NOISE, DUST AND VIBRATION MANAGEMENT PLAN (NDVMP)

Company	Keltbray	Contract No.	TBC
Site Address	25 Parker Street, London, WC2B 5PA		
Document No.	KBY_T16017 _NDVMP_001	Revision no.	00
Start of Project	June 2016	Review arrangements	Reviewed every 6 months

Revision History

Document Number	Revision No.	Issue Date	Author	Description of Modifications
KBY_T16017_NDVMP_001	00	01/04/2016	I. Tranole	Draft

This Revision

	Print Name	Signature	Position	Issued to:
Author	Ioan Tranole	Ioan Tranole	Monitoring Co-ordinator	Site Management Team
Checked by	Altin Lleshi	A. Lleshi	Environmental Manager	Project Director
Approved by	Andy McClafferty	A. McClafferty	Project Director	Client

Status of this Revision

Overall Approval Status	Yes	No	Date
CAT A - Accepted for implementation. Work may proceed as planned.	**X**		01/04/2016
CAT B – Not accepted for implementation. Resubmission required.			
Date returned to Contractor:			

SIGN OFF BY (Project Manager):	Print Name	Sign	Date		
	Shane Grealy		01	04	2016

DOCUMENT INFORMATION

Related documents

Document Title	Owner
Construction Phase Health & Safety Plan (CPHSP)	Keltbray
Site Waste Management Plan (SWMP)	Keltbray
Prevention Incident Response Plan (PIRP)	Keltbray
Traffic Management Plan (TMP)	Keltbray

Abbreviations	The abbreviations listed below may be used in this document:
Ambient Noise	Normal background noise levels, which varies dependent on the location.
Consent (discharge)	A statutory document issued by the Environment Agency under Schedule 10 of the Water Resources Act 1991 or the Scottish Environment Protection Agency under the Control of Pollution Act 1974 to indicate any limits and conditions on the discharge of an effluent to controlled water.
PM	Project Manager
dB (A)	Decibel aura - sound pressure level that corresponds to the frequency response of the human ear.
EA	Environment Agency
EHO	Environmental Health Officer
EMP	Environmental Management Plan
EMS	Environmental Management System to EN ISO 14001
Environmental aspect	Element of an organisations activities or products or services that can interact with the environment
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisations environmental aspects
SAC	Special Area for Conservation
Section 60 notice	Issued under the Control of Pollution Act 1974 to control noise pollution and nuisance. If issued the conditions must be complied with until revoked or successfully appealed against
Section 61 consent	Issued under the Control of Pollution Act 1974 to permit noise on site.
PC	Keltbray Ltd
LA	Camden Council

TABLE OF CONTENTS

1. Introduction

This document describes how the Client and Keltbray aim to approach the management of noise, dust and vibration emissions resulting from the works at Parker House and is part of the Environmental Management Plan (EMP) produced for the deconstruction phase of works at this project. Throughout this document the term 'the project' refers to the demolition and associated works as defined in the scope below of Parker House and does not encompass the full redevelopment scheme (i.e. construction of new buildings).

This document has been produced due to the sensitive nature of the site, specifically the proximity of sensitive receptors and concentrates specifically on noise, dust and vibration. A separate document has been produced (EMP) for the project***. Parker House 'Environmental Management Plan'*** which describes and addresses environmental considerations for this project not covered in this document.

The content and layout of this document has been designed to insure full compliance with to date Code of Practice for Deconstruction and Construction Sites ***"Seventh Edition – May 2013"***, applicable British Standards and relevant planning conditions to the demolition works (see scope below).

1.1. *Location of Works*

The project is located at 25 Parker Street, London, WC2B 5PA.

The site consists of the main building, comprising of three block joined together by hallways and stairs, there are two levels of external link bridges also connecting the three wings.
The three main wings consist of ground , fist second and third floors covered by a flat roof and raised sky lights. The main block also has two small pitched roof structures that project approximately 3 meters above the flat roof.
The main block is flanked on rear and each side by several small single story buildings that are either attached or adjacent to adjoining neighbours boundary walls The façade of the three main wings and the two single story buildings to the east and West of the main blocks on Parker Street will be retained.
Parker Mews is situated to the west of the main block, the Mews is currently used as an outdoor recreation and utility space by the residence of Aldwych Buildings and the Aldwych workshops.
There are two small low level buildings that for Part of the buildings that form the Aldwych workshops that protrude into the mews, These low level buildings are also to be demolished and the resulting expanded footprint of the area will be utilised for site vehicle access and deliveries.

The works are to be undertaken by Keltbray Limited who has been appointed the principal contractor for this phase of project.

Address: Keltbray Limited: St. Andrew's House, Portsmouth Road, Esher, KT10 9TA

Contact Telephone numbers for key site personnel are:

Position	Name	Contact Number
Site Manager	Shane Grealy	07966 694 581
Project director	Andy McClafferty	07711 888 870
Environmental Manager	Altin Lleshi	07734 286 462
Environmental Monitoring Advisor	Ioan Tranole	07551 454 843

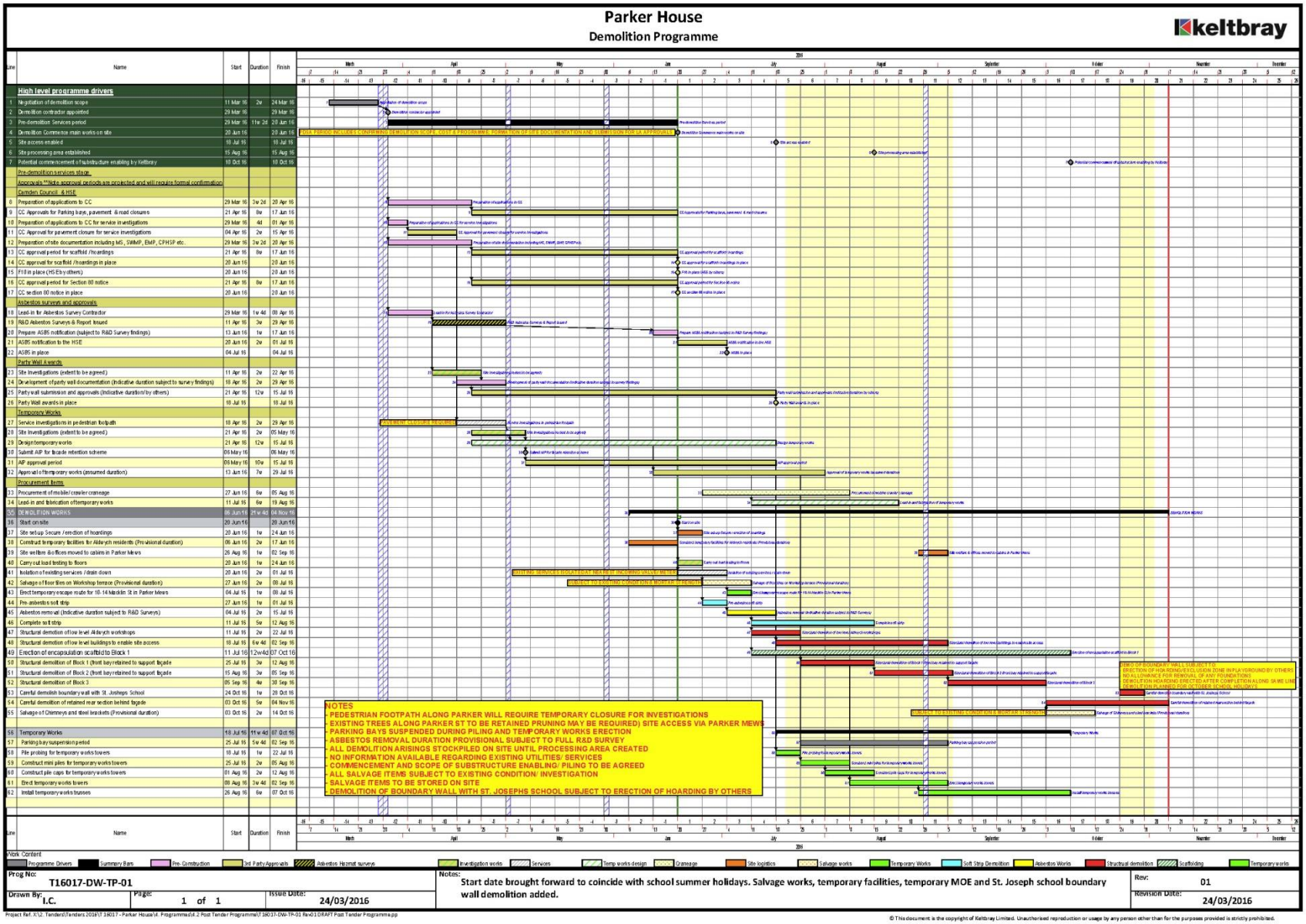
1.2. *Hours of work*

Monday to Friday 08:00 to 18:00

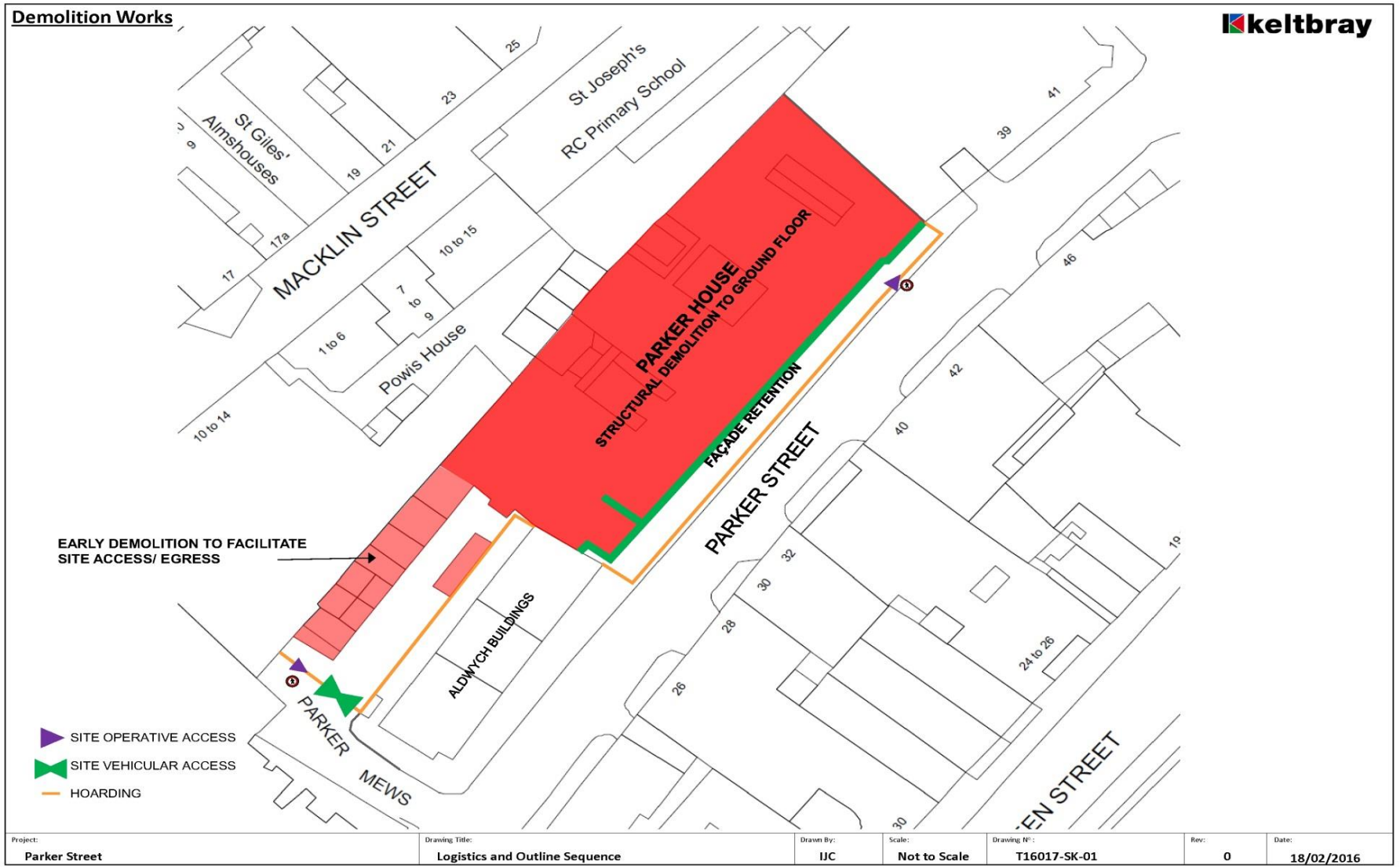
Saturday 08:00 to 13:00

1.3. *Programme*

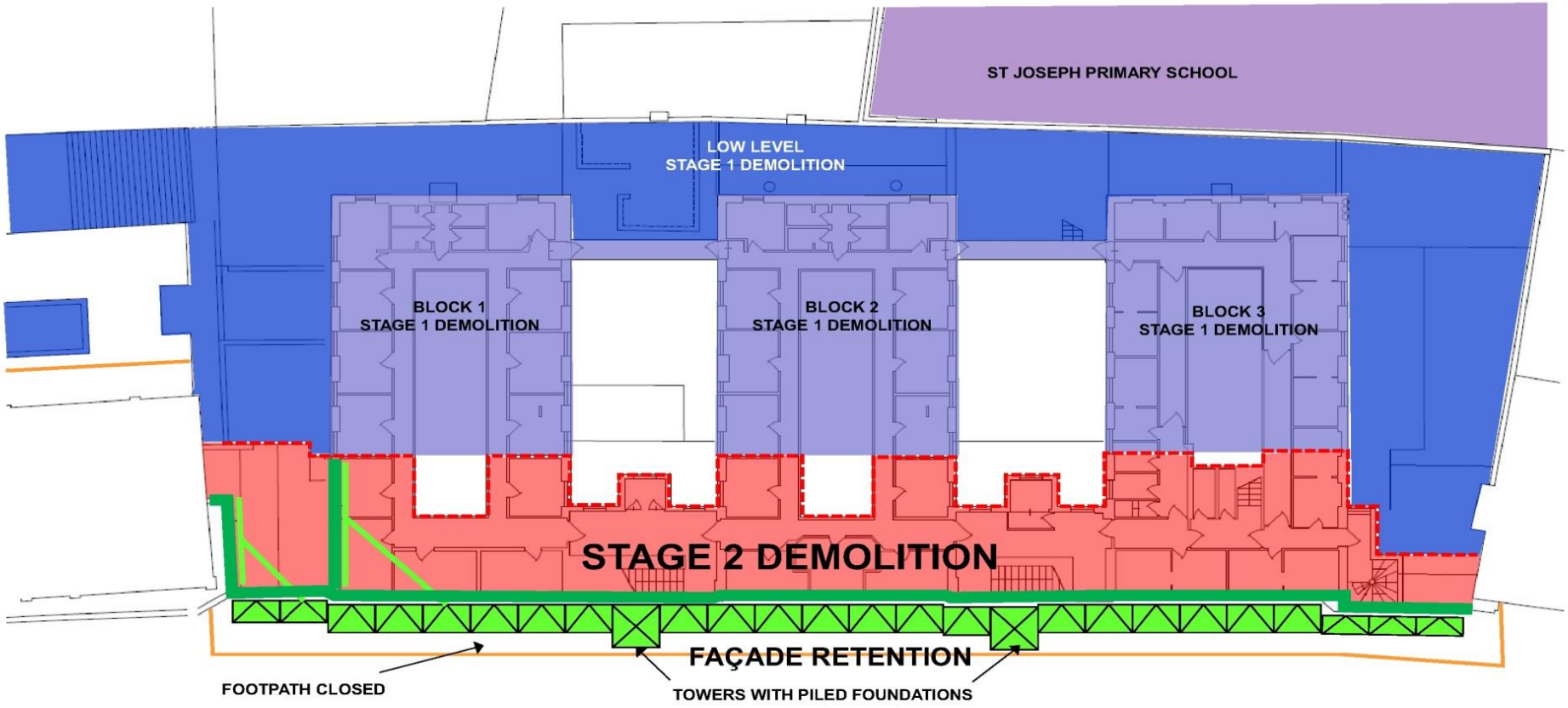
The project duration is planned and sequenced in details. All demolition and associated works on site are programmed to take up to 20 weeks.


Parker House
Demolution Programme
keltbray
NOTES
- PEDESTRIAN FOOTPATH ALONG PARKER WILL REQUIRE TEMPORARY CLOSURE FOR INVESTIGATIONS
- EXISTING TREES ALONG PARKER ST TO BE RETAINED PRUNING MAY BE REQUIRED) SITE ACCESS VIA PARKER MEWS
- PARKING BAYS SUSPENDED DURING PILING AND TEMPORARY WORKS ERECTION
- ASBESTOS REMOVAL DURATION PROVISIONAL SUBJECT TO FULL R&D SURVEY
- ALL DEMOLITION ARISINGS STOCKPILED ON SITE UNTIL PROCESSING AREA CREATED
- NO INFORMATION AVAILABLE REGARDING EXISTING UTILITIES/ SERVICES
- COMMENCEMENT AND SCOPE OF SUBSTRUCTURE ENABLING/ PILING TO BE AGREED
- ALL SALVAGE ITEMS SUBJECT TO EXISTING CONDITION/ INVESTIGATION
- SALVAGE ITEMS TO BE STORED ON SITE
- DEMOLITION OF BOUNDARY WALL WITH ST. JOSEPHS SCHOOL SUBJECT TO ERECTION OF HOARDING BY OTHERS
Prog No: T16017-DW-TP-01
Drawn By: I.C.
Page: 1 of 1
Issue Date: 24/03/2016
Notes: Start date brought forward to coincide with school summer holidays. Salvage works, temporary facilities, temporary MOE and St. Joseph school boundary wall demolition added.
Rev: 01
Revision Date: 24/03/2016

1.4. *Site location*



Demolition Works



Project:	Drawing Title:	Drawn By:	Scale:	Drawing N° :	Rev:	Date:
Parker Street	Logistics and Outline Sequence	IJC	Not to Scale	T16017-SK-01	0	18/02/2016

2. Methodology of Works

2.1. Site Set Up Works

- Details of site contacts and contact details will be provided.
- Demolition Notices will be submitted to the Camden Council.
- Site rules will apply for all operatives and visitors.
- Baseline data will be established for noise and dust.
- Site surveys will be carried out to verify any existing services and also clarification of structural information.
- Temporary services (electric and water) will be provided.
- It is imperative that ALL of the Local service isolations have been carried out prior to our works commencing on site and isolation cert's issued to Keltbray. Works cannot commence in areas where live services are present. Client will issue a permit to commence works and this will include all isolation certs required for the area.

2.2. Enabling works:

In order to comply with our programme the following activities will be required to be provided/actioned by Keltbray

- Statutory Notifications and Consents
- Section 80 Notification
- Scaffold licences/Road closures
- Approval of all relevant and submitted Method Statements, Scaffolding and Temporary Works designs
- Provision of temporary service supplies (power, water, supplies and drainage)
- Site Traffic access/egress and pedestrian routing
- Establishment and operation of noise and dust monitoring stations as required
- Establishment of local residents and communications systems, including meetings, monthly newsletters, establishment of a complaints system etc
- Scaffolding to all necessary elevations
- Decommission services
- Decommission lifts and cut out as required
- Carry out load tests for floors
- Removal of hazardous materials

All of the activities listed below will have been completed prior to the outlined works above commencing.

- Demolition Asbestos Survey (R&D)
- Asbestos removal, and clearance
- Electrical decommissioning isolation
- Draining down and isolation of water services
- Decommissioning of fire alarm
- Installation of temporary power and water, supplied by Keltbray and works completed
- Setting out access / egress on site to working areas and demarcate plant routes on site

- Establish best practicable methods for managing the vehicles entering / leaving the site
- Nominate specialist subcontractor to complete erection of protection encapsulated scaffold as per approved scaffold design
- Establishment of fire routing: fire-fighting equipment and emergency lighting in accordance with separately issued Fire and Emergency procedures
- Structural investigations and floor load testing to determine the size of plant allowable for the floor by floor demolition, or to identify any need for back propping
- Erection of temporary Welfare facilities that include toilets, changing room, canteen and office
- Method statement briefings and tool box talks

2.3. General Site Practises

- All site operatives to be given site induction by Keltbray management and Method Statement briefings and to attend regular toolbox talks (at least weekly) that will be delivered by Keltbray
- Daily task briefings held every morning for all operatives on site, prior to start of works
- CITB, CSCS, CCDO certification or equivalent as a minimum requirement for all personnel on site.
- All staff will be briefed on the Outline Demolition Method Statement, the Environmental Management Plan and the Noise, Dust and Vibration Management Plan.
- All signal slingers, 360° excavators, skid steer loaders and crane operators to have CPSP certification. In addition, the certification for the machines will be kept in the site file and will be available for inspection.
- Access platforms, scaffolding, cranes, excavators and lifting equipment's will be checked regularly in accordance with current regulations.
- All machinery, compressors, pneumatic tools etc will be fitted with silencers of approved types.
- All of the works are to be under the direct control of experienced and trained (NDTG or SSSTS /SMSTS level) demolition foremen and managers.
- All holes in floors and exposed edges are to be provided with suitable handrails and toe boards compliant with current legislation.
- Warning signs and notices are to be prominently displayed in and around site.
- All access/egress corridors and staircases are to be kept free from obstruction at all times.
- Debris and materials will be cleared from floors to prevent excessive build up.
- All works at height, as far as reasonable practicable will be carried out utilising either scaffolding or alloy towers in full compliance with current regulations.
- All scaffolding will be erected by trained, competent scaffolders in accordance with a separately issued Scaffold Method Statement. All alloy towers will be erected by PASMA trained operatives and scaffold tagged.
- First Aiders, appointed Persons and First Aid kit(s) commensurate with the total number of site personnel will to be maintained on site. The names of First Aiders will be displayed in prominent locations.
- Firefighting equipment (carbon dioxide and foam fire extinguishers) under the control of operatives, trained in the use of the same, will be positioned in and around the works.
- Any hot works will be carried out in accordance with a hot works permit from Keltbray.

- Oxy/propane cylinders will be fitted with flashback arrestors and stored in a dedicated lockable cage in the open air. A fire point will be sited adjacent, complete with fire extinguishers.
- The site will be left in a structurally stable manner at the end of each shift.
- Any future changes to the Method Statement will be agreed with the Project Manager/Project Director prior to execution and the Method Statement reviewed, amended and approved accordingly.

2.4. Soft Strip Works

The soft stripping will be carried out in two stages. This method statement covers stages, Pre-asbestos strip and main soft strip. No soft strip can commence until a fully completed R&D Survey has been received.

Stage 1 – Pre-asbestos soft strip.

This will be an initial strip carried out in order to allow the asbestos contractor access to areas where asbestos is concealed, i.e. above suspended ceilings etc. All known asbestos will be marked on site to ensure it is not disturbed during this activity. This activity will be monitored closely by the supervisors and NO asbestos will be damaged during this operation. This will have been completed prior to asbestos removal. All known ACMs should be identified in the asbestos survey and areas isolated / restricted for soft strip or any unauthorised personnel access. This will include any possible disturbed ACMs. The rooms will be marked out using spray paint and the secured through means of screw-in / locking the doors. All operatives doing the soft strip will have asbestos and demolition awareness training completed.

In the likelihood that any such asbestos materials is found during soft strip activities, the area will be secured, the supervisor notified and the area handed over to asbestos removal contractors which will have to organise a re-survey of the building.

Stage 2 – Main Soft strip.

This will be carried out after asbestos removal and only once full asbestos clearance has been issued by the asbestos removal contractor.

The soft strip waste material will be walked down the staircase and into the designated processing area as coordinated by the site manager and the banksmen.

All soft stripped material from the ground floor and basement will be removed from the buildings to the processing areas where it can be loaded into skips and removal from site.

The removal of furniture, carpets, tiles, etc. that does not disturb asbestos or asbestos related products, will be carried out as a pre-asbestos soft strip operation.

Working from the highest floor downwards the following items will be broken out/removed using hand held tools including reciprocating saws in general soft striping exercise back to structure:

- Floors Removal of all coverings
- Walls Removal of plasterboard and partitions, light fittings and fixed shelving. Panelling to the walls
- Ceilings Removal of all suspended ceiling tiles and suspension systems, including light fittings and air system

- Electrical and mechanical services Removal of all surface mounted electrical and mechanical cabling and pipework. All items of electrical and mechanical plant as listed within the Services Engineering Specification

No block walls will be removed until all the floors have been soft stripped and cleared of the materials listed in the table above.

- Partitions and non-structural internal walls will be demolished/dismantled using hand tools such as mattocks bars and 7lb / 14lb hammers and progressively removed
- Where it is deemed necessary to remove any non-structural flooring, this will be carefully uplifted and progressively removed from the upper floors down. Commencing at the furthest point from, and working towards the access stairs / ladders etc.
- Any floor joist that can be removed without affecting the structure of the buildings will cut from below in a “sit cut / drop cut fashion” by operatives using mobile towers.
- Once upper floor removals have been completed any stairs or other access will be removed or block off to prevent access to areas where floor are removed.
- A final sweeping of any concrete or non-removed floor will be undertaken on completion of the works at each level.

The works will be accessed from the existing floor levels or from aluminium towers/podium steps. Competent trained persons will erect the aluminium mobile towers and will be scaff-tagged.

Ceiling hangers, trunking, conduit, pipework and other non-structural metalwork will be cut out using reciprocating saws.

A “hot-works” permit to work system will be enforced when any hot works of this nature are undertaken and fire extinguishers/water hoses will be present at the location where these works are being carried out. Fire extinguishers will also be present at designated fire points at several locations on the floor.

Hot works will cease 1 hour before the end of the working shift and the area thoroughly checked prior to leaving site.

Due to the timber present within the buildings Keltbray Ltd will take all reasonable steps to avoid the outbreak of fire, particularly during “hot” work involving the use of naked flame or intense heat. Where work necessitates the use of such equipment portable fire extinguishers and mains water supply will be readily available.

All power tools will be supplied from a 110V transformer. Transformers will be situated in each floor.

The site has a ‘No Smoking’ policy.

Dust at the workface will be controlled by the use of fine water sprays to damp down areas both during dismantling and clearing up.

Ceiling hangers, trunking, conduit, pipe work and other non-structural metalwork will be cut out using reciprocating saws.

All material will be segregated on the floors by means of temporarily forming controlled piles of timber, plasterboard, metal, and other specific soft stripped materials. The soft strip generated will then be removed from the building using the existing staircase or the controlled drop zones formed by Keltbray prior to start of works. At the low level, the soft strip materials will be removed from site in suitable size yard skip parked inside site premises. Mechanical methods for loading the skips will have priority over loading by

hand, in order to eliminate, reduce and control the need for manual handling. A small size bobcat (up to 3T) or an excavator fitted with grab attachments will be used for skip loadings. All plant movements will be under direct control of a dedicated banksman, details will be provided in the Traffic Management Plan.

It is expected that a reduced number of skips will be required to be loaded by hand until safe and sufficient manoeuvrability areas are available for small plant to work in the area. The manual handling procedures will be closely monitored by the designated supervisor, to ensure correct lifting procedures are implemented. Working proactively, Keltbray will aim to have most of the operatives on site with manual handling training completed.

2.5. Asbestos Removal

Following completion of the surveys and receiving results of any material testing a method statement will be produced for asbestos removal and an ASB5 notification made to the HSE. Due to the phased handover of the buildings as outlined above and there being outstanding R&D surveys, two separate submissions will be made to the HSE. Keltbray Environmental Services will remove the asbestos in accordance with the programmed sequence and method.

The following sequence is an outline methodology of general asbestos removal once the ASB5 notice has been approved by the HSE. The actual method statement will be far more detailed and specific to the type of asbestos and its use should any be encountered in surveys:

- Advanced investigation works will have located the position of the asbestos based materials. (refurbishment and demolition survey)
- A pre-asbestos soft strip will take place to expose areas of asbestos to be removed.
- A decontamination unit will be positioned at ground floor level with a controlled safe transit route to the workface formed.
- The work area will have a protective enclosure erected to encapsulate it.
- A 3 stage airlock will then be installed into the encapsulated area.
- Negative pressure units will be installed into the enclosure.
- Prior to any removal works progressive smoke test will be carried out to ensure that the area is sealed.
- The asbestos based material will be removed / taken down and then double bagged for removal to the secure asbestos skip.
- With the asbestos based products removed the area will have a pre clean and a disturbed air test carried out.
- Once the area is cleaned & signed off the enclosure will then be dismantled & the area will be handed over for following works.

The asbestos will be stored in a secure area within the buildings; the asbestos will be removed by a licensed carrier prior to 8am on either weekdays or Saturday mornings.

2.6. Demolition sequence of works:

Remove roof structures:

The roof(s) and mounted structures will require removing prior to the demolition of the structure to in order to minimise contamination of the hardcore.

- Only suitably trained operatives will undertake hot works or roof works.
- Where this is not possible operatives will remove the slates by hand prior to dropping the timber work to the floor below. A temporary access scaffold will be erected to enable the operatives to safely completing the above mentioned works. If possible other methods may also be implemented such as alloy towers and podium steps. All towers will be checked prior use by trained and qualified personnel. As a measure of last resort, the operatives will also wear suitable harness and lanyard kits secured at the correct height and level to a suitable anchor point such as the scaffold structure.
- The operatives will cut from below in a "sit cut / drop cut fashion" by using mobile towers the materials will be progressively cleared of the buildings or stock pilled in an appropriate location until a well hole is available.
- All operatives working at height whist removing the roofs will have undertaken sufficient training in working at height and utilise rope fall arrest equipment. As mentioned earlier, this will only be used as the last resort only.
- Where possible operatives will work from the floor below utilising mobile towers.

Repetitive Floor-by-floor demolition

HOLD POINT: Keltbray to obtain "permit to Demolish". The issuing of the permit will be reliant of the following:

- 2M monarflex screen above working level
- Propping installed to floors below as required and specified by WHP
- Asbestos clearance certificate
- Confirmation all services have been isolated
- Floor load testing to confirm weight restrictions for demolition plant
- Permit to load for "Drop Zone" (Confirmation scaffold has been built in accordance with Drawings and Specification)
- Permit to load for "Encapsulation Scaffold" (Confirmation scaffolding has been built in accordance with Drawing and Specification)

This section describes the procedure by which the building is reduced top-down one floor at a time.

This method utilises mini-excavators up to 3 tonne and or Brokks, fitted with hydraulic breakers or other suitable attachments, and combined with the use of wheeled bobcat skid-steer loading shovels. The size of the demolition plant will be dictated by the structural investigation works and the slab load test results.

- The structures will be demolished using 360° excavators/Brokks fitted with hydraulic breaker or other suitable attachments such as powered pulverisers.

- The machines will start breaking the slab from the agreed locations and tracking back on the existing slab. Suitable barriers such as “scaffold A-Frames” will be located at the back of the working machines, ensuring no operatives are present in the area where the machine is breaking the slab.
- A Mobile Crane will lift the mini excavators and skid-steer loaders on to the working level.
- Machines will be transferred floor to floor at the end of each respective slab breakout via the ramp created around the main staircase core or by use of the mobile crane. Ensuring that only one 360° excavator is in any one bay at any time (a bay being a slab area between usually 4 columns or 2 beams).
- The debris will be broken down onto the floor below, processed and separated to increase the efficiency of debris removal.
- Wherever possible the use of hydraulic pulverising attachments will be used as opposed to hydraulic breaking attachments
- Once any concrete encased steal members have been severed from the structure any remaining concrete will be removed from the member utilising the above mention hydraulic attachments
- The removal of concrete encasing steal members will only be undertaken by hydraulic breakers where no other practical means are available
- Resultant demolition debris will be cleared using the skid-steer and deposited throughout the appointed well hole/drop zone onto a rubble mattress on the ground slab then transferred to basement level backfilling the basement areas.
- Steelwork will be removed from the workface by use of the same drop zone or by use of mobile crane. These will be segregated from the hardcore and loaded into skip to removal off site.
- Steelwork will be transferred via the drop zone to processing area at ground floor level. Once processed the steel will be loaded into bins via an excavator fitted with a suitable attachment.
- At ground level waste materials will be cleared out of the building by an a mixture of an additional skid-steer loader / medium sized excavator, and fed to a larger 360° excavator for processing and/or loading away.
- The debris will be loaded into tipper wagons using a 20 tonne 360° excavator fitted with grapple and bucket attachments. Steel sections and salvageable materials will be loaded into skips.
- The cutting of any steel or concrete/rebar stanchions and beams will be carried out using oxy/propane burning equipment. And accessed from alloy tower or standard scaffold.
- A ‘Hot Works’ permit to work system will be enforced when any works of this nature are undertaken and fire extinguishers will be prominent. Hot works will cease one hour before the end of a working shift and the area thoroughly checked prior to leaving site. All permits to work will be controlled by Keltbray.
- To prevent inhalation of toxic fumes operatives will wear ‘Airstream’ helmets or active charcoal Ori-Nazel masks during the burning/cutting of galvanised trunking or when fume densities persist whilst cutting other types of metal. The selection of the mask will be via the personal preference of the operator, subject to compliance with being fit for purpose.
- Only trained and competent operatives will carry out these works and segregate ferrous and non-ferrous material for subsequent recycling.
- Fire extinguishers will be provided and maintained at all areas of hot works. All hot works will be carried out in accordance with Keltbray Hot-works permit system.

- The external brickwork/stonework panels will be demolished in sections and folded onto the floor slab using the 360° excavators. The operation will be executed in a controlled manner, ensuring the stone work being pulled over is not excessive in size and weight.
- The steel/concrete columns will be exposed close to the floor slab. The column will be severed using oxy/propane burning equipment and folded onto the slab. The operation will be executed in a controlled manner, ensuring the column being pulled over is not excessive in size and weight.
- Once the external columns and panels have been demolished the working level slab will be broken out using 360° excavators fitted with hydraulic breaker attachments in a bay-by-bay sequence. The 360° excavator will demolish the penultimate structural bay and will allow sufficient core materials to create a ramp to enable relocating on the lower level. The final bay will be broken out from the floor below.
- The arisings will then be cleared from all floor areas to the drop zone using the skid-steer loaders.
- The building will be demolished down to the 1st/2nd floor level or until a larger 20 tonne 360° excavator with extended or standard reach arm and pulverising/shearing attachment can be used safely to reach up and complete the works.
- A pulverising/shearing attachment will be used to remove all structures at all levels down to the ground floor slab level. Assistance will be given to the pulveriser by excavator with hammer attachment for structures at ground level and below.
- The excavator will adopt a logical top down progression removing all walls, columns and slabs down to ground floor level.
- The excavator will progressively break through the ground floor slab and backfill the basement in front of the demolition sequence
- The demolition will be assisted and excess demolition debris progressively cleared / processed by utilising large size excavators.
- Careful consideration will be given to the stability of the building at all times. Any load bearing walls will be identified prior to demolition commencing to ensure that they are maintained until redundant.
- Whilst demolition is in progress, adequate provision will be provided to inspect and survey the existing structure.
- All static noise sources will be sited (as far as reasonable practicable) well away from Party Walls and neighbouring properties to prevent excessive disturbance.
- Dust emissions will be controlled at the working face, drop zone, and loading away area by a fine water spray. The quantity of water emitted by the sprays will be regulated and controlled to prevent any flooding at ground/basement level.
- Where deemed necessary a separation cut between the building under demolition and neighbours building will be undertaken by hand to prevent vibration transfer. Monitoring and controlling of the exposure time for the operatives using vibration tools will be closely managed by Keltbray for the entire duration of the works. Monitoring for building vibration is not required for this stage of works.

Removal of arising from High Level Demolition

Before any demolition is carried out a means of removing the demolition arising from the works area has to be established. Based on the site surveys completed by Keltbray, at this point, it has been decided that Keltbray will form drop zones taking advantage of the existing building geometry. It is in these areas that we intend to transfer the arising down to a larger machine for process and or loading away.

The purpose of the "well hole" or "drop zone" is to be of sufficient size, whist maintaining a secure zone to provide an internal chute for the vertical transfer of demolition arisings to the basement level. Hence the name "well hole" or "drop zone"

- Board up any windows adjacent to the "drop zone" to prevent debris bouncing through, where necessary close off local access within the building adjacent to the "drop zone".
- Ensure all services are decommissioned that are likely to be affected by this operation.
- Prevent access to all areas below working level and provide the appropriate signage. All levels to be closed off as per permit to demolition instructions and design. Warning signs are to be displayed at the light well hole on each floor level to prevent materials being inadvertently dropped down on to the operatives working below. These signs are to remain until such times as the "well hole" is de-commissioned. Also when designated a "drop zone" a drop zone marshal will be permanently placed to police / marshal drop zone activities.
- At working level(s) the edges of the "well hole" will be protected by leaving the brickwork 1.00m high to prevent any loading machine from travelling over.
- Where this is not possible a hand rail no less than 1.00m high(as a minimum at 950mm x 470mm and toeboard) will be placed across any leading edges and a sufficiently sized bulk timber or steel member will be securely placed to prevent mechanical plant over shooting the desired stop points on the leading edge(s).
- A marshal will be positioned at the podium level of the well hole, in radio contact with the 'top ganger' in order to control the "drop zone". The drop zone area at the ground level will be barrier off from any access, including the restriction signage and controlled by a drop zone marshal. The operative controlling the podium level drop zone will have direct radio contact with the supervisor coordinating the works on the higher levels. Refer to permit to demolish for instruction and design
- The materials will be relocated from podium drop zone to level 1 where will be loaded away by the use of skid steers

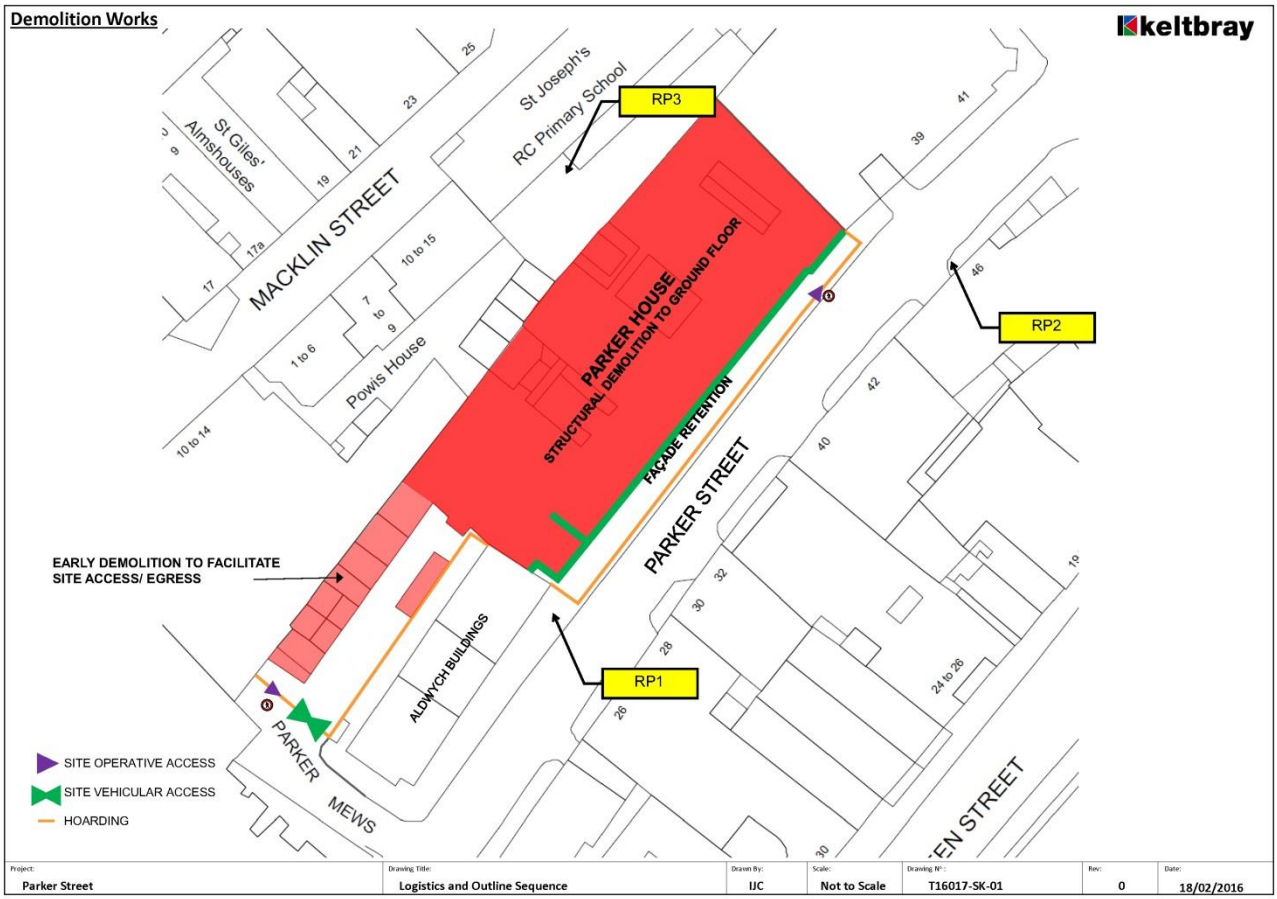
Demolition Safety Procedures

- Whilst demolition is in progress, adequate provision will be provided to inspect and survey the existing structure.
- All static noise sources will be sited (as far as reasonable practicable) well away from Party Walls and neighbouring properties to prevent excessive disturbance.
- Dust emissions will be controlled at the working face, well hole, and loading away area by a fine water spray or "DustBoss" systems. The quantity of water emitted by the sprays will be regulated and controlled to prevent any flooding at ground/basement level.

- Fuel for the machines will be kept in a bunded bowser that will be kept in the compounded area .A drip tray will be maintained under the tap. Adequate supplies of spill kits will be kept on site in case of accidental spillage.
- Fuel will be taken to the work face in bunded bowser (with lifting certification) or in dedicated in 45 gal drums. Any drums stored in the works area will be in drip trays.
- Operatives will wear rubber gloves whilst transporting fuel and when filling the drums.
- Keltbray Ltd will take all reasonable steps to avoid the outbreak of fire, particularly during 'hot' work involving the use of naked flame or intense heat. Where work necessitates the use of such equipment, appropriate and adequate portable fire extinguishers will be readily available. It will be impressed on the workforce that no smoking is allowed on site and the accumulation of rubbish must be prevented.
- Dedicated traffic marshals will be deployed at the site entrance to control all pedestrian and traffic movements. They will be dressed in High Visibility clothing (Orange).
- The works will be supervised by a 'top-man' positioned at the working floor level, and a banksman positioned at ground level in full radio communication to control the "drop zone".
- Stringent fire precautions will be implemented and the material arisings regularly cleared to minimise floor loading.
- Operative walkway routes at the working floor will be kept clear at all times. The works will be undertaken from the highest floor downwards, strictly one floor at a time per building.
- PPE requirements for all operatives will be assessed in accordance with specific Risk and COSHH assessments, and enforced accordingly.
- Throughout the works, fine-mist water sprays will be used to control the soft-strip dust emissions at source, at ground level and the lift shaft/well hole.

3. Monitoring Regime and Sensitive Receptors

After having a site visit, Keltbray have discussed some of the most sensitive receptors around the site. Most sensitive premises and a plan with the number/locations of monitoring points for noise and dust, has been produced. (See illustration below)



3.1. Equipment proposed for environmental monitoring

Noise:

The model proposed to be utilised at Parker House project is a type 1 sound level meter (Casella Cel 490), which will be used in compliance with relevant British Standards (Noise) to monitor the nearest sensitive locations (see photo below). Attended noise monitoring will be conducted during working hours, especially when demolition activities are taking place. Regular monitoring will be carried out throughout the works, on a weekly basis. **Three** Location of Noise Monitoring are proposed for this project

Vibration:

Vibration monitoring will be dealt with, based on the number of complaints received from the residents.

Dust (Air Quality):

EVM7 dust monitor will be deployed as a mobile unit. The EVM7 is an environmental monitor that combines particulate monitoring (PM10), air quality monitoring, and gas detection.
Simultaneously measures and logs particulate mass concentration, volatile organic compounds (VOCs), toxic gases, carbon dioxide (CO_2), relative humidity, temperature, and air velocity.

An extensive array of back up tanks and pumps will be installed by Keltbray to ensure that there is sufficient dust suppression water supply for the hard demolition and soft strip happening concurrently on different areas of the site incl. the lift shafts loading area.

Dust suppression will be constantly monitored ensuring dust is controlled at the source and does not have an opportunity to get air borne. Dust busters and water reels will be made available to assist in the dust suppression.

Sensitive receptors (noise and dust) have been identified as seen in the map below.

Environmental monitoring records are kept electronically and a hard copy maintained on site.

Keltbray project manager will liaise with the environmental manager to ensure the monitoring is reflective of site activities (i.e. not solely during quiet periods.)

4. Noise predictions

4.1. Noise Calculations and Predictions

Noise predictions and calculations have been carried out to determine the L_{Aeq} at the facades of surrounding sensitive receptor.

Keltbray have analysed the programme of works to assess and quantify the likely noise that will be generated through the project.

The deconstruction noise calculations are based noise LAeq data from BS 5228-1:2009+A1:2014 and the performance of scaffold encapsulated monarflex with acoustic screening being used where required and practicable taken into consideration.
The noise predictions follow the general procedure recommended in BS 5228 using CadnaA software. The source noise level of each item of plant is corrected for distance attenuation, screening attenuation, and on-time correction, to produce the activity noise level at the receiver position.

Distance Attenuation

The distance attenuation has been calculated based on the horizontal distance and the building height. It is noted that the distances have been changed since the predictions were first sent, presumably as the predictions have been refined.

Screening Attenuation

A screening attenuation of 10 dB can be applied if the source is hidden by the structure, 5 dB if partially hidden, and 0 dB if not hidden. Most sources are listed as either hidden or partially hidden. It is questionable whether this will be the case in practice, although mobile screens can be used as an alternative if required. It is suggested that if in doubt, no screening attenuation is applied.

On-Time Correction

The on-time correction is intended to be used to take into account the fact that most items of plant will not be used continuously, but will be used in short bursts. So, for example, even if the hand tools are used throughout the working day, they are likely to be used for a few seconds, then put down, then used for a few seconds again, and so on, so in practice they will only actually be used for say 25% of the time.
For any items of plant that could be used continuously (eg. wiresawing, mobile/tower crane) use almost 100% on-time.
The noise impacts at each monitoring location of the site elevation, 1 metre away from nearest facade receptor point (FRP) have been predicted using the sound power levels and percentage on-times for each of the plants, using Cadna A modelling software.

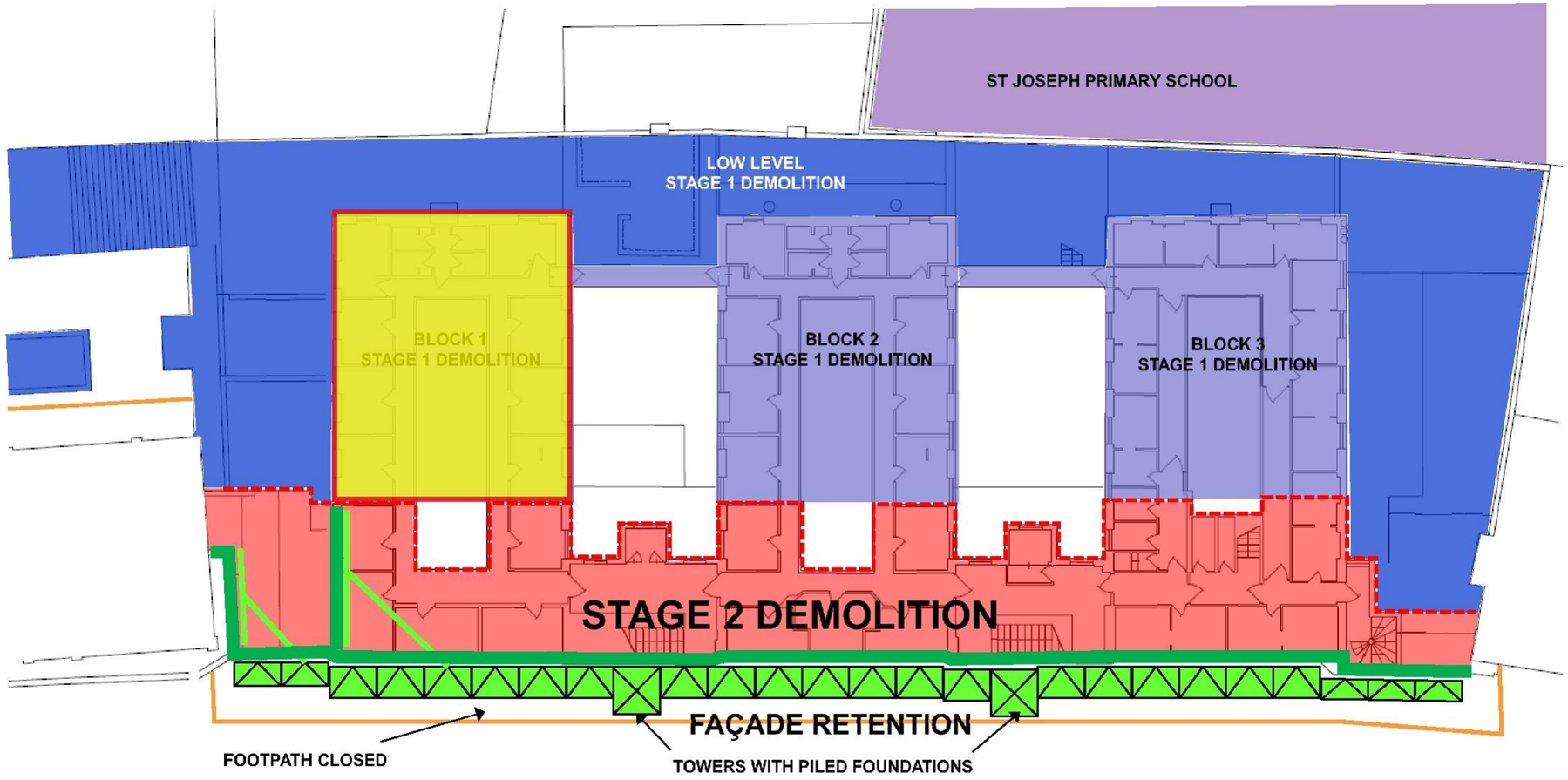
Plant List:

No.	Plant & Equipment	No. Of	BS5228/Defra (TX.X) Reference	L_{Aeq} at 10 metres (dB)	PWL
1	20T Excavator (Bucket/Pulveriser)	1	C6.9	76	104
2	Muck away (Waste) Lorry	2	T4.21	77	105
3	Burning gear	1	T3.34	65	93
4	Skid Steer Loader	1	D3.84	82	110
5	3T Excavator with hammer	2	T5.2	83	111
6	Hand tools	3	Measured	69	97
7	Angle grinder	1	C4.93	80	108
8	Mobile crane	1	C3.30	70	98

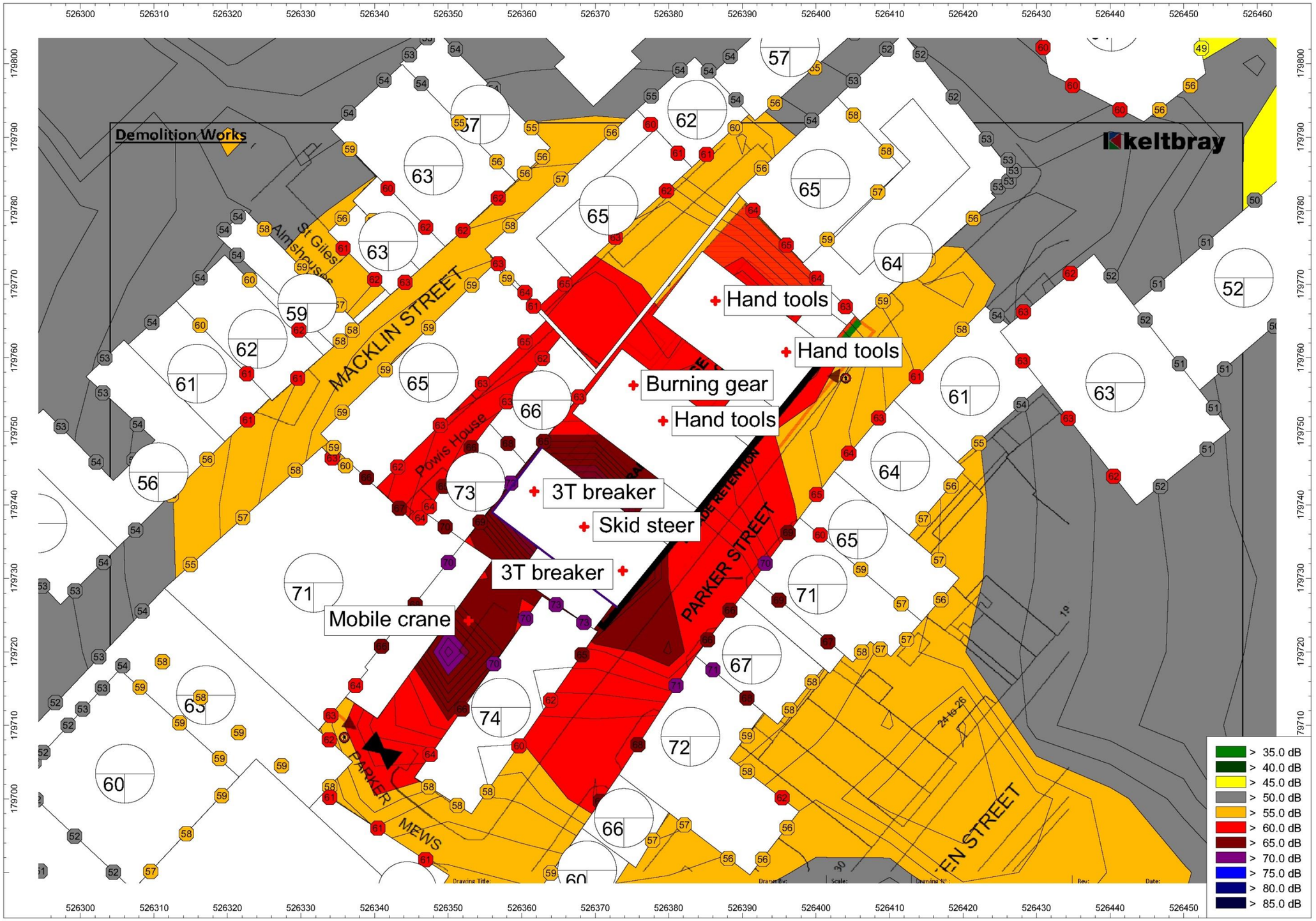
Noise predictions of Parker House using CadnaA software, is presented on the following pages:

Stage 1 – Block 1 – Roof level demolition (See highlighted in yellow)

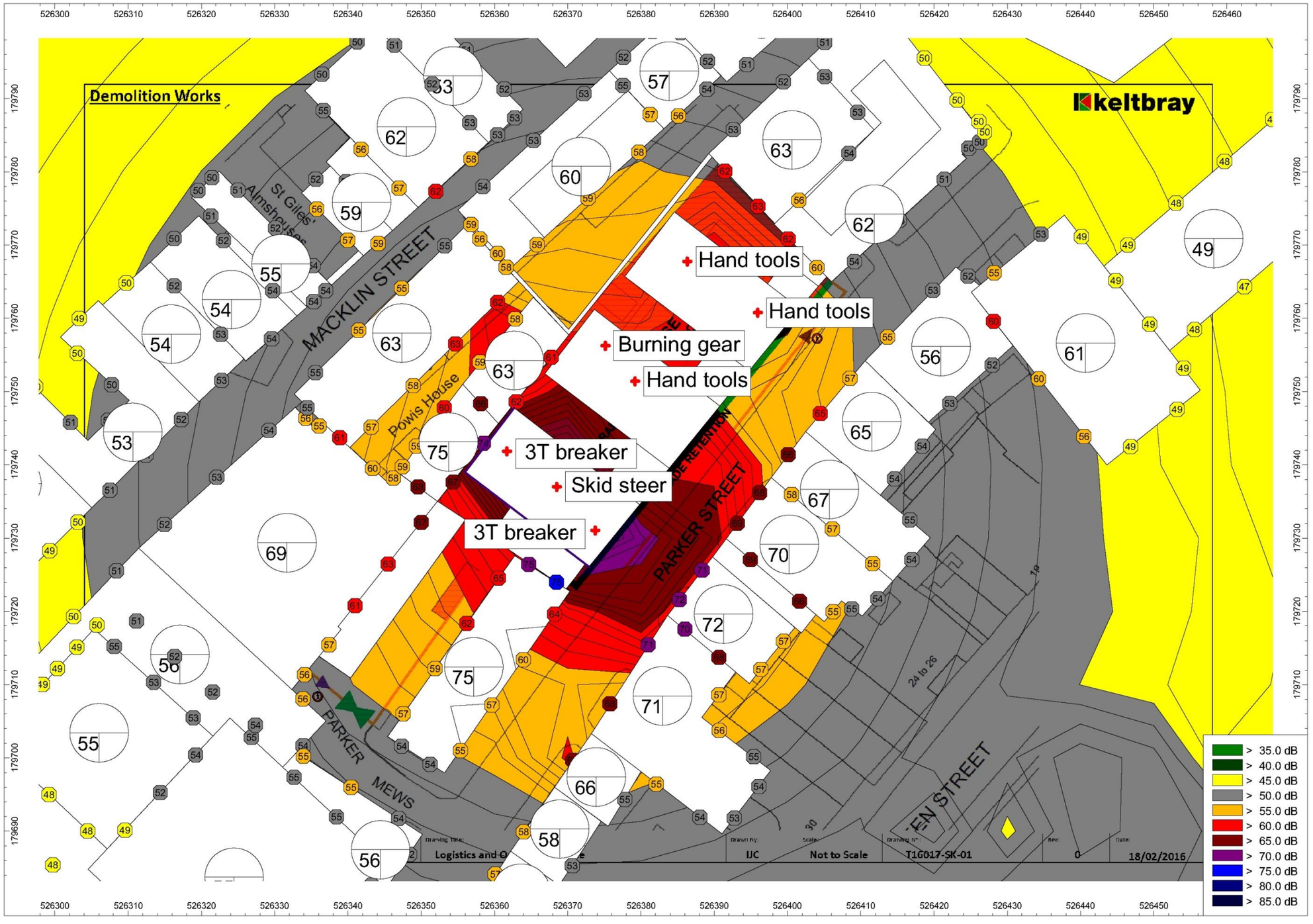
Demolition Works



Project:	Drawing Title:	Drawn By:	Scale:	Drawing N°:	Rev:	Date:
Parker Street	Logistics and Outline Sequence	IJC	Not to Scale	T16017-SK-01	0	18/02/2016

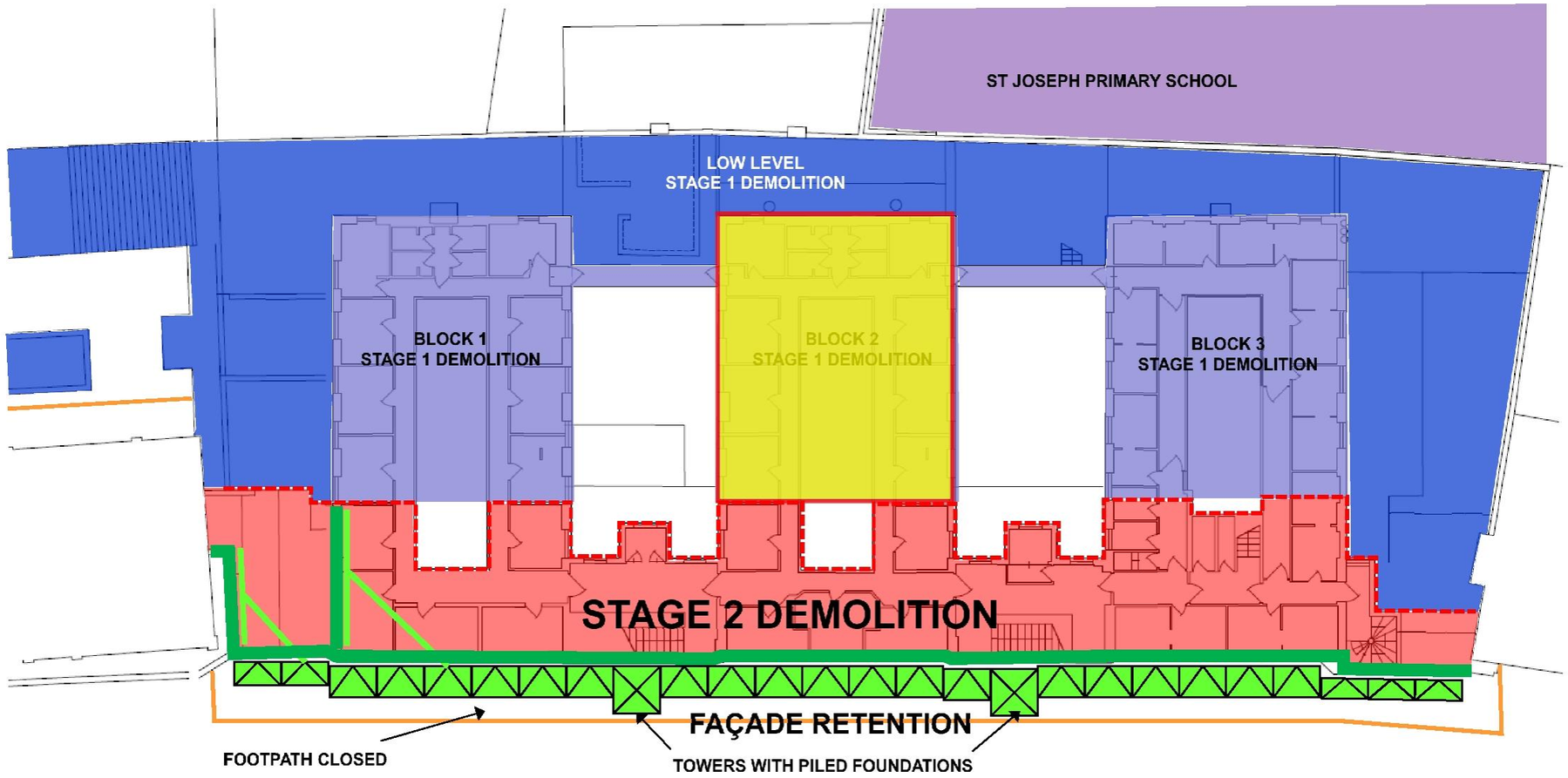

Demolition Works
Keltbray
MACKLIN STREET
PARKER STREET
POWIS HOUSE
PARKER MEWS
Hand tools
Hand tools
Burning gear
Hand tools
3T breaker
Skid steer
3T breaker
Mobile crane
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB

Stage 1 – Block 1 – Low level demolition (2nd floor)

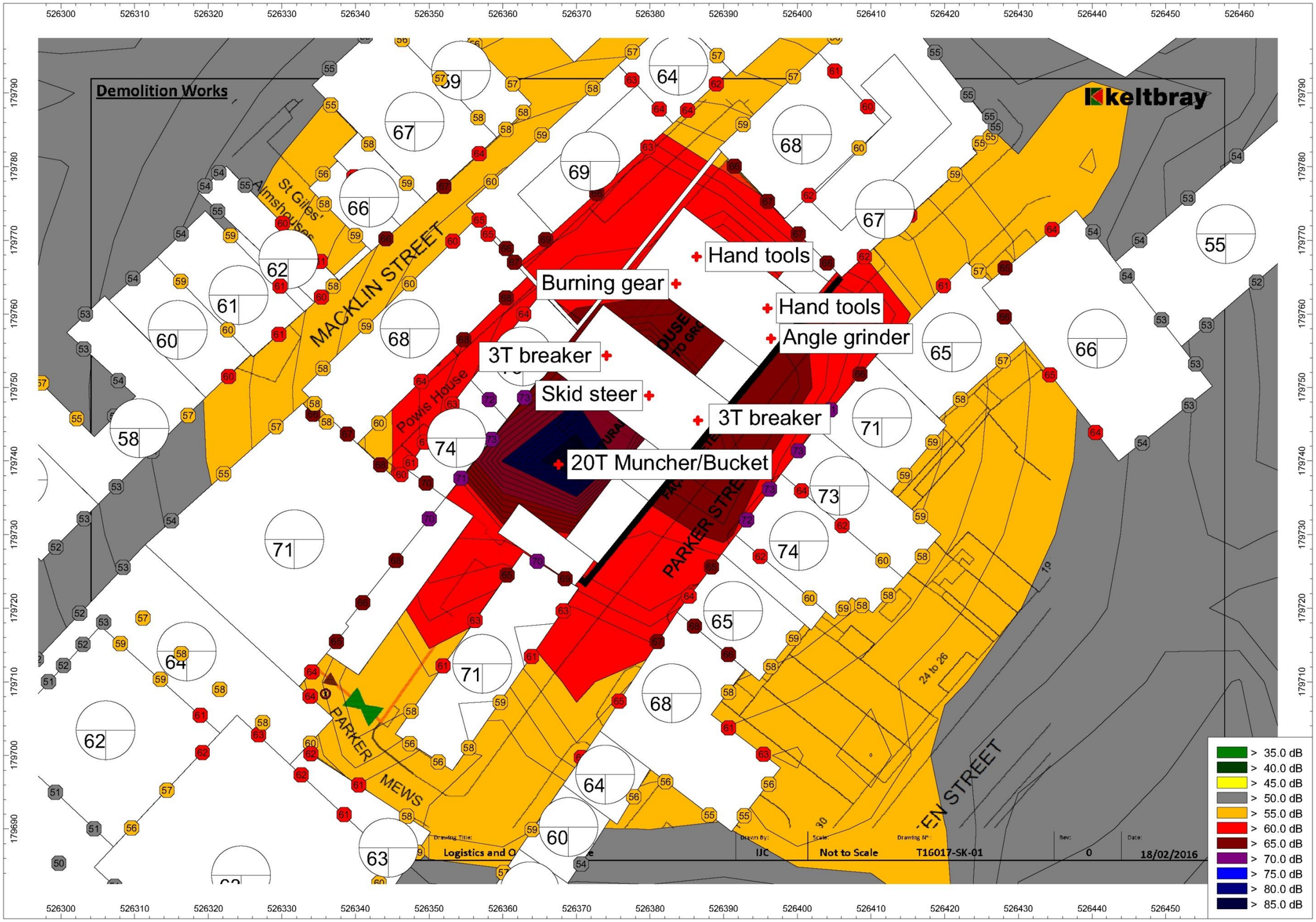


Stage 1 – Block 2 – Roof level demolition (See highlighted in yellow)

Demolition Works



Project:	Drawing Title:	Drawn By:	Scale:	Drawing N°:	Rev:	Date:
Parker Street	Logistics and Outline Sequence	IJC	Not to Scale	T16017-SK-01	0	18/02/2016


Demolition Works
MACKLIN STREET
St Giles' Almshouses
Powis House
PARKER STREET
PARKER MEWS
Hand tools
Burning gear
Hand tools
Angle grinder
3T breaker
Skid steer
3T breaker
20T Muncher/Bucket
Logistics and O
IJC
Not to Scale
T16017-SK-01
0
18/02/2016
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB