

CBL522 – DEMOLITION WORKS, ALPHA HOUSE, WYTHENSHAW

OUTLINE METHODOLOGY

EXISTING SITE

The site comprises of a derelict 1970's 8 storey office building with a single storey section to two sides. There is a high-level bridge from the adjacent building the other side of Wavel Road which leads to a fire escape staircase, separate from Alpha House. Alpha House contains a sub-station which is to remain.

North Centron House and Wavell Road with commercial office space and residential houses beyond (Woodfield).

East Wavell Road with commercial office space and residential houses beyond (Woodfield).

South Derelict building (Former Bingo Hall)

West Rowlandsway with Restaurants and shops beyond

Centron House Structure: (Northern site boundary)

- A section of the 2nd floor of Centron House bridges across Wavell Road, the 4no columns of this structure are located within the northern boundary of the Alpha House site. This structure (Centron House) will not be affected by the demolition of the adjacent single storey section of Alpha House or the demolition of Alpha House. The location and proximity of Centron House will be considered when developing the demolition methodology in this area.
- (The external condition of this section of Centron House will be photographed and recorded prior to commencing demolition works in this area). The structure will be internally excluded and protected from the Alpha House site using heras fencing.

Centron House fire escape:

- Within the northern area of the site there is a fire escape staircase from the Centron House structure that goes to ground level. The ground floor doors of the fire escape open out directly onto the footpath of Wavell Road. This fire escape will remain in use throughout the project. The area on Wavell Road outside the fire escape doors will be kept clear at all times.

Substation (Located within the footprint of Alpha House, Ground Floor Southern Elevation)

- There is a single storey substation on the ground floor of the southern elevation of Alpha House. To prevent accidental damage, hand demolition techniques will be used in the vicinity of the sub-station to separate and form a physical gap between the substation structure and the to be demolished sections of Alpha House.
- The single storey section of the building adjoining the substation will be carefully demolished by hand to separate and form a physical gap from the substation structure.
- The section of Alpha House above the ENWL Substation will be carefully demolished one floor at a time (floor by floor).
- 24 Hour Emergency access to the substation will be maintained for ENWL personnel at all times.

METHODOLOGY

Scope of Works

Prior to commencing works a structural engineer will carry out a full appraisal of the building.

The demolition works generally comprise, but are not limited to, the following:

Phase 1:

- Site set up & installation of welfare facilities.
- Securing of the building to prevent further unauthorised access and bird/ pigeon activity.
- Needle sweep & sharps removal.
- Refurbishment & Demolition Asbestos Survey.
- Immediate asbestos remediation works following review of existing Asbestos Survey.
- Removal of Pigeon / Bird Guano.
- Soft Strip out – Loose debris, fixtures, fittings & furniture.
- Complete UXO Detailed Risk Assessment.

Phase 2:

- Asbestos Removals.
- Protection of existing ENWL electricity substation.
- Tree protection works and associated tree works/removals.
- Decommissioning and removal of existing plant and equipment.
- Pre-Demolition condition survey.
- Pre-Demolition bird inspection by Ecologist.
- Demolition of building superstructure including all associated temporary works to enable safe demolitions.
- Demolition and grubbing substructure including existing foundations and piling.
- Backfill and compaction of any existing voids on site.

(Other elements of works may be required as the works progress).

SITE ESTABLISHMENT

Temporary welfare facilities will be provided on site, generally in the form of 'portacabin' type units, which will be sited within the grassed area to the west of the site. These facilities will be in accordance with the requirements of CDM 2015, specifically Regulations 4(2)(b), 13(4)(c), 15(11), Schedule 2, HSE publication 'Provision of Welfare facilities during construction work' (CIS 59), and the Workplace [Health Safety & Welfare] Regulations, commensurate with number of personnel on site.

Welfare units will generally comprise the following items:

- 1 x Canteen
- 1 x Drying Room
- 1 x Office
- 1 x Toilet Block
- 1 x Store

The welfare facilities will be maintained clean and in good order by the workforce. Electricity will be provided by means of a generator. The water supply will be from via the existing site services, in agreement with the client. Heras fencing will be placed around the compound.

Site Security

A 24hr remote monitoring security system will monitor the site out of hours. The remote monitoring security system is linked via 4G Mobile phone signal to a remote monitoring station which is monitored 24 hours a day (when the alarm is armed). When an intruder is detected, the motion detection camera automatically records a short video and sounds an alarm. The video is sent instantly and automatically via email to the monitoring station who will immediately inform CBL's appointed Security Company. The security company will immediately deploy a patrol to site to investigate the activation.

Please Note: Phase 1 Works includes for securing of the building to prevent further unauthorised access and bird/ pigeon activity. Broken windows and opens at all levels (including ground floor) will be robustly secured to prevent unauthorised access

ACCESS & EGRESS

Access to the site is to be via the existing gate on Rowlandsway. Pedestrian access will be via a sperate gate off Rowlandsway. Access to the site will be strictly controlled by Connell Brothers gateman. Additional access to the site will be via Wavell Road.

Access will be maintained for the Clients personnel, emergency services and statutory authorities at all times. (Access to the substation will be maintained at all times.)

HGV's will drive into and out of site in a forward gear. All vehicle movements on and off site will be carried out under the instruction of a Traffic Marshall. HGV's must follow the marked internal site traffic routes. Pedestrian and vehicle routes will be kept separate on site.

Wherever practical, a one way system will be utilised for all vehicle movements. Where reversing a vehicle is unavoidable a banksman must be present to direct the driver.

When not in use the vehicle access gates will be kept closed and locked to prevent unauthorised access.

External of the site suitable signage will be placed either side of the main entrance warning other road users and pedestrians of the demolition site entrance. When required road plates will be used to protect the existing pavement crossover surface. All vehicle movements on and off site will be controlled by a vehicle marshal.

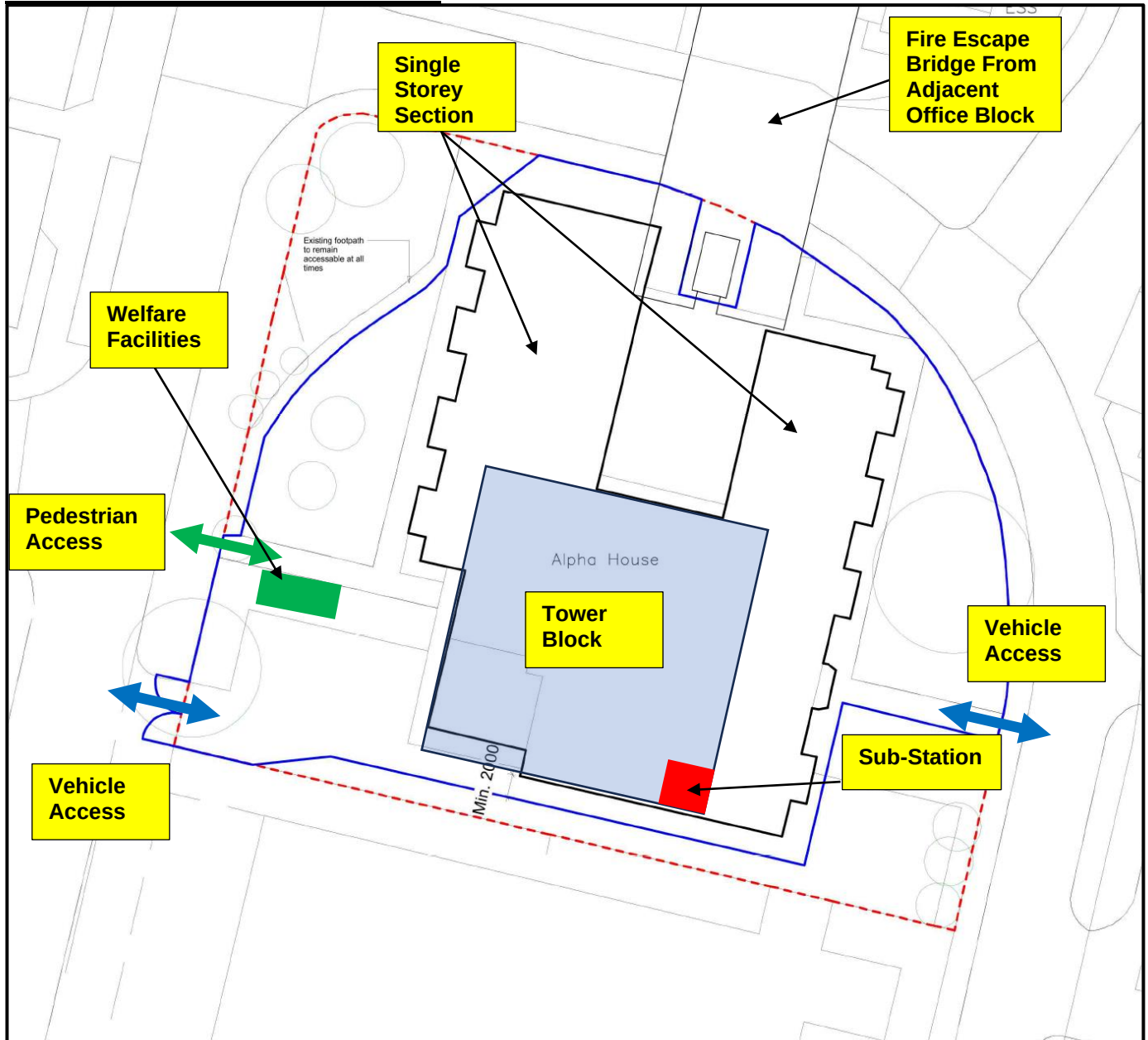
Vehicle and pedestrian routes internal of the site will be kept separate and demarcated using barriers and signage.

HGV's must turn on their flashing warning lights when approaching the site entrance on Rowlandsway, their flashing lights must remain on during all movements (to, from and onsite) until they exit site back on to Rowlandsway.

Delivery / Collection of demolition plant and equipment will be scheduled "out of hours" to avoid disruption to the surrounding road network. A sufficient number of Traffic Marshalls will be on hand to safely manage traffic movements when the plant is being delivered into site.

When removing materials off site HGV movements will be planned and managed. To avoid disruption to the adjacent resident's HGV's will not be allowed to park or queue in the roads surrounding the site.

SITE LAYOUT AND ACCESS ROUTES



LIAISON

The site manager, or his deputy, will carry out the role of liaison manager for the project and his contact details will be prominently displayed on the perimeter fencing. He will be the first point of call regarding any issues with the day to day running of the project at site level i.e. if access is required to the demolition site by statutory authorities etc.

INDUCTIONS

All staff and operatives working on the site will be formally inducted by Connell Brothers prior to commencing work on site. Visitors to the demolition site will be required to attend a Connell Brothers induction and will be escorted by a member of staff at all times when on site.

All operatives on site will have asbestos awareness training regardless of their role.

PERSONAL PROTECTIVE EQUIPMENT

All personnel working on site will be required to wear a hard hat, safety boots, hi-viz jacket/vest, gloves and light eye protection as a minimum requirement. All operatives carrying out hot cutting will also wear flame retardant coveralls, gauntlets and suitable eye protection.

A live water supply will be required for use throughout the demolition works.

SERVICES

Services within the demolition projects may include, but not be limited to:

- Gas
- Electricity
- Water
- Telecommunications
- Client process services

We have received confirmation from the Client that the electricity has been disconnected.

The client has asked that CBL arrange for the gas supply to the building to be disconnected / terminated.

Regardless of isolation documentation, all care will be taken when carrying out demolition works to verify the actual status of services within the demolition area(s). Any areas of concern, ie suspicion of possible 'live' service, will be identified to the Client, verification of the status of the service undertaken and, depending upon the result of the verification, appropriate action taken.

If / when the slab is to be removed, a CAT scan will be carried out prior to work commencing.

There is a LIVE HV Substation built into the structure of Alpha House, access via the southern elevation. The substation is to be retained and kept operational. It will be protected at all times during the works.

NOISE CONTROL

Due to the nature of the works, it is inevitable that noise will be generated. All necessary measures will be taken to keep noise levels and the exposure of all persons, to the absolute possible minimum, which where practicable will not exceed permitted exposure levels. All endeavours will be made to reduce the impact of noise caused by the works.

Demolition works will be carried out utilising Connell Brothers fleet of modern plant incorporating best practices for noise emissions. Modern hydraulic breakers (city type) will be used, these have been specially designed with reduced noise emissions for use in city environments. In addition, wherever practicable hydraulic concrete crackers will be used to demolish concrete instead of hydraulic breakers.

Noise will also be kept to a minimum by ensuring all plant on the project is serviced in compliance with the manufacturer's specifications. Where noise defects on plant cause levels to be increased, the Site Manager will take immediate action to reduce those levels to a safe limit or protect workers from hearing damage.

We shall also follow the code of practice "Noise Control on Construction and Demolition Sites". Copies of the appropriate regulations and guidance notes will be kept on the site. Any necessary personal protective equipment will be acquired and provided as required.

The Site Manager will ensure that supplies of ear defenders or other hearing protection is made available where it is not possible to reduce the noise level to a safe limit. On issue to operatives and others, the Site Manager will give instruction on their use and maintenance. Employees will ensure that any equipment supplied for the protection of hearing is properly used and maintained.

DUST CONTROL

Good working practices and liaison on the works to be carried out and will be employed to cause as little noise/dust disturbance to others. Dust emissions resulting from the works are kept to a minimum by adopting the following control methods:

- The use of modern plant fitted with a powered water suppression system that delivers a fine water spray at the face of the tool during demolition activities.
- Dust will be suppressed by damping down at source using a fine water spray (Dust Bosses – purpose-built state of the art machines that spray a fine water mist in a selected direction to suit the prevailing conditions).

- Handling of potentially dusty material will be kept to a minimum.
- Wagons will be sheeted over.
- Affected roadways will be regularly swept as required.



Dust Boss producing a fine mist to suppress dust
Town Centre Demolition

Excavator fitted with water nozzles at the tool face
to produce a fine water spray to suppress dust
Town Centre demolition.

WASTE

All general waste and demolition arisings will be removed as the demolition works progress and will not be accumulated on site. All arisings removed from site will be accompanied by the relevant waste transfer documentation.

All hazardous materials and their containers to be regularly disposed of off site to a licensed waste facility approved by a Waste Regulation Authority and in accordance with relevant regulations.

All reasonable precautions will be taken to prevent pollution of the site, works and general surrounding areas and environments.

All Asbestos present on the site or found during work will be removed under current legislative requirements, (Control of Asbestos Regulations). Upon completion of asbestos removal in phased areas, clean air certificates will be issued to allow for soft strip works to proceed.

PIGEON GUANO

Pigeon guano and carcasses will be removed by trained operatives wearing suitable PPE.

Work area Set Up (Exclusion Zone)

Prior to commencing removal, the work area will be cordoned off to exclude those operatives not involved in the task. Warning signage will be clearly displayed at all access points to the working area.

Decontamination Area Set

The "Decontamination Area" will be set up in a suitable location on the floor close to the works area and will include the following:

- Polythene sheeting to cover the floor area
- Bucket with clean water
- Sponge and disposal clothes
- Waste bags

Barrier tape and suitable warning signage will be used to demarcate the area.

Pigeon / Pigeon carcasses removal

The Site Supervisor to ensure operatives employed on this task are equipped with the following additional PPE:

- Type 5 / 6 disposable overalls with hood
- Respiratory protection – FFP3 Disposable / SR100 Half Masks
- Gloves (Rubber / Plastic)
- Goggles

Glove / sleeves and boot / leg joints will be sealed with tape before entering the work area.

Work areas will be cordoned off to prevent unauthorised access. Operatives will dampen down the pigeon guano and carcasses in the work area prevent debris and any pathogens becoming airborne. Droppings will be dampened down using a hand-pressurised spray of diluted (1-50) PX – Ornikill. Particular attention will be given to bird carcasses and nesting materials. The work areas will be re – sprayed regularly, pigeon excrement must not be allowed to dry out.

Operatives will lift the pigeon excrement / dead bird carcasses from the floor area using hand shovels. All waste will be placed it into plastic sacks for disposal. Loose items of furniture and rubbish will be disposed of intact rather than cleaning being attempted, if this is not practicable the item will be cleaned as far as reasonably practicable using hand held scrappers and or rags.

When they are full, the sacks containing the pigeon excrement will be “Swan necked” and sealed using duct tape. Waste sacks will be carried from the work area and placed into the waste skip.

These repetitive works will proceed through the affected areas of each floor, of each building until the works are complete.

Upon completion of the works the polythene ground sheet within the “Decontamination Area” will be folded in on itself, ensuring all debris and any dust is contained. The parcelled ground sheet will be disposed of as waste.

When stopping for breaks and at the end of each day operative must decontaminate properly.

Operatives will clean their boots and overalls with a damp rag before removing their overalls and placing them in a waste bag. Operatives will then remove and clear their mask and place the pre-filter and filter into the waste bag along with the overalls. Bags will be sealed and double bagged for disposal.

Operatives must decontaminate at the end of each shift and before breaks. Decontamination will consist of:

- Cleaning boots using a damp rag
- Cleaning overalls using a damp rag.
When using damp rags, clean using a ‘Patting Action’ so as not to disturb any fibres
- Peel of disposable overalls. They should be removed so they end up inside out. The overalls should be placed into a waste bag.
- Finally remove and clean your mask. Place pre-filter and filter into the waste bag along with the overalls.
- Once the waste bag is full it must be taped closed. Bags will be placed inside a bag for disposal.

Once decontamination has been carried out, operatives must wear their Hi Viz waist coat and safety helmet when transiting back to the welfare facilities.

Throughout the works operatives will remain vigilant; in case they uncover previously undetected asbestos containing material.

ASBESTOS SURVEY AND REMOVAL

We have included to carry out a demolition refurbishment survey to the building within our tender quotation. (The asbestos survey will be carried out in accordance with HSG 264 Asbestos: The Survey Guide). Demolition refurbishment surveys will be completed and reviewed prior to soft strip works commencing.

Please note: The asbestos surveyor will be unable to access the area behind, above or below any ACM's / suspected ACMs identified by the survey works, they are unable to survey areas below ground / slab level. We have not included for any costs or time associated with the removal of any ACMs identified by the demolition refurbishment survey or for the removal of any additional ACM's that maybe uncovered by future soft strip or demolition works.

Once the Survey is available, CBL will provide costs for the removal of any asbestos containing materials identified within the survey.

To note, Connell Brothers Limited are HSE Licensed asbestos removal contractors, we hold a full 3 year unrestricted / unconditional asbestos removal license (Issued by the HSE's Asbestos Licencing Unit) and will have complete control and flexibility of all labour and plant resources required for both the asbestos removal and the demolition works on this project. This removes any reliance on third party Asbestos Sub-Contractors.

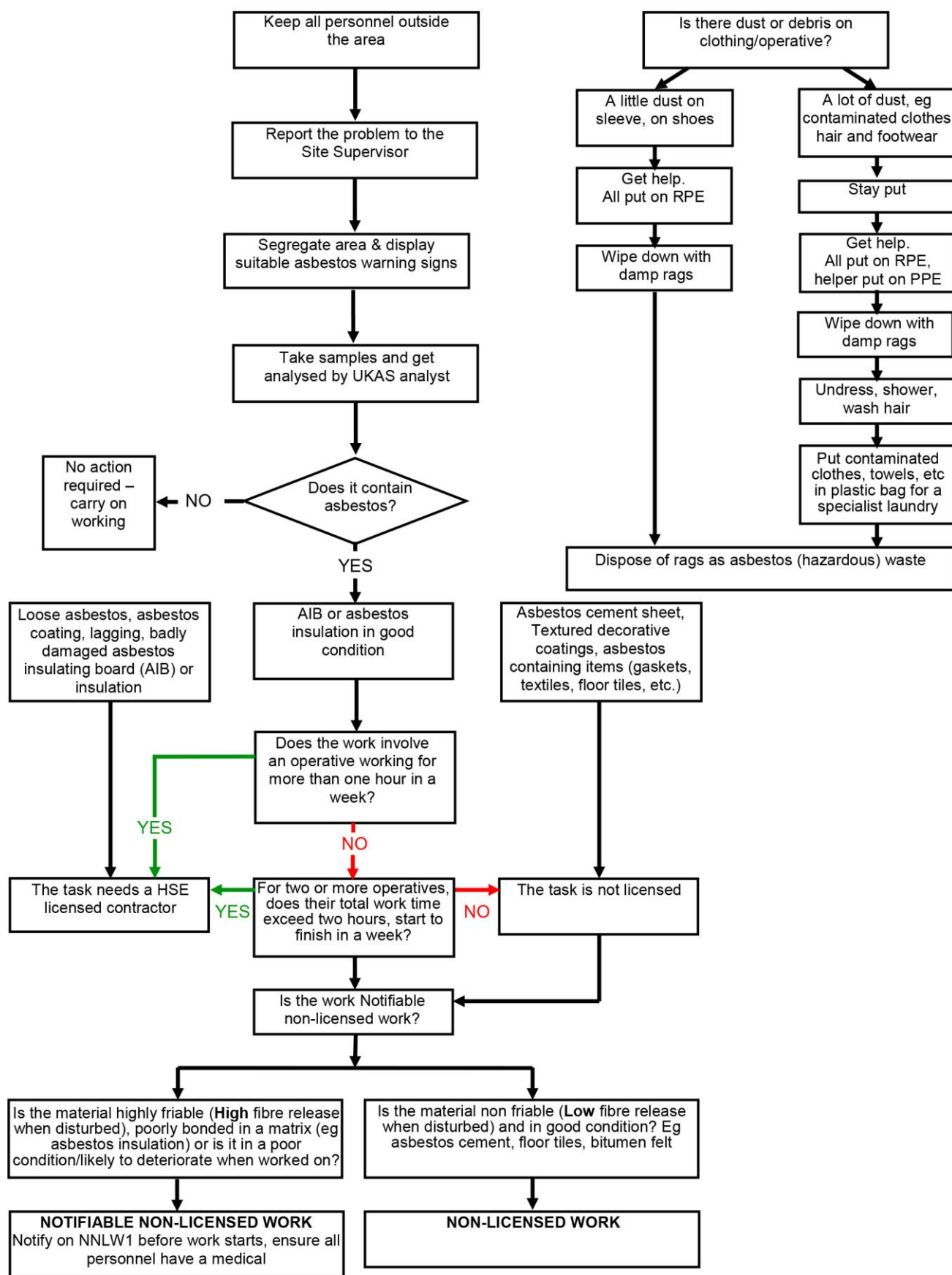
CBL will have complete control and flexibility of all labour and resources required for both the asbestos removal works and the demolition works on this project. The discovery of previously unknown ACM's during a demolition project can cause costly delays. By controlling "in house" the pivotal asbestos removal works, CBL eliminate the problems and cost associated with placing a heavy reliance on 3rd party asbestos removal contractors.

Connell Brothers Limited (CBL) and are long standing members of ARCA (The Asbestos Removal Contractors Association) and the NFDC (National Federation of Demolition Contractors).

All operatives employed on the project will, as a minimum, receive asbestos awareness training. Throughout the soft strip and demolition phase of the project operatives will remain vigilant in case any previously undetected ACM's are uncovered.

ASBESTOS – UNEXPECTED DISCOVERY

IN THE EVENT OF FINDING UNIDENTIFIED MATERIAL THAT COULD CONTAIN ASBESTOS
STOP WORK IMMEDIATELY AND FOLLOW PROCEDURE



If the presence of asbestos is confirmed, works must be carried out by trained, experienced/competent personnel, records **MUST** be maintained, appropriate notifications carried out and new/revised risk assessments and Method Statements/Plans of Work (RAMS) generated

Flowchart based on guidance/information within HSE publication Asbestos Essentials, specifically a0 - Advice on non-licensed work with asbestos and em1- What to do if you uncover or damage materials that may contain asbestos

SOFT STRIP

Prior to any soft stripping activities being carried out all operatives will attend a toolbox talk highlighting the specific risks associated with the building and the possibility of asbestos, hazardous materials, chemical and other contaminants being present within the buildings.

Soft Strip works will only proceed in areas which are not affected by the asbestos removal works. The Site Manager will section off the building after liaising with the Asbestos removal supervisor to ensure soft strip teams do not enter areas of asbestos removal.

Operatives will work carefully and diligently during the Soft Strip Operations in case the discovery of any concealed Asbestos materials. Should any Asbestos material be discovered, the areas will be cordoned off and the Clients representative immediately notified for further action.

During the Soft Strip Operations good housekeeping procedures will be employed to ensure that all escape routes out of the building do not accumulate with debris.

Soft stripping of doors, door frames, skirtings, ceilings, carpets and the like will be carried out by Operatives equipped with suitable P.P.E. and handheld tools. Access to work at height will be by mobile scaffold platform/MEWP as required. Soft strip will be removed in manageable pieces and transported manually from the building via existing doors before being placed in previously positioned skips. Where soft strip is removed from above ground floor level then a suitable window will be removed, and the scaffold drop chute utilised to drop items directly into a skip.

As part of Connell Brothers Limited Environmental Policy soft strip material is segregated into individual waste streams at source and recycle as much material as practically.

- a) Timber will be removed for re-cycling.
- b) Metals – cable will be removed from site for further processing and recycling.
- c) Materials that cannot be recycled will be despatched to a licensed tip facility or Waste Transfer Station with the appropriate documentation.

All waste leaving the site will be accompanied with a Duty of Care / Waste Transfer Note.

DEMOLITION

All demolition method statements will be generated by the Technical Manager and/or the Project Director, both of whom are full members of the IDE (Institute of Demolition Engineers).

Demolition of the building will be carried out using specialist demolition specification excavators of varying sizes equipped with a variety of specialist attachments to suit the type of structure being demolished.

All demolition will be demolished in accordance with BS 6187:2011 Code of practice for full and partial demolition with particular attention paid to Section 13: Safe working spaces and exclusion zones. Prior to the demolition works commencing an exclusion zone will be formed using suitable Heras fencing and signage attached (see below).

Prior to demolition works commencing, Connell Brothers will inspect each structure to assess the condition and produce a detailed, specific method statement.



MAIN DEMOLITION

Single Storey

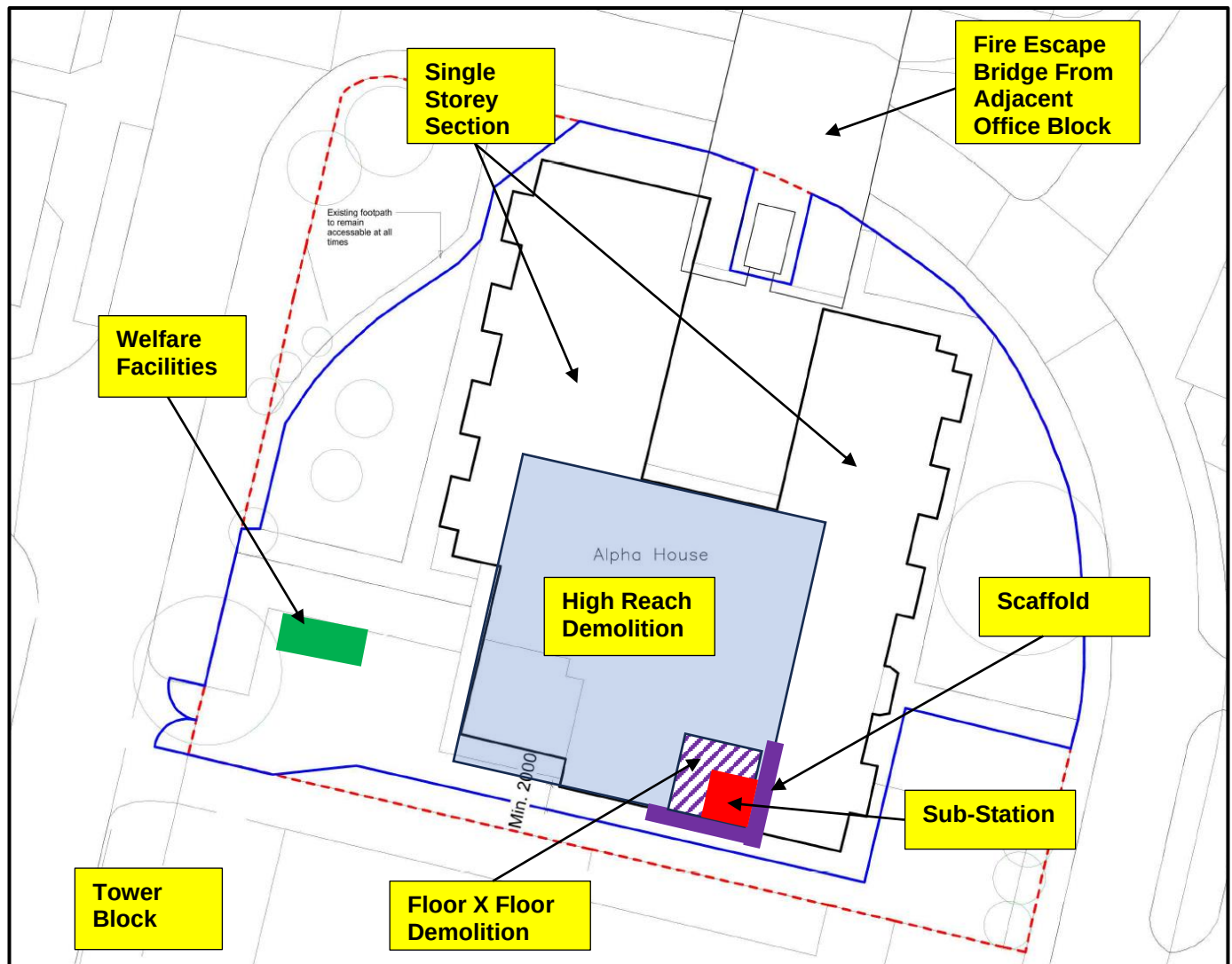
The single storey section appears to be of a steel frame construction with precast concrete walls and roof planks.

Demolition will be carried out by an excavator utilising a shear and a pulveriser. The excavator will remove the external cladding to a bay and then shear through the roof steel beam to gain access to the roof planks, these will then be pulverised insitu. Once removed the remaining steel frame to the bay will be removed using a shear. Demolition will continue in a piecemeal manner working along the length of the single storey sections until they are fully removed.

Hand demolition techniques will be used in the vicinity of the retained sub-station to form a gap between the structures to facilitate mechanical demolition and prevent accidental damage to the retained section.

Main Demolition

The main tower block comprises a reinforced concrete frame with precast concrete panels to the external walls and a clay pot and beam flooring system. Demolition will involve the use of two techniques, floor by floor demolition and high reach demolition.

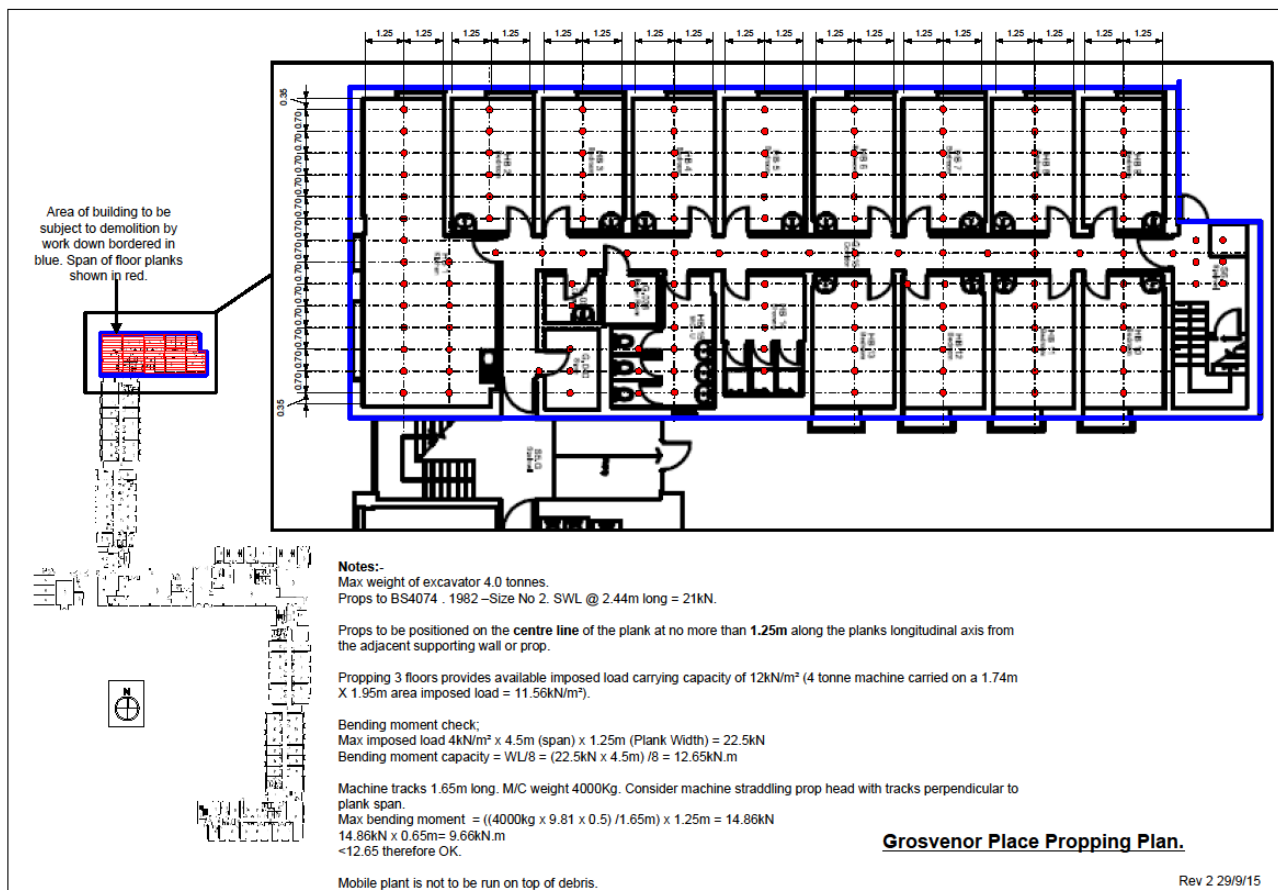


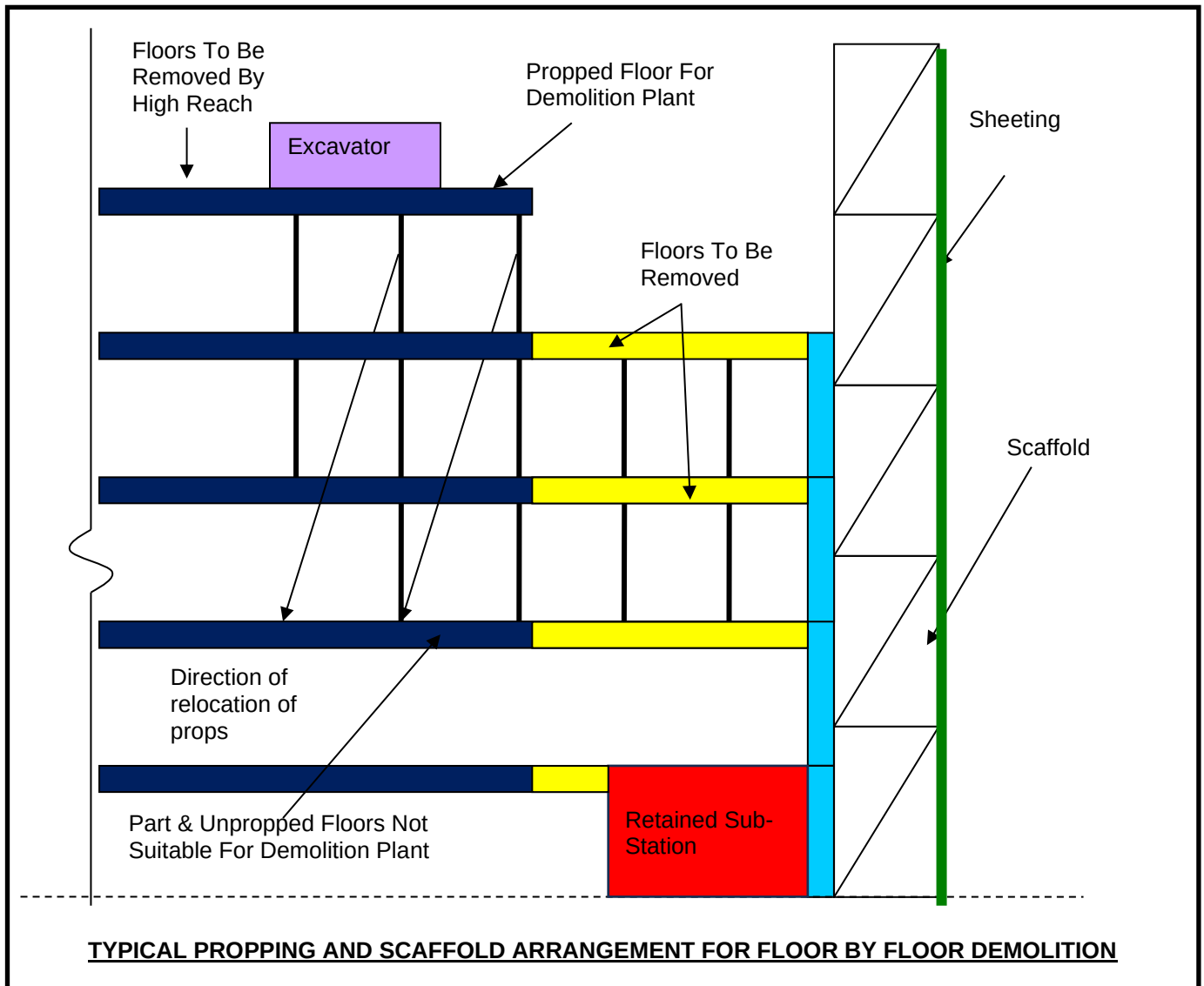
Floor by Floor

A section of the perimeter of the building will be clad in scaffold, sheeted with Monaflex, to its full height. Props will be installed at the required floor levels and a mini excavator equipped with a pulveriser and breaker will be lifted onto the roof by crane. Lifting operations will be managed by Connell Brothers in-house Appointed Person and a full lifting plan developed prior to works being carried out. The site lift supervisor will ensure lifting is carried out in accordance with this plan.

The excavators will proceed to demolish a section of the roof slab allowing the arisings to drop to the floor below. Once the roof section has been removed the excavator will relocate to the floor below and the roof beams and columns to the corner will be removed to the bay. Arisings will then be cast onto the remaining floor slab to be removed during high reach demolition which will be carried out at the same time. The excavator will then break out the floor slab to the corner of the building repeating the process for the roof slab. Demolition of the corner will continue in a floor-by-floor manner as described above until the corner has been demolished to the top of the sub-station. The section of first floor around the sub-station will be carefully broken out and the sub-station separated from the remaining building.

Below is a sketch showing the typical arrangement of the props, excavator and scaffold for floor-by-floor demolition.





High Reach Demolition

The main section of the tower will be demolished using high reach demolition techniques in conjunction with the floor by floor demolition.

An exclusion zone will be formed around the tower section as shown below:

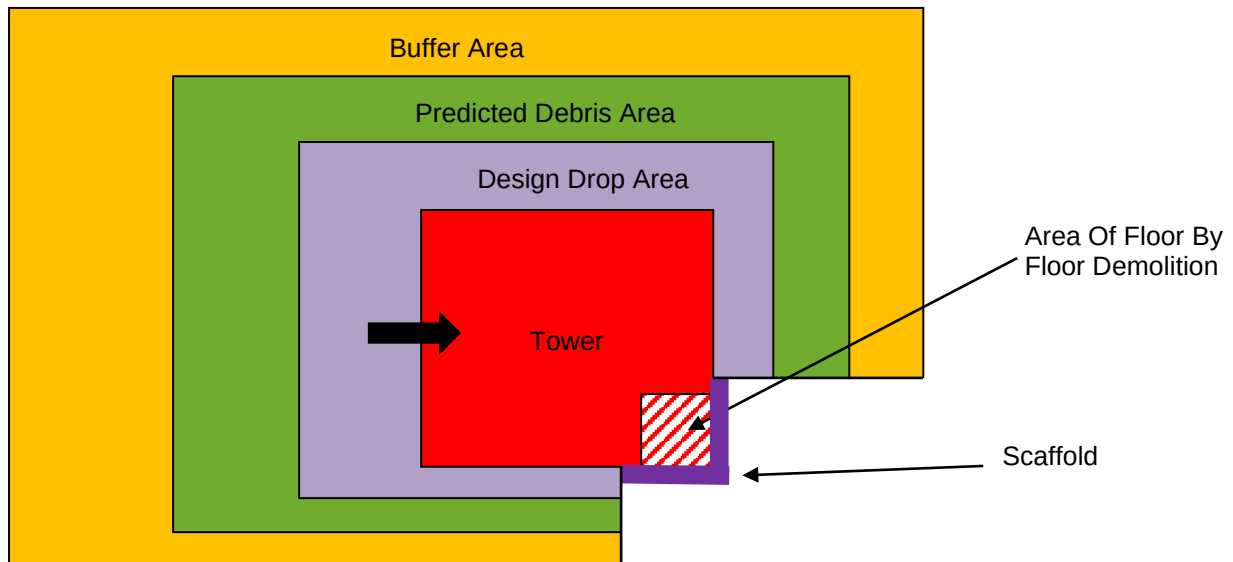
Designed Drop Area – the area where the principle mass of the building is planned to drop.

Predicted Debris Area – the area where debris resulting from the demolition are expected to travel and come to rest.

Buffer Area – the area allowed for unpredictable events. Persons outside this area are safe from the effects of the demolition activity.

These zones are extended on the side the high reach excavator is operating from.

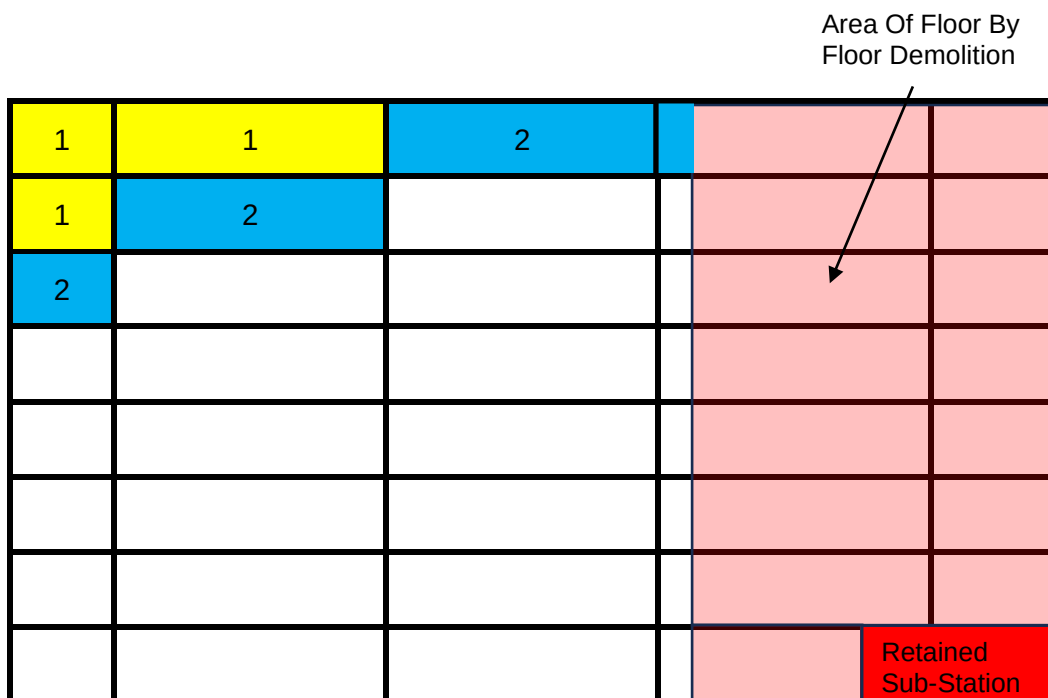
An exclusion zone (buffer area) will be erected around the tower using Heras fencing panels. Panels will be fitted with debris netting to aid in the containment of any dust.



Direction of high reach demolition ➡

The high reach excavator will commence demolition of the tower on one elevation by removing the external wall panel and window to the first bay of the top floor. Once removed the roof beam and roof section to the flat will be pulverised. Demolition will continue along the elevation of the building and into the first bay until the first section of roof has been demolished. Arisings will be allowed to drop to ground level in a controlled manner. The first bays of the next floor will be demolished in a similar manner as described above.

Demolition will then continue in an inwards and downwards manner working down the block maintaining an angled work face as shown below to ensure stability of the structure. The arisings will be allowed to drop to ground level in a controlled manner at the working face and will be cleared from the floors as demolition proceeds to avoid overloading. The arisings will be cleared from the work face by the use of excavators as the works proceed.



Sequence of high reach demolition continued as above in an angled manner for stability

GROUND FLOOR SLAB, FOUNDATIONS & FINISHES

Once the block has been demolished the arising will be cleared to expose the ground floor slab. The slab will be removed by excavators equipped with hydraulic breakers.

Commencing at one corner the slab will be broken out in a systematic manner working across the footprint of the building. The slab will be broken into suitable sized sections and removed by an excavator equipped with a bucket. As the slab is removed the foundations including ring beams will be removed to a depth of 1.2 m below top of slab using hydraulic breakers.

Following the completion of the demolition works the ground will be graded to adjacent levels and voids backfilled with demolition arisings to remove any trip hazards.

The above is an outline methodology designed to give an overview of the demolition works. Should we be successful with our tender then site specific method statements will be prepared for each element of the works.