsheet.

SOFT WALL CAPPINGS

The straight edges and slightly tilted profiles of the wall heads at Kilcloony Castle are suitable for soft wall cappings. Turf selection and application on wall should follow general guidelines set out by Historic Scotland in Soft Capping in Scotland Vol.1 Research Report concerning plant species variety.

- Prior to the establishment of soft capping, the existing wall top to be capped should be thoroughly assessed. Any cracks, voids or hollows should be repaired and consolidated using salvaged stone and lime and sand mortar.
- The ideal time for soft capping to be established is between October and February, as generally sufficient rainfall can be guaranteed during this period to ensure that the turf is watered frequently.
- Freshly laid turf is very susceptible to drying out, especially during the first three months. It is important to ensure that facilities for watering the turf are arranged should soft capping be undertaken at other times of the year.
- A bed of soil should be installed on top of the wall head, compacted and moistened in order to receive the turf.
- Source local clay and mix vigorously with sand to form malleable sticky mix. This is a water impeding layer to slow water penetration into top of wall and also provide a solid but soft base to sod.
- The clay/sand bed should be moist enough for particles to bind together and reduce significant losses down the wall, but not wet.
- Grassy turf (rich in Red Fescue sourced locally outside of archaeological or ecological areas) should be used.
- Cut sod in large pieces (as manageable) and lay on top of wall and clay just tucking ends under and pinning with short lengths of bamboo or cut sticks that will not self-root. Minimum soil depth to sod to be 150mm.
- The ends of several turfs should be laid *upside down*, along either side of a section of wall top. The ends of each turf section should be left to hang down the wall, sufficient to cover the wall head when folded back over and pinned down (therefore over double the width of the wall capping).
- It is important that the turf is firmed down over the clay/ sand bed to ensure good contact between the root mass and the soil; any remaining air pockets inhibit the emergent root growth and will cause them to dry out and perish.
- Edges of turf should overhang the wall head with a slight bulge to throw of rainwater off wall along the edges.
- Water sod though dry spells for rest of summer season.
- Once yearly check sod for self-seeded woody stemmed plants and either pull or apply topical weed killer locally.

TEMPORARY SCAFFOLD PERFORMANCE SPECIFICATION

GENERAL

Before starting work:

- Examine all available information.
- Survey the structure, site and surrounding area.
- Submit method statements to the Construction Manager covering any relevant matters raised in the design brief.
- Ensure that all statutory notices have been given and licenses obtained.
- Submit detailed proposals including drawings and calculations for all systems to the Contract Administrator, and resolve any amendments proposed.

CODES OF PRACTICE

- Design scaffold in accordance with BS EN12811-1:2003
- Workmanship to be in accordance with BS EN12811-1:2003

DESIGN LOADING

- Design wind loads to be in accordance with BS EN12811-1:2003
- Design scaffolding and working platforms for loading specified by the Engineer.
- Provide working platforms at each lift.
- Provide safe access and safe places of work in the scaffold for inspection and repair of damaged areas.
- Ensure that working platforms are suitably close the building so as not to allow material to accidentally fall from one level to the next.

COMMENCEMENT

Before starting work, carry out a visual inspection of the site and note areas that look unstable and may require special care of operatives during erection of the scaffold. Another inspection should be carried out following the removal and disposal of the existing hoarding and the site secured at all times.

MAINTENANCE OF SCAFFOLDING

Regularly inspect and maintain scaffolding, making good ties, wedges, connections, corrosion protection, etc. as necessary.

STABILITY

- Design scaffolding to be self-supporting and not reliant on being tied to the building.
- Provide bracing to the exterior of the scaffold, so as not to inhibit any works.

SAFETY

- Operatives must be appropriately skilled and experienced for the type of work
- Site staff responsible for supervision and control of the work are to be experienced in the methods of erection and maintenance of support systems to be used
- Examine and note the contents of the pre-contract health and safety file before commencing the work.
- Prevent access of unauthorised persons onto scaffold. Leave safe outside working hours.